# PROJECT COMPLETION REPORT[1]

PROJECT NAME Barataria Bay Waterway East
CWPPRA/STATE PROJECT NO. PBA – 12B / BA-26

Report Date: November 26, 2001 BY: USDA - NRCS

1. **Project Managers/Contracting Officer:**

| | | | |
|---|---|---|---|
| DNR Project Manager | John Hodnet | Telephone | (225) 342-7305 |
| DNR Construction Project Manager | John Hodnet | Telephone | (225) 342-7305 |
| DNR Monitoring Manager | Bill Boshart | Telephone | (504) 283-1771 |
| Federal Agency Project Manager | Richard Abshire | Telephone | (337) 291-3060 |
| Federal Agency Contracting Officer | Charles Phillips | Telephone | (318) 473-7796 |

2. **Location and description of projects as approved for construction by Task Force.**

The Barataria Bay Waterway East project is located in Jefferson Parish, Louisiana. The construction site is located within the Barataria Basin in Jefferson Parish, Louisiana. The Barataria Bay Waterway East Project is centered approximately 3.5 miles south southeast of Lafitte on the east bank of the Dupre Cut portion of the waterway. The project area is east of Bayou Rigolettes, north of the Lafitte Oil and Gas Field and south of The Pen. The approximate center of the project area construction is: Latitude: 29°40'30" N, Longitude: 90°05'30" W

A foreshore rock dike has been installed along the east bank of Barataria Bay Waterway. A total length of 17,054 lineal feet of rock foreshore dike was placed in a continuous alignment between Bayou Dupont in the north to the southern project boundary. The extremities of the alignment, approximately 1,956 lineal feet at the north end and 1,517 lineal feet at the south end were constructed of a section consisting of entirely rock riprap. The remainder of the alignment, approximately 13,581 lineal feet was constructed utilizing composite dike consisting of a minimum thickness of 2' of rock riprap placed over lightweight aggregate that was totally encapsulated in a geotextile bag. The lightweight aggregate used was produced by Texas Industries and consisted of a fired clay aggregate.

The entire length of the dike was constructed on top of a geotextile. The dike was constructed with a minimum finished top elevation of +4.0' NGVD with side slopes of 3 horizontal to 1 vertical. The rock riprap gradation used was a COE R-650 rock. The encapsulated lightweight aggregate cross section within the composite dike ranged from 15 to 45 square feet per lineal foot of dike.

3. **Final, as-built features, boundaries and resulting acreage (use attachments if necessary).**

The project was constructed as described above. The sections of the dike which had the lightweight aggregate core was constructed using bags of sewn geotextile. The bags were 11' in length and approximately 3' in diameter and were filled with an average of 3 C.Y. of lightweight aggregate per bag. There were three different requirements in the plans for the cross sectional area of lightweight aggregate core in the various dike sections. The three different requirements were 15 s.f., 30 s.f., and 45 s.f. of lightweight aggregate core within the dike. Two filled bags were placed to achieve the 15 s.f. requirement, 5 bags were used to achieve the 30 s.f. requirement and 6 bags were used to achieve the 45 s.f. requirement. For additional information see attached "AS BUILT" plans.

**Actual Benefited Acres** 217

4. Key project cost elements

| | CWPPRA Project Cost Estimates** | Cost Incurred as of Construction Completion |
|---|---|---|
| Construction | $ 5,106,060.00 | $3,498,170.39 |
| E & D | $337,036.48 | $335,519.61 |
| Landrights | $19,120.45 | $19120.45 |
| Monitoring | $79,421.64 | $2,549.99 |
| O & M | $1,228,499.00 | $ |
| Total | $6,770,137.57 | $3,855,360.41 |

** Most recent estimate from CWPPRA Project estimates Report produced by USACOE.

5. Items of Work

| Schedule of Items | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Item No. | Work | Est. Quan. | Unit | Estimated Unit Price | Estimated Amount | Final Quan. | Bid Unit Price | Final Amount | % Over or - under |
| 1 | Mobilization and Demobilization | 1 | Job | Lump Sum | $74,000.00 | 1 | $250,000.00 | $250,000.00 | 0% |
| 2 | Pollution Control | 1 | Job | Lump Sum | $2,500.00 | 1 | $17,000.00 | $17,000.00 | 0% |
| 3 | Construction Surveys | 1 | Job | Lump Sum | $9,000.00 | 1 | $60,000.00 | $60,000.00 | 0% |
| 4 | Rockfill, Lightweight Aggregate, Encapsulated | 18,070 | C.Y. | $50.00 | $903,500.00 | 17,612 | $62.22 | $1,095,818.64 | -3% |
| 5 | Rock Riprap, Dike | 109,630 | Tons | $28.00 | $3,069,640.00 | 98,883 | $17.65 | $1,745,284.95 | -10% |
| 6 | Metal Fabrication & Installation, Settlement Plates | 17 | Each | $1,000.00 | $17,000.00 | 17 | $750.00 | $12,750.00 | 0% |
| 7 | Geotextile, Dike | 82,370 | S.Y. | $4.00 | $329,480.00 | 74,695 | $2.24 | $167,316.80 | -9% |
| 8 | Contractor Quality Control | 1 | Job | Lump Sum | $10,000.00 | 1 | $150,000.00 | $150,000.00 | 0% |
| | ORIGINAL ESTIMATED AMOUNT | | | | $4,415,120.00 | | | | |
| | | | | | ORIGINAL CONTRACT BID AMOUNT | | | $3,733,543.70 | |
| MODIFICATIONS | | | | | | | | | |
| 9* | Work Repair Dike on BBWWW with Riprap (Modification #2) | 445 | Tons | $17.65 | $7,854.25 | 372 | $17.65 | $6,565.80 | -16% |
| | | | | | | | TOTAL FINAL AMOUNT | $3,504,736.19 | |

*The work done performed as a part of Modification #2 was for Barataria Bay Waterway West, BA-23 (Contract No. 50-7217-0-5). The cost is shown in the total dollar figures for this construction contract, but is not included in the total construction dollars in Section 4 of this report.

6. Construction and construction oversight

| | |
|---|---|
| Prime construction contractor | Leon Duplessis & Sons |
| Subcontractor | Luhr Brothers, Inc. |
| Subcontractor | |
| Original construction contract | $3,733,543.70 |
| Change orders (final costs) | $6,565.80 |
| Over/Under runs (from original bid items) | $-235,373.31 |
| Final construction contract | $3,504,736.19 |

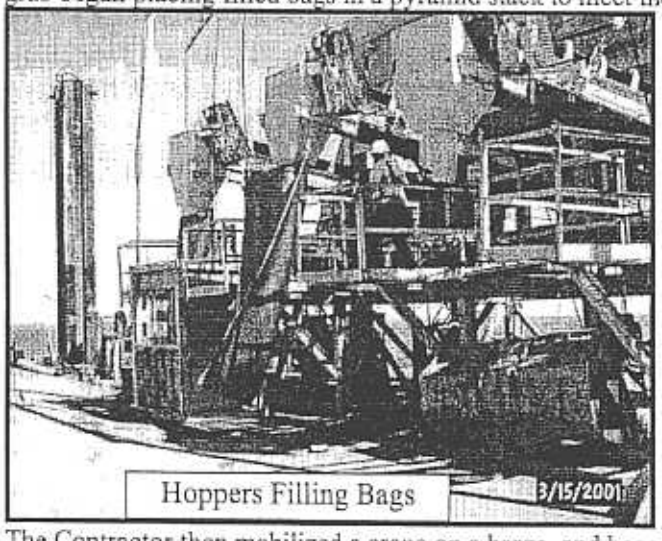
| | | | |
|---|---|---|---|
| **Const. oversight contractor** | N/A | **Const. amt.** | $0.00 |
| **Cons. O.S./Admin. agency** | NRCS | **Est. amt.** | $ |

**7. Major equipment used.**

Manitowoc 4600 Dragline w/ Spud Barge
Bucyrus Erie 88B w/ Spud Barge
Hopper Barge w/ bag loader
Front End Loader
Caterpillar Excavator
John Deere Bobcat
Maitowoc 90 West Crane
Jason Luhr Tug Boat
Charlie B Tug Boat
Spud Barge with Office Trailer

**8. Discuss construction sequences and activities, problems encountered, solutions to problems, etc.**

Contractor mobilized on site and started placing geotextile fabric. A barge with hoppers and conveyers was used in filling the geotextile bags with lightweight aggregate. The bags were suspended and the conveyer deposited the aggregate into the bags. Upon completion of filling, the open top of the bag was sewn closed. The filled bags were then transported to the front of the barge using a front-end loader. An excavator positioned on the bow of the barge and equipped with a special grab began placing filled bags in a pyramid stack to meet the minimum cross sectional area for the core of the rock dike.



Hoppers Filling Bags

Placing Filled Bags

The Contractor then mobilized a crane on a barge, and began placing the riprap over the encapsulated aggregate. While this operation continued, a third crane and barge were excavating for flotation on the Southern section of the project area. Once the crane completed the flotation excavation it began to place riprap. When the contractor completed placing the lightweight aggregate, the hopper barge was removed from the job site and the two cranes completed placing the riprap. The contractor had to place additional riprap in areas where the rock had settled before the work was accepted. The overall operation was very efficient and very well organized. This job went very well with very few problems. The superintendent had to be replaced during the construction for continued harassment of the inspector.

**9. Construction change orders and field changes.**

1. Modification #1 – Moved PI 1 north by 60 feet in order to avoid the British Petroleum Pipeline at the southern end of the dike. This was a no cost change or time modification.
2. Modification #2 – Added Item 9 – Work, Repair dike on BBWWW, BA-23 with riprap, which was used to bring a 180' segment of the rock dike on Barataria Bay Waterway West project that had settled excessively back up to grade. The modification increased the contract amount by $7,854.25. The funds for this modification were paid from MIPR W42HEM93490 that was the MIPR for the Barataria West Project.

10. **Pipeline and other utility crossings.**

| Structure | Owner | Rep. To Contact |
|---|---|---|
| 1. Oil Pipeline | BP Oil Pipeline Company | Kenneth Smithpeters<br>(504) 393-6285 |
| 2. Gas Pipeline | Creole Gas Pipeline Company | Gary Gilbert<br>(318) 665-8761 |
| 3. Gas Pipeline | Equilon Pipeline Company | (504) 340-8761 |

11. **Safety and Accidents.**

There were no accidents reported on the job site. We had to continually remind the workers to wear their hardhats and life jackets, especially the workers on the tugboats. Overall the contractor had a good safety program and the equipment was well maintained.

12. **Additional comments pertaining to construction, completed project, etc.**

Modification #2 was actually performed on Barataria Bay Waterway West, BA-23. The funds for this work was paid for from the Barataria West, BA-23 construction funds; however is shown on this completion report in the total contract dollars. Section 4 of this report does not include the cost of Modification #2 as part of the total project construction cost.

13. **Significant Construction Dates: To be filled out by DNR Construction Project Manager or Contracting Officer for construction for Agency responsible for construction.**

| Bid I.D. (Construction, 50-7217-1-3) | Date |
|---|---|
| Bid Opening | 11/14/2000 |
| Construction Contract Award | 12/15/2000 |
| Preconstruction Conference | 1/18/2001 |
| Notice to Proceed | 1/22/2001 |
| Mobilization | 2/19/2001 |
| Construction Start | 2/20/2001 |
| Construction Completion | 5/16/2001 |
| Final Acceptance | 5/21/2001 |

**If different bids are taken, repeat this table to individually reflect each bid and attach tables.**

**Other significant Project Dates**

| | Date |
|---|---|
| Project Implementation closeout** | |
| Start of Preconstruction Monitoring*** | |
| Preconstruction Aerial Photography Acquisition*** | |
| Monitoring Plan Completion*** | |

** Final implementation closeout is made by either the DNR Project Manager or the Federal Agency Contracting Officer depending on which organization had lead role for construction of project.

*** To be completed by DNR Project Manager.

## NRCS SUPPLEMENT TO COMPLETION REPORT

### CONTRACT ADMINISTRATION

List any significant problems encountered in the administration of the construction contract and recommended solution for future contract of like nature.

| DESCRIPTION OF PROBLEM ENCOUNTERED | RECOMMENDATIONS FOR FUTURE CONTRACTS |
|---|---|
| 1. There were significant quantity variations encountered on this contract. The concern is that the CO must be informed in order that the Government does not allow work to be performed in access of available funds. | The COTR will monitor closely the quantities during construction and report weekly to the CO. Any potential over/under runs will be noted in the weekly reports.<br><br>Also the Design Section will provide to the COTR in the design folder the estimated quantities of rock, geotextile, etc. by like reach or structure. This will provide the COTR a better basis to determine if quantities are running under or over the estimates early on in the construction process. |

### CONSTRUCTION PLANS

List any items pertinent to the plans which caused problems, need clarification or changes for future contracts of this nature.

| DESCRIPTION OF ITEM IN PLANS | RECOMMENDATIONS FOR FUTURE CONTRACTS |
|---|---|
| 1. Location of settlement plate placement | The location of the settlement plate placement shown on the plans should be as near as practical to the locations of the detailed geotechnical borings. This will help facilitate and better refine our ability to predict the settlement. A post construction analysis should be performed by the design engineer for each contract and the results provided to the other design engineers. |

CONSTRUCTION SPECIFICATIONS

List any significant items in the construction specifications which caused problems, need clarification or changes for future contracts of this nature.

| DESCRIPTION OF ITEM IN SPECIFICATIONS | RECOMMENDATIONS FOR FUTURE CONTRACTS |
|---|---|
| 1. Payment of Lightweight Aggregate | The specifications need to explicitly state that any lightweight aggregate lost during placement will not be included for payment. This may need to be accomplished by different means depending upon the method of construction.<br>• Encapsulated in bags prior to placement<br>Measurement shall be by average end area of material on barges. The volume of any bags ruptured after filling and placing, but prior to placement of rock riprap over them will not be included in payment.<br>• Furrow or encapsulated with geotextile after placement<br>Measurement for payment shall be by average end area of material after placement and encapsulation with the geotextile. |
| 2. Final grade of any type dike at final inspection. | The specification needs to explicitly state the following:<br>The allowable vertical tolerance of the placed (rock riprap, earth dike, etc.) shall be to the grade as shown in the plans plus 0.5 feet at the time of final inspection and acceptance. |
| 3. Seeding of Spoil Material | Include vegetative seeding of <u>all spoil material</u> that will remain above the water level. |
| 4. Placement of encapsulated lightweight aggregate | Require contractor to submit plan for both the <u>method of encapsulation</u> and the <u>method of placement</u> of the encapsulated material to the CO for approval prior to the start of work. |

GENERAL COMMENTS

List any significant items which worked well and should be repeated or which caused problems, need clarification or changes for future contracts of this nature.

| DESCRIPTION OF ITEM | RECOMMENDATIONS FOR FUTURE CONTRACTS |
|---|---|
| 1.Settlement plate data | The design engineer needs to make a comparative analysis of the predicted settlements with the actual settlements using the data obtained from the settlement plates during construction. This information needs to be shared with other design engineers. |