

December 12, 2007

**FINAL PIIESA REPORT
PROPOSED CLOSURE STRUCTURES – SEABROOK,
GIWW-MRGO, MICHoud SLIP
PHASE II ENVIRONMENTAL SITE ASSESSMENT
NEW ORLEANS, LOUISIANA**

Prepared for



**US Army Corps
of Engineers®**

New Orleans District

**Under Contract to
U.S. Army Corps of Engineers – New Orleans District
Environmental Services IAW
DACP29-03-D-0014 Task Order #0037**

By



Materials Management Group, Inc.

**TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR
MANUFACTURER'S CERTIFICATE OF COMPLIANCE**

(Read instructions on the reverse side prior to initiating this form)

TRANSMITTAL NO.
TO 037-008

TO:
U.S. Army Corps of Engineers
New Orleans District
P.O. Box 60267
New Orleans, LA 70160
SPECIFICATION SECTION (Cover only one section with each transmittal)

SECTION 1 - REQUEST FOR APPROVAL OF THE FOLLOWING ITEMS (This section will be initiated by the contractor)

FROM:

Materials Management Group, Inc.
3520 General DeGaulle Drive, Suite 3010
New Orleans, LA 70114

PROJECT TITLE AND LOCATION

Task Order 037 - PIIESA - Navigable Control Structures - Seabrook, GIWW-MRG0, Michoud Slip, New Orleans, LA

ITEM NO.	DESCRIPTION OF ITEM (Type, size, model number, etc.)	MFG. OR CONTR. CAT. CURVE DRAWING OR BROCHURE NO. (See instruction no. 8)	NO. OF COPIES	CONTRACT REFERENCE DOCUMENT	FOR CONTRACTOR USE CODE	VARIATION (See instruction no. 6)	FOR OE USE CODE
a.	b.	c.	d.	e.	f.	g.	h.

REMARKS

I certify that the above submitted items have been reviewed in detail and are correct and in strict conformance with the contract drawings and specifications except as otherwise stated.

C. Paul Lo, Project Manager



NAME AND SIGNATURE OF CONTRACTOR

SECTION II - APPROVAL ACTION

DATE

December 12, 2007

NAME, TITLE AND SIGNATURE OF APPROVING AUTHORITY

ENCLOSURES RETURNED (List by item No.)

Comments on:

Materials Management Group, Inc.
Report Submittals for
DACW29-03-D-0014
Task Order #037

Draft Phase II ESA Report

Proposed Closure structures – Seabrook, GIWW-MRGO, Michoud Slip
Phase II ESA Environmental Site Assessment
New Orleans, Louisiana
28 November 2007

Reviewer: George Bacuta, Laura Wilkinson USACE-NOD

Respondent: Karly Gibbs

1. Respondent concurs ☺, Does not Concur (D), or takes Exception (E).
2. Commentor Agrees (A) with response, or Does not Agree (D) with response.

Comment #	Section : Item/Page	Paragraph/ Line	Comment	C, D, E ¹	Response	A or D ²
1 Wilkinson	General	General	We have reviewed the Phase II for Seabrook and there are no significant errors or concerns with their methodology or recommendations; however, Figure 2 of the GIWW-MRGO region map is mislabeled with the Michoud Canal samples labeled at the Bayou Bienvenue sampling location and the Bayou Bienvenue samples labeled at the Michoud Canal location. This error causes significant confusion and casts some doubt on the results, but if the labeling is transposed, the remainder of the analysis seems to fit.	C	Some sample location labels were inadvertently swapped; this has been corrected.	
2 Wilkinson	Section 3.3		Additionally, it may be prudent if samples are still held to perform VOC sampling on the highest PID-reading sample in the GIWW-MRGO region which was located at Bayou Bienvenue.	C	This is a great suggestion, however there was not sufficient sample volume at these locations, and the holding time for VOC extraction is expired anyway.	
3 Bacuta	Exec. Summary; Page vi		Last sentence, paragraph on GIWW-MRGO. Suggest to qualify other sources for PID readings such as related to odor detected in field logs as well as organic content in soil borings. VOC's analyzed on samples along the GIWW (associated with former barge location) just west of propose permanent GIWW gate location as well as VOCs analyzed on samples associated with the temporary gate location just east of Michoud Slip along the confluence of GIWW and	C	Last paragraph of GIWW-MRGO of recommendations, changed last sentence to two sentences: "It should be noted that there were high PID readings...Based on analytical results..."	

Comment #	Section : Item/Page	Paragraph/ Line	Comment	C, D, E ¹	Response	A or D ²
4 Bacuta	Appendix A: Boring Logs & Sampling Logs		MRGO. VOCs are addressed in the plan in areas where there is reason to believe that it is necessary for verification.			
5 Bacuta	Section 5.4, Section 6		Indicate PID readings in boring logs, this may correlate to odor detected and organics (peat) observed in soil borings. Organic decay may be methane related or hydrogen gas; these gases can be field screened depending on VOC field instrument used.	C	All PID readings have been included on the boring logs; see Appendix A.	
6 Bacuta	Exec. Summary, Page vi; Section 5.1, Page 10		Suggest to qualify statements on VOC contamination that other sources of the PID readings likewise include odor detected and organic decay as well as maybe correlated with organic content (i.e. peat) of sample. Qualify that VOCs analyze in samples collected in the GIWW-MRGO-Michoud Slip area are based on their proximity to possible rational source (i.e. associated with adjacent NASA site and barge cleaning — see Scope and Phase 1 ESA reports). There are no Phase 1 ESA evidence for VOC analyses in samples in the middle of wetland (e.g. levee connector and propose gate location further east along GIWW) and from proposed gate location along MRGO near Bayou Bienvenue. More likely the elevated PID screening is from odor detected and organic decay as shown on the boring logs.	C	Section 5.4, revised 4 th sentence to include other sources of PID readings. Section 6.0.GIWW-MRGO paragraph, added last three sentences to discuss potential sources of PID readings: "Site history does not suggest... There are other potential sources...Organic material was observed..."	
			Elevated lead (Pb) revealed in testing results for Seabrook sample B6 maybe consistent with Comment #1 for MMG's report entitled "Phase I Environmental Site Assessment: Seabrook Site, New Orleans, Louisiana" dated 27 Nov2007 indicating historical use of adjacent west bank area by National Lead Company.	C	Section 5.1, Seabrook paragraph, added 3 rd sentence indicating the previous presence of the National Lead Company near sample location B6. Executive Summary, page vi, Seabrook paragraph, added 3 rd & 4 th sentences addressing historical operations of the National Lead Company.	
					Section 6.0, Seabrook paragraph, added 3 rd sentence addressing National Lead Co. history.	

Final Phase II Environmental Site Assessment Report December 12, 2007
Closure Gates – Seabrook, MRGO-GIWW, Michoud Slip, NOLA 2866-ACE

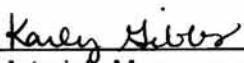
Final Phase II Environmental Site Assessment Report

for

**Closure Gates – Seabrook, MRGO-GIWW, Michoud Slip
New Orleans, LA**

Approval Page


Materials Management Group, Inc.
C. Paul Lo, Project Manager


Materials Management Group, Inc.
Karly Gibbs, Risk Assessor


Materials Management Group, Inc.
Wendell Thompson, Geologist

USACE – NOD
Contracting Officer

USACE – NOD
Project Manager

USACE – NOD
Technical Representative

USACE – NOD
Technical Representative

Table of Contents

Table of Contents.....	ii
Executive Summary	iv
1.0 Introduction	1
1.1 Purpose	1
1.2 Special Terms and Conditions	1
1.3 Limitations and Exceptions of Assessment.....	2
1.4 Limiting Conditions and Methodology Used.....	2
2.0 Background	3
2.1 Site Description and Features	3
2.2 Physical Setting	3
2.3 Site History and Land Use	4
2.4 Adjacent Property Land Use.....	4
2.5 Summary of Previous Assessments	4
3.0 Phase II Activities.....	5
3.1 Scope of Assessment.....	5
3.1.1 Supplemental Record Review	5
3.1.2 Sampling and Chemical Testing Plan.....	5
3.1.3 Deviations from the Work Plans	6
3.2 Field Explorations and Methods	6
3.3 Sampling and Chemical Analyses and Methods.....	7
4.0 Evaluation and Presentation of Results	8
4.1 Subsurface Conditions	8
4.1.1 Geologic Setting	8
4.1.2 Hydrogeologic Conditions.....	8
4.1.2 Verification of Sampling and Quality Objectives	8
4.2 Analytical Data.....	8
5.0 Discussion of Findings and Conclusions	10
5.1 Recognized Environmental Conditions	10
5.2 Affected Media.....	11
5.3 Evaluation of Media Quality	12
5.4 Other Concerns (Adequacy of Assessment).....	12
6.0 Recommendations	13

Tables

- Table 1: Summary of Analytical Results – Seabrook
- Table 2: Summary of Analytical Results – GIWW-MRGO and Levee Connector
- Table 3: Summary of Analytical Results – Barge Area
- Table 4: Summary of Analytical Results – Michoud Slip
- Table 5: Sample Location Geographic Coordinates
- Table 6: PID Results

Figures

- Figure 1: Site Location Maps
- Figure 2: Actual Sample Location Maps

Appendices

- Appendix A: Boring Logs & Sampling Logs
- Appendix B: Final Analytical Report
- Appendix C: Field Logs
- Appendix D: Photographs
- Appendix E: Final Safety Report

Executive Summary

Background

This report addresses the findings of the Phase II Environmental Site Assessment (PIIESA) conducted at the three proposed locations of navigable closure gates in New Orleans, Louisiana. The three investigation locations included: at the confluence of the Inner Harbor Navigation Canal (IHNC) and Lake Pontchartrain (near the Seabrook Bridge), at the confluence of the Mississippi River Gulf Outlet and the Gulf Intracoastal Waterway (MRGO-GIWW) (east of the Bayou Bienvenue-Michoud Canal corridor) as well as the former barge area near the Michoud Canal, and east of the Michoud Slip. MMG conducted the Phase II ESA under contract to the U.S. Army Corps of Engineers (USACE). The Phase II ESA was performed in accordance with all relevant regulations and guidance, including the American Society for Testing and Materials (ASTM) "Standard Guide for Environmental Site Assessments: Phase II Environmental Site Assessment Process," E 1903-97.

Phase I Environmental Site Assessments (PIESAs) were conducted at the proposed locations in 2006; while there were no recognized environmental conditions (RECs) identified at the Seabrook site and only the presence of barges near the Michoud Canal were identified as an REC, the PIESAs recognized the potential for environmental impact on the sediment associated with current and previous industrial activities in the proposed construction areas. The PIESAs revealed findings of industrial activities surrounding the target location(s) for closure gate construction, particularly at the Seabrook site and the GIWW (Michoud Canal) site. Past activities along the Inner Harbor Navigation Canal have resulted in discharges to the canal; these discharges may have impacted the canal sediments. Construction activities will involve dredging/excavation of sediment; therefore it is necessary to investigate the potential environmental impact in order to meet requirements for potential land-based disposal of the sediment.

Therefore, the Phase II ESA was conducted to collect preliminary baseline chemical data to address (disposal or re-use) management of excavated sediment material on land (with evaluation using the Louisiana Department of Environmental Quality (LDEQ) Risk Evaluation/Corrective Action Program (RECAP) standards). Management of excavated sediment in water was not addressed under this PIIESA.

Findings

The analytical results from the Phase II ESA are summarized in Tables 1 (Seabrook), 2 (GIWW-MRGO, Levee Connector), 3 (Barge Area – near Michoud Canal), and 4 (Michoud Slip) and the final analytical report is included in Appendix B. Briefly, the results indicated the following:

Seabrook

The analytical results from the samples collected at the Seabrook area indicate the following:

In-Lake

Few contaminants of concern (COCs) were detected; only TPH-D and metals (aluminum, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, sodium, vanadium, and zinc) were detected in samples B1-B4.

In-Canal

More COCs were detected in the canal samples (B6-B8); these included one VOC (acetone), one SVOC (fluoranthene), TPH-D, TPH-O, herbicides (MCPPA and MCPP), and metals (aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, silver, sodium, vanadium, and zinc).

GIWW-MRGO and Levee Connector

The analytical results from the samples collected near Michoud Canal, Bayou Bienvenue, and the levee connector between indicate:

- Michoud Canal: only herbicides (dichloroprop and MCPP) and metals (aluminum, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, sodium, vanadium, and zinc) were detected;
- Bayou Bienvenue: only TPH-D, TPH-O, and metals (aluminum, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, sodium, vanadium, and zinc) were detected;
- Levee connector: TPH-D, one pesticide (Lindane), one herbicide (MCPP), and metals (aluminum, arsenic, barium, beryllium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, potassium, sodium, vanadium, and zinc) were detected.

Barge Area

The analytical results from the samples collected near the former barge area near Michoud Canal indicate that the COCs detected were two VOCs (acetone and 2-butanone), TPH-D, and metals (aluminum, arsenic, barium, beryllium, calcium, chromium, hexavalent chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, sodium, vanadium, and zinc).

Michoud Slip

The analytical results from the samples collected near Michoud Slip indicate that the COCs detected were two VOCs (acetone and carbon disulfide), TPH-D, and metals (aluminum, arsenic, barium, beryllium, cadmium, calcium, chromium,

cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, sodium, vanadium, and zinc).

The concentrations detected in each location are indicated in Tables 1-4. These data were reviewed with respect to LDEQ RECAP screening standards. The screening standards considered are the most stringent of soil screening non-industrial (SSni) or soil screening protective of groundwater (SSgw). Table 1 summarizes the data from Seabrook, Table 2 summarizes the data from GIWW-MRGO, Table 3 summarizes the data from the former barge area, and Table 4 summarizes the data from Michoud Slip. The limiting RECAP screening standards for each contaminant of concern are included on each of the tables.

Barium and lead are present in the canal sediment at Seabrook location B6 in concentrations above the RECAP screening standards. All other sample locations indicated COCs below RECAP standards. PID readings at the GIWW-MRGO sample locations suggest volatile contaminants may be present in the sediment. However, VOCs were not analyzed at those locations so it is unknown whether VOC contamination exists.

Recommendations

Based on these findings, MMG has the following recommendations:

Seabrook

The Phase II ESA indicated that two COCs (barium and lead) are present in the sediment above RECAP standards in one location in the canal at Seabrook (B6). However, this appears to be an isolated hot spot because all other concentrations of these contaminants are significantly lower. Site history in the area includes operations of the National Lead Company on the west bank, adjacent to B6 (based on the PIESA). This is likely the source of the lead contamination; it is possible there are additional areas of elevated lead concentrations adjacent to B6 based on this history. There are two options for the Seabrook closure structure: in-lake or in-canal. Based on these analytical results and since one canal location was not sampled (B5), it may be better to use the in-lake option for construction. Sample locations B5 and B6 were the areas selected to provide information regarding impact to the sediment from an historical discharge in the area. It is unknown what concentrations may have been detected at B5. If the canal option is chosen for construction, on-land management of the excavated sediment may be limited due to contaminant concentrations; this limitation does not exist with the lake option.

GIWW-MRGO

The Phase II ESA indicated that contaminant concentrations at the proposed gate locations, levee connector, and former barge area are all below the risk levels. Based on these results, construction at this location with on-land management of excavated sediment is feasible. It should be noted that there were high PID readings in these sample locations, which may be associated with

VOC contamination (VOCs were not analyzed so actual concentrations are unknown), but the readings may also be associated with organic material and decay and an odor detected during sampling (see Appendix A for boring logs). Based on analytical results, VOCs are not a concern in areas where potential VOC contamination was anticipated based in site/area history.

Michoud Slip

The Phase II ESA indicated that contaminant concentrations at the proposed gate location area are all below the risk levels. Based on these results, construction at this location with on-land management of excavated sediment is feasible.

Based on the findings of this investigation, there is only one location with unacceptable concentrations of contaminants. The analytical results indicate that management of dredged material/excavated sediment on-land without concern for levels of contaminants is an option at all three construction locations.

1.0 Introduction

Under Indefinite Quantity Requirements Contract (IQRC) DACW29-03-D-0014 Task Order 37, the U.S. Army Corps of Engineers (USACE) New Orleans District (MVN) tasked Materials Management Group, Inc. (MMG) to conduct a Phase II Environmental Site Assessment (ESA) in the vicinity of navigable closure structures the USACE intends to construct in three locations in New Orleans, Louisiana. Permanent closure structures will be constructed at the confluence of the Inner Harbor Navigation Canal (IHNC) and Lake Pontchartrain (near the Seabrook Bridge), and at the confluence of the Gulf Intracoastal Waterway (GIWW) and Mississippi River Gulf Outlet (MRGO) (near the Michoud Canal-Bayou Bienvenue corridor). A temporary (interim) closure structure will also be constructed at an additional GIWW-MRGO location near the Michoud Slip. The USACE granted Notice to Proceed with the project on August 1, 2007. This report follows the guidance outlined in the ASTM Standard E 1903-97. The report will be submitted to the USACE initially, however the USACE will ultimately determine the final distribution list.

1.1 Purpose

The purpose of the Phase II ESA was to collect preliminary baseline chemical data to address (disposal or re-use) management of excavated sediment material from construction on land. The scope of work included sediment sampling and analysis from multiple borings at each proposed closure structure construction location, as well as near the former barge area identified as a recognized environmental condition in the Phase I Environmental Site Assessment (PIESA) (2006). The purpose of this report is to summarize the field activities of the Phase II ESA, discuss the findings, and provide an assessment of the success of the investigation with regard to the project objectives.

1.2 Special Terms and Conditions

This report does not constitute legal advice, nor does MMG purport to give legal advice. Environmental conditions and regulations are subject to constant change and reinterpretation. It should not be assumed that current conditions and/or regulatory positions will remain constant. Furthermore, because the facts stated in this report are subject to professional interpretation, other professionals might reach differing conclusions.

No warranty can be made that conditions were representative of areas not sampled (or investigated). Tests or data collected during this investigation were obtained only for the purposes or objectives stated in the work plans or in this report, and should not be used for reasons other than those intended.

Possession of this Phase II ESA report does not carry with it the rights of publication, and any parts thereof may not be reproduced in any form without written permission of its writer or that of the client (USACE) who ordered the report.

The client (USACE) and their designated users may rely on the information presented in this report. Should substantial time pass or a change in use of the property occur, the accuracy of this report may be compromised and additional site investigation may be required.

1.3 Limitations and Exceptions of Assessment

Due to the limitations of the drilling equipment (boat-mounted Vibracore) based on the nature of the investigation area (over open water), sediment samples were not collected in any areas with a water depth greater than 40 feet. In addition, the nature of the canal bottom at proposed Seabrook sample location B5 (oyster shells) prevented sample collection in this area, even with multiple attempts with various drilling and sampling equipment.

1.4 Limiting Conditions and Methodology Used

Under the requirements of the Task Order, the site assessment was performed in accordance with formal work plans. The site assessment was designed to compare the results with the Louisiana Department of Environmental Quality (LDEQ) Risk Evaluation/Corrective Action Program (RECAP) screening standards for data evaluation purposes as well as to meet USACE-specified target detection limits.

The guidance and regulations followed over the course of this project included:

- American Society for Testing and Standards (ASTM) E 1903-97 “Standard Guide for Environmental Site Assessments: Phase II Environmental Site Assessment Process;”
- LDEQ RECAP document (2003);
- USACE EM 200-1-3 “Requirements for the Preparation of Sampling and Analysis Plans.”

While there were no recognized environmental conditions (RECs) identified at the Seabrook site and only the presence of barges near the Michoud Canal as an REC, the PIESAs conducted at the locations in 2006 recognized the potential for environmental impact on the sediment associated with current and previous industrial activities in the proposed construction areas.

No specific contaminants of concern were identified (based on site history or known spills or releases). Therefore, comprehensive groups of contaminants were included for analysis to meet the project objectives.

2.0 Background

Detailed background information for the sites was presented in the Phase I ESA reports prepared by MMG in 2006. For the purposes of this Phase II ESA report, general background information has been summarized.

2.1 Site Description and Features

Seabrook

The in-lake site is located in Lake Pontchartrain and the in-canal site is located in the IHNC. The Seabrook Bridge and Southern Rail Bridge run between the in-lake and in-canal sites, and the Inner Harbor Navigation Canal or IHNC is south of both sites. A boat launch area is located to the west, and New Orleans Lakefront airport is located to the east. The surrounding area on both banks of the IHNC is mostly industrial use. On the east bank of the Canal is Jourdan Road. Industrial facilities and wharf are constructed along Jourdan Road. On the west bank of the canal is France Road. Industrial facilities can be found along the east side of France Road. Some residential properties are located along the west side of France Road. See Figure 1 for a site location map. The sites are currently water areas.

GIWW-MRGO (Michoud Canal – Bayou Bienvenue) and Michoud Slip

The site for the permanent closure structure is located between the GIWW and MRGO, approximately one mile east of the confluence of the GIWW and MRGO. The temporary structure is located just east of the Michoud Slip. The sites and surrounding vicinity are undeveloped except to the north and west of the proposed GIWW floodgate site. To the west of the GIWW floodgate site is the industrial complex along the east bank of Michoud Canal. Further west beyond the west bank of Michoud Canal is the Michoud NASA facility. See Figure 1 for a site location map. The sites are currently water/wetlands areas.

2.2 Physical Setting

Based on review of the most current USGS Topographic Map, the physical setting of the site is indicated below.

Geography

The sites are located in two areas of New Orleans, LA.

Seabrook Area

The Seabrook area of New Orleans is located at the connection between Lake Pontchartrain and the Inner Harbor Navigation Canal, which runs to the Intracoastal Waterway. The area is west of the New Orleans Lakefront Airport and east of the Seabrook Boat Launch.

GIWW – MRGO

The GIWW-MRGO area of New Orleans is located at the connection between the Mississippi River Gulf Outlet and the Gulf Intracoastal Waterway. The area is north of St. Bernard Parish and south of Orleans Parish.

Physical Setting

Also, based on The Soil Survey of Orleans Parish LA provided by the U.S. Department of Agriculture Soil Conservation Service (1989), the site has soils classified as Aquent.

Aquent: Aquent are a sandy to clayey muck material that has been excavated from other places during the construction of navigable waterways. These soils are slightly saline to saline thought. They are level, highly permeable, and are very poorly drained.

2.3 Site History and Land Use

The sites for the proposed closure structures have been used only for boat traffic and for recreational use. No other previous site use has been identified.

2.4 Adjacent Property Land Use

Based on the Phase I ESA findings, the properties adjacent to the sites are as follows:

Seabrook: to the north – Lake Pontchartrain; to the east – New Orleans Lakefront Airport; to the west – boat launch area; and to the south – the IHNC. The Seabrook Bridge runs between the in-lake and in-canal sites.

GIWW-MRGO & Michoud Slip: to the north – wetlands and part of Bayou Sauvage National Wildlife Refuge; to the east – wetlands and marsh; to the west – industrial complex along the east bank of the Michoud Canal, and to the south – MRGO and the MRGO spoil area.

Land in the area is primarily uninhabitable marsh and wetlands; areas that are in use are primarily industrial.

2.5 Summary of Previous Assessments

Phase I ESAs were conducted at the subject properties in October 2006. Other than the barges identified near the Michoud Canal, RECs were not identified at any of the sites. However, the PIESAs identified the history of industrial uses (and previous discharge in one area) that may have impacted the sediment. Investigation of the sediment was necessary for dredge material management decisions during construction.

3.0 Phase II Activities

MMG conducted the Phase II ESA at the three proposed closure structure locations from August 27 – September 10, 2007. The scope of work and field and analytical methods are described in the following sections.

3.1 Scope of Assessment

The scope of work under the Phase II ESA included sediment sampling from 21 total locations (eight at the Seabrook area – four in-lake and four in-canal; ten at the GIWW-MRGO area – three at each gate location, two along the levee connector, and two near the former barge area; and three near the Michoud Slip) and analysis for the contaminants of concern (COCs), including Total Petroleum Hydrocarbons – diesel and oil ranges (TPH-D and TPH-O), TAL metals, semi-volatile organic compounds (SVOCs), pesticides, herbicides, polychlorinated biphenyls (PCBs), volatile organic compounds (VOCs), and hexavalent chromium (Cr(VI)), depending on sample location.

3.1.1 Supplemental Record Review

Part of the scope development for the Phase II ESA involved records review, including the Phase I ESA reports and site background information. This information aided in determining the contaminants of concern (COCs) and the appropriate sampling locations.

3.1.2 Sampling and Chemical Testing Plan

Prior to conducting the Phase II ESA site activities, MMG prepared work plans documenting the tasks to be completed, including a Field Sampling Plan (FSP), Quality Assurance Project Plan (QAPP), and Site-Specific Safety and Health Plan (SSHP). The FSP describes the investigation methodologies, including drilling, sampling, and analysis methods. The QAPP describes the quality objectives of the site assessment, including quality of data and quality assurance for sampling protocols.

The rationale for the sampling activities is as follows. The purpose of the Phase II ESA was to collect preliminary baseline chemical data to address (disposal or re-use) management of excavated sediment material from construction on land. The USACE Task Order specified the number of samples to be collected at each closure structure location; in general, a minimal number of samples were collected at each location to determine whether sediment has been impacted by industrial activity. Therefore, 21 total boreholes were drilled: eight at the Seabrook area, ten at the GIWW-MRGO and barge areas, and three near the Michoud Slip. The actual sample locations were based on site conditions (water depth) due limitations of the drilling equipment as well as the Geologist's discretion to represent potential construction areas; see Figure 2 for the actual locations. Since the site history does not indicate specific contaminants based on spills, releases, or site use for all areas, comprehensive groups of chemicals were included as contaminants of concern to meet the project objectives. The

COCs were SVOCs, TAL metals, TPH-D, TPH-O, pesticides, herbicides, PCBs, and VOCs and Cr(VI) in some locations.

3.1.3 Deviations from the Work Plans

Any deviations from the work plans are addressed below.

Sediment Sampling: Samples were not collected at location B5 at Seabrook due to the nature of the sediment/canal bottom (primarily consisting of oyster shells). Sample collection at location B5 was attempted five times in three locations with the Vibracore drill rig, and again several times using a sediment sampler with a T-handle extension. A split sample was planned for sample location B5; since the location was abandoned, this QC sample was not collected. Sample collection at location B1 (Seabrook) was also attempted multiple times with the Vibracore and ultimately samples were collected using the sediment sampler with T-handle extension.

Schedule: The sampling schedule was extended over a longer period of time than expected due to Vibracore equipment problems and the use of additional equipment to collect samples. The sampling schedule was as follows:

- August 27-29, 2007: Sample collection at Michoud Slip B1 and B2 and Bayou Bienvenue.
- September 5-7, 2007: Sample collection at Seabrook B2, B3, B4, B6, B7, and B8, Michoud Slip B3, Michoud Canal, Barge area, and Levee connector.
- September 10, 2007: Sample collection at Seabrook B1 and attempts made at B5 before abandoning.

3.2 Field Explorations and Methods

Photo documentation of all site activities is included in Appendix D. Copies of all field logs and paperwork are included in Appendix C. The final safety report is included in Appendix E.

MMG conducted sediment sampling from eight locations at the Seabrook area (four in the lake and four in the canal), ten locations at the GIWW-MRGO area (three at each gate location, two near the former barge area, and two along the levee connector), and three locations near the Michoud Slip. The sampling was conducted at the sites from August 27-29 and September 5-7, and 10, 2007. MMG's subcontractor, QRI Inc., used a barge-mounted Vibracore drill rig with three-inch aluminum cores to advance the borings and collect the sediment for sampling. The drill rig uses vibrations to advance the core into the sediment (rather than direct push); this method prevents the sample intervals from compacting and slipping out of the sample tube (which is a potential problem due to the nature of the site). The core was placed in the water and advanced five feet into the sediment. The core was then cut at the water surface and capped. The core was carefully lifted from the water and the bottom was capped prior to

breaking the surface of the water. The core then contained the sample interval as well as a column of water. The cores were transported to shore to remove the samples. The borings were all advanced to five feet bgs (into the sediment) with the exception of B1 at Seabrook, which was collected using the sediment sampler to a depth of 1.5 feet bgs.

The borehole locations (indicated on Figure 2) were chosen based on the proposed construction areas (to determine whether there has been impact from industrial activity) as well as the water depth (less than 40 feet deep). The boring logs are included in Appendix A and lithology is described in Section 4.1. One interval was collected from each of the 21 borings; this was 0-5 feet in all locations except Seabrook B1 (which was 0-1.5 feet). All samples were field screened using a photoionization detector (PID).

The sediment samples were collected in the containers specified in the Field Sampling Plan. A split sample was collected at Michoud Slip B1. A second split was planned for Seabrook B5, but was not collected since the location was abandoned. Matrix spike/matrix spike duplicate (MS/MSD) analysis was requested on the sample collected from Michoud Slip B2. Field blanks were collected each day of sampling activities where volatile analysis was requested. Trip blanks were included in the coolers containing the volatile samples. Rinsate blanks were collected following samples collection at Seabrook B8 and Michoud Slip B3. All samples were analyzed for SVOCs, TAL metals, TPH-D, TPH-O pesticides, herbicides, and PCBs. Samples collected from the canal at Seabrook, the former barge area near Michoud Canal and at Michoud Slip were also analyzed for VOCs. The samples from the former barge area and Michoud Slip were also analyzed for Cr(VI). The samples were packaged in a cooler (according to the procedures described in the QAPP) and dropped off at Pace Analytical in St. Rose, LA. The analytical results are presented in Tables 1-4, and are discussed briefly in Section 4.0. The final analytical report is included in Appendix B.

3.3 Sampling and Chemical Analyses and Methods

The QAPP addresses the laboratory procedures and analyses that were performed in more detail. This section lists the specific EPA SW-846 (or other) analytical methods used over the course of the Phase II ESA.

The analytical methods used for analysis of the sediment samples were:

- SVOCs – 8270
- TAL metals – 6010, 7470
- Pesticides – 8081
- Herbicides – 8151
- PCBs – 8082
- TPH-D and TPH-O – 8015
- VOCs – 5035 (Encore samplers), 8260
- Cr(VI) – SM 3500 Cr D

4.0 Evaluation and Presentation of Results

The following sections describe the results of the Phase II ESA. Copies of all boring logs are included in Appendix A. The full analytical report is included as Appendix B.

4.1 Subsurface Conditions

The following sections describe the lithology as observed from boring/core inspection at each of the investigation areas.

4.1.1 Geologic Setting

The Seabrook and GIWW-MRGO areas have geology consistent with the deposition of near surface sedimentary deposits associated with fluvial depositional processes (Mississippi River Alluvium). These deposits typically consist of gray and brown silty clay and some fine sand with some peat inclusions that are consistent with past and present courses of the Mississippi River and associated tributaries. Soil depth is variable from 5 to 6 feet. Underlying rock formations include Quaternary and Tertiary sedimentary deposits.

4.1.2 Hydrogeologic Conditions

The hydrogeologic regime underlying the sites consists of a near-surface Gonzales – New Orleans alluvial aquifer. Ground water movement is in a southeastern direction.

4.1.2 Verification of Sampling and Quality Objectives

The sampling objectives included collection of sediment samples. The subsurface investigation objectives also included logging of sediments from each sample location. All of these sampling objectives were met. In addition, the quality objectives included collection of specific quality control samples, including split samples and blanks, and running MS/MSD analysis. These quality objectives were also met, with the exception of not collecting one split sample due to abandoning a sample location.

4.2 Analytical Data

The analytical results from the sediment investigation are summarized in Table 1 for Seabrook, Table 2 for GIWW-MRGO and the levee connector, Table 3 for the former barge area, and Table 4 for Michoud Slip. The analytical results (COCs detected) are briefly summarized for each investigation area below. The actual concentrations detected at each location are listed on the summary tables. Overall, there were few COCs detected, and the concentrations were very low. The only VOCs detected were common laboratory contaminants, only one SVOC was detected in one location, and the only COCs consistently detected were metals, which are present in background levels.

Seabrook

The analytical results from the samples collected at the Seabrook area indicate the following:

In-Lake

Few contaminants of concern (COCs) were detected; only TPH-D and metals (aluminum, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, sodium, vanadium, and zinc) were detected in samples B1-B4.

In-Canal

More COCs were detected in the canal samples (B6-B8); these included one VOC (acetone), one SVOC (fluoranthene), TPH-D, TPH-O, herbicides (MCPPA and MCPP), and metals (aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, silver, sodium, vanadium, and zinc).

GIWW-MRGO and Levee Connector

The analytical results from the samples collected near Michoud Canal, Bayou Bienvenue, and the levee connector indicate the following:

- Michoud Canal: only herbicides (dichloroprop and MCPP) and metals (aluminum, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, sodium, vanadium, and zinc) were detected;
- Bayou Bienvenue: only TPH-D, TPH-O, and metals (aluminum, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, sodium, vanadium, and zinc) were detected;
- Levee connector: TPH-D, one pesticide (Lindane), one herbicide (MCPP), and metals (aluminum, arsenic, barium, beryllium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, potassium, sodium, vanadium, and zinc) were detected.

It should be noted that VOCs were not analyzed at the GIWW-MRGO and levee locations (based on site history). However, the highest PID readings were detected at these locations. It is unknown if VOC contamination exists at these locations.

Barge Area

The analytical results from the samples collected near the former barge area near Michoud Canal indicate that the COCs detected were two VOCs (acetone and 2-butanone), TPH-D, and metals (aluminum, arsenic, barium, beryllium, calcium, chromium, hexavalent chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, sodium, vanadium, and zinc).

Michoud Slip

The analytical results from the samples collected near Michoud Slip indicate that the COCs detected were two VOCs (acetone and carbon disulfide), TPH-D, and metals (aluminum, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, sodium, vanadium, and zinc).

The data quality is discussed in Section 5.3.

An evaluation of these data in regard to RECAP screening standards is included in Section 5.2; the limiting RECAP screening standards are included on each summary table (Tables 1-4).

5.0 Discussion of Findings and Conclusions

This Phase II ESA was conducted in accordance with the approved work plans (FSP, QAPP, and SSHP) and all guidance referenced in those work plans, including ASTM guidance E 1903-97. All activities planned for this site were performed as anticipated.

5.1 Recognized Environmental Conditions

The Phase II ESA was conducted to collect preliminary baseline chemical data to address (disposal or re-use) management of excavated sediment material on land.

The scope of work under the Phase II ESA included sediment sampling and analysis at the three proposed closure structure locations (Seabrook, GIWW-MRGO, and Michoud Slip), with eight locations at Seabrook, ten locations at GIWW-MRGO and the former barge area, and three locations at Michoud Slip.

The results of the Phase II ESA indicate the following. Recommendations based on the findings are included in Section 6.0.

Seabrook

Based on a review of the analytical results, only two contaminants are present in the sediment above the acceptable risk levels (RECAP screening standards) in the Seabrook area. These COCs are barium (4710 mg/kg) and lead (233 mg/kg), and they only exceeded the RECAP screening standards at location B6 (in the canal). The lead is likely present as a result of previous operations of the National Lead Company, which previously operated on the west bank of the canal (as identified during the PIESA). All other locations indicated concentrations of all COCs below the screening standards. All reporting limits met the screening standards as well.

GIWW-MRGO (and levee)

Based on a review of the analytical results, there are no COCs in the sediment exceeding the RECAP screening standards at the proposed gate locations and along the levee connector. All concentrations and reporting limits are below the standards. VOCs were not analyzed at these locations, but the highest PID readings were detected with these samples. It is unknown if VOC contamination exists at these locations.

Former Barge Area

Based on a review of the analytical results, there are no COCs in the sediment exceeding the RECAP screening standards in the former barge area. All concentrations and reporting limits are below the standards.

Michoud Slip

Based on a review of the analytical results, there are no COCs in the sediment exceeding the RECAP screening standards near the Michoud Slip. All concentrations and reporting limits are below the standards.

5.2 Affected Media

There are no RECAP standards for several of the COCs, including some SVOCs, pesticides, herbicides, and metals. Therefore, concentrations of these contaminants could not be evaluated without developing screening standards.

The analytical results from the sediment investigation at Seabrook, GIWW-MRGO (Michoud Canal – Bayou Bienvenue corridor), and Michoud Slip indicate that a few of the COCs (VOCs (laboratory contaminants), one SVOC (fluoranthene), TPH-D, TPH-O, one pesticide (Lindane), herbicides (dichloroprop, MCPA, and MCPP), and metals (aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, silver, sodium, vanadium, and zinc) were detected at the sites. The sites are located in a heavily industrial region therefore the presence of the contaminants is anticipated.

The concentrations detected in each location are indicated in Tables 1-4. These data were reviewed with respect to LDEQ RECAP screening standards. The screening standards considered are the most stringent of soil screening non-industrial (SSni) or soil screening protective of groundwater (SSgw). Table 1 summarizes the data from Seabrook, Table 2 summarizes the data from GIWW-MRGO, Table 3 summarizes the data from the former barge area, and Table 4 summarizes the data from Michoud Slip. The limiting RECAP screening standards for each contaminant of concern are included on each of the tables.

Barium and lead are present in the canal sediment at Seabrook location B6 in concentrations above the RECAP screening standards. All other sample locations indicated COCs below RECAP standards. PID readings at the GIWW-MRGO sample locations suggest volatile contaminants may be present in the

sediment. However, VOCs were not analyzed at those locations so it is unknown whether VOC contamination exists.

5.3 Evaluation of Media Quality

One of the objectives of the Phase II ESA was to provide quality data to support risk-based decisions about contamination at the site. The quality of the data is based on the results of the quality control samples (trip blanks, field blanks, rinsate blanks, split samples, and matrix spike/matrix spike duplicate (MS/MSD) analysis).

As indicated in the final analytical report from the laboratory (see Appendix B), some of the samples reported recoveries outside of QC acceptance criteria for spiking compounds and surrogates (which can be attributed to matrix interference); this occurred primarily with pesticides, SVOCs, VOCs, and some metals. Overall, the samples were within the acceptance criteria.

Also, some contaminants were detected in some of the QC blank samples. Some of the field blank(s) contained acetone and 2-butanone. This was true for the corresponding trip blank(s) (collected the same day). However, these contaminants are typical laboratory contaminants and may be attributed to the water used for collection of the blanks. In addition, several COCs (diethylphthalate, TPH-D, MCPA, and some metals) were detected in the rinsate blanks. However, the concentrations were so low it is unlikely that cross-contamination occurred and impacted the sample results.

Overall, the data are of sufficient quality to satisfy the objectives of this assessment and the recommendations provided in this report.

5.4 Other Concerns (Adequacy of Assessment)

The Phase II ESA is a limited site assessment conducted to provide information about suspected or potential environmental conditions at a property. The findings of the Phase II ESA provide information about the RECs identified in the Phase I ESA, or in this case about potential contamination as well as baseline chemical information at the site. The sediment sample results indicate that, overall, industrial activity has not resulted in unacceptable levels of contaminants in the sediment (there is contamination above the RECAP screening standards in one location – Seabrook B6). It should be noted that high PID readings were recorded at the GIWW-MRGO locations; these readings may be associated with VOC contamination or with the presence of organic material and decay (VOCs were not analyzed at these locations based on site history so there are no analytical results to correlate, and organic material and an odor was noted in the field logs, see Appendix A). MMG's recommendations are discussed in Section 6.0.

6.0 Recommendations

MMG's recommendations are indicated below based on proposed construction location.

Seabrook

The Phase II ESA indicated that two COCs (barium and lead) are present in the sediment above RECAP standards in one location in the canal at Seabrook (B6). However, this appears to be an isolated hot spot because all other concentrations of these contaminants are significantly lower. Based on the historical operations of the National Lead Company on the west bank in this area, there may be additional areas with elevated lead around B6. There are two options for the Seabrook closure structure: in-lake or in-canal. Based on these analytical results and since one canal location was not sampled (B5), it may be better to use the in-lake option for construction. Sample locations B5 and B6 were the areas selected to provide information regarding impact to the sediment from an historical discharge in the area. It is unknown what concentrations may have been detected at B5. If the canal option is chosen for construction, on-land management of the excavated sediment may be limited due to contaminant concentrations; this limitation does not exist with the lake option.

GIWW-MRGO

The Phase II ESA indicated that contaminant concentrations at the proposed gate locations, levee connector, and former barge area are all below the risk levels. Based on these results, construction at this location with on-land management of excavated sediment is feasible. It should be noted that VOC contamination may exist at these locations based on PID readings, however VOCs were not analyzed so actual concentrations are unknown. Site history does not suggest VOCs would be a concern in these locations. There are other potential sources of vapors that would result in the PID readings; these include organic material and decay. Organic material was observed in the sample intervals and an odor (potentially from decaying material) was noted during the sampling (see Appendix A).

Michoud Slip

The Phase II ESA indicated that contaminant concentrations at the proposed gate location area are all below the risk levels. Based on these results, construction at this location with on-land management of excavated sediment is feasible.

Based on the findings of this investigation, there is only one location with unacceptable concentrations of contaminants. The analytical results indicate that management of dredged material/excavated sediment on-land without concern for levels of contaminants is an option at all three construction locations.

Tables

**Final Phase II Environmental Site Assessment Report
Closure Gates – Seabrook, MRGO-GIWW, Michoud Slip, NOLA**

**December 12, 2007
2866-ACE**

Table 1: Summary of Analytical Results – Seabrook

Parameter	Limiting RECAP Standard (mg/kg)	Sample Result (mg/kg)					
		SD-2866ACE-SB-B1	SD-2866ACE-SB-B2	SD-2866ACE-SB-B3	SD-2866ACE-SB-B4	SD-2866ACE-SB-B6	SD-2866ACE-SB-B7
Acetone	1.5	NA	NA	NA	NA	0.0220	0.0175
Benzene	0.051	NA	NA	NA	<0.00443	<0.00407	<0.00373
Bromodichloromethane	0.92	NA	NA	NA	<0.00443	<0.00407	<0.00373
Bromoform	1.8	NA	NA	NA	<0.00443	<0.00407	<0.00373
Bromomethane	0.04	NA	NA	NA	<0.00443	<0.00407	<0.00373
2-Butanone (MEK)	5.0	NA	NA	NA	<0.00887	<0.00813	<0.00746
Carbon disulfide	11	NA	NA	NA	<0.00443	<0.00407	<0.00373
Carbon tetrachloride	0.11	NA	NA	NA	<0.00443	<0.00407	<0.00373
Chlorobenzene	3.0	NA	NA	NA	<0.00443	<0.00407	<0.00373
Chloroethane	0.035	NA	NA	NA	<0.00443	<0.00407	<0.00373
Chloroform	0.044	NA	NA	NA	<0.00443	<0.00407	<0.00373
Chloromethane	0.1	NA	NA	NA	<0.00443	<0.00407	<0.00373
Dibromochloromethane	1.0	NA	NA	NA	<0.00443	<0.00407	<0.00373
1,2-Dibromo-3-chloropropane	0.01	NA	NA	NA	<0.00443	<0.00407	<0.00373
1,1-Dichloroethane	7.5	NA	NA	NA	<0.00443	<0.00407	<0.00373
1,2-Dichloroethane	0.035	NA	NA	NA	<0.00443	<0.00407	<0.00373
1,1-Dichloroethene	0.085	NA	NA	NA	<0.00443	<0.00407	<0.00373
cis-1,2-Dichloroethene	0.49	NA	NA	NA	<0.00443	<0.00407	<0.00373
trans-1,2-Dichloroethene	0.77	NA	NA	NA	<0.00443	<0.00407	<0.00373
1,2-Dichloropropane	0.042	NA	NA	NA	<0.00443	<0.00407	<0.00373
cis-1,3-Dichloropropene	0.04	NA	NA	NA	<0.00443	<0.00407	<0.00373
trans-1,3-Dichloropropene	0.04	NA	NA	NA	<0.00443	<0.00407	<0.00373
Ethylbenzene	19	NA	NA	NA	<0.00443	<0.00407	<0.00373
Methyl-tert-butyl-ether	0.077	NA	NA	NA	<0.00443	<0.00407	<0.00373
Methylene chloride	0.017	NA	NA	NA	<0.00443	<0.00407	<0.00373
4-Methyl-2-pentanone (MIBK)	6.4	NA	NA	NA	<0.00887	<0.00813	<0.00746

**Final Phase II Environmental Site Assessment Report
Closure Gates – Seabrook, MRGO-GIWW, Michoud Slip, NOLA**

**December 12, 2007
2866-ACE-E**

Parameter	Limiting RECAP Standard (mg/kg)	Sample Result (mg/kg)					
		SD-2866ACE-SB-B1	SD-2866ACE-SB-B2	SD-2866ACE-SB-B3	SD-2866ACE-SB-B4	SD-2866ACE-SB-B6	SD-2866ACE-SB-B7
Isobutanol	30	NA	NA	NA	NA	<0.222	<0.203
Styrene	11	NA	NA	NA	NA	<0.00443	<0.00407
1,1,1,2-Tetrachloroethane	0.046	NA	NA	NA	NA	<0.00443	<0.00407
1,1,2,2-Tetrachloroethane	0.006	NA	NA	NA	NA	<0.00443	<0.00407
Tetrachloroethene	0.18	NA	NA	NA	NA	<0.00443	<0.00407
Toluene	20	NA	NA	NA	NA	<0.00443	<0.00407
1,2,4-Trichlorobenzene	14	NA	NA	NA	NA	<0.00443	<0.00407
1,1,1-Trichloroethane	4.0	NA	NA	NA	NA	<0.00443	<0.00407
1,1,2-Trichloroethane	0.058	NA	NA	NA	NA	<0.00443	<0.00407
Trichloroethylene	0.073	NA	NA	NA	NA	<0.00443	<0.00407
Trichlorofluoromethane	37	NA	NA	NA	NA	<0.00443	<0.00407
Vinyl chloride	0.013	NA	NA	NA	NA	<0.00443	<0.00407
Xylene(s)	18	NA	NA	NA	NA	<0.00443	<0.00407
Acenaphthene	220	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Acenaphthylene	88	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Anthracene	120	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Benzo(a)anthracene	0.62	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Benzo(b)fluoranthene	0.62	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Benzo(k)fluoranthene	6.2	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Benzoic acid	NS	<0.833	<0.833	<0.833	<0.833	<0.833	<0.833
Benzo(g,h,i)perylene	NS	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Benz(a)pyrene	0.33	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Benzyl alcohol	NS	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
4-Bromophenylphenyl ether	NS	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Butylbenzylphthalate	220	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Carbazole	NS	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
4-Chloro-3-methylphenol	NS	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
3 & 4-Chloroaniline	1.5	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330

**Final Phase II Environmental Site Assessment Report
Closure Gates – Seabrook, MRGO-GIWW, Michoud Slip, NOLA**

**December 12, 2007
2866-ACE**

Parameter	Limiting RECAP Standard (mg/kg)	Sample Result (mg/kg)					
		SD-2866ACE-SB-B1	SD-2866ACE-SB-B2	SD-2866ACE-SB-B3	SD-2866ACE-SB-B4	SD-2866ACE-SB-B6	SD-2866ACE-SB-B7
Bis(2-chloroethoxy)methane	NS	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Bis(2-chloroethyl)ether	0.33	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
2-Chloronaphthalene	500	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
2-Chlorophenol	1.4	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
4-Chlorophenylphenyl ether	NS	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Chrysene	62	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Dibenz(a,h)anthracene	0.33	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Dibenzofuran	24	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
1,2-Dichlorobenzene	29	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
1,3-Dichlorobenzene	2.1	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
1,4-Dichlorobenzene	5.7	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
3,3'-Dichlorobenzidine	0.97	<0.667	<0.667	<0.667	<0.667	<0.667	<0.667
2,4-Dichlorophenol	12	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Diethylphthalate	360	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
2,4-Dimethylphenol	20	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Dimethylphthalate	1500	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Di-n-butylphthalate	NS	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
4,6-Dinitro-2-methylphenol	NS	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
2,4-Dinitrophenol	1.7	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
2,4-Dinitrotoluene	1.0	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
2,6-Dinitrotoluene	0.39	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Di-n-octylphthalate	240	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Bis(2-ethylhexyl)phthalate	35	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Fluoranthene	220	<0.330	<0.330	<0.330	<0.330	0.565	<0.330
Fluorene	230	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Hexachloro-1,3-butadiene	0.82	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Hexachlorobenzene	0.34	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Hexachlorocyclopentadiene	1.4	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330

**Final Phase II Environmental Site Assessment Report
Closure Gates – Seabrook, MRGO-GIWW, Michoud Slip, NOLA**

**December 12, 2007
2866-ACE**

Parameter	Limiting RECAP Standard (mg/kg)	Sample Result (mg/kg)					
		SD-2866ACE-SB-B1	SD-2866ACE-SB-B2	SD-2866ACE-SB-B3	SD-2866ACE-SB-B4	SD-2866ACE-SB-B6	SD-2866ACE-SB-B7
Hexachloroethane	2.2	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Indeno(1,2,3-cd)pyrene	0.62	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Isophorone	0.56	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
2-Methylnaphthalene	1.7	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
2-Methylphenol	NS	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
3&4-Methylphenol	NS	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660
Naphthalene	1.5	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
2-Nitroaniline	1.7	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
3-Nitroaniline	1.7	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
4-Nitroaniline	1.7	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Nitrobenzene	0.33	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
2-Nitrophenol	NS	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
4-Nitrophenol	2.6	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
N-Nitroso-di-n-propylamine	0.33	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
N-Nitrosodiphenylamine	2.1	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
2,2'-Oxybis(1-chloropropane)	NS	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Pentachlorophenol	1.7	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Phenanthrene	660	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Phenol	11	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Pyrene	230	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
1,2,4-Trichlorobenzene	14	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
2,4,5-Trichlorophenol	320	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
2,4,6-Trichlorophenol	1.3	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
TPH-D	65	<10	11	12.5	30.5	<10	<10
TPH-O	180	<50	<50	<50	64.5	<50	<50
Aldrin	0.028	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017
alpha-BHC	0.0064	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017
beta-BHC	0.016	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017

**Final Phase II Environmental Site Assessment Report
Closure Gates – Seabrook, MRGO-GIWW, Michoud Slip, NOLA**

**December 12, 2007
2866-ACE-E**

Parameter	Limiting RECAP Standard (mg/kg)	Sample Result (mg/kg)					
		SD-2866ACE-SB-B1	SD-2866ACE-SB-B2	SD-2866ACE-SB-B3	SD-2866ACE-SB-B4	SD-2866ACE-SB-B6	SD-2866ACE-SB-B7
delta-BHC	NS	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017
gamma-BHC (Lindane)	0.033	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017
alpha-Chlordane	1.6	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017
gamma-Chlordane	1.6	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017
4,4'-DDD	1.5	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333
4,4'-DDE	1.7	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333
4,4'-DDT	1.7	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333
Dieldrin	0.03	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333
Endosulfan I	34	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017
Endosulfan II	34	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333
Endosulfan sulfate	NS	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333
Endrin	1.8	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333
Endrin aldehyde	NS	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333
Endrin ketone	NS	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333
Heptachlor	0.016	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017
Heptachlor epoxide	0.053	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017
Methoxychlor	30	<0.0167	<0.0167	<0.0167	<0.0167	<0.0167	<0.0167
Toxaphene	0.44	<0.0667	<0.0667	<0.0667	<0.0667	<0.0667	<0.0667
PCB-1016	0.11	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333
PCB-1221	0.11	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333
PCB-1232	0.11	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333
PCB-1242	0.11	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333
PCB-1248	0.11	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333
PCB-1254	0.11	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333
PCB-1260	0.11	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333
2,4-D	NS	<0.0667	<0.0667	<0.0667	<0.0667	<0.0667	<0.0667
Dalapon	NS	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333
2,4-DB	NS	<0.167	<0.167	<0.167	<0.167	<0.167	<0.167

**Final Phase II Environmental Site Assessment Report
Closure Gates – Seabrook, MRGO-GIWW, Michoud Slip, NOLA**

**December 12, 2007
2866-ACE**

Parameter	Limiting RECAP Standard (mg/kg)	Sample Result (mg/kg)					
		SD-2866ACE-SB-B1	SD-2866ACE-SB-B2	SD-2866ACE-SB-B3	SD-2866ACE-SB-B4	SD-2866ACE-SB-B6	SD-2866ACE-SB-B7
Dicamba	NS	<0.0667	<0.0667	<0.0667	<0.0667	<0.0667	<0.0667
Dichloroprop	NS	<0.0667	<0.0667	<0.0667	<0.0667	<0.0667	<0.0667
Dinoseb	0.14	<0.0667	<0.0667	<0.0667	<0.0667	<0.0667	<0.0667
MCPA	NS	<8.33	<8.33	<8.33	<8.33	49	<8.33
MCPP	NS	<8.33	<8.33	<8.33	<8.33	594	<8.33
2,4-T	NS	<0.0667	<0.0667	<0.0667	<0.0667	<0.0667	<0.0667
2,4,5-TP	NS	<0.0667	<0.0667	<0.0667	<0.0667	<0.0667	<0.0667
Mercury (Pace)	2.3	<0.0200	0.0306	0.174	0.0283	0.392	<0.0194
Aluminum	NS	878	4830	4320	4910	2230	1610
Antimony	3.1	<0.556	<0.517	<0.571	<0.588	1.31	<0.500
Arsenic	12	0.593	1.91	1.60	0.863	7.75	0.875
Barium	550	99.8	124	24.2	35.4	4710	154
Beryllium	8.0	<0.093	0.250	0.219	0.235	0.283	0.108
Cadmium	3.9	<0.093	0.103	<0.095	<0.098	1.15	<0.083
Calcium	NS	132	1690	1380	928	7890	769
Chromium	23	1.43	6.20	5.72	6.14	10.4	2.54
Cobalt	470	0.769	2.88	2.85	2.17	1.35	1.60
Copper	310	2.64	4.11	3.91	4.43	17.2	1.90
Iron	NS	1250	6790	6630	5240	4890	2770
Lead	100	2.4	6.54	5.68	4.75	233	4.59
Magnesium	NS	412	2330	2100	2230	1090	875
Manganese	NS	53.1	134	139	44.4	182	30.3
Mercury (sub)	2.3	<0.0370	0.0345	<0.0381	<0.0392	0.3009	0.0333
Nickel	160	1.94	5.59	5.31	6.08	2.30	2.25
Potassium	NS	208	1230	949	1300	588	534
Selenium	20	<0.278	<0.259	<0.286	<0.294	<0.265	<0.250
Silver	39	<0.185	<0.172	<0.190	<0.196	0.239	<0.167
Sodium	NS	610	1680	663	2410	2110	1110
							895

**Final Phase II Environmental Site Assessment Report
Closure Gates – Seabrook, MRGO-GIWW, Michoud Slip, NOLA**

**December 12, 2007
2866-ACE**

Parameter	Limiting RECAP Standard (mg/kg)	Sample Result (mg/kg)					
		SD-2866ACE-SB-B1	SD-2866ACE-SB-B2	SD-2866ACE-SB-B3	SD-2866ACE-SB-B4	SD-2866ACE-SB-B6	SD-2866ACE-SB-B7
Thallium	0.55	<0.463	<0.431	<0.476	<0.490	<0.442	<0.417
Vanadium	55	2.17	9.96	9.09	10.1	5.14	3.85
Zinc	2300	7.88	19.6	18.1	16.0	228	9.28
							8.98

Note – Sample location B5 attempted multipile times with both Vibracore drilling equipment and with alternate sediment sampler.

NS = no standard

NA = not analyzed

**Final Phase II Environmental Site Assessment Report
Closure Gates – Seabrook, MRGO-GIWW, Michoud Slip, NOLA**

**December 12, 2007
2866-ACE-E**

Table 2: Summary of Analytical Results – GIWW – MRGO and Levee Connector

Parameter	Limiting RECAP Standard (mg/kg)	Sample Result (mg/kg)					
		SD-2866ACE-GIWW-MC-B1	SD-2866ACE-GIWW-MC-B2	SD-2866ACE-GIWW-MC-B3	SD-2866ACE-MRGO-BB-B1	SD-2866ACE-MRGO-BB-B2	SD-2866ACE-MRGO-BB-B3
Acenaphthene	220	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Acenaphthylene	88	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Anthracene	120	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Benzo(a)anthracene	0.62	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Benzo(b)fluoranthene	0.62	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Benzo(k)fluoranthene	6.2	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Benzoic acid	NS	<0.833	<0.833	<0.833	<0.833	<0.833	<0.833
Benzo(g,h,i)perylene	NS	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Benz(a)pyrene	0.33	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Benzyl alcohol	NS	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
4-Bromophenylphenyl ether	NS	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Butylbenzylphthalate	220	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Carbazole	NS	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
4-Chloro-3-methylphenol	NS	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
3 & 4-Chloroaniline	1.5	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Bis(2-chloroethoxy)methane	NS	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Bis(2-chloroethyl)ether	0.33	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
2-Chloronaphthalene	500	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
2-Chlorophenol	1.4	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
4-Chlorophenylphenyl ether	NS	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Chrysene	62	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Dibenz(a,h)anthracene	0.33	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Dibenzofuran	24	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
1,2-Dichlorobenzene	29	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
1,3-Dichlorobenzene	2.1	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330

**Final Phase II Environmental Site Assessment Report
Closure Gates – Seabrook, MRGO-GIWW, Michoud Slip, NOLA**

**December 12, 2007
2866-ACE-E**

Parameter	Limiting RECAP Standard (mg/kg)	SD-2866ACE-GIWW-MC-B1	SD-2866ACE-GIWW-MC-B2	SD-2866ACE-GIWW-MC-B3	SD-2866ACE-MRGO-BB-B1	SD-2866ACE-MRGO-BB-B2	SD-2866ACE-MRGO-BB-B3	SD-2866ACE-Levee-B1	SD-2866ACE-Levee-B2
1,4-Dichlorobenzene	5.7	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
3,3'-Dichlorobenzidine	0.97	<0.667	<0.667	<0.667	<0.667	<0.667	<0.667	<0.667	<0.667
2,4-Dichlorophenol	12	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Diethylphthalate	360	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
2,4-Dimethylphenol	20	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Dimethylphthalate	1500	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Di-n-butylphthalate	NS	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
4,6-Dinitro-2-methylphenol	NS	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
2,4-Dinitrophenol	1.7	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
2,4-Dinitrotoluene	1.0	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
2,6-Dinitrotoluene	0.39	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Di-n-octylphthalate	240	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Bis(2-ethylhexyl)phthalate	35	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Fluoranthene	220	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Fluorene	230	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Hexachloro-1,3-butadiene	0.82	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Hexachlorobenzene	0.34	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Hexachlorocyclopentadiene	1.4	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Hexachloroethane	2.2	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Indeno(1,2,3-cd)pyrene	0.62	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Isophorone	0.56	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
2-Methylnaphthalene	1.7	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
2-Methylphenol	NS	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
3&4-Methylphenol	NS	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660	<0.660
Naphthalene	1.5	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
2-Nitroaniline	1.7	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
3-Nitroaniline	1.7	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330

**Final Phase II Environmental Site Assessment Report
Closure Gates – Seabrook, MRGO-GIWW, Michoud Slip, NOLA**

**December 12, 2007
2866-ACE**

Parameter	Limiting RECAP Standard (mg/kg)	SD-2866ACE-GIWW-MC-B1	SD-2866ACE-GIWW-MC-B2	SD-2866ACE-GIWW-MC-B3	SD-2866ACE-MRGO-BB-B1	SD-2866ACE-MRGO-BB-B2	SD-2866ACE-MRGO-BB-B3	SD-2866ACE-Levee-B1	SD-2866ACE-Levee-B2
4-Nitroaniline	1.7	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Nitrobenzene	0.33	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
2-Nitrophenol	NS	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
4-Nitrophenol	2.6	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
N-Nitroso-di-n-propylamine	0.33	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
N-Nitrosodiphenylamine	2.1	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
N-Nitrosodimethylamine	NS	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
2,2'-Oxybis(1-chloropropane)									
Pentachlorophenol	1.7	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Phenanthrene	660	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Phenol	11	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
Pyrene	230	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
1,2,4-Trichlorobenzene	14	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
2,4,5-Trichlorophenol	320	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
2,4,6-Trichlorophenol	1.3	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330	<0.330
TPH-D	65	<10	<10	49.2	16.8	41.9	13	18.5	
TPH-O	180	<50	<50	86.2	<50	58.4	<50	<50	<50
Aldrin	0.028	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017
alpha-BHC	0.0064	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017
beta-BHC	0.016	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017
delta-BHC	NS	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017
gamma-BHC (Lindane)	0.033	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017
alpha-Chlordane	1.6	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017
gamma-Chlordane	1.6	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017
4,4'-DDD	1.5	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333
4,4'-DDE	1.7	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333
4,4'-DDT	1.7	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333
Dieldrin	0.03	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333

**Final Phase II Environmental Site Assessment Report
Closure Gates – Seabrook, MRGO-GIWW, Michoud Slip, NOLA**

**December 12, 2007
2866-ACE-E**

Parameter	Limiting RECAP Standard (mg/kg)	Sample Result (mg/kg)						SD-2866ACE-Levee-B2
		SD-2866ACE-MC-B1	SD-2866ACE-MC-B2	SD-2866ACE-GIWW-MC-B3	SD-2866ACE-MRCG-BB-B1	SD-2866ACE-MRCG-BB-B2	SD-2866ACE-MRCG-BB-B3	
Endosulfan I	34	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017
Endosulfan II	34	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333
Endosulfan sulfate	NS	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333
Endrin	1.8	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333
Endrin aldehyde	NS	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333
Endrin ketone	NS	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333	<0.00333
Heptachlor	0.016	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017
Heptachlor epoxide	0.053	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017
Methoxychlor	30	<0.0167	<0.0167	<0.0167	<0.0167	<0.0167	<0.0167	<0.0167
Toxaphene	0.44	<0.0667	<0.0667	<0.0667	<0.0667	<0.0667	<0.0667	<0.0667
PCB-1016	0.11	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333
PCB-1221	0.11	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333
PCB-1232	0.11	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333
PCB-1242	0.11	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333
PCB-1248	0.11	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333
PCB-1254	0.11	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333
PCB-1260	0.11	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333
2,4-D	NS	<0.0667	<0.0667	<0.0667	<0.0667	<0.0667	<0.0667	<0.0667
Dalapon	NS	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333
2,4-DB	NS	<0.167	<0.167	<0.167	<0.167	<0.167	<0.167	<0.167
Dicamba	NS	<0.0667	<0.0667	<0.0667	<0.0667	<0.0667	<0.0667	<0.0667
Dichloroprop	NS	0.651	<0.0667	<0.0667	<0.0667	<0.0667	<0.0667	<0.0667
Dinoseb	0.14	<0.0667	<0.0667	<0.0667	<0.0667	<0.0667	<0.0667	<0.0667
MCPA	NS	<8.33	<8.33	<8.33	<8.33	<8.33	<8.33	<8.33
MCPP	NS	89.1	<8.33	<8.33	<8.33	<8.33	<8.33	54.7
2,4-T	NS	<0.0667	<0.0667	<0.0667	<0.0667	<0.0667	<0.0667	<0.0667
2,4,5-TP	NS	<0.0667	<0.0667	<0.0667	<0.0667	<0.0667	<0.0667	<0.0667

**Final Phase II Environmental Site Assessment Report
Closure Gates – Seabrook, MRGO-GIWW, Michoud Slip, NOLA**

**December 12, 2007
2866-ACE**

Parameter	Limiting RECAP Standard (mg/kg)	SD-2866ACE-GIWW-MC-B1	SD-2866ACE-GIWW-MC-B2	SD-2866ACE-GIWW-MC-B3	SD-2866ACE-MRGO-BB-B1	SD-2866ACE-MRGO-BB-B2	SD-2866ACE-MRGO-BB-B3	SD-2866ACE-Levee-B1	SD-2866ACE-Levee-B2
Mercury	2.3	<0.0171	<0.0194	0.0234	<0.02	0.0224	0.0195	<0.0200	<0.0182
Aluminum	NS	1800	5480	7790	1910	6060	3600	1310	4770
Antimony	3.1	<0.594	<0.517	<0.550	<0.545	<0.583	<0.517	<0.561	<0.492
Arsenic	12	0.624	2.29	2.09	1.10	3.03	1.89	0.421	1.13
Barium	550	25.7	46.2	78.3	13.6	79.0	37.2	16.5	20.9
Beryllium	8.0	0.119	0.276	0.358	<0.091	0.301	0.198	<0.094	0.246
Cadmium	3.9	<0.099	0.095	0.174	<0.091	0.252	0.138	<0.094	<0.082
Calcium	NS	2720	5030	7030	1410	3040	2560	951	711
Chromium	23	2.77	7.61	9.31	2.32	8.20	3.72	1.64	5.52
Cobalt	470	1.65	3.76	8.59	1.27	3.49	1.42	0.776	1.99
Copper	310	3.64	6.45	9.94	2.79	8.30	5.87	1.16	4.71
Iron	NS	2820	7680	11400	3720	9140	3790	1640	5070
Lead	100	2.70	5.68	7.26	1.58	7.50	2.77	1.07	5.53
Magnesium	NS	898	3710	3990	1470	2990	1920	917	1780
Manganese	NS	25.9	221	442	23.7	338	44.9	24.3	46.4
Mercury (sub)	2.3	<0.0396	<0.0345	<0.0367	<0.0364	<0.0388	<0.0345	<0.0374	<0.0328
Nickel	160	2.50	8.86	14.7	3.61	8.56	5.90	1.58	4.35
Potassium	NS	523	1360	1800	530	1430	660	346	1150
Selenium	20	<0.297	<0.259	<0.275	0.455	0.631	0.853	<0.280	<0.246
Silver	39	<0.198	<0.172	<0.183	<0.182	<0.194	<0.172	<0.187	<0.164
Sodium	NS	1190	2060	2020	3480	3870	2840	1780	2570
Thallium	0.55	<0.495	<0.431	<0.459	<0.455	<0.485	<0.431	<0.467	<0.410
Vanadium	55	4.32	12.6	18.3	4.00	11.7	10.0	3.51	9.98
Zinc	2300	8.62	23.0	29.6	7.83	30.4	8.13	3.58	15.4

NS = no standard

Table 3: Summary of Analytical Results – Barge Area

Parameter	Limiting RECAP Standard (mg/kg)	Sample Result (mg/kg)	
		SD-2866ACE-BARGE-B1	SD-2866ACE-BARGE-B2
Acetone	1.5	0.115	0.0918
Benzene	0.051	<0.00646	<0.00663
Bromodichloromethane	0.92	<0.00646	<0.00663
Bromoform	1.8	<0.00646	<0.00663
Bromomethane	0.04	<0.00646	<0.00663
2-Butanone (MEK)	5.0	0.0276	0.0198
Carbon disulfide	11	<0.00646	<0.00663
Carbon tetrachloride	0.11	<0.00646	<0.00663
Chlorobenzene	3.0	<0.00646	<0.00663
Chloroethane	0.035	<0.00646	<0.00663
Chloroform	0.044	<0.00646	<0.00663
Chloromethane	0.1	<0.00646	<0.00663
Dibromochloromethane	1.0	<0.00646	<0.00663
1,2-Dibromo-3-chloropropane	0.01	<0.00646	<0.00663
1,1-Dichloroethane	7.5	<0.00646	<0.00663
1,2-Dichloroethane	0.035	<0.00646	<0.00663
1,1-Dichloroethene	0.085	<0.00646	<0.00663
cis-1,2-Dichloroethene	0.49	<0.00646	<0.00663
trans-1,2-Dichloroethene	0.77	<0.00646	<0.00663
1,2-Dichloropropane	0.042	<0.00646	<0.00663
cis-1,3-Dichloropropene	0.04	<0.00646	<0.00663
trans-1,3-Dichloropropene	0.04	<0.00646	<0.00663
Ethylbenzene	19	<0.00646	<0.00663
Methyl-tert-butyl-ether	0.077	<0.00646	<0.00663
Methylene chloride	0.017	<0.00646	<0.00663
4-Methyl-2-pentanone (MIBK)	6.4	<0.0129	<0.0133
Isobutanol	30	<0.323	<0.332
Styrene	11	<0.00646	<0.00663
1,1,1,2-Tetrachloroethane	0.046	<0.00646	<0.00663
1,1,2,2-Tetrachloroethane	0.006	<0.00646	<0.00663
Tetrachloroethene	0.18	<0.00646	<0.00663
Toluene	20	<0.00646	<0.00663
1,2,4-Trichlorobenzene	14	<0.00646	<0.00663
1,1,1-Trichloroethane	4.0	<0.00646	<0.00663
1,1,2-Trichloroethane	0.058	<0.00646	<0.00663
Trichloroethene	0.073	<0.00646	<0.00663
Trichlorofluoromethane	37	<0.00646	<0.00663
Vinyl chloride	0.013	<0.00646	<0.00663
Xylene(s)	18	<0.00646	<0.00663

Final Phase II Environmental Site Assessment Report December 12, 2007
Closure Gates – Seabrook, MRGO-GIWW, Michoud Slip, NOLA 2866-ACE

Parameter	Limiting RECAP Standard (mg/kg)	Sample Result (mg/kg)	
		SD-2866ACE- BARGE-B1	SD-2866ACE- BARGE-B2
Acenaphthene	220	<0.330	<0.330
Acenaphthylene	88	<0.330	<0.330
Anthracene	120	<0.330	<0.330
Benzo(a)anthracene	0.62	<0.330	<0.330
Benzo(b)fluoranthene	0.62	<0.330	<0.330
Benzo(k)fluoranthene	6.2	<0.330	<0.330
Benzoic acid	NS	<0.833	<0.833
Benzo(g,h,i)perylene	NS	<0.330	<0.330
Benz(a)pyrene	0.33	<0.330	<0.330
Benzyl alcohol	NS	<0.330	<0.330
4-Bromophenylphenyl ether	NS	<0.330	<0.330
Butylbenzylphthalate	220	<0.330	<0.330
Carbazole	NS	<0.330	<0.330
4-Chloro-3-methylphenol	NS	<0.330	<0.330
3 & 4-Chloroaniline	1.5	<0.330	<0.330
Bis(2-chloroethoxy)methane	NS	<0.330	<0.330
Bis(2-chloroethyl)ether	0.33	<0.330	<0.330
2-Chloronaphthalene	500	<0.330	<0.330
2-Chlorophenol	1.4	<0.330	<0.330
4-Chlorophenylphenyl ether	NS	<0.330	<0.330
Chrysene	62	<0.330	<0.330
Dibenz(a,h)anthracene	0.33	<0.330	<0.330
Dibenzofuran	24	<0.330	<0.330
1,2-Dichlorobenzene	29	<0.330	<0.330
1,3-Dichlorobenzene	2.1	<0.330	<0.330
1,4-Dichlorobenzene	5.7	<0.330	<0.330
3,3'-Dichlorobenzidine	0.97	<0.667	<0.667
2,4-Dichlorophenol	12	<0.330	<0.330
Diethylphthalate	360	<0.330	<0.330
2,4-Dimethylphenol	20	<0.330	<0.330
Dimethylphthalate	1500	<0.330	<0.330
Di-n-butylphthalate	NS	<0.330	<0.330
4,6-Dinitro-2-methylphenol	NS	<0.330	<0.330
2,4-Dinitrophenol	1.7	<0.330	<0.330
2,4-Dinitrotoluene	1.0	<0.330	<0.330
2,6-Dinitrotoluene	0.39	<0.330	<0.330
Di-n-octylphthalate	240	<0.330	<0.330
Bis(2-ethylhexyl)phthalate	35	<0.330	<0.330
Fluoranthene	220	<0.330	<0.330
Fluorene	230	<0.330	<0.330
Hexachloro-1,3-butadiene	0.82	<0.330	<0.330

Final Phase II Environmental Site Assessment Report December 12, 2007
Closure Gates – Seabrook, MRGO-GIWW, Michoud Slip, NOLA 2866-ACE

Parameter	Limiting RECAP Standard (mg/kg)	Sample Result (mg/kg)	
		SD-2866ACE- BARGE-B1	SD-2866ACE- BARGE-B2
Hexachlorobenzene	0.34	<0.330	<0.330
Hexachlorocyclopentadiene	1.4	<0.330	<0.330
Hexachloroethane	2.2	<0.330	<0.330
Indeno(1,2,3-cd)pyrene	0.62	<0.330	<0.330
Isophorone	0.56	<0.330	<0.330
2-Methylnaphthalene	1.7	<0.330	<0.330
2-Methylphenol	NS	<0.330	<0.330
3&4-Methylphenol	NS	<0.660	<0.660
Naphthalene	1.5	<0.330	<0.330
2-Nitroaniline	1.7	<0.330	<0.330
3-Nitroaniline	1.7	<0.330	<0.330
4-Nitroaniline	1.7	<0.330	<0.330
Nitrobenzene	0.33	<0.330	<0.330
2-Nitrophenol	NS	<0.330	<0.330
4-Nitrophenol	2.6	<0.330	<0.330
N-Nitroso-di-n-propylamine	0.33	<0.330	<0.330
N-Nitrosodiphenylamine	2.1	<0.330	<0.330
2,2'-Oxybis(1-chloropropane)	NS	<0.330	<0.330
Pentachlorophenol	1.7	<0.330	<0.330
Phenanthrene	660	<0.330	<0.330
Phenol	11	<0.330	<0.330
Pyrene	230	<0.330	<0.330
1,2,4-Trichlorobenzene	14	<0.330	<0.330
2,4,5-Trichlorophenol	320	<0.330	<0.330
2,4,6-Trichlorophenol	1.3	<0.330	<0.330
TPH-D	65	<10	17.1
TPH-O	180	<50	<50
Aldrin	0.028	<0.0017	<0.0017
alpha-BHC	0.0064	<0.0017	<0.0017
beta-BHC	0.016	<0.0017	<0.0017
delta-BHC	NS	<0.0017	<0.0017
gamma-BHC (Lindane)	0.033	<0.0017	<0.0017
alpha-Chlordane	1.6	<0.0017	<0.0017
gamma-Chlordane	1.6	<0.0017	<0.0017
4,4'-DDD	1.5	<0.00333	<0.00333
4,4'-DDE	1.7	<0.00333	<0.00333
4,4'-DDT	1.7	<0.00333	<0.00333
Dieldrin	0.03	<0.00333	<0.00333
Endosulfan I	34	<0.0017	<0.0017
Endosulfan II	34	<0.00333	<0.00333
Endosulfan sulfate	NS	<0.00333	<0.00333

Final Phase II Environmental Site Assessment Report December 12, 2007
Closure Gates – Seabrook, MRGO-GIWW, Michoud Slip, NOLA 2866-ACE

Parameter	Limiting RECAP Standard (mg/kg)	Sample Result (mg/kg)	
		SD-2866ACE- BARGE-B1	SD-2866ACE- BARGE-B2
Endrin	1.8	<0.00333	<0.00333
Endrin aldehyde	NS	<0.00333	<0.00333
Endrin ketone	NS	<0.00333	<0.00333
Heptachlor	0.016	<0.0017	<0.0017
Heptachlor epoxide	0.053	<0.0017	<0.0017
Methoxychlor	30	<0.0167	<0.0167
Toxaphene	0.44	<0.0667	<0.0667
PCB-1016	0.11	<0.0333	<0.0333
PCB-1221	0.11	<0.0333	<0.0333
PCB-1232	0.11	<0.0333	<0.0333
PCB-1242	0.11	<0.0333	<0.0333
PCB-1248	0.11	<0.0333	<0.0333
PCB-1254	0.11	<0.0333	<0.0333
PCB-1260	0.11	<0.0333	<0.0333
2,4-D	NS	<0.0667	<0.0667
Dalapon	NS	<0.333	<0.333
2,4-DB	NS	<0.167	<0.167
Dicamba	NS	<0.0667	<0.0667
Dichloroprop	NS	<0.0667	<0.0667
Dinoseb	0.14	<0.0667	<0.0667
MCPA	NS	<8.33	<8.33
MCPP	NS	<8.33	<8.33
2,4-T	NS	<0.0667	<0.0667
2,4,5-TP	NS	<0.0667	<0.0667
Hexavalent Chromium	23	<1.87	2.46
Mercury	2.3	0.0200	<0.0182
Aluminum	NS	3670	968
Antimony	3.1	<0.545	<0.492
Arsenic	12	1.86	1.33
Barium	550	52.1	27.1
Beryllium	8.0	0.200	<0.082
Cadmium	3.9	<0.091	<0.082
Calcium	NS	4250	1060
Chromium	23	5.07	1.20
Cobalt	470	2.68	0.951
Copper	310	4.77	1.54
Iron	NS	6010	1860
Lead	100	3.94	0.902
Magnesium	NS	2820	1050
Manganese	NS	146	16.5
Mercury (sub)	2.3	<0.0364	<0.0328

**Final Phase II Environmental Site Assessment Report December 12, 2007
Closure Gates – Seabrook, MRGO-GIWW, Michoud Slip, NOLA 2866-ACE**

Parameter	Limiting RECAP Standard (mg/kg)	Sample Result (mg/kg)	
		SD-2866ACE- BARGE-B1	SD-2866ACE- BARGE-B2
Nickel	160	6.98	2.61
Potassium	NS	864	285
Selenium	20	<0.273	<0.246
Silver	39	<0.182	<0.164
Sodium	NS	1160	3070
Thallium	0.55	<0.455	<0.410
Vanadium	55	9.53	3.43
Zinc	2300	15.8	2.10

NS = no standard

**Final Phase II Environmental Site Assessment Report December 12, 2007
Closure Gates – Seabrook, MRGO-GIWW, Michoud Slip, NOLA 2866-ACE**

Table 4: Summary of Analytical Results – Michoud Slip

Parameter	Limiting RECAP Standard (mg/kg)	Sample Result (mg/kg)			
		SD-2866ACE-MS-B1	SD-2866ACE-MS-B1a	SD-2866ACE-MS-B2	SD-2866ACE-MS-B3
Acetone	1.5	0.0208	0.0319	0.0526	0.0702
Benzene	0.051	<0.00517	<0.00535	<0.00839	<0.00630
Bromodichloromethane	0.92	<0.00517	<0.00535	<0.00839	<0.00630
Bromoform	1.8	<0.00517	<0.00535	<0.00839	<0.00630
Bromomethane	0.04	<0.00517	<0.00535	<0.00839	<0.00630
2-Butanone (MEK)	5.0	<0.0103	<0.0107	<0.0168	<0.0126
Carbon disulfide	11	<0.00517	<0.00535	0.0352	<0.00630
Carbon tetrachloride	0.11	<0.00517	<0.00535	<0.00839	<0.00630
Chlorobenzene	3.0	<0.00517	<0.00535	<0.00839	<0.00630
Chloroethane	0.035	<0.00517	<0.00535	<0.00839	<0.00630
Chloroform	0.044	<0.00517	<0.00535	<0.00839	<0.00630
Chloromethane	0.1	<0.00517	<0.00535	<0.00839	<0.00630
Dibromochloromethane	1.0	<0.00517	<0.00535	<0.00839	<0.00630
1,2-Dibromo-3-chloropropane	0.01	<0.00517	<0.00535	<0.00839	<0.00630
1,1-Dichloroethane	7.5	<0.00517	<0.00535	<0.00839	<0.00630
1,2-Dichloroethane	0.035	<0.00517	<0.00535	<0.00839	<0.00630
1,1-Dichloroethene	0.085	<0.00517	<0.00535	<0.00839	<0.00630
cis-1,2-Dichloroethene	0.49	<0.00517	<0.00535	<0.00839	<0.00630
trans-1,2-Dichloroethene	0.77	<0.00517	<0.00535	<0.00839	<0.00630
1,2-Dichloropropane	0.042	<0.00517	<0.00535	<0.00839	<0.00630
cis-1,3-Dichloropropene	0.04	<0.00517	<0.00535	<0.00839	<0.00630
trans-1,3-Dichloropropene	0.04	<0.00517	<0.00535	<0.00839	<0.00630
Ethylbenzene	19	<0.00517	<0.00535	<0.00839	<0.00630
Methyl-tert-butyl-ether	0.077	<0.00517	<0.00535	<0.00839	<0.00630
Methylene chloride	0.017	<0.00517	<0.00535	<0.00839	<0.00630
4-Methyl-2-pentanone (MIBK)	6.4	<0.0103	<0.0107	<0.0168	<0.0126
Isobutanol	30	<0.258	<0.268	<0.419	<0.315
Styrene	11	<0.00517	<0.00535	<0.00839	<0.00630
1,1,1,2-Tetrachloroethane	0.046	<0.00517	<0.00535	<0.00839	<0.00630
1,1,2,2-Tetrachloroethane	0.006	<0.00517	<0.00535	<0.00839	<0.00630
Tetrachloroethene	0.18	<0.00517	<0.00535	<0.00839	<0.00630
Toluene	20	<0.00517	<0.00535	<0.00839	<0.00630
1,2,4-Trichlorobenzene	14	<0.00517	<0.00535	<0.00839	<0.00630
1,1,1-Trichloroethane	4.0	<0.00517	<0.00535	<0.00839	<0.00630
1,1,2-Trichloroethane	0.058	<0.00517	<0.00535	<0.00839	<0.00630
Trichloroethene	0.073	<0.00517	<0.00535	<0.00839	<0.00630
Trichlorofluoromethane	37	<0.00517	<0.00535	<0.00839	<0.00630
Vinyl chloride	0.013	<0.00517	<0.00535	<0.00839	<0.00630
Xylene(s)	18	<0.00517	<0.00535	<0.00839	<0.00630

Final Phase II Environmental Site Assessment Report December 12, 2007
Closure Gates – Seabrook, MRGO-GIWW, Michoud Slip, NOLA 2866-ACE

Parameter	Limiting RECAP Standard (mg/kg)	Sample Result (mg/kg)			
		SD-2866ACE-MS-B1	SD-2866ACE-MS-B1a	SD-2866ACE-MS-B2	SD-2866ACE-MS-B3
Acenaphthene	220	<0.330	<0.330	<0.330	<0.330
Acenaphthylene	88	<0.330	<0.330	<0.330	<0.330
Anthracene	120	<0.330	<0.330	<0.330	<0.330
Benzo(a)anthracene	0.62	<0.330	<0.330	<0.330	<0.330
Benzo(b)fluoranthene	0.62	<0.330	<0.330	<0.330	<0.330
Benzo(k)fluoranthene	6.2	<0.330	<0.330	<0.330	<0.330
Benzoic acid	NS	<0.833	<0.833	<0.833	<0.833
Benzo(g,h,i)perylene	NS	<0.330	<0.330	<0.330	<0.330
Benz(a)pyrene	0.33	<0.330	<0.330	<0.330	<0.330
Benzyl alcohol	NS	<0.330	<0.330	<0.330	<0.330
4-Bromophenylphenyl ether	NS	<0.330	<0.330	<0.330	<0.330
Butylbenzylphthalate	220	<0.330	<0.330	<0.330	<0.330
Carbazole	NS	<0.330	<0.330	<0.330	<0.330
4-Chloro-3-methylphenol	NS	<0.330	<0.330	<0.330	<0.330
3 & 4-Chloroaniline	1.5	<0.330	<0.330	<0.330	<0.330
Bis(2-chloroethoxy)methane	NS	<0.330	<0.330	<0.330	<0.330
Bis(2-chloroethyl)ether	0.33	<0.330	<0.330	<0.330	<0.330
2-Chloronaphthalene	500	<0.330	<0.330	<0.330	<0.330
2-Chlorophenol	1.4	<0.330	<0.330	<0.330	<0.330
4-Chlorophenylphenyl ether	NS	<0.330	<0.330	<0.330	<0.330
Chrysene	62	<0.330	<0.330	<0.330	<0.330
Dibenz(a,h)anthracene	0.33	<0.330	<0.330	<0.330	<0.330
Dibenzofuran	24	<0.330	<0.330	<0.330	<0.330
1,2-Dichlorobenzene	29	<0.330	<0.330	<0.330	<0.330
1,3-Dichlorobenzene	2.1	<0.330	<0.330	<0.330	<0.330
1,4-Dichlorobenzene	5.7	<0.330	<0.330	<0.330	<0.330
3,3'-Dichlorobenzidine	0.97	<0.667	<0.667	<0.667	<0.667
2,4-Dichlorophenol	12	<0.330	<0.330	<0.330	<0.330
Diethylphthalate	360	<0.330	<0.330	<0.330	<0.330
2,4-Dimethylphenol	20	<0.330	<0.330	<0.330	<0.330
Dimethylphthalate	1500	<0.330	<0.330	<0.330	<0.330
Di-n-butylphthalate	NS	<0.330	<0.330	<0.330	<0.330
4,6-Dinitro-2-methylphenol	NS	<0.330	<0.330	<0.330	<0.330
2,4-Dinitrophenol	1.7	<0.330	<0.330	<0.330	<0.330
2,4-Dinitrotoluene	1.0	<0.330	<0.330	<0.330	<0.330
2,6-Dinitrotoluene	0.39	<0.330	<0.330	<0.330	<0.330
Di-n-octylphthalate	240	<0.330	<0.330	<0.330	<0.330
Bis(2-ethylhexyl)phthalate	35	<0.330	<0.330	<0.330	<0.330
Fluoranthene	220	<0.330	<0.330	<0.330	<0.330
Fluorene	230	<0.330	<0.330	<0.330	<0.330
Hexachloro-1,3-butadiene	0.82	<0.330	<0.330	<0.330	<0.330

Final Phase II Environmental Site Assessment Report December 12, 2007
Closure Gates – Seabrook, MRGO-GIWW, Michoud Slip, NOLA 2866-ACE

Parameter	Limiting RECAP Standard (mg/kg)	Sample Result (mg/kg)			
		SD-2866ACE-MS-B1	SD-2866ACE-MS-B1a	SD-2866ACE-MS-B2	SD-2866ACE-MS-B3
Hexachlorobenzene	0.34	<0.330	<0.330	<0.330	<0.330
Hexachlorocyclopentadiene	1.4	<0.330	<0.330	<0.330	<0.330
Hexachloroethane	2.2	<0.330	<0.330	<0.330	<0.330
Indeno(1,2,3-cd)pyrene	0.62	<0.330	<0.330	<0.330	<0.330
Isophorone	0.56	<0.330	<0.330	<0.330	<0.330
2-Methylnaphthalene	1.7	<0.330	<0.330	<0.330	<0.330
2-Methylphenol	NS	<0.330	<0.330	<0.330	<0.330
3&4-Methylphenol	NS	<0.660	<0.660	<0.660	<0.660
Naphthalene	1.5	<0.330	<0.330	<0.330	<0.330
2-Nitroaniline	1.7	<0.330	<0.330	<0.330	<0.330
3-Nitroaniline	1.7	<0.330	<0.330	<0.330	<0.330
4-Nitroaniline	1.7	<0.330	<0.330	<0.330	<0.330
Nitrobenzene	0.33	<0.330	<0.330	<0.330	<0.330
2-Nitrophenol	NS	<0.330	<0.330	<0.330	<0.330
4-Nitrophenol	2.6	<0.330	<0.330	<0.330	<0.330
N-Nitroso-di-n-propylamine	0.33	<0.330	<0.330	<0.330	<0.330
N-Nitrosodiphenylamine	2.1	<0.330	<0.330	<0.330	<0.330
2,2'-Oxybis(1-chloropropane)	NS	<0.330	<0.330	<0.330	<0.330
Pentachlorophenol	1.7	<0.330	<0.330	<0.330	<0.330
Phenanthrene	660	<0.330	<0.330	<0.330	<0.330
Phenol	11	<0.330	<0.330	<0.330	<0.330
Pyrene	230	<0.330	<0.330	<0.330	<0.330
1,2,4-Trichlorobenzene	14	<0.330	<0.330	<0.330	<0.330
2,4,5-Trichlorophenol	320	<0.330	<0.330	<0.330	<0.330
2,4,6-Trichlorophenol	1.3	<0.330	<0.330	<0.330	<0.330
TPH-D	65	<10	<10	<10	15.2
TPH-O	180	<50	<50	<50	<50
Aldrin	0.028	<0.0017	<0.0017	<0.0017	<0.0017
alpha-BHC	0.0064	<0.0017	<0.0017	<0.0017	<0.0017
beta-BHC	0.016	<0.0017	<0.0017	<0.0017	<0.0017
delta-BHC	NS	<0.0017	<0.0017	<0.0017	<0.0017
gamma-BHC (Lindane)	0.033	<0.0017	<0.0017	<0.0017	<0.0017
alpha-Chlordane	1.6	<0.0017	<0.0017	<0.0017	<0.0017
gamma-Chlordane	1.6	<0.0017	<0.0017	<0.0017	<0.0017
4,4'-DDD	1.5	<0.00333	<0.00333	<0.00333	<0.00333
4,4'-DDE	1.7	<0.00333	<0.00333	<0.00333	<0.00333
4,4'-DDT	1.7	<0.00333	<0.00333	<0.00333	<0.00333
Dieldrin	0.03	<0.00333	<0.00333	<0.00333	<0.00333
Endosulfan I	34	<0.0017	<0.0017	<0.0017	<0.0017
Endosulfan II	34	<0.00333	<0.00333	<0.00333	<0.00333
Endosulfan sulfate	NS	<0.00333	<0.00333	<0.00333	<0.00333

Final Phase II Environmental Site Assessment Report December 12, 2007
Closure Gates – Seabrook, MRGO-GIWW, Michoud Slip, NOLA 2866-ACE

Parameter	Limiting RECAP Standard (mg/kg)	Sample Result (mg/kg)			
		SD-2866ACE-MS-B1	SD-2866ACE-MS-B1a	SD-2866ACE-MS-B2	SD-2866ACE-MS-B3
Endrin	1.8	<0.00333	<0.00333	<0.00333	<0.00333
Endrin aldehyde	NS	<0.00333	<0.00333	<0.00333	<0.00333
Endrin ketone	NS	<0.00333	<0.00333	<0.00333	<0.00333
Heptachlor	0.016	<0.0017	<0.0017	<0.0017	<0.0017
Heptachlor epoxide	0.053	<0.0017	<0.0017	<0.0017	<0.0017
Methoxychlor	30	<0.0167	<0.0167	<0.0167	<0.0167
Toxaphene	0.44	<0.0667	<0.0667	<0.0667	<0.0667
PCB-1016	0.11	<0.0333	<0.0333	<0.0333	<0.0333
PCB-1221	0.11	<0.0333	<0.0333	<0.0333	<0.0333
PCB-1232	0.11	<0.0333	<0.0333	<0.0333	<0.0333
PCB-1242	0.11	<0.0333	<0.0333	<0.0333	<0.0333
PCB-1248	0.11	<0.0333	<0.0333	<0.0333	<0.0333
PCB-1254	0.11	<0.0333	<0.0333	<0.0333	<0.0333
PCB-1260	0.11	<0.0333	<0.0333	<0.0333	<0.0333
2,4-D	NS	<0.0667	<0.0667	<0.0667	<0.0667
Dalapon	NS	<0.333	<0.333	<0.333	<0.333
2,4-DB	NS	<0.167	<0.167	<0.167	<0.167
Dicamba	NS	<0.0667	<0.0667	<0.0667	<0.0667
Dichloroprop	NS	<0.0667	<0.0667	<0.0667	<0.0667
Dinoseb	0.14	<0.0667	<0.0667	<0.0667	<0.0667
MCPA	NS	<8.33	<8.33	<8.33	<8.33
MCPP	NS	<8.33	<8.33	<8.33	<8.33
2,4-T	NS	<0.0667	<0.0667	<0.0667	<0.0667
2,4,5-TP	NS	<0.0667	<0.0667	<0.0667	<0.0667
Hexavalent Chromium	23	<0.952	<0.980	<0.962	<1.85
Mercury (Pace)	2.3	<0.02	<0.0188	0.0212	<0.0167
Aluminum	NS	4390	4190	6240	3560
Antimony	3.1	<0.556	<0.536	<0.561	<0.600
Arsenic	12	2.46	2.61	3.64	0.980
Barium	550	62.7	53.2	57.9	39.4
Beryllium	8.0	0.222	0.214	0.402	0.200
Cadmium	3.9	0.185	0.170	0.318	<0.100
Calcium	NS	3430	5970	2610	5000
Chromium	23	5.49	5.47	7.85	5.32
Cobalt	470	2.89	2.81	3.86	3.20
Copper	310	5.74	5.28	7.77	2.96
Iron	NS	6640	6570	9820	5650
Lead	100	6.25	6.32	7.77	3.72
Magnesium	NS	2150	2030	2830	3440
Manganese	NS	131	124	364	131
Mercury (sub)	2.3	<0.0370	<0.0357	<0.0374	<0.0400

Final Phase II Environmental Site Assessment Report December 12, 2007
Closure Gates – Seabrook, MRGO-GIWW, Michoud Slip, NOLA 2866-ACE

Parameter	Limiting RECAP Standard (mg/kg)	Sample Result (mg/kg)			
		SD- 2866ACE- MS-B1	SD- 2866ACE- MS-B1a	SD- 2866ACE- MS-B2	SD- 2866ACE- MS-B3
Nickel	160	5.96	5.82	8.29	7.01
Potassium	NS	1020	956	1540	944
Selenium	20	0.407	0.375	0.822	<0.300
Silver	39	<0.185	<0.179	<0.187	<0.200
Sodium	NS	2430	2170	4370	1350
Thallium	0.55	<0.463	<0.446	<0.467	<0.500
Vanadium	55	8.31	8.30	12.2	9.29
Zinc	2300	25.2	21.7	30.3	15.4

NS = no standard

**Final Phase II Environmental Site Assessment Report December 12, 2007
Closure Gates – Seabrook, MRGO-GIWW, Michoud Slip, NOLA 2866-ACE**

Table 5: Sample Location Geographic Coordinates

Location	Latitude	Longitude
Seabrook		
B1	N 30°02'2.0"	W 90°01'40"
B2	N 30°02'4.6"	W 90°02'3.1"
B3	N 30°02'2.0"	W 90°02'12"
B4	N 30°01'52"	W 90°02'15"
B6	N 30°01'48"	W 90°02'1.6"
B7	N 30°01'46"	W 90°02'1.5"
B8	N 30°01'49"	W 90°02'4.7"
GIWW-Michoud Canal		
B1	N 29°59'54"	W 89°54'15"
B2	N 29°59'53"	W 89°54'22"
B3	N 30°00'56"	W 89°53'49"
Levee		
B1	N 30°00'39"	W 89°54'7.2"
B2	N 30°00'15"	W 89°54'9.4"
MRGO-Bayou Bienvenue		
B1	N 30°01'00"	W 89°53'49"
B2	N 30°00'58"	W 89°53'49"
B3	N 30°00'55"	W 89°53'48"
Barge Area		
B1	N 30°00'56"	W 89°54'3"
B2	N 30°00'51"	W 89°54'1.5"
Michoud Slip		
B1	N 30°00'35"	W 89°55'33"
B2	N 30°00'28"	W 89°55'39"
B3	N 30°00'21"	W 89°55'29"

**Final Phase II Environmental Site Assessment Report December 12, 2007
Closure Gates – Seabrook, MRGO-GIWW, Michoud Slip, NOLA 2866-ACE**

Table 6: PID Results

Sample Location	PID Result (ppm)
Seabrook	
B1	0
B2	32.2
B3	6.1
B4	1.6
B6	0
B7	0
B8	0.6
GIWW-Michoud Canal	
B1	28.6
B2	10.1
B3	12.6
Levee	
B1	98.6
B2	112.6
MRGO – Bayou Bienvenue	
B1	89.3
B2	128.6
B3	280.7
Barge Area	
B1	0
B2	0.7
Michoud Slip	
B1	0.02/0.03 (split)
B2	0
B3	No result

Figures

Figure 1: Site Location Map

Figure 1: Site Location Maps



Figure 2: Sample Locations at GIWW-MRGO and Michoud Slip Sites



Figure 3: Sample Locations at Seabrook Site



Appendices

Appendix A: Boring Logs & Sampling Logs

PROJECT: PIIESA at Closure Gates New Orleans, Louisiana			Log of Borehole BARGE-B1		
BORING LOCATION: Intracostal Waterway			ELEVATION AND DATUM: Elev: N: 30 0' 55.5" W: 89 54' 3.0"		
DRILLING CONTRACTOR: Quaternary Resource Investigations			DATE STARTED: 9/6/07		DATE FINISHED: 9/6/07
DRILLING METHOD: Vibracore			TOTAL DEPTH (ft.): 5		MEASURING POINT: Ground Surface
DRILLING EQUIPMENT: Vibracore Drill Rig			DEPTH TO WHERE FREE WATER FIRST ENCOUNTERED: 0		
SAMPLING METHOD: Grab			DEPTH TO WATER AT COMPLETION: 5		
HAMMER WEIGHT: N/A		DROP: N/A	LOGGED BY: Wendell Thompson		
DEPTH (feet)	SAMPLES		MATERIAL DESCRIPTION	LABORATORY TESTS	
	Sample No.	Sample		Moisture Content (%)	Dry Density (pcf)
0			Sandy Clay (CL): Dark grey sandy clay, very moist, no odor, no inclusions	0	
1				1	
2				2	
3				3	
4				4	
5				5	0.0

S-2866ACE-BARGE-B1

PROJECT: PIIESA at Closure Gates New Orleans, Louisiana		Log of Borehole BARGE-B2				
BORING LOCATION: Mississippi River Gulf Outlet		ELEVATION AND DATUM: Elev: N: 30 0' 55.5" W: 89 54' 1.6"				
DRILLING CONTRACTOR: Quaternary Resource Investigations		DATE STARTED: 9/6/07 DATE FINISHED: 9/6/07				
DRILLING METHOD: Vibracore		TOTAL DEPTH (ft.): 5 MEASURING POINT: Ground Surface				
DRILLING EQUIPMENT: Vibracore Drill Rig		DEPTH TO WHERE FREE WATER FIRST ENCOUNTERED: 0				
SAMPLING METHOD: Grab		DEPTH TO WATER AT COMPLETION: 5				
HAMMER WEIGHT: N/A		LOGGED BY: Wendell Thompson				
DEPTH (feet)	SAMPLES		LABORATORY TESTS			
	Sample No.	Sample	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	Field PID
0		Sandy Clay (CL): Dark grey sandy clay, very moist, no odor, no inclusions	0			
1			1			
2			2			
3			3			
4			4			
5			5	0.7		

PROJECT: PIIESA at Closure Gates New Orleans, Louisiana		Log of Borehole GIWW-MC-B1				
BORING LOCATION: Intracostal Waterway		ELEVATION AND DATUM: Elev: N: 29 59' 54.14" W: 89 54' 15.4"				
DRILLING CONTRACTOR: Quaternary Resource Investigations		DATE STARTED: 9/7/07 DATE FINISHED: 9/7/07				
DRILLING METHOD: Vibracore		TOTAL DEPTH (ft.): 5 MEASURING POINT: Ground Surface				
DRILLING EQUIPMENT: Vibracore Drill Rig		DEPTH TO WHERE FREE WATER FIRST ENCOUNTERED: 0				
SAMPLING METHOD: Grab		DEPTH TO WATER AT COMPLETION: 5				
HAMMER WEIGHT: N/A		LOGGED BY: Wendell Thompson				
DEPTH (feet)	SAMPLES		LABORATORY TESTS			
	Sample No.	Sample	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	Field PID
0			Clayey Sand (SC): Medium grey sand, very moist, methane odor, no inclusions	0		
1				1		
2				2		
3				3		
4				4		
5				5	28.6	

PROJECT: PIIESA at Closure Gates New Orleans, Louisiana		Log of Borehole GIWW-MC-B2			
BORING LOCATION: Intracoastal Waterway		ELEVATION AND DATUM: Elev: N: 29 59' 52.9" W: 89 54' 21.85"			
DRILLING CONTRACTOR: Quaternary Resource Investigations		DATE STARTED: 9/7/07 DATE FINISHED: 9/7/07			
DRILLING METHOD: Vibracore		TOTAL DEPTH (ft.): 5 MEASURING POINT: Ground Surface			
DRILLING EQUIPMENT: Vibracore Drill Rig		DEPTH TO WHERE FREE WATER FIRST ENCOUNTERED: 0			
SAMPLING METHOD: Grab		DEPTH TO WATER AT COMPLETION: 5			
HAMMER WEIGHT: N/A		LOGGED BY: Wendell Thompson			
DEPTH (feet)	SAMPLES		LABORATORY TESTS		
	Sample No.	Sample	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)
0		Clayey Sand (SC): Medium grey sand, very moist, no odor, no inclusions	0		
1			1		
2			2		
3			3		
4			4		
5			5		10.1
S-2866ACE-GIWW-MC-B2					

PROJECT: PIIESA at Closure Gates New Orleans, Louisiana		Log of Borehole GIWW-MC-B3				
BORING LOCATION: Intracoastal Waterway		ELEVATION AND DATUM: Elev: N: 29 59' 47.38" W: 89 54' 36.71"				
DRILLING CONTRACTOR: Quaternary Resource Investigations		DATE STARTED: 9/6/07		DATE FINISHED: 9/6/07		
DRILLING METHOD: Vibracore		TOTAL DEPTH (ft.): 5		MEASURING POINT: Ground Surface		
DRILLING EQUIPMENT: Vibracore Drill Rig		DEPTH TO WHERE FREE WATER FIRST ENCOUNTERED: 0				
SAMPLING METHOD: Grab		DEPTH TO WATER AT COMPLETION: 5				
HAMMER WEIGHT: N/A		LOGGED BY: Wendell Thompson				
DEPTH (feet)	SAMPLES		LABORATORY TESTS			
	Sample No.	Sample	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	Field PID
0		Sandy Clay (CL): Dark grey sandy clay, very moist, no odor, no inclusions	0			
1			1			
2			2			
3			3			
4			4			
5			5		12.6	

S-2866ACE-GIWW-MC-B3

PROJECT: PIIESA at Closure Gates New Orleans, Louisiana		Log of Borehole LEVEE-B1				
BORING LOCATION: Michoud Slip		ELEVATION AND DATUM: Elev: N: 30 0' 38.58" W: 89 53' 59.68"				
DRILLING CONTRACTOR: Quaternary Resource Investigations		DATE STARTED: 9/7/07 DATE FINISHED: 9/7/07				
DRILLING METHOD: Vibracore		TOTAL DEPTH (ft.): 5 MEASURING POINT: Ground Surface				
DRILLING EQUIPMENT: Vibracore Drill Rig		DEPTH TO WHERE FREE WATER FIRST ENCOUNTERED: 0				
SAMPLING METHOD: Grab		DEPTH TO WATER AT COMPLETION: 5				
HAMMER WEIGHT: N/A		LOGGED BY: Wendell Thompson				
DEPTH (feet)	SAMPLES		LABORATORY TESTS			
	Sample No.	Sample	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	Field PID
0		Peat (PT): Dark grey sandy peat, very moist, methane odor, no inclusions	0			
1			1			
2			2			
3			3			
4			4			
5			5			98.6

PROJECT: PIIESA at Closure Gates New Orleans, Louisiana		Log of Borehole LEVEE-B2				
BORING LOCATION: Michoud Slip		ELEVATION AND DATUM: Elev: N: 30 0' 39.49" W: 89 54' 7.21"				
DRILLING CONTRACTOR: Quaternary Resource Investigations		DATE STARTED: 9/7/07 DATE FINISHED: 9/7/07				
DRILLING METHOD: Vibracore		TOTAL DEPTH (ft.): 5 MEASURING POINT: Ground Surface				
DRILLING EQUIPMENT: Vibracore Drill Rig		DEPTH TO WHERE FREE WATER FIRST ENCOUNTERED: 0				
SAMPLING METHOD: Grab		DEPTH TO WATER AT COMPLETION: 5				
HAMMER WEIGHT: N/A		LOGGED BY: Wendell Thompson				
DEPTH (feet)	SAMPLES		LABORATORY TESTS			
	Sample No.	Sample	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	Field PID
0		Peat (PT): Dark grey sandy peat, very moist, methane odor, no inclusions	0			
1			1			
2			2			
3			3			
4			4			
5			5			112.6

S-2866ACE-LEVEE-B2

PROJECT: PIIESA at Closure Gates New Orleans, Louisiana		Log of Borehole MRGO-BB-B1				
BORING LOCATION: Mississippi River Gulf Outlet		ELEVATION AND DATUM: Elev: N: 30 1' 0" W: 89 53' 49"				
DRILLING CONTRACTOR: Quaternary Resource Investigations		DATE STARTED: 8/28/07 DATE FINISHED: 8/28/07				
DRILLING METHOD: Vibracore		TOTAL DEPTH (ft.): 5 MEASURING POINT: Ground Surface				
DRILLING EQUIPMENT: Vibracore Drill Rig		DEPTH TO WHERE FREE WATER FIRST ENCOUNTERED: 0				
SAMPLING METHOD: Grab		DEPTH TO WATER AT COMPLETION: 5				
HAMMER WEIGHT: N/A		LOGGED BY: Wendell Thompson				
DEPTH (feet)	SAMPLES		LABORATORY TESTS			
	Sample No.	Sample	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	Field PID
0			Sandy Clay (CL): Dark grey sandy clay, very moist, methane odor, no inclusions	0		
1			Peat (PT): Dark grey peat, very moist, methane odor, no inclusions	1		
2				2		
3				3		
4				4		
5				5		89.3
S-2866ACE-MRGO-BB-B1						

PROJECT: PIIESA at Closure Gates New Orleans, Louisiana		Log of Borehole MRGO-BB-B2				
BORING LOCATION: Mississippi River Gulf Outlet		ELEVATION AND DATUM: Elev: N: 30° 0' 58" W: 89° 53' 49"				
DRILLING CONTRACTOR: Quaternary Resource Investigations		DATE STARTED:	8/28/07	DATE FINISHED: 8/28/07		
DRILLING METHOD: Vibracore		TOTAL DEPTH (ft.):	5	MEASURING POINT: Ground Surface		
DRILLING EQUIPMENT: Vibracore Drill Rig		DEPTH TO WHERE FREE WATER FIRST ENCOUNTERED:	0			
SAMPLING METHOD: Grab		DEPTH TO WATER AT COMPLETION:	5			
HAMMER WEIGHT:	N/A	DROP:	N/A	LOGGED BY: Wendell Thompson		
DEPTH (feet)	SAMPLES		MATERIAL DESCRIPTION	LABORATORY TESTS		
	Sample No.	Sample		Moisture Content (%)	Dry Density (pcf)	Field PID
0			Sandy Clay (CL): Dark grey sandy clay, very moist, methane odor, no inclusions	0		
1			Peat (PT): Dark grey peat, very moist, methane odor, no inclusions	1		
2				2		
3				3		
4				4		
5				5		128.6

S-2866ACE-MRGO-BB-B2

PROJECT: PIIESA at Closure Gates New Orleans, Louisiana		Log of Borehole MRGO-BB-B3				
BORING LOCATION: Mississippi River Gulf Outlet		ELEVATION AND DATUM: Elev: N: 30 0' 55" W: 89 53' 48"				
DRILLING CONTRACTOR: Quaternary Resource Investigations		DATE STARTED:	8/28/07	DATE FINISHED: 8/28/07		
DRILLING METHOD: Vibracore		TOTAL DEPTH (ft.):	5	MEASURING POINT: Ground Surface		
DRILLING EQUIPMENT: Vibracore Drill Rig		DEPTH TO WHERE FREE WATER FIRST ENCOUNTERED:	0			
SAMPLING METHOD: Grab		DEPTH TO WATER AT COMPLETION:	5			
HAMMER WEIGHT:	N/A	DROP:	N/A	LOGGED BY: Wendell Thompson		
DEPTH (feet)	SAMPLES		MATERIAL DESCRIPTION	LABORATORY TESTS		
	Sample No.	Sample		Moisture Content (%)	Dry Density (pcf)	Field PID
0			Sandy Clay (CL): Dark grey sandy clay, very moist, methane odor, no inclusions	0		
1			Peat (PT): Dark grey peat, very moist, methane odor, no inclusions	1		
2				2		
3				3		
4				4		
5				5		280.7
S-2866ACE-MRGO-BB-B3						

PROJECT: PIIESA at Closure Gates New Orleans, Louisiana		Log of Borehole MS-B1				
BORING LOCATION:	Michoud Slip	ELEVATION AND DATUM: Elev: N: 30 0' 35" W: 89 55' 33"				
DRILLING CONTRACTOR:	Quaternary Resource Investigations	DATE STARTED: 8/27/07	DATE FINISHED: 8/27/07			
DRILLING METHOD:	Vibracore	TOTAL DEPTH (ft.): 5	MEASURING POINT: Ground Surface			
DRILLING EQUIPMENT:	Vibracore Drill Rig	DEPTH TO WHERE FREE WATER FIRST ENCOUNTERED: 0				
SAMPLING METHOD:	Grab	DEPTH TO WATER AT COMPLETION: 5				
HAMMER WEIGHT:	N/A	DROP:	N/A			
		LOGGED BY:	Wendell Thompson			
DEPTH (feet)	SAMPLES		LABORATORY TESTS			
	Sample No.	Sample		MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)
0		Sandy Clay (CL): Dark grey sandy clay, very moist, no odor, no inclusions	0			
1			1			
2			2			
3			3			
4			4			
5			5		0.02	

PROJECT: PIIESA at Closure Gates New Orleans, Louisiana		Log of Borehole MS-B2				
BORING LOCATION: Michoud Slip		ELEVATION AND DATUM: Elev: N: 30 0' 28" W: 89 55' 39"				
DRILLING CONTRACTOR: Quaternary Resource Investigations		DATE STARTED:	DATE FINISHED: 8/27/07 8/27/07			
DRILLING METHOD: Vibracore		TOTAL DEPTH (ft.): 5	MEASURING POINT: Ground Surface			
DRILLING EQUIPMENT: Vibracore Drill Rig		DEPTH TO WHERE FREE WATER FIRST ENCOUNTERED: 0				
SAMPLING METHOD: Grab		DEPTH TO WATER AT COMPLETION: 5				
HAMMER WEIGHT: N/A		LOGGED BY: Wendell Thompson				
DEPTH (feet)	SAMPLES		LABORATORY TESTS			
	Sample No.	Sample		MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)
0		Sandy Clay (CL): Dark grey sandy clay, very moist, no odor, no inclusions	0			
1			1			
2			2			
3			3			
4			4			
5			5		0.0	

PROJECT: PIIESA at Closure Gates New Orleans, Louisiana		Log of Borehole MS-B3				
BORING LOCATION: Michoud Slip		ELEVATION AND DATUM: Elev: N: 30 0' 21" W: 89 55' 29"				
DRILLING CONTRACTOR: Quaternary Resource Investigations		DATE STARTED: 9/6/07	DATE FINISHED: 9/6/07			
DRILLING METHOD: Vibracore		TOTAL DEPTH (ft.): 5	MEASURING POINT: Ground Surface			
DRILLING EQUIPMENT: Vibracore Drill Rig		DEPTH TO WHERE FREE WATER FIRST ENCOUNTERED: 0				
SAMPLING METHOD: Grab		DEPTH TO WATER AT COMPLETION: 5				
HAMMER WEIGHT:	N/A	DROP:	N/A			
		LOGGED BY: Wendell Thompson				
DEPTH (feet)	SAMPLES		LABORATORY TESTS			
	Sample No.	Sample		MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)
0		Sandy Clay (CL): Dark grey sandy clay, very moist, no odor, no inclusions	0			
1			1			
2			2			
3			3			
4			4			
5			5	0.0		

S-2866ACE-MS-B3

PROJECT: PIIESA at Closure Gates New Orleans, Louisiana		Log of Borehole SB-B1				
BORING LOCATION: Seabrook		ELEVATION AND DATUM: Elev: N: 30 2' 4.54" W: 90 1' 56.28"				
DRILLING CONTRACTOR: Quaternary Resource Investigations		DATE STARTED:	DATE FINISHED:	9/10/07 9/10/07		
DRILLING METHOD: Vibracore		TOTAL DEPTH (ft.): 1.5	MEASURING POINT: Ground Surface			
DRILLING EQUIPMENT: Vibracore Drill Rig		DEPTH TO WHERE FREE WATER FIRST ENCOUNTERED: 0	DEPTH TO WATER AT COMPLETION: 1.5			
SAMPLING METHOD: Grab		LOGGED BY:	Wendell Thompson			
HAMMER WEIGHT:	N/A	DROP:	N/A			
DEPTH (feet)	SAMPLES		MATERIAL DESCRIPTION	LABORATORY TESTS		
	Sample No.	Sample		Moisture Content (%)	Dry Density (pcf)	Field PID
0	S-2866ACE-SB-B1		Sandy Clay (CL): Medium grey sandy clay, very moist, no odor, no inclusions, extremely fine sand	0		
1				1		
2				2		0.0
3				3		
4				4		
5				5		

PROJECT: PIIESA at Closure Gates New Orleans, Louisiana		Log of Borehole SB-B2				
BORING LOCATION:	Seabrook	ELEVATION AND DATUM: Elev: N: 30 2' 4.66" W: 90 2' 3.1"				
DRILLING CONTRACTOR:	Quaternary Resource Investigations	DATE STARTED: 9/5/07	DATE FINISHED: 9/5/07			
DRILLING METHOD:	Vibracore	TOTAL DEPTH (ft.): 5	MEASURING POINT: Ground Surface			
DRILLING EQUIPMENT:	Vibracore Drill Rig	DEPTH TO WHERE FREE WATER FIRST ENCOUNTERED: 0				
SAMPLING METHOD:	Grab	DEPTH TO WATER AT COMPLETION: 5				
HAMMER WEIGHT:	N/A	DROP:	N/A			
		LOGGED BY: Wendell Thompson				
DEPTH (feet)	SAMPLES		LABORATORY TESTS			
	Sample No.	Sample		MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)
0		Sandy Clay (CL): Dark grey sandy clay, very moist, no odor, no inclusions	0			
1			1			
2			2			
3			3			
4			4			
5			5		32.2	

S-2866ACE-SB-B2

PROJECT: PIIESA at Closure Gates New Orleans, Louisiana		Log of Borehole SB-B3				
BORING LOCATION:	Seabrook	ELEVATION AND DATUM: Elev: N: 30 2' 2.0" W: 90 2' 12.2"				
DRILLING CONTRACTOR:	Quaternary Resource Investigations	DATE STARTED: 9/5/07	DATE FINISHED: 9/5/07			
DRILLING METHOD:	Vibracore	TOTAL DEPTH (ft.): 5	MEASURING POINT: Ground Surface			
DRILLING EQUIPMENT:	Vibracore Drill Rig	DEPTH TO WHERE FREE WATER FIRST ENCOUNTERED: 0				
SAMPLING METHOD:	Grab	DEPTH TO WATER AT COMPLETION: 5				
HAMMER WEIGHT:	N/A	DROP:	N/A			
LOGGED BY: Wendell Thompson						
DEPTH (feet)	SAMPLES		LABORATORY TESTS			
	Sample No.	Sample		MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)
0			Sandy Clay (CL): Dark grey sandy clay, very moist, no odor, no inclusions	0		
1				1		
2				2		
3				3		
4				4		
5				5	6.1	

S-2866ACE-SB-B3

PROJECT: PIIESA at Closure Gates New Orleans, Louisiana		Log of Borehole SB-B4				
BORING LOCATION:	Seabrook	ELEVATION AND DATUM: Elev: N: 30 1' 58.37" W: 90 2' 17.41"				
DRILLING CONTRACTOR:	Quaternary Resource Investigations	DATE STARTED: 9/5/07	DATE FINISHED: 9/5/07			
DRILLING METHOD:	Vibracore	TOTAL DEPTH (ft.): 5	MEASURING POINT: Ground Surface			
DRILLING EQUIPMENT:	Vibracore Drill Rig	DEPTH TO WHERE FREE WATER FIRST ENCOUNTERED: 0	DEPTH TO WATER AT COMPLETION: 5			
SAMPLING METHOD:	Grab	LOGGED BY: Wendell Thompson				
HAMMER WEIGHT:	N/A	DROP: N/A				
DEPTH (feet)	SAMPLES		LABORATORY TESTS			
	Sample No.	Sample		MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)
0		Clayey Sand (SC): Dark grey sand, very moist, no odor, no inclusions	0			
1			1			
2			2			
3			3			
4			4			
5			5		1.6	

PROJECT: PIIESA at Closure Gates New Orleans, Louisiana			Log of Borehole SB-B5		
BORING LOCATION: Seabrook			ELEVATION AND DATUM: Elev: N: 30 1' 47.52" W: 90 2' 3.92"		
DRILLING CONTRACTOR: Quaternary Resource Investigations			DATE STARTED:	DATE FINISHED:	Abandoned Abandoned
DRILLING METHOD: Vibracore			TOTAL DEPTH (ft.): 0	MEASURING POINT: N/A	
DRILLING EQUIPMENT: Vibracore Drill Rig			DEPTH TO WHERE FREE WATER FIRST ENCOUNTERED: N/A		
SAMPLING METHOD: Grab			DEPTH TO WATER AT COMPLETION: N/A		
HAMMER WEIGHT:	N/A	DROP:	N/A	LOGGED BY: Wendell Thompson	
DEPTH (feet)	SAMPLES		MATERIAL DESCRIPTION	LABORATORY TESTS	
	Sample No.	Sample		Moisture Content (%)	Dry Density (pcf)
0		No Recovery	0		
1			1		
2			2		
3			3		
4			4		
5			5		

PROJECT: PIIESA at Closure Gates New Orleans, Louisiana		Log of Borehole SB-B6				
BORING LOCATION:	Seabrook	ELEVATION AND DATUM: Elev: N: 30 1' 48.0" W: 90 2' 1.55"				
DRILLING CONTRACTOR:	Quaternary Resource Investigations	DATE STARTED: 9/6/07	DATE FINISHED: 9/6/07			
DRILLING METHOD:	Vibracore	TOTAL DEPTH (ft.): 5	MEASURING POINT: Ground Surface			
DRILLING EQUIPMENT:	Vibracore Drill Rig	DEPTH TO WHERE FREE WATER FIRST ENCOUNTERED: 0				
SAMPLING METHOD:	Grab	DEPTH TO WATER AT COMPLETION: 5				
HAMMER WEIGHT:	N/A	DROP:	N/A			
LOGGED BY: Wendell Thompson						
DEPTH (feet)	SAMPLES		LABORATORY TESTS			
	Sample No.	Sample		MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)
0		Sandy Clay (CL): Medium grey sandy clay, very moist, no odor, shell inclusions	0			
1			1			
2			2			
3			3			
4			4			
5			5		0.0	

S-2866ACE-SB-B6

PROJECT: PIIESA at Closure Gates New Orleans, Louisiana		Log of Borehole SB-B7				
BORING LOCATION:	Seabrook	ELEVATION AND DATUM: Elev: N: 30 1' 46.08" W: 90 2' 1.51"				
DRILLING CONTRACTOR:	Quaternary Resource Investigations	DATE STARTED: 9/5/07	DATE FINISHED: 9/5/07			
DRILLING METHOD:	Vibracore	TOTAL DEPTH (ft.): 5	MEASURING POINT: Ground Surface			
DRILLING EQUIPMENT:	Vibracore Drill Rig	DEPTH TO WHERE FREE WATER FIRST ENCOUNTERED: 0				
SAMPLING METHOD:	Grab	DEPTH TO WATER AT COMPLETION: 5				
HAMMER WEIGHT:	N/A	DROP: N/A	LOGGED BY: Wendell Thompson			
DEPTH (feet)	SAMPLES		LABORATORY TESTS			
	Sample No.	Sample		MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)
0		Clayey Sand (SC): Dark grey sand, very moist, no odor, no inclusions	0			
1			1			
2			2			
3			3			
4			4			
5			5		0.0	

PROJECT: PIIESA at Closure Gates New Orleans, Louisiana		Log of Borehole SB-B8		
BORING LOCATION:	Seabrook	ELEVATION AND DATUM: Elev: N: 30 1' 51.34" W: 90 2' 1.75"		
DRILLING CONTRACTOR:	Quaternary Resource Investigations	DATE STARTED: 9/5/07	DATE FINISHED: 9/5/07	
DRILLING METHOD:	Vibracore	TOTAL DEPTH (ft.): 5	MEASURING POINT: Ground Surface	
DRILLING EQUIPMENT:	Vibracore Drill Rig	DEPTH TO WHERE FREE WATER FIRST ENCOUNTERED: 0		
SAMPLING METHOD:	Grab	DEPTH TO WATER AT COMPLETION: 5		
HAMMER WEIGHT:	N/A	LOGGED BY: Wendell Thompson		
DEPTH (feet)	SAMPLES Sample No.	MATERIAL DESCRIPTION	LABORATORY TESTS	
Sample No.	Sample	Moisture Content (%)	Dry Density (pcf)	Field PID
0		Clayey Sand (SC): Dark grey sand, very moist, no odor, no inclusions	0	
1			1	
2			2	
3			3	
4			4	
5			5	0.6

Appendix B: Final Analytical Report

Appendix C: Field Logs

Location Michigan Slip Gates Date 8/27/07
Project / Client 2866ACE / USACE

Vibrate the core. Before the bottom of the core breaks the vibrator starts, the bottom is also capped. The 3" aluminum core is filled with 5' of sample plus this a column of water equal to the depth.

10:47 The first core is removed from the ground and transported to land.

SD-2866ACE - MS-B1
This sample will be split for lab quality control.
SD-2866ACE - MS-B1/a

11:02 MS-B2
N 30° 00' 28"
W 89° 55' 37"

12:00 The second core is removed from the ground and transported to land.

Location Michigan Slip Gates Date 8/27/07
Project / Client 2866ACE / USACE

SP-2866ACE - MS-B2
This sample is MS/MSD for quality control.

12:05 The sample core separated during transportation. The core fell into the slip. QRI began to reposition and a 2nd attempt at collecting the had core began.

12:45 During removal from the water the plumbers cap did not hold and the sample was lost. The vibecore base was repositioned and a 3rd attempt at collecting the had core began.

13:30 The second core is removed from the ground and transported to land.

Care 1 Sampling begins

Michigan Slip Gates 8/27/07
2866ACE / USACE

Lake Michigan Slip Gates 8/27/07
2866ACE / USACE

13:40 SD-2866ACE-M5-B1 PTD=0.02

SD-2866ACE-M5-B1a PTD=0.03

13:45 Sample material is a Dark Grey,
Sandy Clay, Very Moist, No Odor.

14:15 Core 2 Sampling Begins M5/M5D
SD-2866ACE-M5-B2 M5/M5D

PTD=0.00

14:18 Sample is mixed in a plastic
bag and placed into sample
jars and Tuna Cans.

14:50 Sample material is a Dark
Grey, Sandy Clay, Very Moist,
No Odor. 5' long

14:51 Kenny New of QRI called to say
QRI's crew boat broke down.

14:52 P.L. & R.E. went to rescue.

14:52 M5-B3 N 30° 00" 21'
W 89° 55" 29'

16:44 During removal of 3rd core sample
from water the sample fell out
of the core before it could

be capped at the bottom.

The QRI barge was repositioned
on a 2nd attempt at the 3rd
core is made.

17:20 Fat Sample is lost during
removal from water.

17:33 MRI & QRI teams end day
and head to boat launch.

18:30 P.L., R.P., & R.E. leave boat
launch.

19:10 W.T. & QRI team leave boat
launch

19:11 Sampling Day Ends 8-27-07

Wet Silt

Location MR60 Date 8/28/07
Project # 2866 ACE / USACE

Location MR60 Date 8/28/07
Project # 2866 ACE / USACE

- 06:30 MMG Team Arrive at Paris Rd.
boat launch.
MMG & QRI MOB for MR60
QRI Prepares a Vibracone barge
and a crew boat.
- MMG prepares 2 crew boats.
Paul Lo (P.L.) of MMG conducts
Fairgate Safety Meeting.
- 07:15 MMG & QRI teams depart
for MR60 sample area.
- 07:35 Teams arrive at sample area
Sampling begins.
- 08:45 MR60 - BB-1
N 30° 01' 00" W 89° 53' 49"
- 08:50 Paul departs to retrieve Corps
Personnel.
- 08:55 1st Sample is brought to land
Paul returns with USACE personnel
- George Bacetta
Lawn L. Walker

- 09:32 MR60 - BB-2
N 30° 00' 55" W 89° 53' 48"
10:00 2nd Core is brought to
land for sampling.
- Sampling is interrupted by
lightning & rain. Job is
stopped until rain passes.
- 10:15 Rain passes. Job starts
P.L. and USACE depart.
SD-2866 ACE-MR60-BB-1
PTD = 89.3
- 10:35 Sample is mixed into
a plastic bag and sampled
into jars.
- 10:37 Sample material is 1 ft. of
Dark Grey clay with 4 ft. of
Dark Grey peat. Methane Odor.
- SD - 2866 ACE-MR60-BB-1
PTD = 280.7
- 10:42 Sample is mixed and placed

MRGO
Date 8/28/07
Location 2866ACE / USACE

MRGO
Date 8/28/07
Location 2866ACE / USACE

into jars.
10:53 Sample material is 2' + clay
and 4' of peat. The Clay is Dark
Grey, Very Moist. The Peat is
Dark Grey, Very Moist, and has
a Methane odor.

11:20 Water trip blanck and water filled
blanks are placed in cooler.

11-2866ACE-TB-82707

W-2866ACE-FB-82707

11:41 MS-B2

N 30° 0' 58"

W 89 53' 49"

12:00 P.L. and USACE return.

12:15 The third sample of the day
MS-B2 is removed from the
ground and transported back
to land for sampling.

12:17 P.L and USACE depart.

12:20 5D-2866ACE-MRGD-BB-B2

P.T.D = 128.6

- 12:21 Sample is mixed into a
plastic bag and sampled
into jars.
- 12:23 Sample material is 1 ft.
of Dark Grey very moist clay.
And 4' of Dark Grey, very
moist Peat. The Peat has
a Methane odor.
- 12:35 P.L returns
- 12:40 Stop work is called by P.L.
due to lightning & rain.
MMG & QRI wait out rain
on bank.
- 13:10 Stop job is called by W.T.
due to lightning & rain.
MMG & QRI return to
Paris Rd. boat dock.
Sample day ends.
- Murray end

26 Location MR GO
Project # 2866ACE / USACE

Date 8/29/07 Location MR GO
Project # 2866ACE / USACE

- 06:25 MMG & QRI teams arrive at Paris Rd. boat launch. QRI team is minus Jason New. QRI prepares Vibracone Barge for sampling. Team is waiting for a replacement engine. QRI team prepares a crew boat MMG prepares & crew boats.
- 08:13 QRI repaired Vibracone Barge. 08:15 W.T. conducts Fallgate safety. 08:30 MMG & QRI depart for drill area.
- 09:10 QRI drill team almost sinks the barge when towing the rig thru the lock.
- 09:12 All personnel are safe and QRI slows down for safety measures.
- 10:00 The teams arrive at the 1st borehole location MS-B3.

- 10:15 W.T. escorts K.N. to the Paris Rd. dock to look for a necessary part that was left behind. K.N. can't find the part. He assumes it fell off the barge when it almost sunk.
- 10:30 W.T. decides to move the team to shallower water where samples can be collected without the necessary permit (coupling). The team moves to GUTT-MOB. 10:45 Rain and lightning begin. W.T. postpones sampling.
- 12:00 With rain continuing and lightning present U.F. cells the day.
- 13:30 Q.R.I. (K.N.) says drilling can begin again on Wednesday 9-5-07. X comment

Scabrook Bridge 9-5-2007
28664CE / USACE

Scabrook Bridge 9-5-2007
28664CE / USACE

Scabrook Bridge 9-5-2007
28664CE / USACE

MMG Team arrives at

Scabrook Boat Launch

QRI Team arrives at

Scabrook Boat Launch

MMG Team
(R.P.) Randy Pernotidaia (Tech)
(W.T.) Wendell Thompson (Geologist)
(P.L.) Paul Lo
QRI Team

(J.N.) Jason New (Tech)
(T.Q.) Ty Quick (Tech)
(K.N.) Kenny New (Supervisor)

MMG Prepares 2 Crew Boats
QRI Prepares 1 Crew Boat and

1 Drill Barge (Vibrocone)

Paul Lo Departs

W.T. conducts tailgate safety
meetings.

MMG & QRI depart for
B-1.

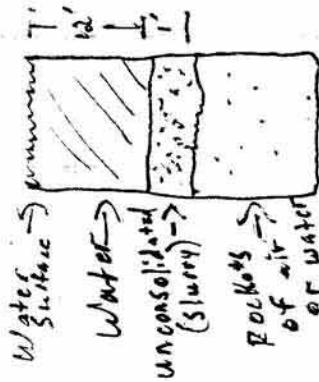
Teams arrive at first borehole B-1
North of previous position.

09:37 5B - B1
N 30° 2' 2.0" Sample depth 44'
W 30° 2' 2.0" "90° 1' 40.29"
09:39 When sample was brought
to surface it slipped from
tube and fell into the lake.
Driller (K.N) said there
wasn't any consolidated
material in the tube. Everything
that came out was a mix
of mud and water (slurry).
(W.T) decided to reposition
rig and try the hole again.
09:59 Second attempt at 2st hole
produced the same result.
(K.N) says the core receives
minimal resistance for 1'
below ground surface (bgs) and
then no resistance.
(W.T) repositions the rig 20'
North of previous position.

W Location Seabrook Bridge Date 9-5-2007
 Project/Client 2866AEE / USACE

W Location Seabrook Bridge Date 9-5-2007
 Project/Client 2866AEE / USACE

9:58 and we will attempt B1 a third time.
 10:10 Third attempt at 1st hole produced the same result.
 SB B1 New Position
 N. 30° 2' 2.0" Water Depth 11'
 W. 90° 1' 25.29" Sample Depth N/A
 Based upon sample material
 (slurry) not remaining in tube.
 We have decided to abandon this hole.



			SB	B2		
10:20	N	30° 2'	4.60			
	W	90° 2'	3.1			
				BA brought to land for sampling.		
10:38					Team moves to third hole	
				SB - B3		
10:45					Water Depth 20'	
11:00		SB - B3			Water Depth 20'	
	N	30° 2'	3.4"		Sample Depth	
	W	90° 2'	11.6"			
				We made 2 attempts at		
				drilling a core. The current		
				is very strong and is pulling		
				the core at an angle to		
				the rig. This sample location		
				will be moved and reattempted.		
12:28	SB - B3				New location	
	N	30° 2'	2.0"		Water Depth 18'	
	W	90° 2'	12.2"		Sample Depth 5'	
13:02				Sample removed from water		
				& transported to land for sampling.		

Scabrook Bridge
9-5-2007
2866ACE / USACT

Scabrook Bridge
9-5-2007
2866ACE / USACT

- 13:10 Team moves to 4th loc.
SB-B4
13:12 SB-B4 Water Depth 15'
N 30° 1' 52.30" Sample Depth 12'
W 90° 2' 15.0"
13:15 W.T. & R.P. return to shore
to sample cores. Drill team
can be observed from shore
Sample SD-2866ACE-SB-B2
Borehole
Sample is a dark grey sandy
clay; NO odor; very fine sand;
no inclusions; PTD = 32.2
Sample Jars x 2 40oz 1 32oz
13:30
13:40
- 14:23 Samples are secured in MNG
cooler (at) ice.
Drill team attempted sample
borehole 3 times. Core
SB-B4 is brought to shore
for sampling. (W.T.) car 1/3
for lunch break.
- 14:35 Sample SD-2866ACE-SB-B4
Borehole
Sample is a dark grey sand;
no odor; coarse; no inclusions;
PTD = 1.6.
Sample Jars: 2 40oz 1 32oz
Team moves to 5th hole.
- 15:00 SB-B5
SD-2866ACE-SB-B3
Sample is a dark grey sandy
clay; no odor; very fine sand;
no inclusions; PTD = 6.1
Sample Jars: 2 40oz 1 32oz
15:02 W.T. & R.P. return to drill rig.
- 15:10 58 - B5 Water Depth 5'
N 30° 1' 35.28" Sample Depth 15'
W 90° 2' 4.3"
15:21 Sample not recovered. Slurry
in tube was lost at the
water's surface. location moved

34 Location: Seabrook Bridge Date: 9-5-07
Project / Client: 2866 ACE / USACE

Location: Seabrook Bridge Date: 9-5-2007
Project / Client: 2866 ACE / USACE

15:27 5' west. (Near to bank)
15:45 Sample attempted twice.
No recovery. Slurry in tube
was lost at the water's surface.
Location moved 20' southwest.
(Inside Inlet)

SB-B5 New location
N 30° 1' 25.85" Water Depth 15'
W 90° 2' 5.5" Sample Depth 15'
16:21 No recovery. W.T. decides sample
location will be abandoned.
Team moves to SB-B8.

16:30 SB-B8 Water Depth 12'
N 30° 1' 49.2" Sample Depth 15'
W 90° 2' 4.73"
17:33 W.T. brings core SB-B8 + o
shore for sampling.

17:40 R.P. & drill team move to new
hole SB-B7
17:45 SB-B7 Water Depth 20'
N 30° 1' 46.09" Sample Depth 13'
W 90° 2' 1.51"

Time	Sample	Notes	Sample	Notes
18:00	SD-2866 ACE - SB-B8	SB-BS	Sample Tars 2	40# 1 32.00
	Sample is a dark grey clay-sand			
	no odor; coarse; no inclusions.			
	PED = 0.6.			
	Sample Tars 2	40# 1 32.00		
			1 set Terra cores	
18:53	W.T. & R.P. brings core SB-B7	to shore for sampling.		
18:57	The day's activities are	done and RPT returns to		
		shore.		
19:00	SD-2866 ACE - SB-B7	SB-B7	Sample Tars 2	40# 1 32.00
	Sample is a dark grey sandy			
	clay; no odor; fine; no inclusions			
	PED = 0.0			
	Sample Tars 2	40# 1 32.00		
			1 set Terra cores	
19:45	RPT & MMG depart boat launch	Day Ends Walked up bank.		

Seabrook Bridge 9-6-2007
Location: 2866 ACE / USACE

- 06:30 MMG & QRI teams arrive at Seabrook Boat Launch
 (R.P.) Randy Purnilia (MMG Tech)
 (W.T.) Wendell Thompson (MMG Geo)
 (J.N.) Jason New (QRI Tech)
 (K.N.) Kenny New (QRI Super)
 (T.Q.) Ty Quick (QRI Tech)
 (D.M.) Dave Mainwick (QRI Person)
- 07:00 MMG prepare & crew boats
 QRI prepares 2 crew boats
 and 1 Drill Rig (Vibroseis)
- 07:05 W.T. conducts vigilante safety meeting.
- 07:06 Team departs for SB-B6
- 07:10 Team begins sampling at SB-B6
 SB-B6 Water Depth 11'
 N 30° 1' 48.0" Sample Depth 14'
 W 90° 2' 0.05"
- 08:15 Two attempts were made but sample could not be collected due to underlying obstructions. Team will move to new location.
- 08:20 SB-B6 New Location
 N 30° 1' 48.0" Water Depth 11'
 N 90° 2' 1.55" Sample Depth 15'
- 08:57 On the 2nd attempt a core was collected and transported to shore for sampling.
- 09:45 Sample Benthic
 SD-2866ACE-SB-B6 SB-B6
 Sample is a medium gray sandy clay, no odor; coarse shell inclusions;
 $PZD = 0.0$
 Sample Tars 2 9oz 1 14 oz
- 09:46 MMG & QRI MOB to MR60 sample site.
- 11:00 MMG & QRI arrive at boat launch (Paris Rd.)
 MMG prepares 2 crew boats
 QRI prepares 1 crew boat and 1 drill rig.

35

Location: Seabrook Bridge / MRBO Date: 9-6-07
 Project: United 2866ACE / USACE

Location: Seabrook Bridge / MRBO Date: 9-6-07
 Project: United 2866ACE / USACE

- 11:30 QRI takes lunch.
- 12:30 QRI returns from lunch.
- 12:35 Drill team departs boat launch for drill site.
- 13:20 Drill team arrive at M5-B3
 N 30° 00' 21" Sample Depth 10'
 N 89° 55' 29"
- 13:40 Sample team pulls core from the ground. R.P. & W.T. transport core to land for sampling.
- 14:05 Team moves to Barge - B1 Site.
- 14:15 Barge - B1 Water Depth 5'
 N 30° 0' 45.50" Sample Depth 5'
 W 89° 54' 3.00"
- 14:55 Sample team pulls core from the ground. R.P. & W.T. transport core to land for sampling.
- 15:00 Team moves to Barge - B2 Site.

- 15:05 Barge - B2 Water Depth 15'
 N 30° 0' 50.5" Sample Depth 10'
 W 89° 54' 1.5"
- 15:10 Sample team pulls core from the ground. R.P. & W.T. transport core to land for sampling.
- 15:13 Team moves to G.I.WW-MC-BB site.
- 15:22 G.I.WW - MC-BB Water Depth 10'
 N 30° 0' 55.57" Sample Depth 15'
 W 89° 53' 49.4"
- 15:27 Sample team pulls core from the ground. R.P. & W.T. transport core to land for sampling.
- 15:30 W.T. ends the sampling day. QRI & MMG return to dock.
- 15:45 ~~MMG~~ & QRI leave pier 1d dock.
- X W.M. at end.

(4) Sample: Seabrook Barge / MRGO Date: 9-6-07
SD - 2866 ACE / USACE

Location: Seabrook Barge / MRGO Date: 9-6-07
Prepared/Chkd: 2866 ACE / USACE

16:00 Sample:

SD - 2866 ACE - BARGE - B1

Boehole:

BARGE - B1

Sample is a dark grey sandy clay,
no odor, fine sand, no inclusions.
PTD = 0.0

PTD = 0.0

Sample Jars:

(3) 4 oz. (1) 32 oz. (1) Terra

Sample:

SD - 2866 ACE - BARGE - B2

Boehole:

BARGE - B1

Sample is a dark grey sandy clay,
no odor, fine sand, no inclusions.
PTD = 0.7

Sample Jars:

(3) 4 oz. (1) 32 oz. (1) Terra

Sample:

SD - 2866 ACE - GWW - MAC - B3

Boehole:

MC - B3

16:10 Sample is a dark grey clay,
no odor, fine sand, no inclusions.

PTD = 12.6

Sample Jars:

(1) 4 oz. (1) 32 oz.
16:30 MNG leaves Paris Rd.
boat launch.

16:05 Sample:

SD - 2866 ACE - BARGE - B2

Boehole:

BARGE - B1

Sample is a dark grey sandy clay,
no odor, fine sand, no inclusions.
PTD = 0.7

Sample Jars:

(3) 4 oz. (1) 32 oz. (1) Terra

Sample:

SD - 2866 ACE - GWW - MAC - B3

Boehole:

MC - B3

Location: MRGO
Project / Client: 2866ACE / USACE
Date: 9-7-07
Location: MRGO
Project / Client: 2866ACE / USACE
Date: 9-7-07

43

06:30 MMG & QRT teams arrive at Paris Rd boat launch.
(P.P.) Randy Puntilia (MMG Tech)
(W.T.) Wendell Thompson (MMG Geo)
(J.N.) Jason New (QRT Tech)
(K.N.) Kenny New (QRT Supervisor)
(T.Q.) Ty Quick (QRT Tech)
(D.M.) Dave Marinick (QRT Foreman)
07.22 MMG prepares 2 Crew Boats & QRT prepares 2 Crew Boat and 2 Drill Rig (Vibroseis).
07.27 W.T. conducts tailgate safety meeting.
07.30 Team departs boat dock for MC-B1

08:30 MC-B1 was removed from the ground and transported to land for sampling.
08:35 Team travels to MC-B2
08:39 Team begins sampling at MC-B2.
N 30° 00' 39.49" 29° 59' 52" W 89° 34' 07.41" 89° 54' 21.88"
Water Depth: 30', Sample Depth: 7',
08:52 MC-B2 was removed from the ground and transported to land for sampling.
09:00 Team travels to LEVEE-B1
LEVEE-B1
N 30° 00' 39.49" W 89° 54' 07.21"
Water Depth: 1', Sample Depth: 5',
09:13 LEVEE-B1 was removed from the ground and transported to land for sampling.

44 Location: MR60 Date: 9-7-07
2866ACE / LEVEE / USACE

Location: MR60 Date: 9-7-07
2866ACE / USACE

09:15 Team travels to LEVEE - B2
LEVEE - B2
N 30° 00' 15.42"
W 89° 54' 09.45"
Water Depth: 1'
Sample Depth: 5'

09:23 LEVEE - B2 was removed from
the ground and transported to
land for sampling.

09:42 Samples will be transported to
boat dock for collection. MMG
and QRT leave sample area
and head to boat dock.

10:00 Sample:

SD-2866ACE - G1WW - MC - B2

Borehole:
MC - B2

Sample is a medium grey clayey
sand, slight methane odor, fine
sand, no inclusions.
PID = 28.6

10:10

SD-2866ACE - LEVEE - B1

Borehole:
LEVEE - B1

Sample is a dark grey sandy
peat, thick methane odor, very
fine sand, no inclusions.
PID = 98.6

Sample Jars:
(1) 4oz. (1) 32 oz.

10:00 Sample Jars:
(1) 4oz. (1) 32 oz.

10:05 Sample:

SD-2866ACE - G1WW - MC - B2

Borehole:

MC - B2

Sample is a medium grey clayey
sand, no odor, fine
sand, no inclusions.

PID = 10.1

Sample Jars:

(1) 4oz. (1) 32 oz.

Sample:

SD-2866ACE - LEVEE - B1

Borehole:
LEVEE - B1

Sample is a dark grey sandy
peat, thick methane odor, very
fine sand, no inclusions.

PID = 98.6

Sample Jars:
(1) 4oz. (1) 32 oz.

16

MRCO Date 9-7-07
 Project #/Location 2866 ACE / USACE

Location Seabrook Date 9-10-07
 Project #/Location 2866 ACE / USACE

010:15 Sample: LEVEE

SD - 2866 ACE - GINN - B2

Borehole:

LEVEE - B2

Sample is a dark grey sandy peat, thick methane odor, very fine sand, no inclusions.

PID = 112.6

Sample Jars

(1) 4 oz. (1) 32 oz.

0 10:30 MMG & QRI decon all material at the Paris Rd Boat Launch.

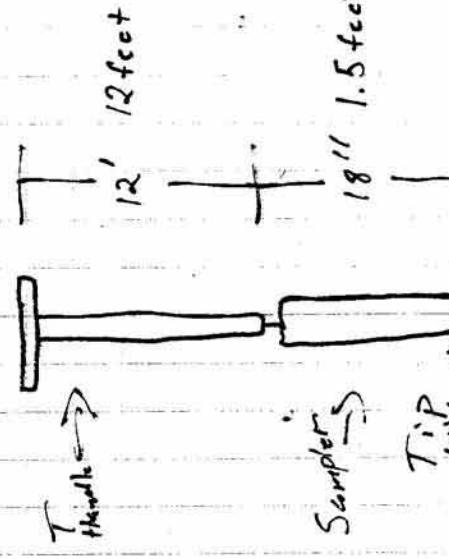
12:45 QRI departs from the Paris Rd boat launch.

13:30 MMG departs from the Paris Rd boat launch.

W.M.A. Work

X

06:30 MMG team arrives at the Seabrook Boat Launch.
 (R.P.) Randy Purnilla (MMG Tech)
 (W.T.) Wendell Thompson (MMG Co.)
 (P.L.) Paul Lo (MMG Supervisor)
 (R.E.) Richard Endale (MMG Tech)
 MMG prepares 2 Crew Boats and a + Sampler.



18" 1.5 feet
 Tip with catotar
 MMG will attempt to collect abandoned boreholes SB-B1

Date 9-10-07
 Project / Client Seabrook & 2866ACE / USACE

Date 9-10-07
 Location Seabrook & 2866ACE / USACE

06:38 and 5B-B5 with the T sampler to a depth of 2.5 feet bgs.
 These methods have been approved by George Bacatta of the USACE.

07:45 MMG departs boat launch to 5B-B1
 08:30 Team begins sampling at 5B-B1

N 30° 00' 35" 30° 2' 2.0"
 W 89° 90° 1' 40.2"

Water Depth

Sample Depth

08:55 Sample

SD-2866ACE-5B-B1

This sample will be an MGS/MSD sample.

Sampler Borehole

5B-B1

Sample is a medium grey sand,
 no odor, very fine sand, no indus-

08:55 PID= 0.0
 Sample Jars:
 (2) 4oz. (2) 32 oz.
 09:09 Team travels to 5B-B5
 09:17 While trying to sample the T-sampler was lost at the bottom of the lake.
 5B-B5 will be abandoned.
 Sampling for this job is now done.

09:40 MMG returns to seabrook boat launch. Samples will be transported to Pac Lab.
 And job will be ac-MOB.

Well of 1st

X

Appendix D: Photographs



QRI drill team prepares to sample at SB-B4



Drill team vibrates core into the ground



QRI fills core with water



Top of filled core is sealed with plumbers cap



QRI using crane to remove core from ground



Bottom of core is capped before core breaks the surface



Tape is applied to seal core



QRI transports core to MMG support boat



MMG cutting open core SB-B4



Removing cap from bottom of core



Sandy material found in core SB-B4



QRI transporting core to MMG boat



MMG and QRI support vessels at BARGE-B1



QRI placing core at BARGE-B1



QRI removes core from ground at BARGE-B1



MMG samples SB-3



MMG releases water from tube at MRGO-BB-3



QRI removes core from SB-B7

Appendix E: Final Safety Report

SAFETY INSPECTION FORM

Materials Management Group, Inc.

SUBJECT: INSTRUCTIONS, PROCEDURES &
DRAWINGS: HEALTH & SAFETY

Page: 1 of 1

Document: qa/qm/oper/h&s/sftyrep

Monday

PROJECT NUMBER: 2866-ACE

DATE: 8/27/07

CUSTOMER: USACE

TIME FROM: 06:30 **TO:** 19:11

JOB LOCATION: Proposed Closure Structures – Seabrook, GIWW-MRGO, Michoud Slip

SUPERVISOR: Wendell Thompson

FOREMAN/LEADMAN: Paul Lo

GENERAL JOB DESCRIPTION: Phase II Environmental Site Assessment

EMPLOYEES: Paul Lo

MMG

Wendell Thompson

MMB

Richard Encalante

MMB

Randy Pumilia

MMG

Jason New

QRI

Kenny New

QRI

David Macki

QRI

Ty Quick

QRI

SAFETY CONDITIONS:

WEATHER: Partly cloudy, 85°, 5MPH N wind

MONITORING & SAMPLING (attach results)

INSTRUMENTATION USED: PID Meter

LEVEL OF PROTECTION (special conditions)
D with life vest

PROBLEMS/UNUSUAL SITUATIONS

CORRESPONDENCE

SIGNATURE: Wendell Thompson
(Project Supervisor/Foreman/Leadman)

SIGNATURE: _____
(HSO Dept.)

ORIGINAL DATE: September 4, 1997

REV#: DATE: 8/27/07

GENERATED BY: JEM

REVIEWED BY: Jane Morgan;
signature on file

APPROVED BY: Jane Morgan; signature
on file

Tailgate Safety Meeting

Date: 8/27/07Time: 0830File #: 2866 ACESite Location: Sediment SamplingType of Work: ParkingSite Phone: 104237-4172Site Manager: Paulo**Safety Topics:** Emergency Shut-Off Exclusion Zone Smoking Area Proper Excavation Attire (no loose clothing, no jewelry, tight leather gloves) Weekly Topic: _____**Hazards:** Slips/Trips/Falls Thermal Stress Biological Electrical Lifting Acoustical Severe Weather Radiological Shearing Metal Rotating Equipment Crushing or Pinching Heavy Equipment Fire/Explosion/Hot Work* Excavation* Confined Space* Chemical Exposure From site: _____ From work procedures: _____ Absorption Inhalation Ingestion MSDS located in field files Other: _____**PPE: Level** A B C D Full Face 1/2 Face Combination: _____ Hepa Organic Air Pump Cascade Air SCBA Leather Gloves Cotton Dot Steel Toe Rubber Steel Toe Face Shield/Goggles/Glasses Ear Plugs Hard Hat PVC Gloves Surgical Gloves Nitrile Other: _____ Tyvek Saranex**Monitoring:** OVM/OVA LEL/O2 Draeger: _____ Personnel Area Other: _____**Emergency Facility:** Map AttachedName: LSU Medical Center

Phone: _____

Address: 2021 Pershing St.

* Permit Required

Attendees Signature required on other side of this form

Meeting Conducted By: Paulo
C:\My Documents\Forms\Drilling Forms\Drilling Tailgate.blnk.doc

Plan of the Day:

Printed Name

Paulo

Jason P Ne

Scott T Quirk

Dave Mancik

Kenny New

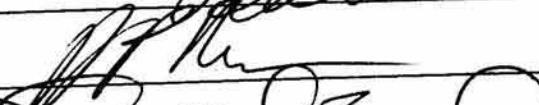
Richard Encalade

Wendell Thompson

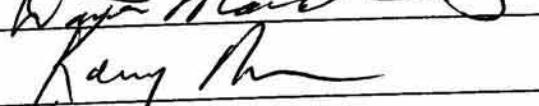
Randy Puntila

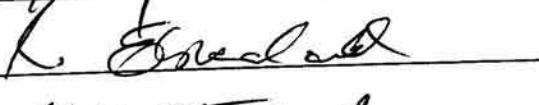
Signature

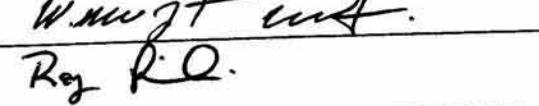














EMERGENCY TELEPHONE NUMBERS:

Job #: 2866ACE
Location: _____

Date: 8-27-09
Supervisor's Initials: WT

DATE

8/27/07

DAY

S	M	T	W	TH	F	S
---	---	---	---	----	---	---

A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER George Bacuta / Laura Wilkinson
 PROJECT PIIESA - Proposed Closure Structures

JOB NO 2866-ACF
 CONTRACT NO DACW29-03-D-0014, Task Order 37

WEATHER

Temp

	Bright Sun	Clear	Overcast	Rain	Snow
To 32	32-35	50-70	70-85	85 up	
Still	Mod.	High			Report No.
Dry	Moder	Humid			

SUB-CONTRACTOR ON SITE

ORI Quaternary Resource Investigations

EQUIPMENT ON SITE

MMG 2 Boats & Equipment Truck
QRI 2 Boats & 3 Trucks

WORK PERFORMED (INCLUDING SAMPLING):

Sample MS-B1
MS-B2

(Continuation Sheet)

PROJECT PII ESA, Seabrook, Michigan, MRGD REPORT NO. 2866ALE
JOB NO. 2866ALE DATE 8/27/07

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

P. I. D. Calibrations

HEALTH AND SAFETY LEVELS AND ACTIVITIES

Level D PPE, (Boots, Hard Hat, Life Vest, Ear Plugs,
SunScreen, Bug Spray)

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

Dangerous Weather

SPECIAL NOTES

BRI having trouble collecting in deep water.

TOMORROW'S EXPECTATIONS:

SHEET OF

BY Wendell Thompson TITLE Geologist

SAFETY INSPECTION FORM

Materials Management Group, Inc.	
SUBJECT: INSTRUCTIONS, PROCEDURES & DRAWINGS: HEALTH & SAFETY	Page: 1 of 1 Document: qa/qm/oper/h&s/sftyrep

PROJECT NUMBER: 2866-ACE DATE: 8/28/07 *Tuesday*
 CUSTOMER: USACE TIME FROM: 06:30 TO: 16:30
 JOB LOCATION: Proposed Closure Structures – Seabrook, GIWW-MRGO, Michoud Slip
 SUPERVISOR: Wendell Thompson FOREMAN/LEADMAN: Paul Lo
 GENERAL JOB DESCRIPTION: Phase II Environmental Site Assessment
 EMPLOYEES: Wendell Thompson *(MMG Geologist)*
Paul Lo *(MMG Environmental Sci.)*
Randy Pumilia *(Sample Tech) MMG*
Richard Encalde *(Sample Tech) MMG*
Ty Quick *(QRF Sample Tech)*
Jason New *(QRI Drill Tech)*
Kenny New *(QRF Drill Forman)*
David Mancik *(QRI Drill Forman)*
 SAFETY CONDITIONS: Slip, Trip, Fall, Weather
 WEATHER: Cloudy, 85°F, Humid, NW wind 5 MPH

MONITORING & SAMPLING (attach results)

INSTRUMENTATION USED: Field PID Meter

LEVEL OF PROTECTION (special conditions)

D with Life Vest

PROBLEMS/UNUSUAL SITUATIONS

CORRESPONDENCE

SIGNATURE: Wendell Thompson
(Project Supervisor/Foreman/Leadman)

SIGNATURE: _____
(HSO Dept.)

ORIGINAL DATE: September 4, 1997

REV#: DATE:

GENERATED BY: JEM

REVIEWED BY: Jane Morgan;
signature on file

APPROVED BY: Jane Morgan; signature
on file

Tailgate Safety Meeting

Date: 8/28/07 Time: 0715 File #: 2866 AC
Site Location: GWW/MR60
Type of Work: Sediment Sampling
Site Manager: Paulo Site Phone: 4237-5172

Safety Topics:

- Emergency Shut-Off Exclusion Zone Smoking Area
 Proper Excavation Attire (no loose clothing, no jewelry, tight leather gloves)
 Weekly Topic: _____

Hazards:

- Slips/Trips/Falls Thermal Stress Biological Electrical
 Lifting Acoustical Severe Weather Radiological
 Shearing Metal Rotating Equipment Crushing or Pinching
 Heavy Equipment Fire/Explosion/Hot Work* Excavation* Confined Space*

Chemical Exposure

- From site: _____
 From work procedures: _____
 Absorption Inhalation Ingestion MSDS located in field files
 Other: _____

PPE: Level A B C D

- | | | |
|--|---|---|
| <input type="checkbox"/> Full Face | <input type="checkbox"/> 1/2 Face | <input type="checkbox"/> Combination: _____ |
| <input type="checkbox"/> Hepa | <input type="checkbox"/> Organic | <input type="checkbox"/> Air Pump |
| <input type="checkbox"/> Cascade Air | <input type="checkbox"/> SCBA | <input type="checkbox"/> Leather Gloves <input type="checkbox"/> Cotton Dot |
| <input type="checkbox"/> Steel Toe | <input type="checkbox"/> Rubber Steel Toe | <input type="checkbox"/> Face Shield/Goggles/Glasses |
| <input type="checkbox"/> Ear Plugs | <input type="checkbox"/> Hard Hat | <input type="checkbox"/> PVC Gloves |
| <input type="checkbox"/> Surgical Gloves | <input type="checkbox"/> Nitrile | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Tyvek | <input type="checkbox"/> Saranex | |

Monitoring:

- OVM/OVA LEL/O2 Draeger: _____
 Personnel Area
 Other: _____

Emergency Facility: Map Attached

Name: LSU Medical Center Phone: _____

Address: _____

Attendees Signature required on other side of this form

* Permit Required

Meeting Conducted By: Paulo
C:\My Documents\Forms\Drilling Forms\Drilling Tailgate.blink.doc

Plan of the Day:

Printed Name

Paul Lo

Wendell Thompson

Jason New

Dave Mancik

Kenny New

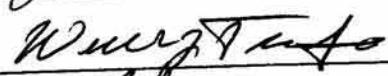
Randy Familia

Richard Encalade

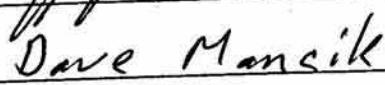
Ty Quick

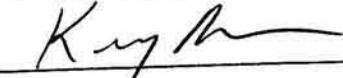
Signature

















EMERGENCY TELEPHONE NUMBERS:

Job #: 2966 ACE
Location: Michoud Slip, MR GO

Date: 8/28/07
Supervisor's Initials: WT.

DATE

8/28/07

DAY

S	M	T	W	TH	F	S
---	---	---	---	----	---	---

A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER George Bacuta / Laura Wilkinson
 PROJECT PIIESA - Proposed Closure Structures

JOB NO 2866-ACE
 CONTRACT NO DACW29-03-D-0014, Task Order 37

WEATHER

Temp

	Bright Sun	Clear	Overcast	Rain	Snow
To 32	32-35	50-70	70-85	85 up	
Shif	Moder	High			Report No.
Dry	Moder	Humid			

SUB-CONTRACTOR ON SITE

QRI Quaternary Resource Investigations

EQUIPMENT ON SITE

2 QRI Boats, 2 MMG Boats

WORK PERFORMED (INCLUDING SAMPLING):

Sample MRGO-BB-B1
 MRGO-BB-B3
 MRGO-BB-B2

(Continuation Sheet)

PROJECT

REPORT NO.

JOB NO

2866 ACE

DATE

8/28/07

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

Field Calibrate PID meter

HEALTH AND SAFETY LEVELS AND ACTIVITIES

Level D & Life Vest

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES

Bad Weather Ends Day

TOMORROW'S EXPECTATIONS:

SHEET 2 OF 3

BY Wendell Thompson TITLE Geologist

SAFETY INSPECTION FORM

Materials Management Group, Inc.

SUBJECT: INSTRUCTIONS, PROCEDURES &
DRAWINGS: HEALTH & SAFETY

Page: 1 of 1

Document: qa/qm/oper/h&s/sftyrep

PROJECT NUMBER: 2866-ACE

DATE: 9/29/07 Wednesday

CUSTOMER: USACE

TIME FROM: _____ TO: _____

JOB LOCATION: Proposed Closure Structures – Seabrook, GIWW-MRGO, Michoud Slip

SUPERVISOR: Wendell Thompson

FOREMAN/LEADMAN: _____

GENERAL JOB DESCRIPTION: Phase II Environmental Site Assessment

EMPLOYEES: Wendell Thompson _____

Kenny New _____

Dave Mancik _____

Ty Quick _____

Randy Pumil _____

Richard Encalade _____

Paul Lo _____

SAFETY CONDITIONS: _____

WEATHER: Partly Cloudy, 85°F, Calm, Humid

MONITORING & SAMPLING (attach results)

INSTRUMENTATION USED: PID Meter

LEVEL OF PROTECTION (special conditions)

D with life vest

PROBLEMS/UNUSUAL SITUATIONS

CORRESPONDENCE

SIGNATURE: Wendell Thompson
(Project Supervisor/Foreman/Leadman)

SIGNATURE: _____
(HSO Dept.)

ORIGINAL DATE: September 4, 1997

REV#: _____ DATE: _____

GENERATED BY: JEM

REVIEWED BY: Jane Morgan;
signature on file

APPROVED BY: Jane Morgan; signature
on file

Tailgate Safety Meeting

Date: 8-29-07 Time: 08:15 File #: 2866 ACE

Site Location: MARCO N.O. LA.

Type of Work: Vibracore & Soil Sampling

Site Manager: W. Thompson Site Phone: 715-7849

Safety Topics:

Emergency Shut-Off

Exclusion Zone

Smoking Area

- Proper Excavation Attire (no loose clothing, no jewelry, tight leather gloves)
 Weekly Topic: _____

Hazards:

- Slips/Trips/Falls Thermal Stress Biological Electrical
 Lifting Acoustical Severe Weather Radiological
 Shearing Metal Rotating Equipment Crushing or Pinching
 Heavy Equipment Fire/Explosion/Hot Work* Excavation* Confined Space*

Chemical Exposure

- From site: _____
 From work procedures: _____
 Absorption Inhalation Ingestion MSDS located in field files
 Other: _____

PPE: Level A

B

C

D

- Full Face 1/2 Face Combination: _____
 Hepa Organic Air Pump
 Cascade Air SCBA Leather Gloves Cotton Dot
 Steel Toe Rubber Steel Toe Hard Hat Face Shield/Goggles/Glasses
 Ear Plugs Nitrile PVC Gloves
 Surgical Gloves Saranex Other: Life Vest

Monitoring:

- OVM/OVA LEL/O2 Draeger: _____
 Personnel Area
 Other: _____

Emergency Facility:

Map Attached

Name: 2500 Medical

Phone: _____

Address: _____

* Permit Required

Attendees Signature required on other side of this form

Plan of the Day:

Printed Name

Wendell Thompson

Kenny Dean

Dave Mancik

14 Quicke ✓

Randy Punilia

Richard Swanson

Pedro

Signature

Wendell Thompson

Kenny Dean

Dave Mancik

14 Quicke ✓

Randy Punilia

Richard Swanson

Pedro

EMERGENCY TELEPHONE NUMBERS:

Job #: 2866 ACE
Location: _____

Date: 8-29-07
Supervisor's Initials: LST

DATE

8-29-07

DAY

S	M	T	<input checked="" type="checkbox"/>	TH	F	S
---	---	---	-------------------------------------	----	---	---

A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER George Bacuta / Laura Wilkinson
 PROJECT PIIESA - Proposed Closure Structures

JOB NO 2866-ACE
 CONTRACT NO DACW29-03-D-0014, Task Order 37

WEATHER

Temp

	Bright Sun	Clear	Overcast	Rain	Snow
To 32	32-35	50-70	70-85	<input checked="" type="checkbox"/>	
Still	<input checked="" type="checkbox"/>	High			Report No.
Dry	Moder	<input checked="" type="checkbox"/>			

SUB-CONTRACTOR ON SITE

Q.R.I.

EQUIPMENT ON SITE

Vibracore Rig.

WORK PERFORMED (INCLUDING SAMPLING):

(Continuation Sheet)

PROJECT

REPORT NO.

JOB NO

DATE

8/29/07

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

Field Calibrate PID meter

HEALTH AND SAFETY LEVELS AND ACTIVITIES

Level D & Life Vest

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

QRI lost coupling. They could not sample in deep water.

Day was lost due to bad weather.

SPECIAL NOTES

TOMORROW'S EXPECTATIONS:

SHEET 2 OF 2

BY Wendell Thompson TITLE Geologist

SAFETY INSPECTION FORM

Materials Management Group, Inc.	
SUBJECT: INSTRUCTIONS, PROCEDURES & DRAWINGS: HEALTH & SAFETY	Page: 1 of 1 Document: qa/qm/oper/h&s/sftyrep

PROJECT NUMBER: 2866-ACE DATE: 9-5-07 Attachment

CUSTOMER: USACE TIME FROM: 06:30 TO: 19:45

JOB LOCATION: Proposed Closure Structures – Seabrook, GIWW-MRGO, Michoud Slip

SUPERVISOR: Wendell Thompson FOREMAN/LEADMAN: _____

GENERAL JOB DESCRIPTION: Phase II Environmental Site Assessment

EMPLOYEES: Wendell Thompson _____

Ty Quick _____

Pete Mancik _____

Kenny New _____

Jason New _____

Randy Pumilia _____

SAFETY CONDITIONS: _____

WEATHER: Partly Cloudy, 80°F, Calm, Humid

MONITORING & SAMPLING (attach results)

INSTRUMENTATION USED: Pid Meter

LEVEL OF PROTECTION (special conditions) D with I.Fc Vest

PROBLEMS/UNUSUAL SITUATIONS Unable to collect SB-B1 & SB-B5

CORRESPONDENCE

SIGNATURE: <u>Wendell Thompson</u> (Project Supervisor/Foreman/Leadman)	SIGNATURE: _____ (HSO Dept.)
---	--

ORIGINAL DATE: September 4, 1997	REV#: _____ DATE: _____
GENERATED BY: JEM	REVIEWED BY: Jane Morgan; signature on file

Tailgate Safety Meeting

Date: 9-5-07 Time: 08:10 File #: 2866 ACE

Site Location: Seabrook Bridge N.O. LA

Type of Work: Vibracore & Soil Sampling

Site Manager: W. Thompson Site Phone: 715-7849

Safety Topics:

Emergency Shut-Off

Exclusion Zone

Smoking Area

- Proper Excavation Attire (no loose clothing, no jewelry, tight leather gloves)
 Weekly Topic: _____

Hazards:

- Slips/Trips/Falls Thermal Stress Biological Electrical
 Lifting Acoustical Severe Weather Radiological
 Shearing Metal Rotating Equipment Crushing or Pinching
 Heavy Equipment Fire/Explosion/Hot Work* Excavation* Confined Space*

Chemical Exposure

- From site: _____
 From work procedures: _____
 Absorption Inhalation Ingestion MSDS located in field files
 Other: _____

PPE: Level A B C D

- Full Face 1/2 Face Combination: _____
 Hepa Organic Air Pump _____
 Cascade Air SCBA _____
 Steel Toe Rubber Steel Toe Leather Gloves Cotton Dot
 Ear Plugs Hard Hat Face Shield/Goggles/Glasses
 Surgical Gloves Nitrile PVC Gloves
 Tyvek Saranex Other: Life Vest

Monitoring:

- OVM/OVA LEL/O2 Draeger: _____
 Personnel Area
 Other: _____

Emergency Facility: Map Attached

Name: LSU Medical

Phone: _____

Address: Map Provided

* Permit Required

Attendees Signature required on other side of this form

Meeting Conducted By: Walter J. Thompson
C:\My Documents\Forms\Drilling Forms\Drilling Tailgate.blink.doc

Plan of the Day:

Printed Name

Wendell Thompson MMG
Ty Brink QRI
Dave Mancik QRI
Kenny Lin GRI
Jason New QRI

Signature

Wendell Thompson
Ty Brink
Dave Mancik
Kenny Lin
Jason New

EMERGENCY TELEPHONE NUMBERS:

Job #: _____
Location: _____

Date: 9-5-07
Supervisor's Initials: WT.

DATE

9-5-07

DAY

S	M	T	<u>W</u>	TH	F	S
---	---	---	----------	----	---	---

WEATHER

Temp

Bright Sun	Clear	Overcast	Rain	Snow
To 32	32-35	50-70	<u>70-85</u>	85 up
<u>Still</u>	Moder	High		Report No.
Dry	Moder	<u>Humid</u>		

A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER George Bacuta / Laura Wilkinson
 PROJECT PIIESA - Proposed Closure Structures

JOB NO 2866-ACF
 CONTRACT NO DACW29-03-D-0014, Task Order 37

SUB-CONTRACTOR ON SITE

Q.R.I.

EQUIPMENT ON SITE

Vibracore Rig

WORK PERFORMED (INCLUDING SAMPLING):

Sample SB-B2
SB-B3
SB-B4
SB-B8

(Continuation Sheet)

PROJECT

REPORT NO.

JOB NO

2866ACE

DATE

9-5-07

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

Field Calibrate PID meter

HEALTH AND SAFETY LEVELS AND ACTIVITIES

Leve D & Life Vest

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

Can't collect SB-B1 & SB-B5

SPECIAL NOTES

TOMORROW'S EXPECTATIONS:

SHEET 2 OF 2

BY le)Thompson TITLE Geologist

SAFETY INSPECTION FORM

Materials Management Group, Inc.

SUBJECT: INSTRUCTIONS, PROCEDURES & DRAWINGS: HEALTH & SAFETY	Page: 1 of 1
	Document: qa/qm/oper/h&s/sftyrep

PROJECT NUMBER: 2866-ACE DATE: 9-6-07 Thursday

CUSTOMER: USACE TIME FROM: 06:30 TO: 16:30

JOB LOCATION: Proposed Closure Structures – Seabrook, GIWW-MRGO, Michoud Slip

SUPERVISOR: Wendell Thompson FOREMAN/LEADMAN: _____

GENERAL JOB DESCRIPTION: Phase II Environmental Site Assessment

EMPLOYEES: Randy Pumila _____

Wendell Thompson _____

Jason New _____

Kenny New _____

Ty Quick _____

Dave Manick _____

SAFETY CONDITIONS: _____

WEATHER: Partly Cloudy, 85°F, Calm, Humid

MONITORING & SAMPLING (attach results)

INSTRUMENTATION USED:

PID Meter

LEVEL OF PROTECTION (special conditions)

D with Life Vest

PROBLEMS/UNUSUAL SITUATIONS

Unable to collect

CORRESPONDENCE

SIGNATURE: Wendell Thompson
(Project Supervisor/Foreman/Leadman)

SIGNATURE: _____
(HSO Dept.)

ORIGINAL DATE: September 4, 1997

REV#: DATE:

GENERATED BY: JEM

REVIEWED BY: Jane Morgan;
signature on file

APPROVED BY: Jane Morgan; signature
on file

Tailgate Safety Meeting

Date: 9-6-07Time: 07:05

File #:

Site Location: Seabrook BridgeType of Work: Vibracore & SamplingSite Manager: Wendell ThompsonSite Phone: 915-7849

Safety Topics:

Emergency Shut-Off

Exclusion Zone

Smoking Area

- Proper Excavation Attire (no loose clothing, no jewelry, tight leather gloves)
 Weekly Topic: _____

Hazards:

- Slips/Trips/Falls Thermal Stress
 Lifting Acoustical
 Shearing Metal Rotating Equipment
 Heavy Equipment Fire/Explosion/Hot Work* Excavation*

- Biological Electrical
 Severe Weather Radiological
 Crushing or Pinching Confined Space*

Chemical Exposure

- From site: _____
 From work procedures: _____

- Absorption
 Other: _____

Inhalation

Ingestion

- MSDS located in field files

PPE: Level

A B C D

- Full Face 1/2 Face Combination: _____
 Hepa Organic Air Pump
 Cascade Air SCBA Leather Gloves Cotton Dot
 Steel Toe Rubber Steel Toe Hard Hat Face Shield/Goggles/Glasses
 Ear Plugs Nitrile PVC Gloves
 Surgical Gloves Saranex Other: Cute Vest

Monitoring:

- OVM/OVA LEL/O2 Draeger: _____
 Personnel Area
 Other: _____

Emergency Facility:

Map Attached

Name: CSA Medical

Phone: _____

Address: _____

* Permit Required

Attendees Signature required on other side of this form

Meeting Conducted By: W. Thompson
C:\My Documents\Forms\Drilling Forms\Drilling Tailgate.blink.doc

Plan of the Day:

Printed Name

Wendell Thompson (MMI)
Eduardo Quint (ORI)
Jason P New
Randy Lumilia
Kenny Chen
Dave Mancik

Signature

Wendell Thompson
Eduardo Quint
Jason P New
Randy Lumilia
Kenny Chen
Dave Mancik

EMERGENCY TELEPHONE NUMBERS:

Job #: _____
Location: _____

Date: 9-6-07
Supervisor's Initials: WT

DATE

9-6-07

DAY

S	M	T	W	F	F	S
---	---	---	---	--------------	---	---

A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER George Bacuta / Laura Wilkinson
 PROJECT PIIESA - Proposed Closure Structures

JOB NO 2886-ACE
 CONTRACT NO DACW29-03-D-0014, Task Order 37

WEATHER

Temp

	Bright Sun	Clear	Overcast	Rain	Snow
To 32	32-35	50-70	70-85	85 up	
Still	Moder	High			Report No.
Dry	Moder	Humid			

SUB-CONTRACTOR ON SITE

QRI

EQUIPMENT ON SITE

Vibracore R's

WORK PERFORMED (INCLUDING SAMPLING):

Sample SB-B6
 MS-B3
 Barge - B1
 Barge - B2
 GIWW-MC-B3

(Continuation Sheet)

PROJECT

REPORT NO.

JOB NO

2866 ACE

DATE

9-6-07

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

Field Calibrate PID Meter

HEALTH AND SAFETY LEVELS AND ACTIVITIES

Level D & Life Vest

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES

TOMORROW'S EXPECTATIONS:

SHEET 2 OF 2

BY Wendell Thompson TITLE Geologist

SAFETY INSPECTION FORM

Materials Management Group, Inc.

SUBJECT: INSTRUCTIONS, PROCEDURES & DRAWINGS: HEALTH & SAFETY	Page: 1 of 1
	Document: qa/qm/oper/h&s/sftyrep

PROJECT NUMBER: 2866-ACE DATE: 9-7-07 Friday

CUSTOMER: USACE TIME FROM: 06:30 TO: 13:30

JOB LOCATION: Proposed Closure Structures – Seabrook, GIWW-MRGO, Michoud Slip

SUPERVISOR: Wendell Thompson FOREMAN/LEADMAN: _____

GENERAL JOB DESCRIPTION: Phase II Environmental Site Assessment

EMPLOYEES: Randy Pumilia _____

Wendell Thompson _____

Jason New _____

Kenny New _____

Ty Quick _____

Dave Mauick _____

SAFETY CONDITIONS: _____

WEATHER: Partly Cloudy, 90°F, Calm, Humid

MONITORING & SAMPLING (attach results)

INSTRUMENTATION USED: PID Meter

LEVEL OF PROTECTION (special conditions)

D with Life Vest

PROBLEMS/UNUSUAL SITUATIONS

CORRESPONDENCE

SIGNATURE: <u>Wendell Thompson</u> (Project Supervisor/Foreman/Leadman)	SIGNATURE: _____ (HSO Dept.)
--	---------------------------------

ORIGINAL DATE: September 4, 1997	REV#: DATE:
GENERATED BY: JEM	REVIEWED BY: Jane Morgan; signature on file

Tailgate Safety Meeting

Date: 9-7-07 Time: 07:27 File #:

Site Location: MRGO

Type of Work: Vibracore & Soil Sampling

Site Manager: W. Thompson Site Phone: 715-7849

Safety Topics:

Emergency Shut-Off

Exclusion Zone

Smoking Area

Proper Excavation Attire (no loose clothing, no jewelry, tight leather gloves)

Weekly Topic: _____

Hazards:

Slips/Trips/Falls

Thermal Stress

Biological

Electrical

Lifting

Acoustical

Severe Weather

Radiological

Shearing Metal

Rotating Equipment

Crushing or Pinching

Heavy Equipment

Fire/Explosion/Hot Work*

Excavation*

Confined Space*

Chemical Exposure

From site: _____

From work procedures: _____

Absorption

Inhalation

Ingestion

MSDS located in field files

Other: _____

PPE: Level

A

B

C

D

Full Face

1/2 Face

Hepa

Organic

Cascade Air

SCBA

Combination:

Cotton Dot

Steel Toe

Rubber Steel Toe

Leather Gloves

Face Shield/Goggles/Glasses

Ear Plugs

Hard Hat

PVC Gloves

Surgical Gloves

Nitrile

Other:

Cute Vest

Tyvek

Saranex

Monitoring:

OVM/OVA

LEL/O2

Draeger:

Personnel

Area

Other:

Emergency Facility:

Map Attached

Name: LSU Medical

Phone: _____

Address: _____

Attendees Signature required on other side of this form

* Permit Required

Meeting Conducted By: Walt J. Thompson
C:\My Documents\Forms\Drilling Forms\Drilling Tailgate.blnk.doc

9-8-07

Tailgate Safety Signature Form

Wendell Thompson

Wendell

Dan Cifunilis

Dan Cifunilis

Dave Mansik

Dave Mansik QKI

Jason New

Jason New

Chris W.

Chris W.

Kenny New

Kenny New QRS

DATE

9-7-07

DAY

S	M	T	W	TH	<u>F</u>	S
---	---	---	---	----	----------	---

A-E DAILY QUALITY CONTROL REPORT

COE PROJECT MANAGER George Bacuta / Laura Wilkinson
 PROJECT PIESA - Proposed Closure Structures

JOB NO 2866-ACE
 CONTRACT NO DACW29-03-D-0014, Task Order 37

WEATHER

Temp

Bright Sun	Clear	Overscast	Rain	Snow
To 32	32-35	50-70	70-85	65-75
Still	Moder	High		Report No.
Dry	Moder	High		

SUB-CONTRACTOR ON SITE

Q.R.I.

EQUIPMENT ON SITE

Vibracore Rig

WORK PERFORMED (INCLUDING SAMPLING):

Sample MC-B1
 MC-B2
 Levee-B1
 Levee-B2

(Continuation Sheet)

PROJECT _____ REPORT NO. _____

JOB NO 2866 ACE DATE 9-1-07

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

Field Calibrate PID Meter

HEALTH AND SAFETY LEVELS AND ACTIVITIES

Level D & Life Vest

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES

TOMORROW'S EXPECTATIONS:

SHEET 2 OF 2

BY Wendell Thompson TITLE Geologist