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MEMORANDUM REPORT

TO: Mr. Barry S. Drucker, Physical Scientist, Contracting Officer's Technical Representative (COTR, U. S. Department of Interior Minerals Management Service (MMS), Sand and Gravel Program, 381 Elden St., Mail Stop 4010, Herndon, VA 20170-4817
FROM: Kim Zarillo, Program Manager, SEA 5575 Willoughby Dr., Melbourne, FL 32934, Telephone/facsimile: 321.254.2708, email seapp1@aol.com
DATE: September 23, 2005
SUBJECT: Progress Report-1 for Contract No. 1435-01-05-CT-39054 Biological Characterization/Numerical Wave Model Analysis within Identified Borrow Sites Offshore the West Coast of Florida/Physical Implications of Sand Dredging on the Topography of the West Florida Shelf

1. Summary of Work Accomplished and Progress Status of Project Items and Tasks

The contract award date was July 22, 2005. This report covers the period from July 22, 2005 to September 23, 2005.

- **Kickoff Meeting and Item 1 (Task1) Identification of Study Areas/coordination with U.S. Army Corp of Engineers (ACOE), United States Geological Survey (USGS), Florida Geological Survey (FGS), Coastal Planning and Engineering, Inc. (CPE**). A kickoff meeting was held September 12-13, 2005. The meeting served to bring together interested parties to discuss the data collection efforts and analysis to date on potential study areas for Item 1 (Task1). Item 1 (Task1): The selection of three (3) study areas including the Toms' Hills Shoals (T-1, T-2) and the Siesta Shoal, sand ridge, was completed during the kickoff meeting. Additional data from the MMS COTR and specific information on the selected sites will be exchanged among the PI's for planning the field event and to update spatial files. A Kickoff Meeting Report is provided in Attachment 1.

- **Item 2 (Task 2): Compilation and synthesis of existing biological and physical information** Key project personnel discussed status of data collection on proposed study sites. Existing information has been collected from Federal, state and local governments and private sector engineering firms. A draft of references and database sources has been sent to the MMS COTR. This task is approximately 95% complete. The reference list requires formatting and the additions of a few items as a result of discussions during the kickoff meeting.

- **Item 3 (Task 3) Program development to address biological and physical issues associated with the use of potential sand borrow areas offshore of the West coast of Florida –** A tentative schedule for the fall field event of September 2005 or October 2005, a subtask of Item 3 (Task 3) was discussed during the kickoff meeting. Issues with respect to vessel availability and changing fuel prices were also discussed. A spring field event is planned for May-June 2006.

Deliverables from Tasks 4, 5, and 6 will be divided into two categories technical and non-technical:

- **Item 4 (Task 4): Preparation of the Draft And Final Technical Manuscript and**
- **Item 5 (Task 5): Draft and Final Technical Summaries** – Drafts of various sections will be provided during **Item 3 (Task 3)** beginning January 2006. The complete draft is due March 2007.

- **Item 6 (Task 6) Submission of Draft and Final Non-Technical Summaries** -- Drafts of various sections will be provided during Item 3 (Task 3). Drafts of various sections will be provided throughout Item 3 (Task 3) beginning April 2006. The complete draft is due March 2007.
- **Item 7 (Task 7): Submission of Draft Scientific Paper and Paper to Refereed Journal** -- A draft scientific paper is due October 2007.

- **Item 8 (Task 8) Presentation at MMS Information Transfer Meeting or Other Scientific, or Technical Conferences, or Meetings –** A ITM or conference is planned for February 2008.

- **Item 9 (Task 9) Bi-Monthly Progress Reports –** This is Progress Report 1 of 16 to be completed over the 32 month contract.

- **Item 10 (Task 10) Presentation Slide Sets -** A draft slide set is due July 2007.

- **Item 11 (Task 11) Spatial Data Files –** Data files are due July 2007.

- **Item 12: Program Management and Control Requirements** -- The Program Manger maintains ongoing communication with the COTR and PIs. The Program Manager is tracking costs and keeping within budget.

- **Item 13 Data Management** – The Program Manager coordinated with PIs to complete a draft and final data management plan. The Data Management Plan for MMS Biological Characterization/Numerical Wave Model Analysis within Identified Borrow Sites Offshore the West Coast of Florida/Physical Implications of Sand Dredging on the Topography of the West Florida Shelf - Contract No. 1435-01-05-CT-39054 was completed in August 2005. The PM is coordinating ongoing data transfer.

2. Significant Problems Encountered

No significant problems have been encountered to date. An issue causing the most concern was late start date relative to the scheduled field event as proposed in the Technical Presentation. The

amount of time for planning and organizing the first field event and collecting existing information under Task 1 was compressed in order to keep biological sampling within time periods that correspond to the fall season. However, the Project team was able to complete Item 1 (Task1); identification of study areas and plan the field event.

3. Summary and Interpretation of Technical Findings

Analyses of the geological information from the U.S.Geological Survey (USGS) published In a series of Open File Reports and corresponding peer reviewed publication in the Marine Geology Journal led to identification of the discrete few sand ridges present in west Florida federal waters that have significant for potential beach quality sand. These areas are in addition to the Toms' Hills Shoals previously identified by Coastal Planning and Engineering, Inc (CPE, Inc) on behalf of Collier County.

4. Summary of Significant Meetings

On September 12, 2005 a field trip was conducted to examples of natural and replenished beaches on Florida's east coast. On September 13, 2005 the kickoff meeting was held in Melbourne, FL at Florida Tech's Science Tower Conference Room. The kickoff meeting and workshop resulted in selection of study sites and a review of the upcoming field event. A schedule of the major deliverables and tasks from July 2005 to March 2008 was provided.

5. Summary of Scheduled Work for the Next Two Months

Work will proceed on **Item 3 (Task 3).** The first field event will be completed in October 2005. Data collected from the event will be complied, and analysis of existing data collected for **Item 1 (Task 1)** will be provided. The Program Manager and PI's communicated with various contacts to obtain existing information. It may be necessary to meet with a few of these contacts to copy various data sets not available in electronic format or easily obtainable in print.

6. Summary of MMS Questions and Resolution

During the kickoff meeting two questions were asked:
1. How will borrow site cuts be determined for modeling purposes?
On T-1 the existing topography will be used for the pre-dredge model simulation and the as built cut will be used for the post-cut simulations. For sites T-2 and Siesta Shoal Dr. Zarillo will design the cut according to examples of previous borrow cuts in the nearshore waters of west Florida and according to future needs for sand volume as projected by the appropriate county managers.

2. Is the equipment available for the field event? Dr. Reidenauer replied that the equipment was in order and available. SEA biologists Shenker and Barkaszi also have sampling equipment online for the field event.

Attachment 1

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FROM: Kim Zarillo, Program Manager, SEA 5575 Willoughby Dr., Melbourne, FL 32934, Telephone: 321.254.2708, email: seapp1@aol.com
DATE: September 22, 2005

SUBJECT: Kickoff Meeting Report for Contract No. 1435-01-05-CT-39054 Biological Characterization/Numerical Wave Model Analysis within Identified Borrow Sites Offshore the West Coast of Florida/Physical Implications of Sand Dredging on the Topography of the West Florida Shelf

A kickoff meeting was held for Contract No. 1435-01-05-CT-39054 on September 12 and 13, 2005 in order to bring together interested parties and key project personnel to discuss progress completed and ongoing for project tasks. A field trip was conducted on September 12, 2005. On September 13, 2005 the kickoff meeting continued at Florida Tech's Science Tower from 9:00 AM to 4:00 PM. The meeting was divided into two sessions' the morning and afternoon. Present at the Kickoff meeting were the Barry Drucker-MMS COTR, the SEA-BERGER Team (Kim Zarillo, Program Manager, Dr. Gary Zarillo PI for PI-Physical Processes modeling and geology, Dr. Jon Shenker PI-Fishes, Mary Jo Barkaszi, PI Marine Mammals, Dr. Jeff Reidenauer, PI and Task Leader for Biological Communities of The Louis Berger Group, and Daniel Phelps, PG - Geologist from Florida Geological Survey (FGS).

Task 1 Evaluation and Selection of Study Locations

During the morning session the presentations and discussion focused on selecting the study site locations. Dr. Zarillo presented a brief review of the modeling process followed by Mr. Phelps's presentation of research conducted by the Florida Geological Survey (FGS) on behalf of MMS. Dr. Zarillo discussed differences in the geologic settings of the east and west coasts of Florida. Offshore sand ridges of the west coast are smaller in dimension, contain less sand volume and occur with less spatial frequency compare to the nearshore and offshore sand resources of east Florida coastal waters. Dr. Zarillo provided a brief description of the information sources and data available on (4) four possible study areas in Federal waters off the west coast of Florida. The most data rich sites were the Tom's Hills shoals – (T-1) and (T-2).

Next in the amount of documented potential beach quality sand source material were two sites off of Sarasota and Pinellas Counties termed the Siesta and Indian Rocks Shoals, respectively. Sites T-1 and T-1 were selected as two of three study sites given the amount of existing available data, their relative geographical proximity to each other, and the existence of a draft MMS lease agreement with Collier County, FL to obtain beach quality sand from T-1 in November 2005. This provides the SEA-Berger Team with an opportunity to conduct a fall biological sampling event prior to the commencement of dredging on T-1. The biological data collected during the first sampling event in fall 2005 will provide baseline data for a pre-dredge analysis of T-1and the second sampling event in spring 2006 will provide post dredge data.

The third study location, Siesta Shoal was selected after discussion on the geologic information available for sand ridges and Florida's unique bicoastal geological features. Data were collected and analyzed for the Siesta Shoal site by the United States Geological Survey (USGS). Although smaller in size, the USGS data on the Siesta area shows a discrete sand ridge containing beach quality sand. It is located close to Sarasota County, Florida and could provide material for the beaches in the northern extent of the west coast Florida project area.

Modeling of Pre-Post Burrow Cut Impacts

At the T-1 site, the borrow cut as proposed in the lease agreement with MMS and in final cut designs in the FDEP Joint Coastal Permit will be used for modeling the before and after impacts of the site. T-2 borrow cuts will be designed by Dr. Zarillo based on previous sand source experience in this area and projected sand volume requirements for Lee and Collier Counties.

Fall and Spring Field Events

During the second part of the meeting a general discussion with the biologists continued on the existing data collection efforts for the west coast of Florida and Gulf of Mexico, the use of boats for marine operations, and proposed sampling methods and equipment. Sampling and cruise plans are in preparation. A draft will be sent to the COTR after the kickoff meeting and before the first field event.

One issue was the use of ship time and increased fuel cost due to Hurricane Katrina. Alpine Ocean Seismic Survey's RV Atlantic Twin was scheduled for ship time for the fall event September-October 2005; Alpine increased costs after Katrina, which could affect the marine operations budget. Inquires are in progress to hire a backup vessels for the fall event. The M&S Enterprises M/V Thunderforce is being scheduled for the spring event May- to early June 2006. Dr. Jeff Reidenauer lead the discussion of proposed sampling at the sites selected earlier that morning. Each of the biologists discussed methods and equipment to be deployed during the event.

Schedule Update and Conclusion

Kim Zarillo presented a review of the project schedule beginning with the date of contract and Tasks 1-13 through month 32. The late signing of the contract with respect to the seasonality of biological species for a fall (September-October) field event made it necessary for the SEA-

Berger Team to move the first field event, a subtask of Task 3, up by two months. Other than compressing the schedule upfront and increased fuel costs for marine operations in the first few months, no problems were encountered. The occurrence of hurricanes during the fall field event looms as a possible problem.