



## Memorandum

### Mississippi River Reintroduction to Bayou Lafourche Ascension, Assumption and Lafourche Parish, Louisiana

To: Mr. James Ledet, P.E.  
With: T. Baker Smith, LLC  
Date: August 6, 2013  
Re: Summary of Geotechnical Scope of Work  
Terracon No. EH135069  
From: Lynne E. Roussel, P.E.  
Review by: Stephen Greaber, P.E.

Based upon conversations with the Fresh Water District and T. Baker Smith, Terracon developed a plan to approach the geotechnical evaluation of Phase 2 of the Bayou Lafourche Improvement Project.

Terracon has reviewed the information provided for the Phase 1 portion of the project, which included previous geotechnical information performed along the alignment. During the previous geotechnical investigation, several areas along Bayou Lafourche were modeled to determine the stability of the proposed cross sections. During dredging, several areas along the bayou began to exhibit sloughing indicative of an apparent slope failure. Several photographs of these areas have been provided to us during the preliminary planning stages of the Phase 2 portion.

Based upon our review of the data and the issues encountered during Phase 1, it was concluded that the stability along the Bayou most often has more to do with what "man" has done along the bank than with the natural soil conditions. As such, we believe it makes sense to have our geotechnical engineers spend time making field observations along the proposed stretch cataloging potential stability trouble spots, using this information to focus the field investigations and engineering around those areas. This time will be spent riding in a boat up and down the bayou to examine the existing conditions along the bank. Areas of apparent surface debris or obvious filling activities will be noted. Also areas that appear to be reconstructed and don't follow the natural slope of the bank will also be noted. These are likely areas where residences/businesses have added soil/debris to perhaps gain more land. These specific areas should be evaluated more closely because the models with the natural soils will not be applicable to these areas. For these locations, the models will have to show the profile of the debris or reconstructed slopes to determine the site specific stability of the bank.

We will take the notes from the field site visits and research historical aerial photographs of the alignment to better define areas where boring locations should be concentrated. The previous geotechnical data along with new data along the Phase 2 portion of the alignment will be used to aid in developing the baseline stability models. We have proposed 40 landside borings to 70 feet (locations to be selected later) including in-situ vane shear tests to better understand the



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undrained shear strength envelope for intact and fully softened conditions. We have also specified 10 days of barge work on the Bayou to collect CPT soundings and vane shear data along the bayou banks and centerline to evaluate the anticipated upper low strength soils and obtain in-situ shear strength profiles.