Public Executive Summary

Title: Geophysical Modeling Methods

Name of Offeror: SEAM, the SEG (Society of Exploration Geophysicists) Advanced Modeling

Project Manager: James Pappas
Principal Investigator: Peter Pangman

Additional participants: 3DGeo Development; Anadarko; BHP Billiton; CGGV Veritas; Chevron; Conoco Phillips; Devon; EMGS ASA; EnI; Exxon Mobil,; Geotrace Technologies; Hess Corporation; ION; Landmark Graphics; Maersk Oil; Marathon Oil; Petrobras; PGS Americas; Repsol Services; Rock Solid Images; StatoilHydro; Total; WesternGeco

Solicitation Number: RFP2007DW2001 (07121-2001)

Project Start Date: June 15, 2009
Project End Date: March 31, 2012

Total Estimated Cost:	$ 2,500,000.00
RPSEA Maximum Share:	$ 2,000,000.00
SEAM Cost Share:	$ 500,000.00

Goals

We propose to conduct realistic simulations of geophysical data that will contribute towards the development of the next generation of imaging and acquisition approaches, lead to a higher rate of success in identifying petroleum resources in the Gulf of Mexico, and improve reservoir characterization so that production can be maximized.

Background

Objectives:

To contribute to the evolution of geophysical imaging technology by providing our nearly completed realistic benchmark geological model containing multiple geophysical attributes along with two synthetic seismic datasets and three synthetic nonseismic datasets that will allow industry to assess individual as well as joint geophysical acquisition and processing techniques for generating images of hydrocarbon reservoirs beneath and surrounding massive, complex salt bodies. SEAM will develop requirements for hosting and distributing these datasets for their useful lifetime, which we expect could be one or more decades.

Description of the project including methods to be employed: SEAM will conduct its work by (a) engaging SEAM member companies in the development of acquisition plans for each geophysical simulation, (b) critical evaluation of numerical algorithms to ensure robust simulation results, (c)

competitive contracting with qualified vendors to conduct the simulations, (d) implementing a detailed quality procedure to ensure the integrity of the data, (e) storing and distributing the data to potential users, and (f) communicating to a broad range of potential users in industry, government research laboratories, and academia about the work.

Potential impact: The technical details of our proposal have been vetted by experts from our 23 participating companies and they expressed strong support for the scope of work and its extremely high value in helping them to address critical issues that limit their ability to do reliable imaging in the deepwater Gulf of Mexico. The proposed work is farreaching; no one has done detailed 3D elastic simulations of a realistic model for the Gulf of Mexico. By striving to push beyond the technical frontier, we seek to make the greatest possible contribution to geophysical exploration. With broad industry participation and a track record of attacking difficult numerical simulation challenges, SEAM is uniquely qualified to conduct the proposed work.

Our participating supporters include industry's leading experts in the field and are already embedded in SEAM Corporation as active participants on the Board of Directors, Management Committee, and Technical Working Groups.

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