

Consultation Service Specification on the “Trend Survey of OBM/SBM”

September 26, 2006

Japan Oil, Gas and Metals National Corporation (JOGMEC)
Oil & Gas Survey and Technology (OST) Group

1. General

This specification applies to the work titled “Trend Survey of OBM (Oil Base Mud) / SBM (Synthetic Base Mud)” mandated to the consultant. The consultant is required to submit the proposal documents mentioning work procedures covering the whole scope of work specified by JOGMEC.

2. Investigation scope

The consultant shall collect all sorts of information for the Trend Survey of OBM/SBM.

Summary and survey item of OBM/SBM

- The consultant shall provide an overview of OBM/SBM technology.
- The consultant shall survey recent (1997-2006) literature (SPE, OTC, OGJ (Oil Gas Journal) etc.) about the technology, and summarize it.
- The consultant shall collect technical information in relation to each operation in which OBM/SBM has been used (cementing, well control, solid control, OBM/SBM-enabled rig’s equipment, closed loop system, electrical logging, etc.)
- The consultant shall collect information regarding zoning regulation, legislation and logistics. Research zone: Japan, Libya, Iraq, Iran, Qatar, Caspian Sea, East Siberian, Sakhalin, Australia, Indonesia, Malaysia, Vietnam, Thailand, Mexico, U.S.A, Gulf of Mexico, North Sea etc.

Applicable Case and Limitation

- The consultant shall identify a particular case, and study the benefits and practical issues regarding OBM/SBM in relation to this case.
- The consultant shall understand the present issues relating to the development of the technology. The consultant shall identify cases which demonstrate limitations of the technology.
- The consultant shall identify the influence of the technology on formation damage and logging analysis, and how and to what extent OBM/SBM impacts on the environment.

The technical point of issues in the R&D

- The consultant shall interview drilling fluid companies and other service companies (cementing, well control, solid control equipments, etc.) about technical issues in the development of OBM/SBM technology.
- The consultant shall inquire into drilling fluid companies’ perceptions of the technological developments and their predictions about how the technology will contribute to the oil industry.
- The consultant shall collect and examine cost performance using OBM/SBM compared with cost performance using both past water-based mud (WBM) technology and the latest WBM technology.

The list of developers

The consultant shall collect the address and contact person information of the drilling fluid companies and the other service companies (cementing, well control, solid control equipments, etc.) and produce a list containing this information.

Issues arising from this survey

Where the consultant identifies any issue arising from this survey, the consultant shall examine such issue in detail.

Presentation

The consultant shall give a presentation on the results of the investigation at a briefing which will take place at the offices of JOGMEC, in Tokyo.

3. Work Scope

Investigation

The consultant shall carry out investigations relating to “Trend Survey of OBM/SBM” according to the Investigation Scope outlined above, analyzing the latest developments in this field.

Report

Hard copy: 2 copies

Digital file: 30 copies of CD

* The digital file should be finalized in such a way that data can be extracted from the file. This report shall be disclosed to companies in the Japanese oil industry.

Presentation

The consultant shall give a presentation on the results of the technical survey at JOGMEC’s Tokyo conference room at the end of February, 2007.

* Presentation materials are to be distributed to presentation participants.

4. The Date of Delivery

Monthly Progress Report: The consultant shall submit a Monthly Progress Report of the work’s status to JOGMEC not later than the end of each month

1st Review (25% Review) Document: The consultant shall submit a 1st Review (25% Review) Document so as to help finalize the Scope of Work within two weeks after contract agreement

Final Review (90% Review) Document: The consultant shall submit a Final Review (90% Review) Document not later than the end of December, 2006

Final Document: The consultant shall submit the Final Document not later than the end of February, 2007

5. Duration

From the date of the contract agreement to 28th February, 2007.

6. Organization

This survey may be implemented by more than one company as necessary.

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