ChevronTexaco Gulf of Mexico Hydrates JIP Workshop
Westin Winchester Hotel - Winchester, CO
September 30 - October 1, 2003

ChevronTexaco GoM Hydrates JIP RFP #2: Generic Drilling and Coring Plans JOI Mid-Term Progress Report

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Project Timelines for RFP #2 (Generic Well Plan)

Request for Proposals (RFP #2) issued by ChevronTexaco JIP in September 2002 to develop a generic well plan for hydrate project in the Gulf of Mexico. Proposal submission deadline was mid-October, 2002.

JOI submitted proposal with TAMU and LDEO.

ChevronTexaco informed JOI of selection in April 2003

Negotiation process between JOI and ChevronTexaco to establish final statement of work for combined RFP #2 and RFP #3 and sign contract was concluded in late June 2003.

Initiated contracted work in July 2003.

Generic Scenarios for RFP #2:

Two generic scenarios will be assessed for drilling and coring in the Gulf of Mexico (e.g., (1) Scientific Ocean Drilling Vessel, (2) Geotechnical Drilling Vessel).

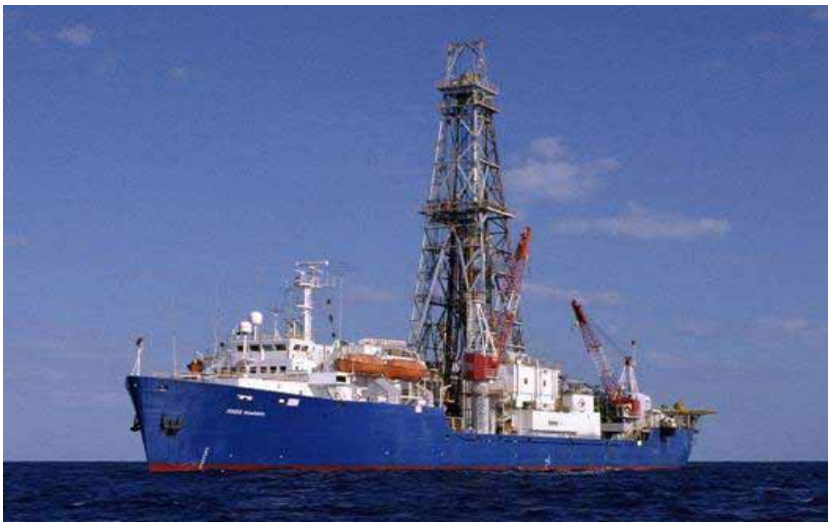
Primary assumptions:

All vessels are assumed to be dynamically positioned, have heave compensation, and have adequate facilities aboard to support the crew, rig, and ancillary drilling equipment.

All coring systems are assumed to be wire-line retrievable and to have removable plastic core liners for rapid handling of hydrate samples and sediment cores.

JOIDES Resolution

Scientific Ocean Drilling Vessel



Fugro Explorer

Geotechnical Drilling Vessel

Generic Scenarios for RFP #2 (cont.)

(1) Scientific Ocean Drilling Vessel (e.g., R/V *JOIDES Resolution*):

Additional assumptions: operating in riserless mode and using ODP's wireline retrieved advanced piston corer (APC), extended core barrel (XCB), rotary core barrel (RCB), and pressure core sampler (PCS), along with Schlumberger wireline logging and LWD systems. The vessel charter excludes scientific laboratory equipment and services except those required for safety.

(2) Geotechnical coring vessel (e.g., D/V *Fugro Explorer*):

Additional assumptions: operating in riserless mode and using wireline retrieved geotechnical style coring tools with a support vessel to handle core and equipment storage.

Generic Scenarios for RFP #2 (cont.)

The generic operations plan is to drill and core at least three holes from at least two separate locations (sites), which have not been chosen. Hole plans will be based on the following:

- **Water depth 2500 to 4000 ft (760 to 1200 m)**
- **Target depth of penetration 0 to 2000 ft (0 to 610 m)**
- **Drilling performed with or without a riser**
- **Wireline retrieved coring system**
- **Pressured and non-pressured coring systems**
- **All holes plugged and abandoned after logging**

Ranking Matrix for RFP #2:

We will provide a ranking matrix considering the following type of information for ranking the two generic scenarios:

(a) Mobilization of vessel
(b) Mobilization of coring equipment
(c) Mobilization of lab equipment
(d) Mobilization of logging and LWD equipment
(e) Water depth limitation of vessel
(f) Coring depth limitation
(g) Positioning
(h) Drilling to the coring initiation point
(i) Coring and core handling
(j) Logging (wireline and LWD)
(k) Plug and abandon
(l) Preparing for inter-site rig move
(m) Demobilization
(n) Laboratory requirements
(o) Safety requirements
(p) Costs
(q) Other parameters as relevant.

Analysis of Scenarios for RFP #2:

(1) Identify the primary risks:

(a) Shallow gas flow
(b) Shallow water flow
(c) Uncontrolled oil flow
(d) Hydrate deposit destabilization
(e) H_2S.

(2) Evaluate the ability of specific mitigating measures to reduce the primary risks:

(a) Pre-drilling site seismic survey
(b) Site review by TAMU Site Safety panel
(c) Pre-drilling seafloor survey with TV / Sonar
(d) Analysis of core gas to detect migrated hydrocarbons
(e) Standby kill weight mud;

Analysis of Scenarios for RFP #2 (cont.)

(3) Evaluate the Safety issues related to:

(a) Handling pressured core
(b) Handling potentially unstable hydrate core
(c) Handling H_2S core.

White Paper on Current Safe Drilling Practice for RFP #2

JOI and our subcontractors (TAMU, LDEO) will provide a white paper documenting current safe drilling practices for drilling in areas with known presence of gas hydrates.

The white paper will be based on scientific ocean drilling experience from ODP Legs 164 (Blake Ridge and Carolina Rise) and 204 (Hydrate Ridge), which includes hydrate coring, logging and LWD in hydrate-bearing formations.

The white paper will explain the minimum laboratory facilities required to provide adequate hydrocarbon analysis data to assure safe riserless drilling (e.g., gas collection with injection into gas analyzer, bulk physical properties, downhole temperature (and pressure) measurements, etc.).

Site (well) Plan for RFP #2

We will provide a generic site (well) plan for drilling and coring hydrates in the Gulf of Mexico, covering:

(a) mobilization
(b) positioning
(c) drilling to coring point
(d) coring and core handling
(e) logging and LWD
(f) plug and abandon
(g) preparing for inter-site (well) moves; and
(h) demobilization.

Site (well) Plan for RFP #2 (cont.)

The generic site (well) plan will cover, as appropriate, the following information (independent of vessel selection):

(1) Step-by-Step detailed operations sequence:

(a) operations plan with time estimates.

(b) recommended field operations sequence for safe drilling/coring /logging operations (coring, wireline logging, drilling and coring, and LWD).

(2) Typical drilling and coring parameters (e.g., typical wob, rpm, gpm, rop).

Appendices for RFP #2

Appendices will include the following:

(a) Tubular specifications
(b) wellhead specifications
(c) coring equipment specifications
(d) drill and coring bit specifications
(e) BHA and drill string specifications
(f) drill-in casing specifications
(g) drilling and coring fluids (with recommended use, mixing procedures and properties)
(h) wireline and LWD logging equipment
(i) conductor and casing strings with auxiliary equipment (float shoes, centralizers)
(j) wellhead equipment and running procedures
(k) cement slurries and recommended placement.

Project Tasks, Deliverables and Due Dates for RFP #2

The primary tasks are to complete a document outlining the two generic drilling/coring scenarios, a white paper on "current safe drilling practice" for operations in hydrate provinces, and a conceptual well plan.

Deliverables for RFP #2:

JOI will deliver final documents (and electronic versions on CD-ROM) with the information required, on or before December 9, 2003.

Progress to date on RFP #2:

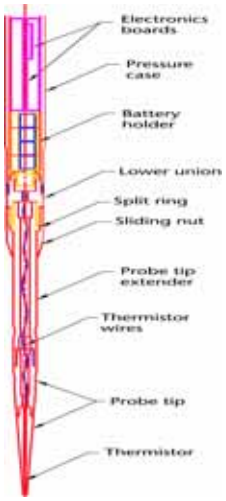
Team assembled, gathering information on geotechnical drilling vessel, and pulling together supporting documentation for development of deliverables.

Rig Floor Layout and Safety Procedures

Safe Procedures for Drilling and Coring of Hydrates

Safe Pipe Handling and Tool Deployment

Wireline Downhole Tool Deployments
Temperature and Pressure Measurements



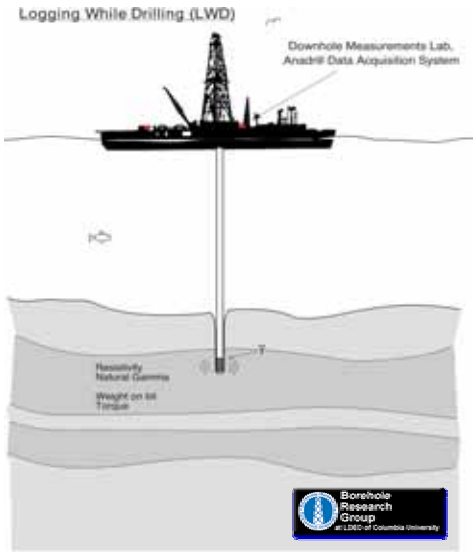
The DVTP-P provides in situ pore pressure measurements, in addition to measurements of formation temperature.

Assembly and Servicing Space for Pressure Corers

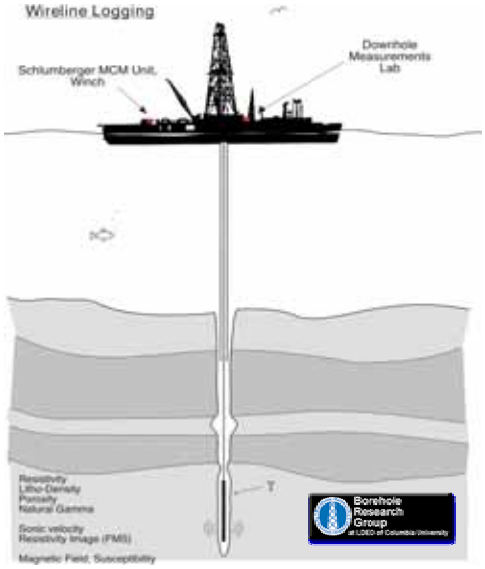
Adequate Work Area for Pressure Core Transfers

Continuous Program of Hydrocarbon Monitoring using Gas Chromatograph for Safety Evaluation

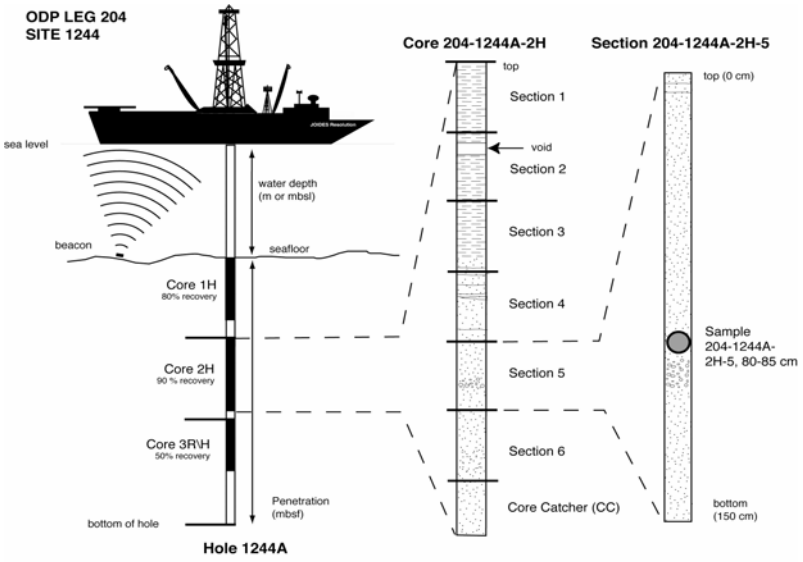
Logging While Drilling (LWD)



Conventional Wireline Logging



System for Positioning and Naming Core Samples



Pipe Handling and Tool Deployment

Geotechnical Drilling Vessel

Available Space on the Vessel for the Safe Handling of Pressure Corers and Core Samples

Geotechnical Drilling Vessel

Available Space for the Safe Handling of Pressure Corers and Core Samples

Geotechnical Drilling Vessel