

bp



CONFIDENTIAL

Revised GOM Drilling Fluids Engineer Role

April 24, 2009

0

CONFIDENTIAL

BP-HZN-2179MDL00768549

EXHIBIT #

690

WIT:

Leslie

Role Presentation Shown to BP



- The role presentation was shown to Planning and Operations Groups
- Used to introduce the role and gather feedback to further define the role
- Feedback was use to refine and further define the role
- Results of the refinement will be presented here

CONFIDENTIAL

BP-HZN-2179MDL00768550

Positive Feedback Mentioned



- **Overall positive response**
 - The transition can be managed
 - Agree with the general direction
- **Benefit of consistency across teams**
- **Relieve Drilling Engineers from signoff on fluids vendor scorecards**
- **Will help to train Drilling Engineers concerning fluids**
- **Will help to manage vendor issues and cost**

Major Issues of Concern Mentioned



- Perception of loss of current level of vendor support and current vendor personnel
- The role as defined could not be effectively executed by two Drilling Fluid Engineers.
- BP needs a good hydraulics program.
- Management of Change
- Concern about not involving operations in changes
- Concern about communications and work flow as presented in slides.

Existing Gaps noted from our point of view



- **EPTG resources not always utilized to advantage**
- **Re-assessment of EPTG recommendations not always done when changes made in execution**
-

CONFIDENTIAL

BP-HZN-2179MDL00768553

Current Fluids Engineer Project Allocation



BP DFE
Andres Diaz

Thunder Horse
(Enterprise & PDQ)
Atlantis
(DDII & DDIII)
Planning Wells
Tubular Bells
Kodiak

BP CFE
Daryl Patterson

Thunder Horse
(Enterprise & PDQ)
Atlantis
(DDII & DDIII)
Holstein
Mad Dog
Tubular Bells
Kodiak

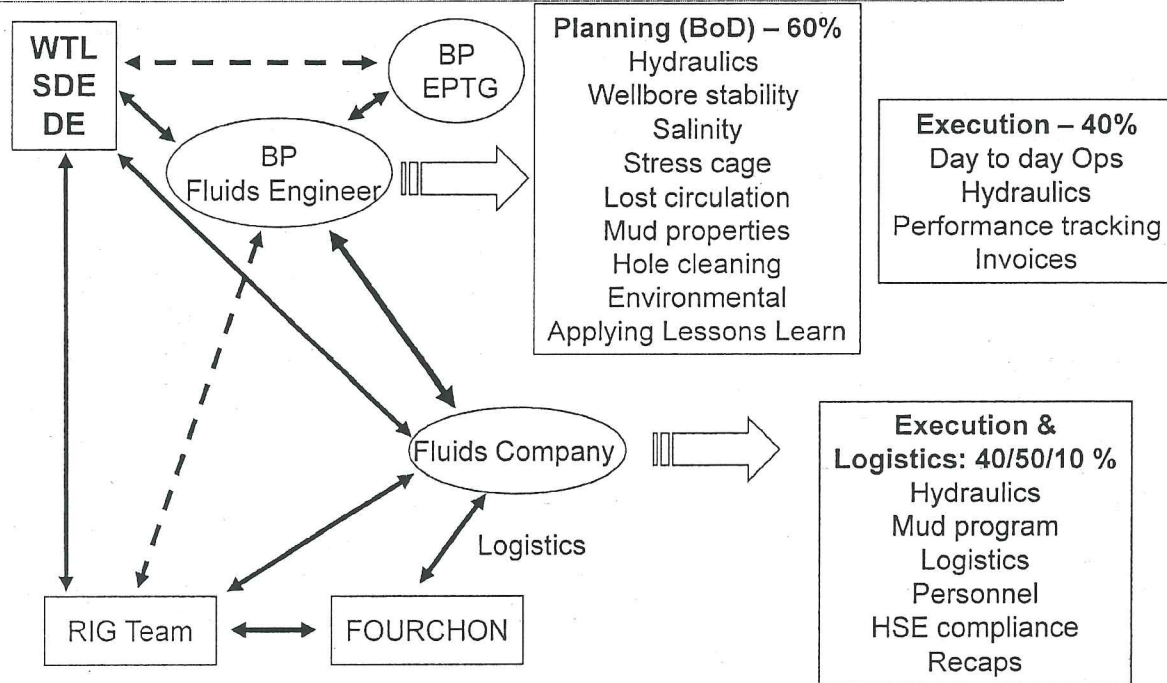
BP DFE
John LeBleu

Horizon
Deep Gas
Holstein
Marianas
Planning Wells
Puma
Mad Dog
South West Ridge

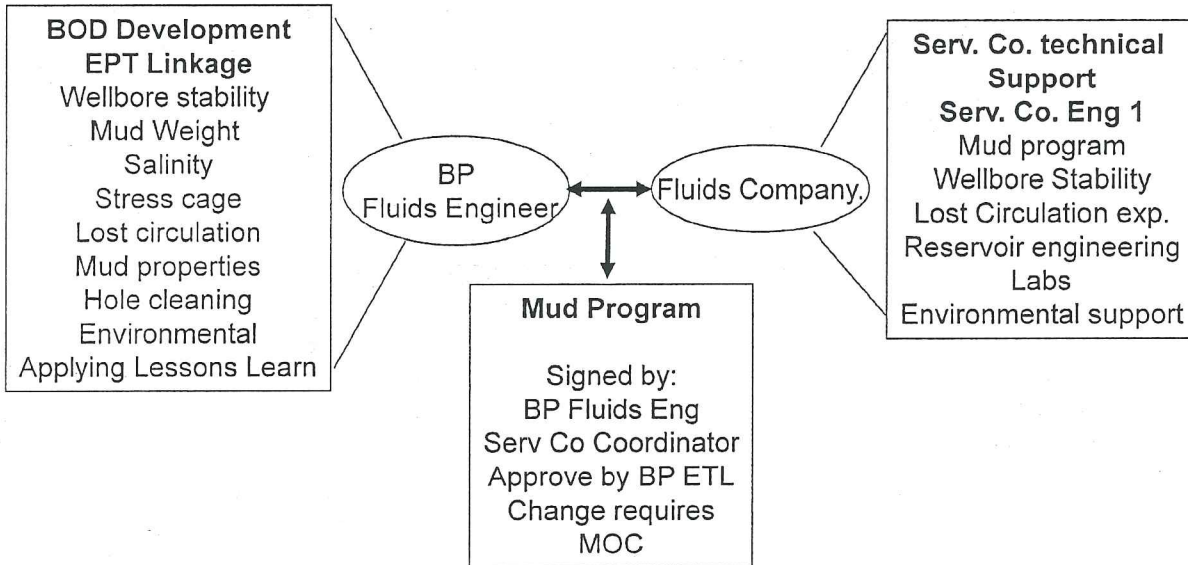
CONFIDENTIAL

BP-HZN-2179MDL00768554

Revised Fluids Support Model



Fluids Support Model - Planning



CONFIDENTIAL

BP-HZN-2179MDL00768556

Drilling Fluids Engineer R&R



Planning:

- 1) Design the drilling fluids BOD for wells, incorporating facets of rock mechanics & wellbore stability, pore pressure & fracture gradient (PPFG) as well as drilling fluids. The engineer will work closely with the Drilling Engineer through all stages of planning and execution. All of the design work will be documented and included in the Fluids Basis of Design for the well.
 - 2) Wellbore fluid design components:
 - Hole Cleaning and Hydraulic Modeling
 - Stress Cage
 - Lost Circulation
 - Pore Pressure, Fracture gradient
 - Wellbore Stability
 - Environmental compliance
 - Waste Management
 - Mud properties per hole section
- Additional well design considerations:
Completion type, formation damage, riserless drilling, sub-salt drilling, corrosion monitoring and management, fluid displacement, cementing interface, H₂S, etc

Drilling Fluids Engineer R&R



Execution

- 1) Attends morning meetings as priority dictates, reviews all daily reports, make recommendations as required and ensure adherence to the program.
- 2) Ensures adherence to all QA/QC procedures.
- 3) Capture and disseminate lessons learned.
- 4) Review and approve the D&C SPM score card for the well.
- 5) Performance incentive / penalty tracking per the fluids contract.
- 6) Review daily fluid cost and review fluid invoices.
- 7) Manage any contractual related supplier changes and issues.

Location

Reporting to Gregg Walz

CONFIDENTIAL

BP-HZN-2179MDL00768558



- Back-up Slides

CONFIDENTIAL

BP-HZN-2179MDL00768559

Wellbore / Performance Focus



From independent silos...

Drilling Fluids

- Technical design for SBM 90-95% optimized
 - Flat Rheology
 - Shale stability
 - Hole cleaning/stuck pipe
 - Lubricity
 - Environment
 - Waste management

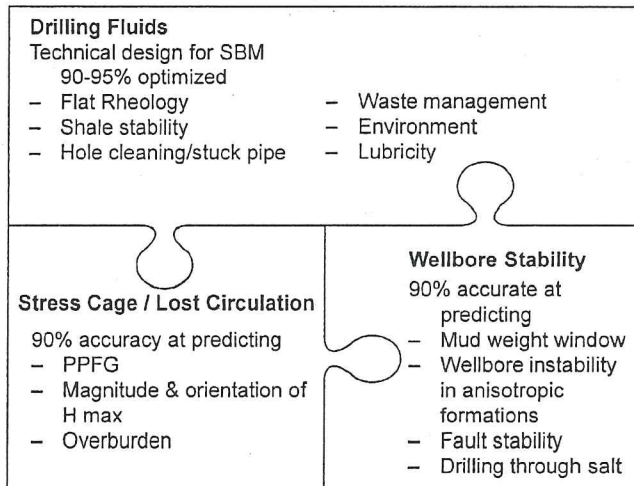
Stress Cage / LC

- 90% accuracy at predicting
 - PPFG
 - Magnitude & orientation of H max
 - Overburden
 - Geology

Wellbore Stability

- 90% accurate at predicting
 - Mud weight window
 - Wellbore instability in anisotropic formations
 - Fault stability
 - Drilling through salt

Future performance incentives / penalties under new contract



Current and future BP related IP issues

Performance Incentive / Penalty



SIDE TRACK WELL

Losses	≤ 500 bbl	501 – 1,000 bbl	1,001 – 3,000 bbl	≥ 3,001 BBL
Bonus or Penalty	\$20,000 Bonus	No bonus no penalty	10% penalty	15% penalty

DEVELOPMENT WELL

Losses	≤ 1,000 BBL	1,001 - 2,000 BBL	2,001- 4,000 BBL	≥ 4,001 BBL
Bonus or Penalty	\$30,000 Bonus	No bonus no penalty	10% penalty	15% penalty

EXPLORATION WELL

Losses	≤ 3,000 BBL	3,001 - 5,000 BBL	5,001 - 7,000 BBL	≥ 7,001 BBL
Bonus or Penalty	\$50,000 Bonus	No bonus no penalty	10% penalty	15% penalty

CONFIDENTIAL

BP-HZN-2179MDL00768561