

Opportunities and Risks in Deepwater Gulf of Mexico from a Regulatory Perspective

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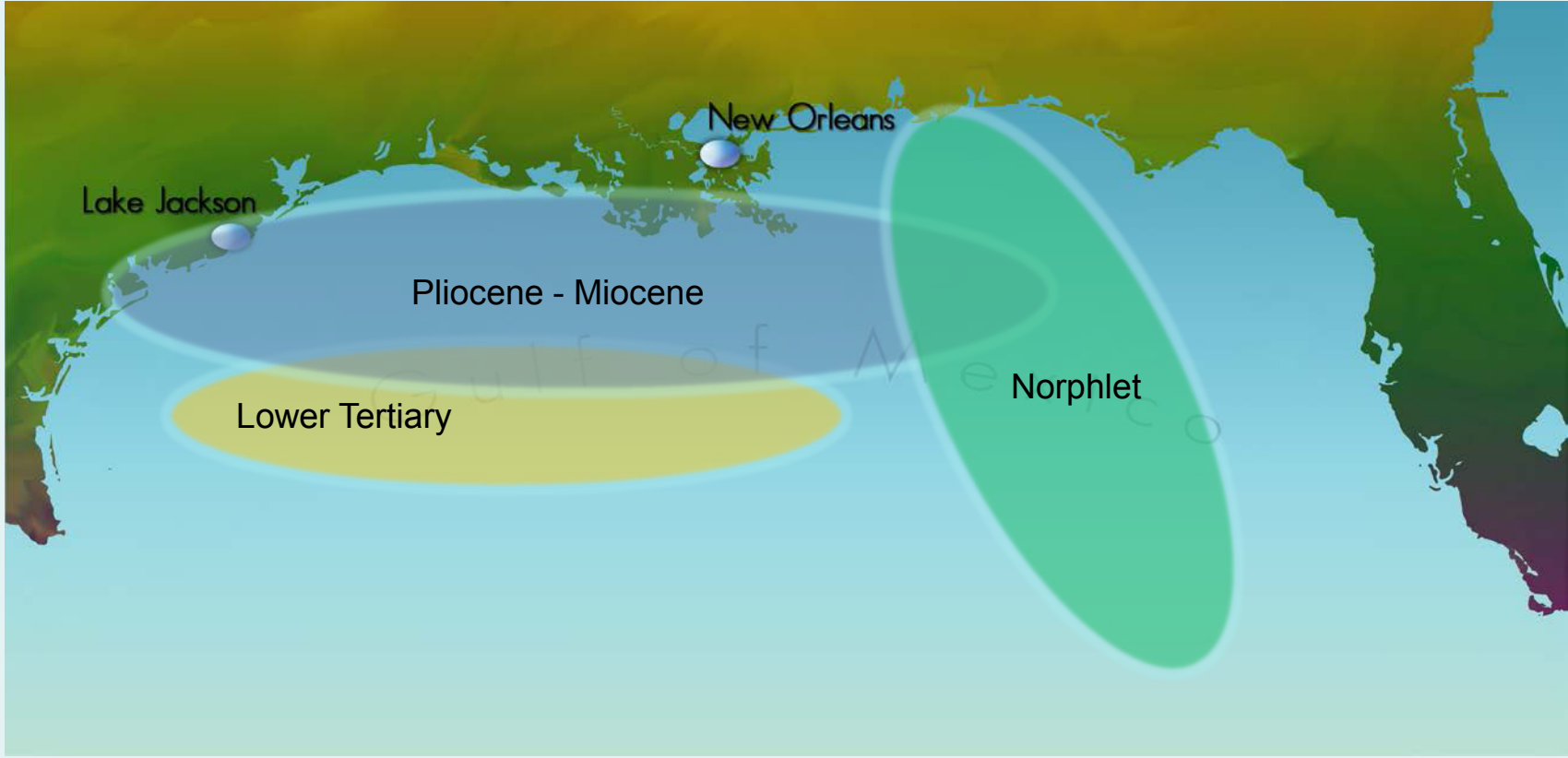


Yesterday's Experience,
Tomorrow's Innovations and Solutions

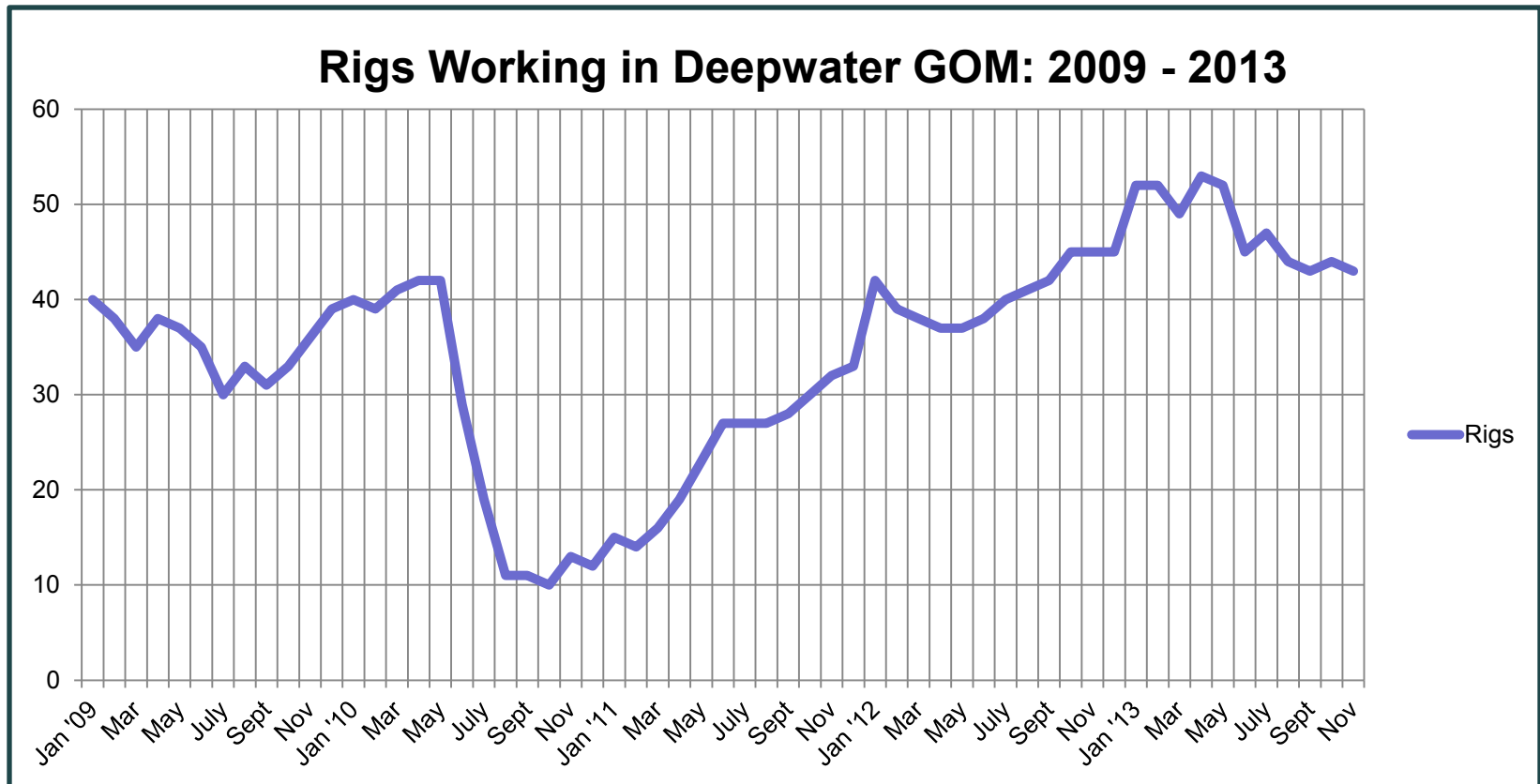
Agenda

- Trends in Exploration & Production
- Deepwater Activity
- Challenges & Risks
- Regulator's Role
- Industry's Call to Action
- Looking to the Future

Trends in Exploration & Production



Rig Activity in Deepwater Gulf of Mexico



New Deepwater Development Activity

Sanctioned Projects

- **Olympus TLP (Mars B) @ MC806, Shell**, (installed July, 2013, 1st Prod - 2015)
- **Jack – St. Malo @ WR718, Chevron**, (1st Prod - 2014)
- **Big Foot & WR029, Chevron**, (1st Prod - 2014)
- **Lucius (oil/gas) /Hadrian (gas) @ KC875, Anadarko**, (1st Prod - 2014)
- **Tubular Bells @ MC725, Hess Corp.** (1st Prod - 2014)
- **Delta House @MC254, LLOG Exploration**, (1st Prod - 2015)
- **Heidelberg @ GC865, Anadarko**, (1st Prod - 2016)
- **Stones @ WR508, Shell**, (2nd FPSO in GOM, 1st Prod - 2016)
- **Stampede @ GC468 (Pony) GC468 (Pony)/GC512(Knotty Head), Hess Corp.** (Sanction 2014, 1st Prod 2016)
- **Big Dog (Mad Dog B) @ GC825, BP**, (Sanction under evaluation)



New Deepwater Development Activity

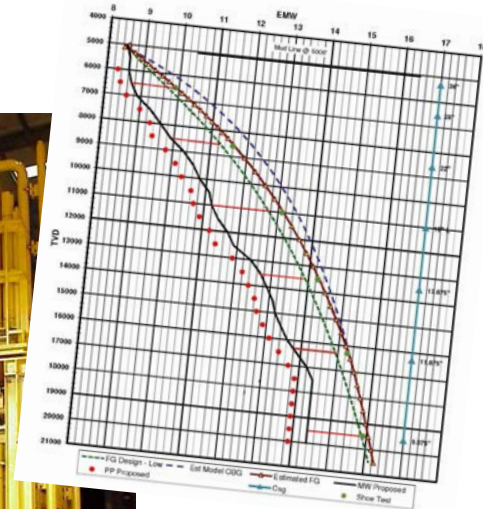
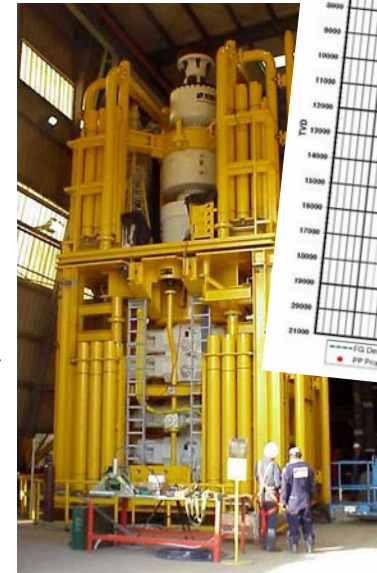
Appraisal Prospects

- **Appomattox @ MC806, Shell**, (appraisal)
- **Vito @ MC984, Shell**, (appraisal)
- **Gunflint @ MC984, Noble Energy**, (appraisal)
- **Hadrian North @ KC918, ExxonMobil**, (appraisal)
- **Shenandoah @ WR052, Anadarko** and **Coronada @ WR098, Chevron**, (appraisal)
- **Buckskin @ KC872** and **Moccasin @ KC736, Chevron**, (appraisal)
- **Kaskida @ KC292** and **Tiber @ KC102**, (appraisal), **Gila @ KC093** (Drilling) **BP**, [HP/HT]
- **North Platte @ GB959, Cobalt Intl. Energy**, (appraisal)



Challenges in Deepwater GOM

- High Pressure/High Temperature (HPHT)
- Blowout Preventer Technology
- Personnel Experience



Risks in Deepwater GOM

- Metallurgical Failures



- Dynamic Positioning Failures



- Well Control



Industry Addressing Challenges and Risks

- Improving Industry Standards
- Training
- Competency Assurance
- Real Time Monitoring
- Improving QA/QC Manufacturing Process
- BOP and Well Control System Technology and Intelligence

Regulatory Approach to Challenges and Risks

- Regulations
- Notice-to-Lessees
- Deepwater Operations Plans
- Risk Management
- Safety and Environmental Management Plans
- Use of Qualified 3rd Party Reviews



Looking to the Future

- Identification of Best Available and Safest Technology (BAST)
- Industry Standards Organization to Promote Step Changes in Safety through Equipment Specifications and Procedures
- Establishment of Ocean Energy Safety Institute
- Develop Methods to Improve Human Element of Decision

Thank you for your attention.

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