

The Who Dat Development

Evolution of a Project from Lease Sale to First Production

Rick Fowler – LLOG Exploration

January 16, 2012

Five Star Award



Who Dat Awarded Prestigious Five Star Award by Offshore Magazine

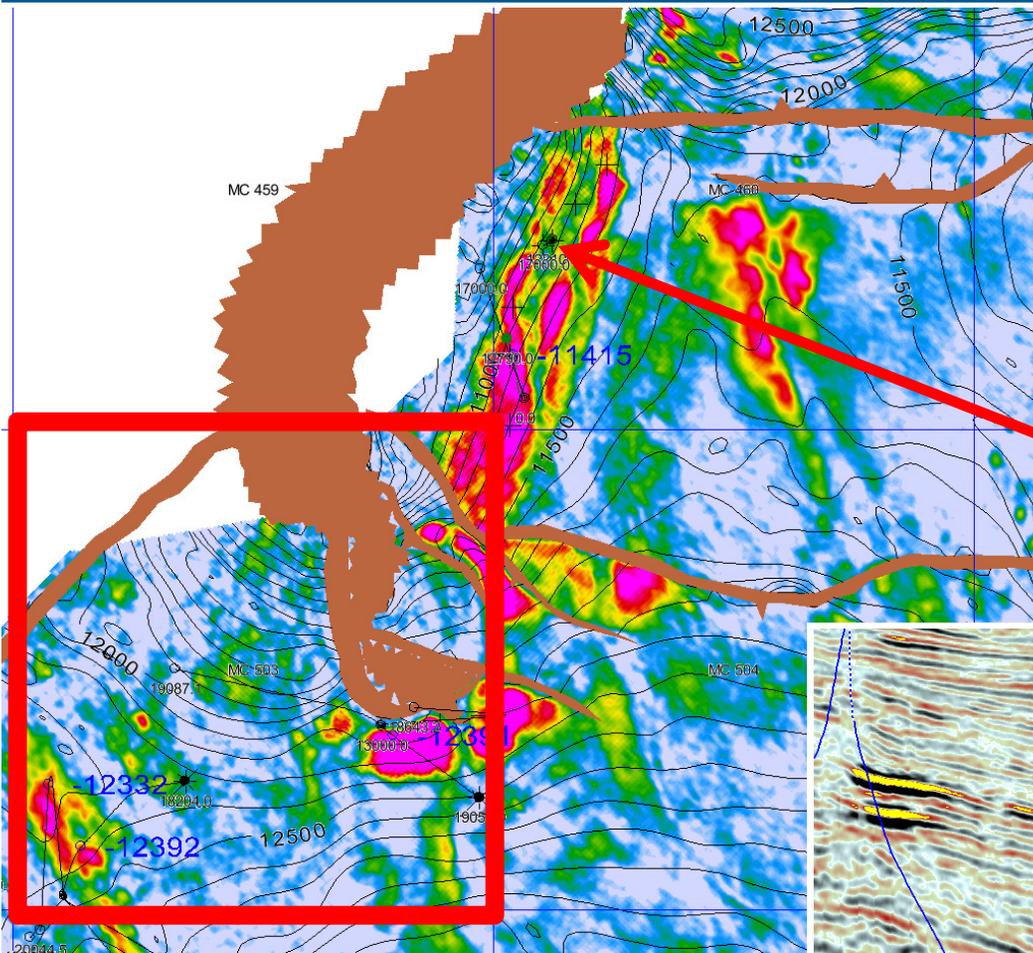
- Awarded annually
- Top 5 offshore projects in the world
- Selection Criteria
 - Innovation of production methods
 - Application of technology
 - Resolution of Challenges
 - Safety
 - Environmental Protection
 - Project Execution

Project Summary

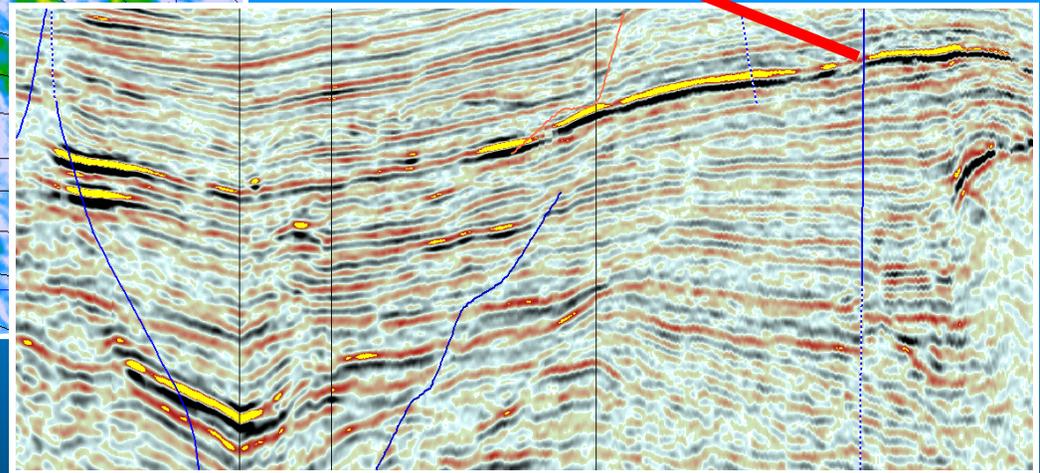
- New FPS in 3100' water
- Twelve wells, 100-300 MMBOE reserves
- 60 MBOPD, 150 MMCFD
- \$2B total project cost
- Project Firsts
 - GOM FPS post-Macondo
 - Opti-Ex FPS Design
 - FPS built on spec
 - Concept selection to installation in < one year
 - Privately Owned FPS



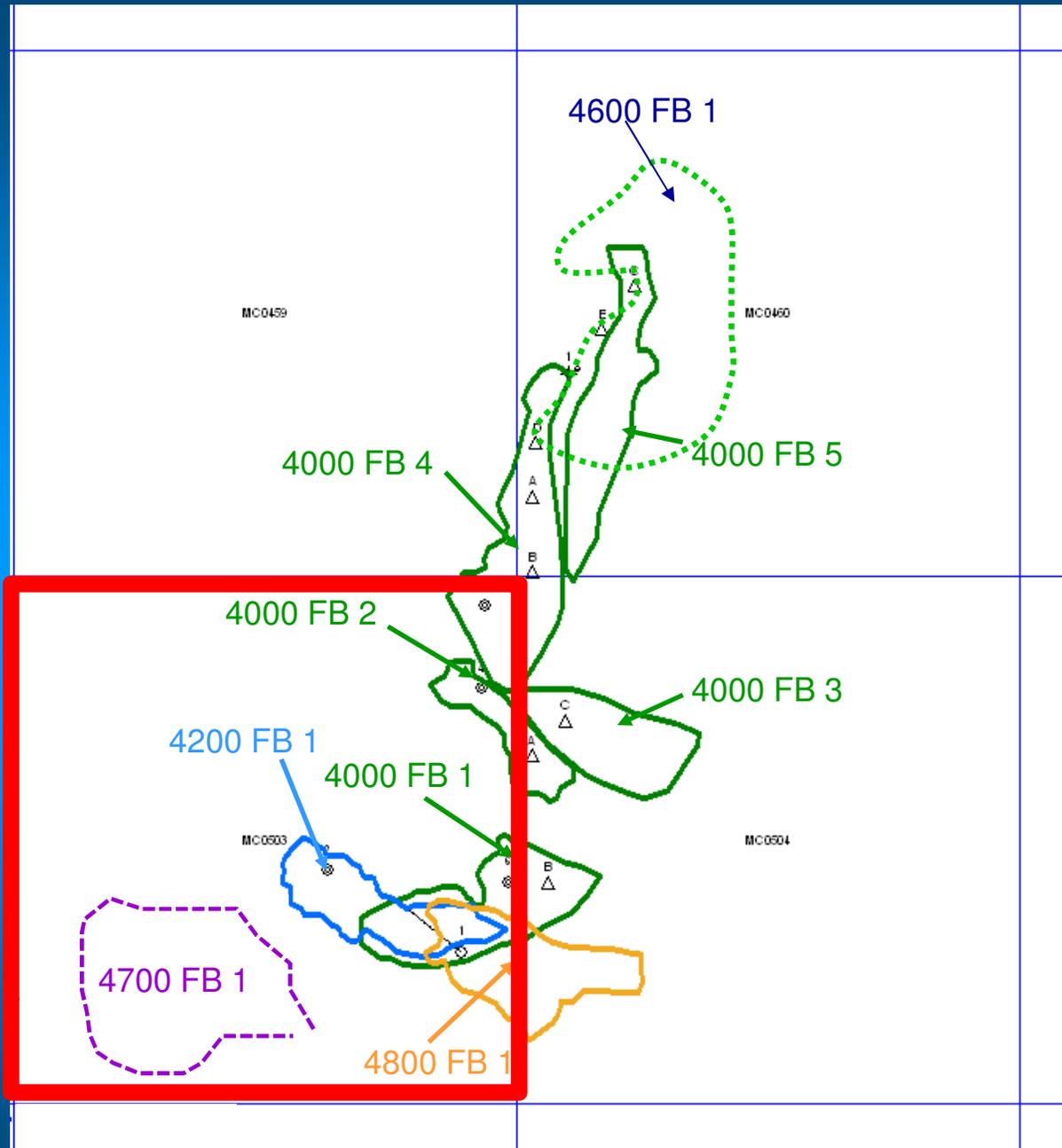
Identifying the Prospect



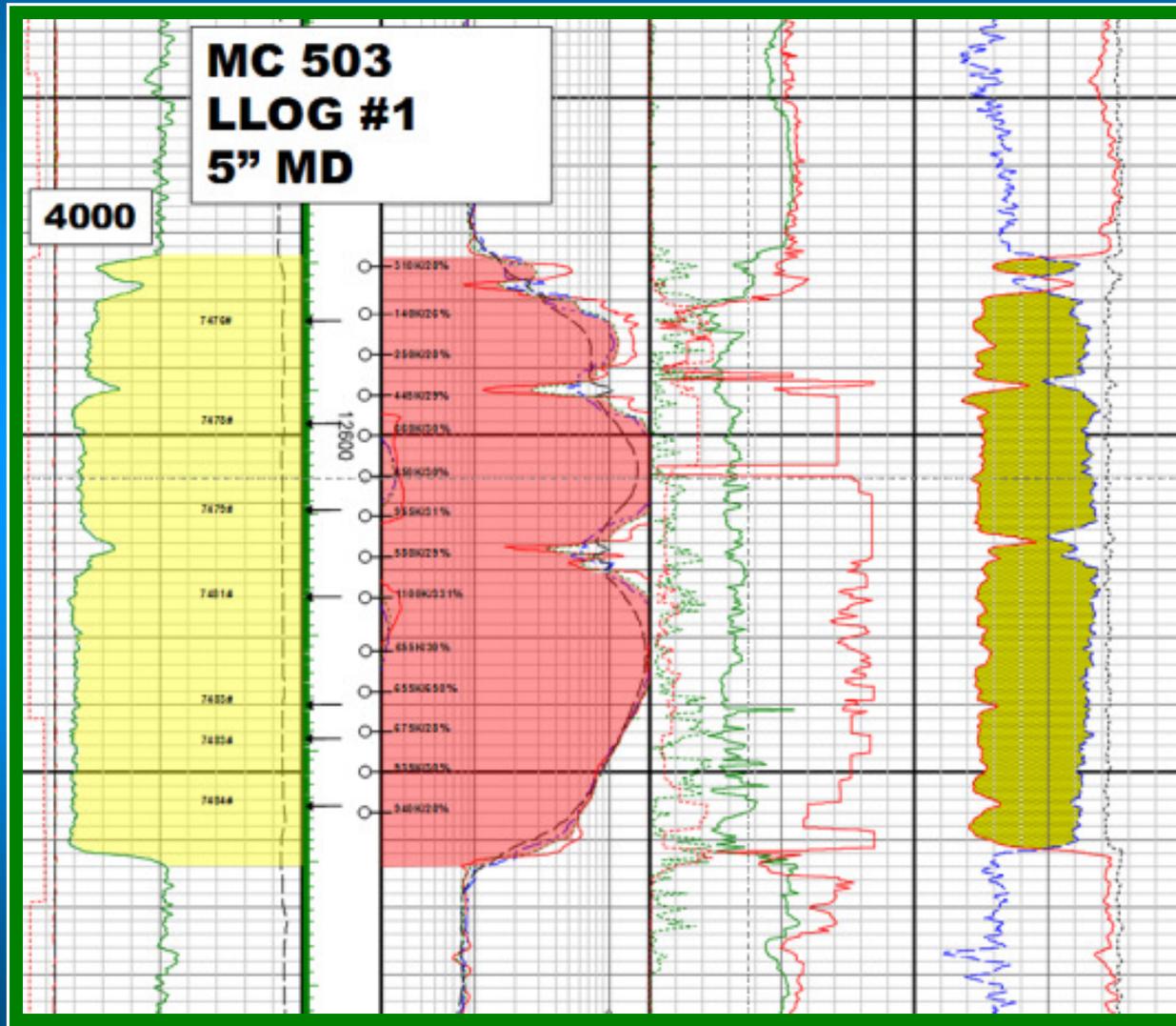
- Bright amplitudes
- Conformance to structure
- Previous wells thin/poor quality



Addressing Lease Issues

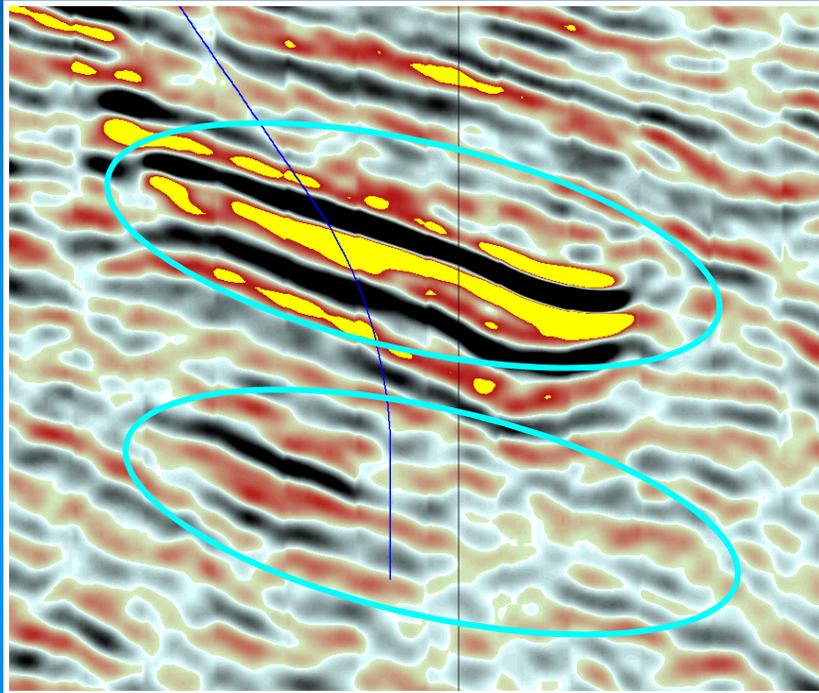


Results of First Well

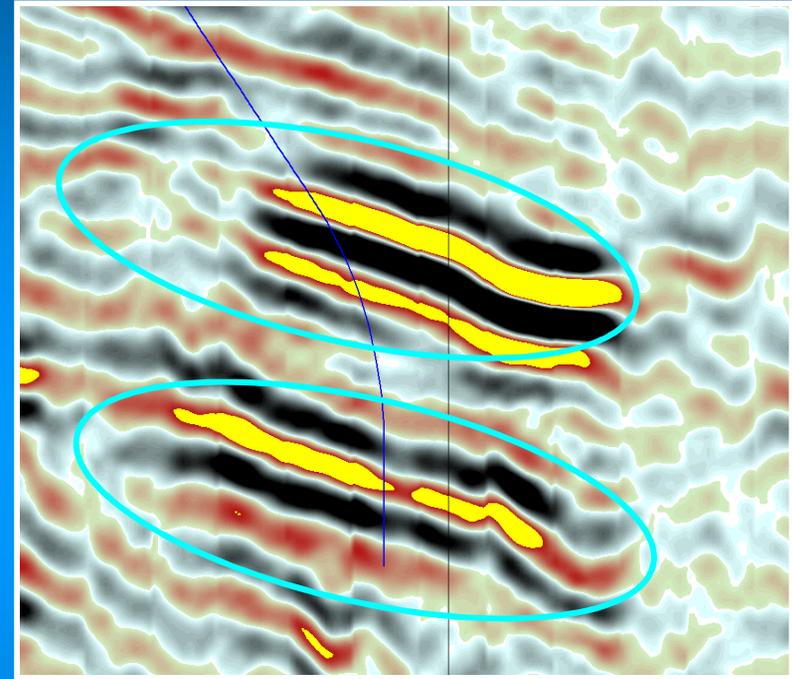


- 76' Gas
- 34% PHI
- 15% Swi
- 45 BPM Yield

Drilling Deeper



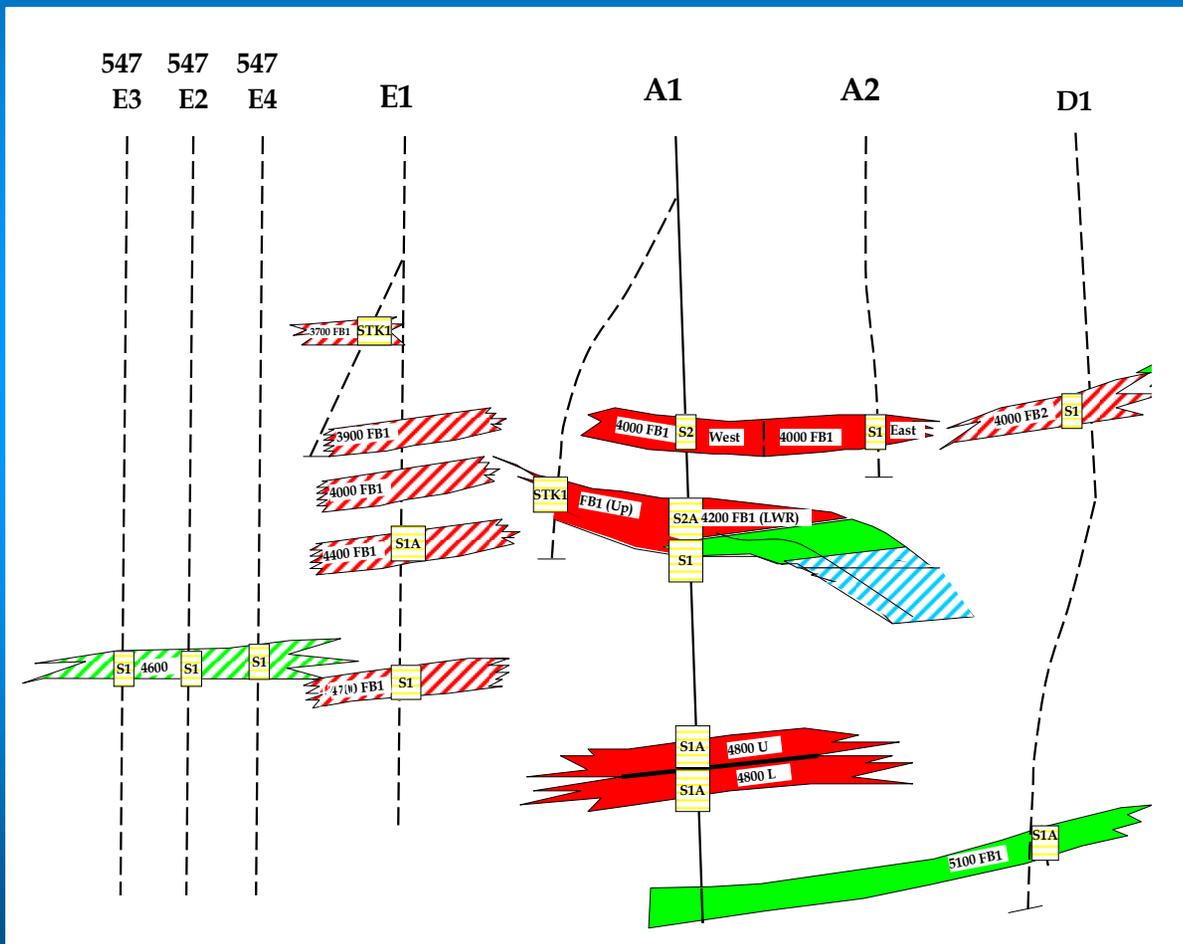
Full Stack Time Data



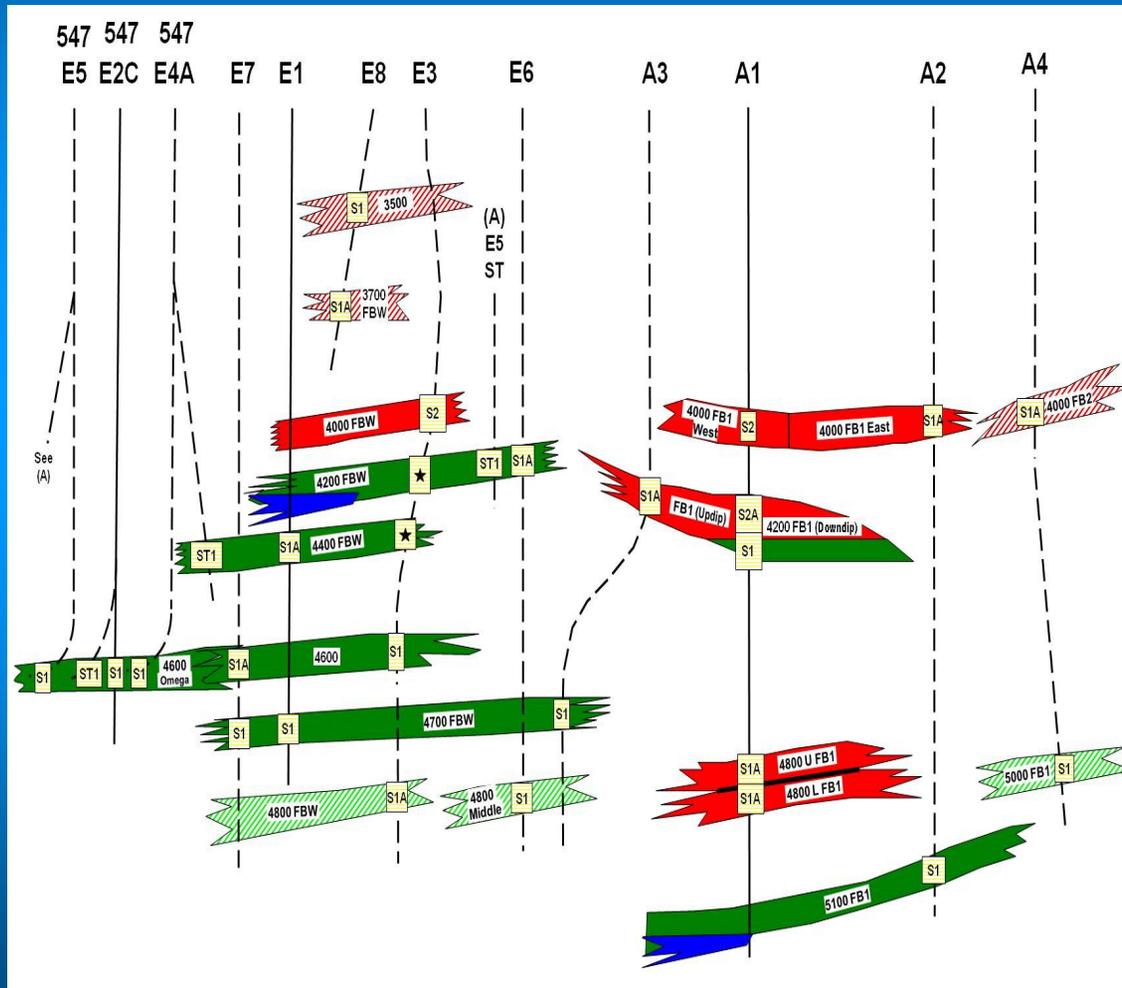
Far Stack Time Data

Deeper zone had different seismic response

Post #1 Well Depletion Plan



Current Depletion Plan

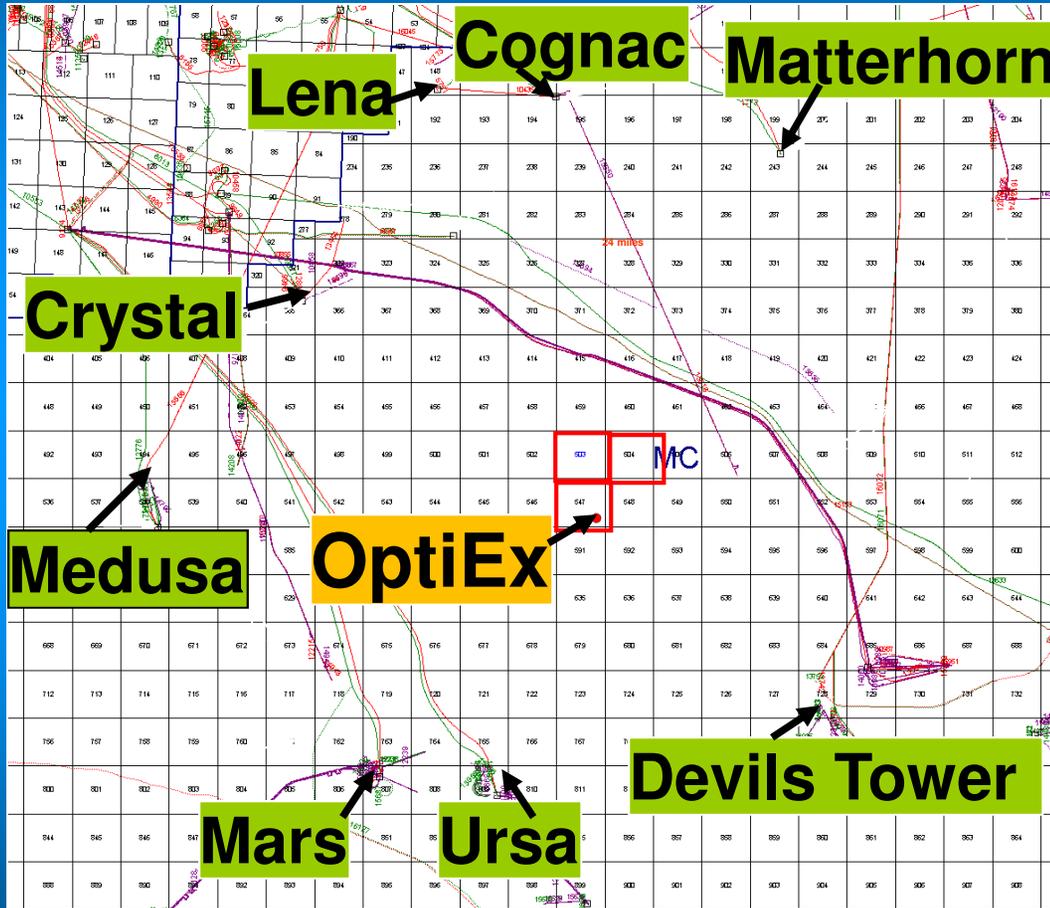


- 10 Productive Horizons
- Mostly oil
- 12 Wells
- 3 Future Sidetracks
- Smart Selective Completions
- 28 Completions

Host Options

Development Scenarios/ Desired Capacity

- Nearest host 20 miles
 - Most had limited capacity
- Pre #1 – Existing host
 - 1 MBOPD, 40 MMCFD
- Post #1 – New shelf platform
 - 25 MBOPD, 100 MMCFD
- Post #3 – New FPS
 - 35 MBOPD, 100 MCFD
- Post Optimization
 - 60 MBOPD, 150 MMCFD



Opti-Ex



Riser Adaptor



Coffer Dam/Riser Adaptor



Topsides



HP Gas



HP Inlet Module



Flare Tip



Sales Meter Skid



LACT

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Regulatory Approval

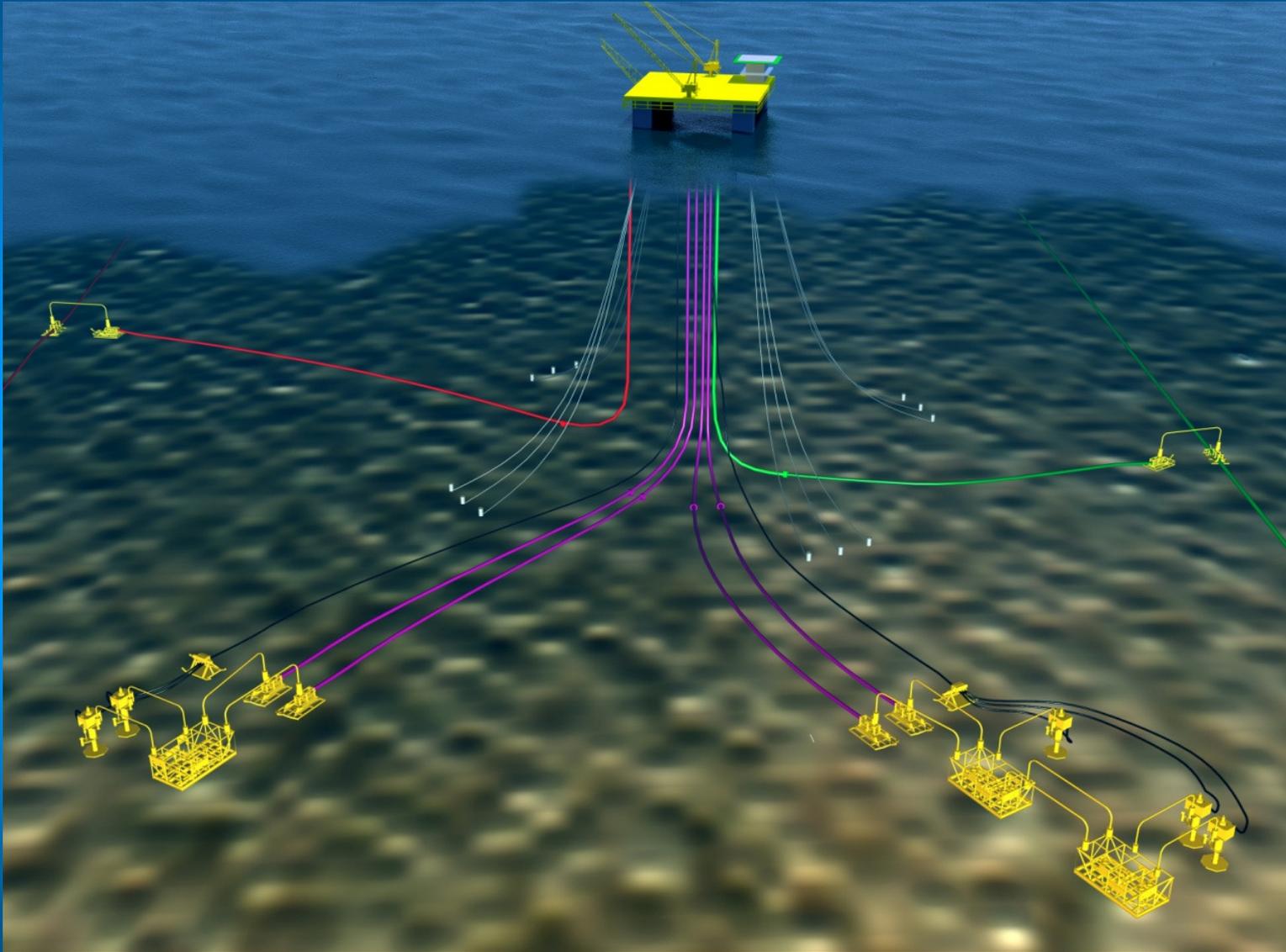
OPTI-Ex

- USCG normally reviews project during construction
- ABS hired “as if” CVA
- USCG worklist of 102 items

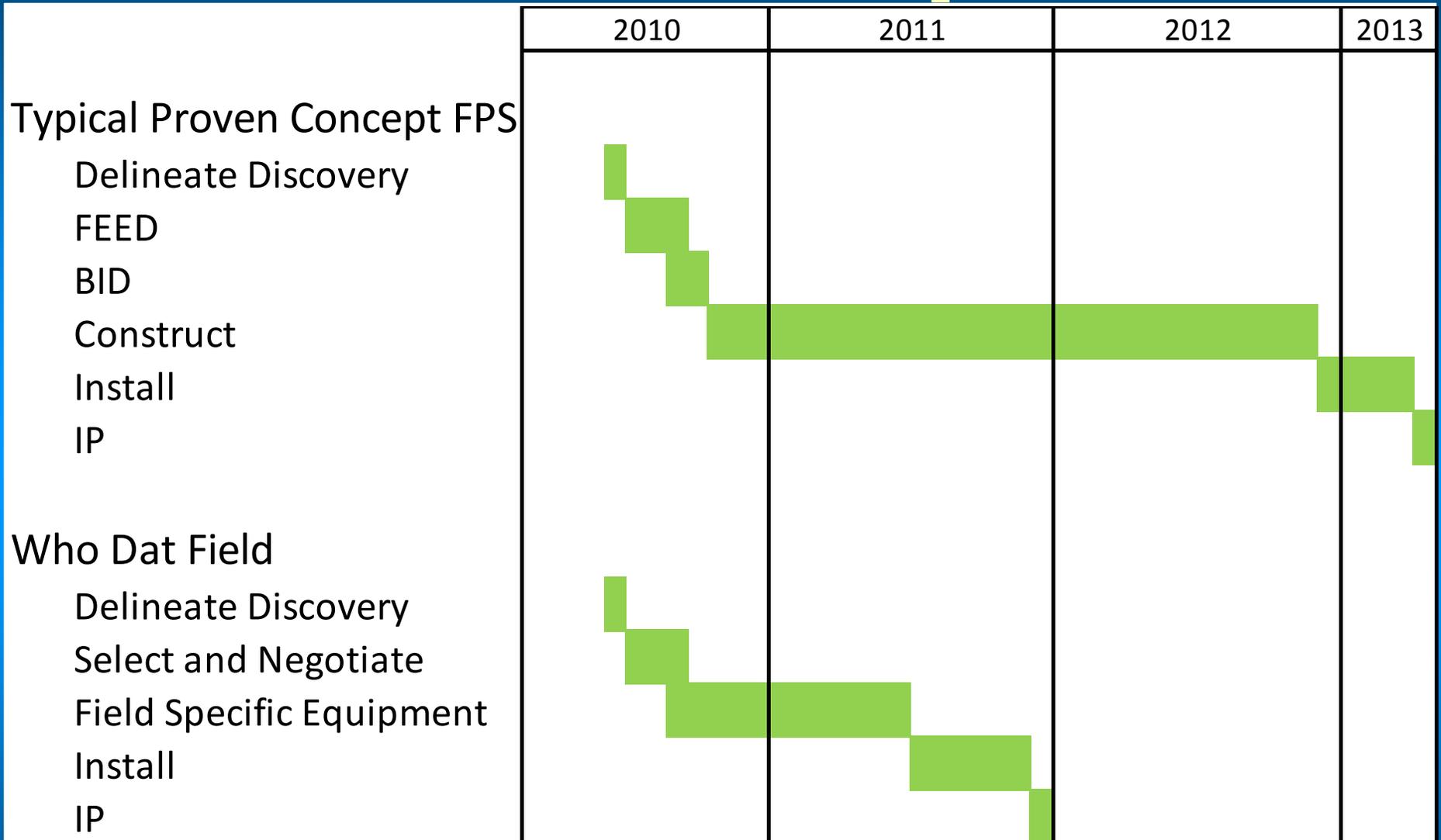
Wells

- Macondo drilling moratorium prevented further drilling
- Field unexpectedly suddenly moved into completion mode

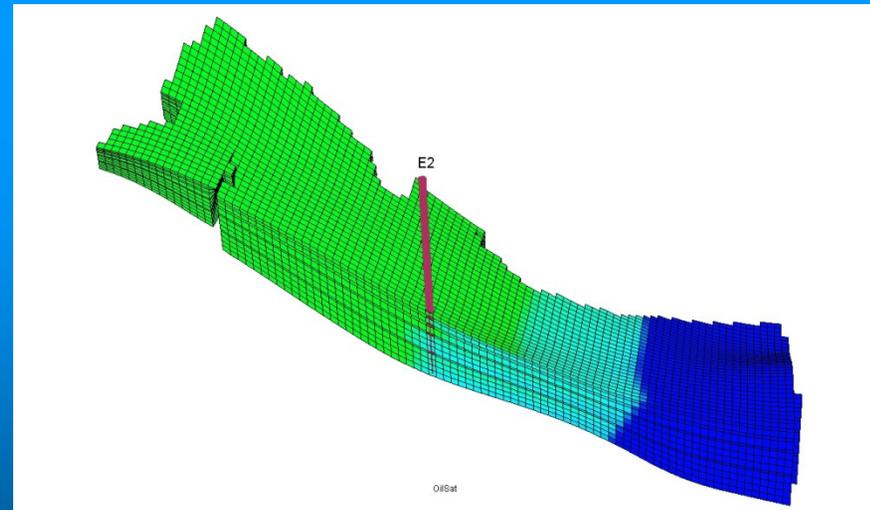
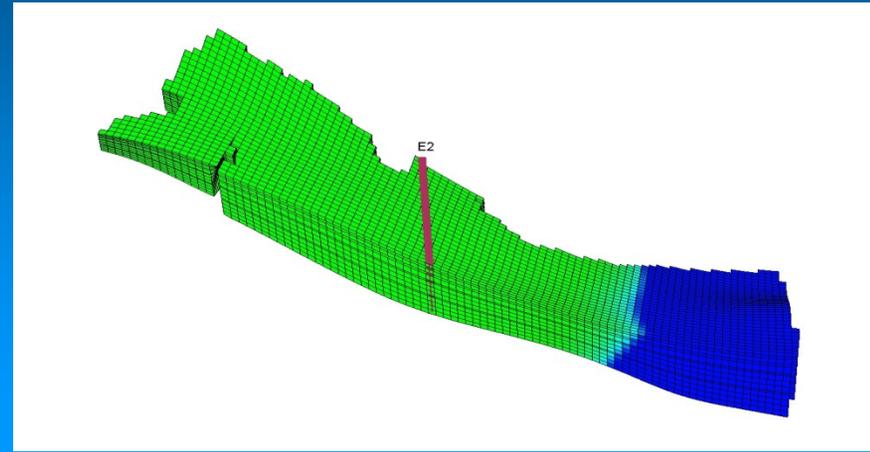
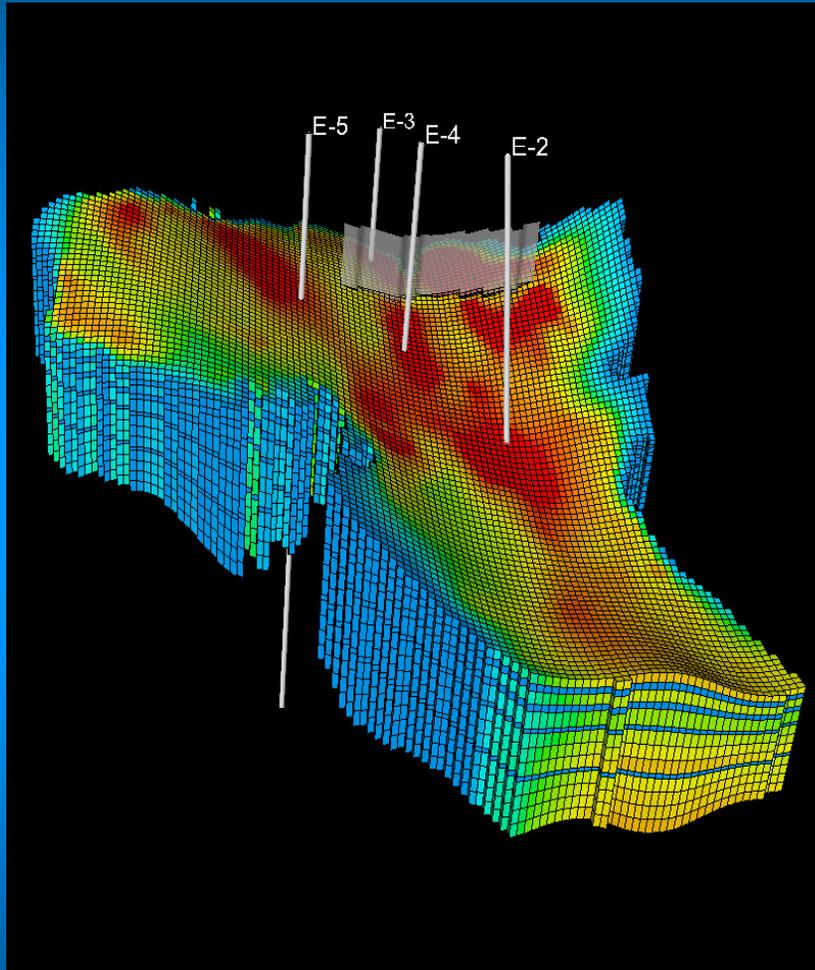
Who Dat Project Scope



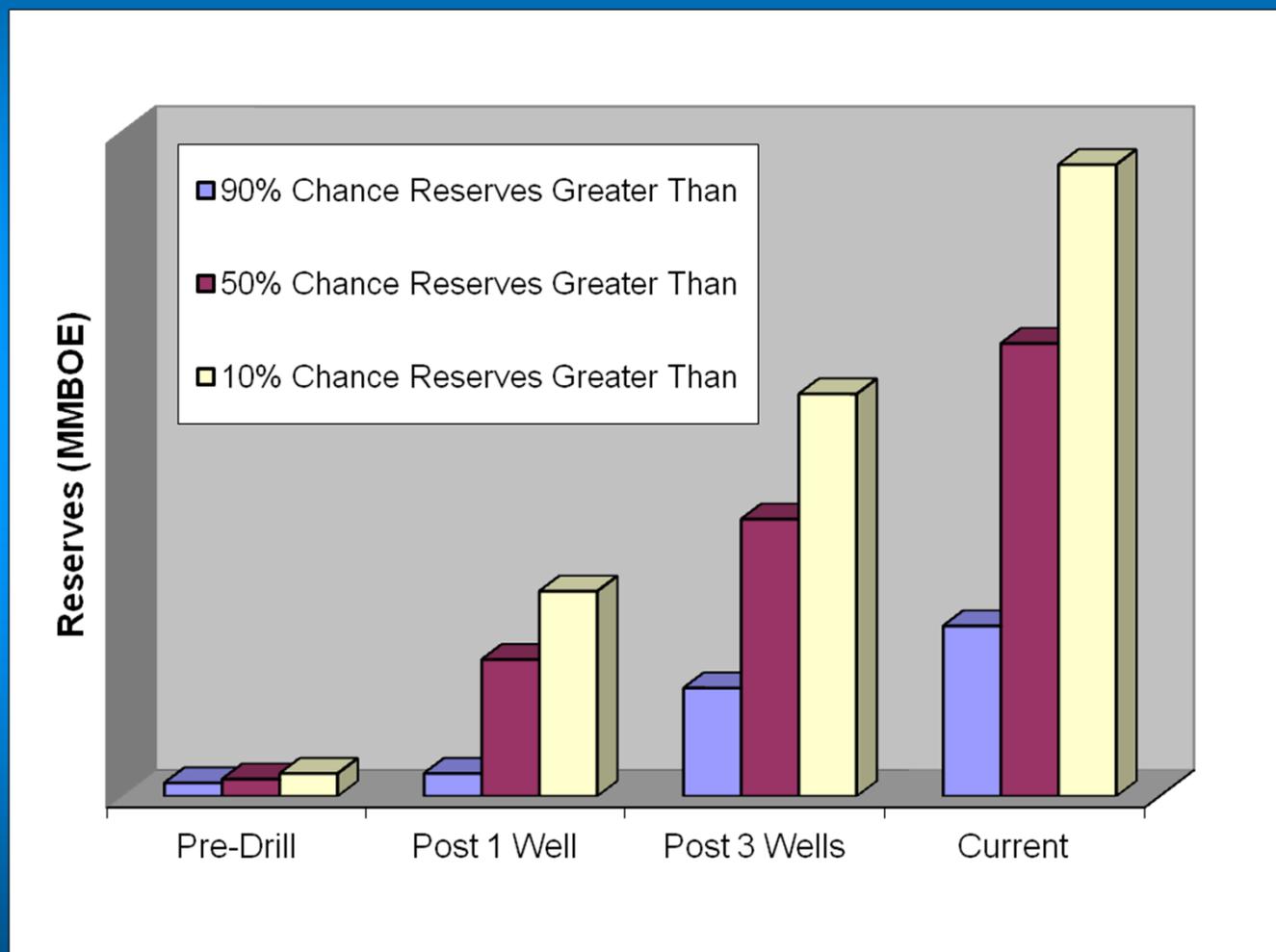
Schedule Impact



Reservoir Simulation



Expected Reserves



- More zones
- More oil
- Thicker sands
- Area outside of amplitudes
- Simulation
 - Cr
 - Fluid work

Conclusions

- Reserves increase completely changed the development plan
- Equipment inventory facilitated early completions
- Opti-Ex is a flexible FPS design
- Spec built facility greatly accelerated production
- Creative deal structure greatly reduced cost to startup
- Single installation vendor eased vessel access

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