

## **Think, Innovate, Deliver, Learn ...**

### **A Marginal Field Development in West Africa**

#### **Situation as first encountered by Summit Upstream**

- Platform 60% complete but much information missing
- Unclear condition for 4 existing wells
- Unclear production test information for 4 existing wells
- Unclear geological/reservoir model
- Unclear exploitation plan (wells)
- Unclear platform installation plan
- Complex Geography and disparate design teams and legacy hardware
- Inefficient and ill-defined planning sequence
  - When to drill?
  - When to install platform?
  - When to bring in FPSO?
  - How to arrange hook-up?
  - How to drill/test/complete the wells?

#### **Corrective actions by Summit Upstream**

- Assess physical state of platform
- Completed the design of the platform
- Directed the mechanical completion of platform fabrication in Louisiana
- Assess pipeline export option with lagoon based process barge and infrastructure tie-in options
- Reviewed FPSO export option and negotiated lower lease rate
- Completed the installation, hook-up and commissioning plans
- Design, tender, evaluate, and deliver plan for wells (Field Prod Tech Rev)
- Gather disparate information on existing wells
- Participate in defining the geological/reservoir model
- Conducted an export market study
- Managed the geophysical and geotechnical surveys
- Design wells to exploit the reservoir
  - Two new wells
  - Four existing wells
- Plan, hold, evaluate three Field Development Workshops
  - Drill, complete, test, produce, maintain the wells
  - Complete, transport, install, hook-up the platform
  - Assess all risks connected with the project
- Reinforce integration between participating teams
- Critically challenge project schedule

#### **Resolution by Summit Upstream**

- Organise and hone the install/drill/hook-up sequence
- Investigate a new artificial lift scenario
- Begin Investigations into a conductor tower
- Begin investigations into post installation well maintenance
- Outsourced field production operations to the FPSO operator to leverage synergies with two other operators in the same waters

**Findings on Summit Upstream's creative actions**

- The conductor tower provides flexibility to the schedule and results in \$60 million savings
- PCP pumps are the most attractive artificial lift option
- Well maintenance is key to efficient field exploitation with a difference of \$15 million between first and second choice options
- Different approaches are necessary between the existing wells and the new wells to be drilled

**The Final Plan**

- Design, build, install conductor tower
- Sell the minimum facilities platform to the highest bidder
- Re-configure to include all process/control equipment
- Finalise well maintenance plans as a key component of field exploitation
- Finalise complete outsourcing of production operations and field logistics

**Management Reporting**

- Developed and presented project progress to the E&P Board and West African government ministry
- Prepared and presented project status and history to potential farm-in partners
- Assisted the development of various field economic scenarios

For further information,  
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