

Deep Water Gulf of Mexico Commingling

Background and Subsurface Setting

Three deep water gas fields in the Gulf of Mexico — Aconcagua, Camden Hills, and King's Peak — are using intelligent completion technology to optimize the subsea development of a marginal reserve base, along with pipeline, platform, and subsea system synergies. These fields are located in Mississippi Canyon and Desoto Canyon Blocks in 6200 to 7200 ft of water, 55 miles from the most distant well location, with production tied to the Canyon Station host platform. Eight of the nine production wells in this three-field project are completed as intelligent wells, making it the largest field-wide deployment of intelligent completion technology in the world.

Challenge

The use of intelligent completion equipment to optimize the reservoir is critical to the economic success of these fields. Intelligent completion technology enables gas production from multiple zones to be commingled, and the well to be reconfigured to shut-off water production without the requirement for well intervention. These capabilities will allow the subsea developments to be completed and produced economically.

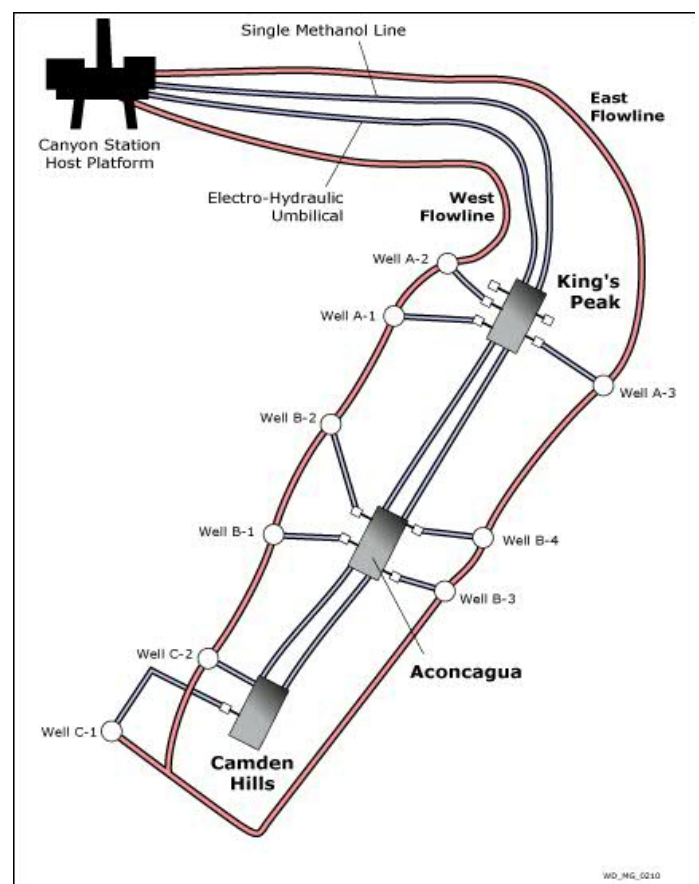
SmartWell® Solution

All zones within each well will have the capability to be commingled initially. As water production occurs, the zones will be shut off as necessary to eliminate water production. The intelligent completion equipment will allow the reservoirs to be produced in the following manner:

- Fully open lower zone; upper zone shut-in
- Fully open upper zone; lower zone shut-in
- Both zones shut-in for extended well test or during emergency shutdown
- Both zones fully open

Customer Value

A unique field developmental plan of shared umbilicals, flowlines, intelligent completion technology, and platform processing has facilitated the development of three deepwater fields that otherwise would not have been economically feasible to produce. This achievement can be attributed to the application of innovative technology such as intelligent completion technology, and demonstrates that "real-time" reservoir management can significantly improve reservoir performance and enable the economical development of marginal fields.



Aconcagua, Camden Hills and King's Peak - Field Overview

Details

Client	TotalFinaElf
Date Deployed	April 2002
Country	GOM USA
Field/Well	Aconcagua/MC305-3
TVD(m)	13,005
MD(m)	13,005
Dev (deg)	2
Temp (deg C)	154
Well Type	Gas Producer
Structure	Subsea
System	Direct Hydraulics™
Equipment Used	CV-ICV + CVS-ICV
No of Zones	3
ICV Size	2 x 3.5" + 1 x (shrouded) x 3.5"

Client	Marathon Oil
Date Deployed	February 2002
Country	GOM USA
Field/Well	Camden Hills/MC348-1
TVD(m)	14,619
MD(m)	14,908
Dev (deg)	45
Temp (deg C)	154
Well Type	Gas Producer
Structure	Subsea
System	Direct Hydraulics™
Equipment Used	CV-ICV + CVS-ICV + PDG
No of Zones	3
ICV Size	2 x 3.5" + 1 x (shrouded) x 3.5"

Client	BP
Date Deployed	July 2002
Country	GOM USA
Field/Well	King's Peak/MC217-3
TVD(m)	13,035
MD(m)	15,573
Dev (deg)	62
Temp (deg C)	158
Well Type	Gas Producer
Structure	Subsea
System	Direct Hydraulics™
Equipment Used	CV-ICV + CVS-ICV
No of Zones	2
ICV Size	2 x 3.5"

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