HELIX
ENERGY SOLUTIONS GROUP

Spill Containment

<u>Fast</u> Response to GOM Subsea Oil Spills

Helix Deepwater Scope of Operations

Vessel selection

Working in Gulf of Mexico

- Meet USCG requirements
- Certified for operations in Gulf (Helix Producer I)
- Jones Act compliant (Q4000)

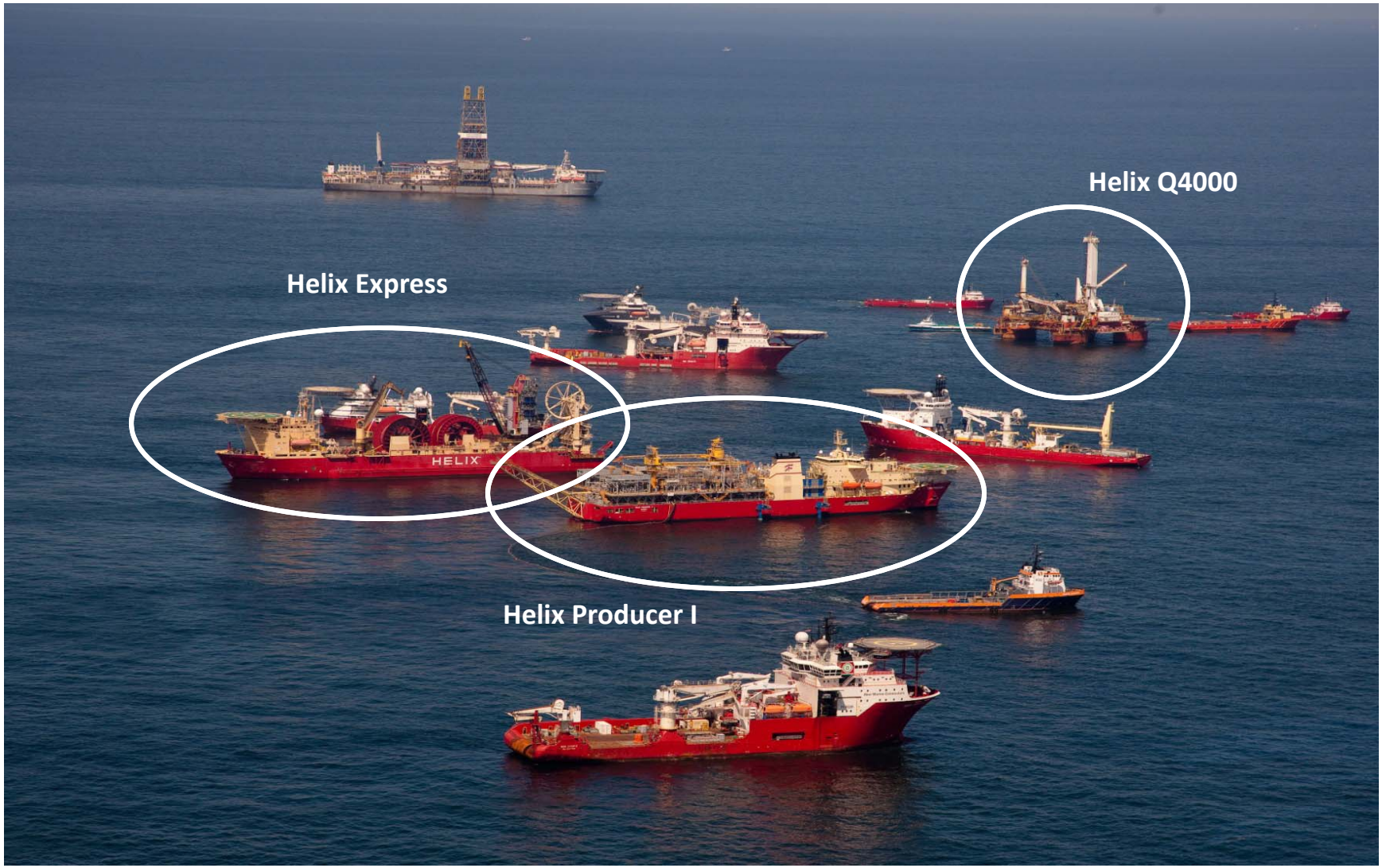
Equipment operational and maintained

Expert knowledgeable crew

Multi faceted – reducing number of vessels in the field

Able to mobilize on short notice

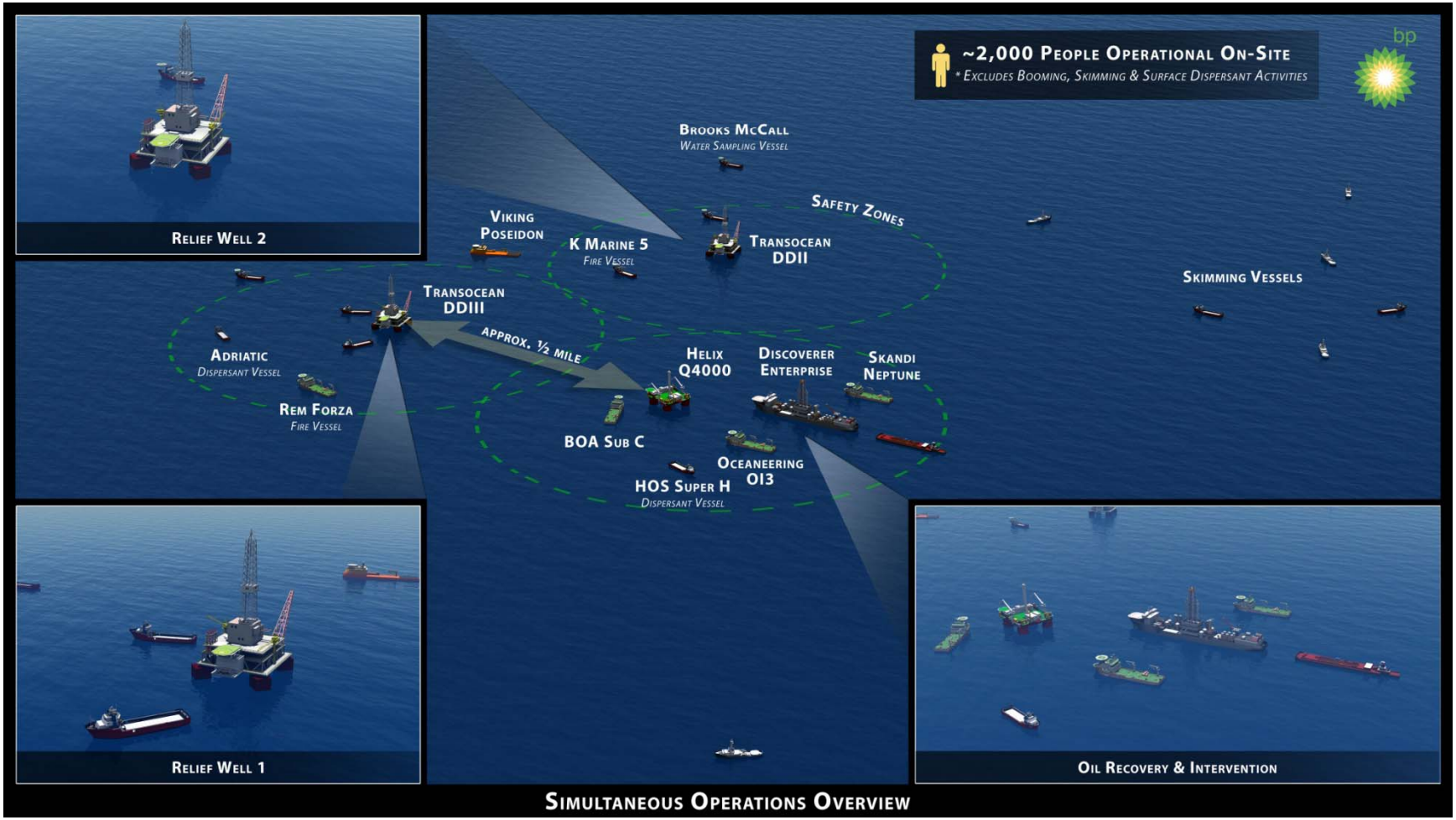
Helix Vessels at Macondo



Helix Q4000

- DP3 MODU
- US Flag – ABS classed
- 600 Te. Multi Purpose Tower (Derrick)
- 360 Te. / 160 Te. Deepwater Cranes
- 2 x 150 HP ROV's
- 3,000 barrel fluid handling system
- Open deck versatile – not your typical rig
- Large accomodations

SIMOPS on the Surface



Q4000 Macondo Response

Dynamic Kill

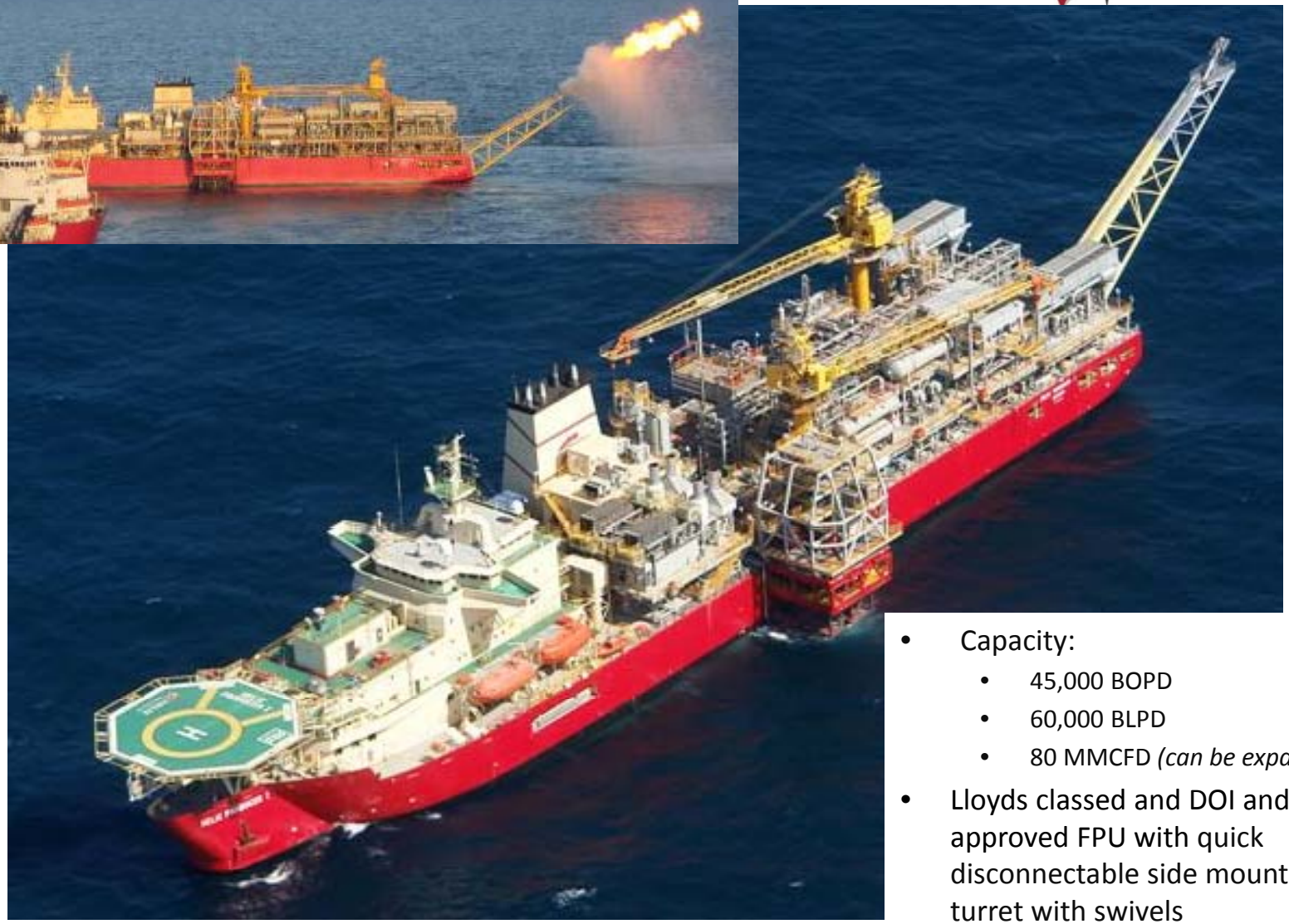
Static Kill

With Evergreen Burners

Full Stack recovery

- Arrived in staging area within 3 days of call-off
- Multi functional and ease of adaptability between operating modes
  - Containment
  - Dynamic Kill
  - Flaring
  - Static Kill
  - Recovery
  - Control platform for LMRP/BOP yellow pod

DP 2 FPS Helix Producer I



- Capacity:
  - 45,000 BOPD
  - 60,000 BLPD
  - 80 MMCFD *(can be expanded)*
- Lloyds classed and DOI and USGC approved FPU with quick disconnectable side mounted turret with swivels

HPI Macondo Deployment

Called to action on June 12, 2010. Departed Phoenix / Typhoon location in GC237 within 2 days and was operational in MC252 30 days later. Helix plans to make permanent modifications to the HPI to shorten response time from 30 to 10 days.

270 te. Buoy designed and built in two weeks..

Our goals

- Call-off on Day 1
- Response time of 10 days from call-off to in-service

HPI Modifications for Macondo

- Fabrication of new buoy
- Fabrication of water curtain system to cool the flare boom
- Fabrication of off-loading systems

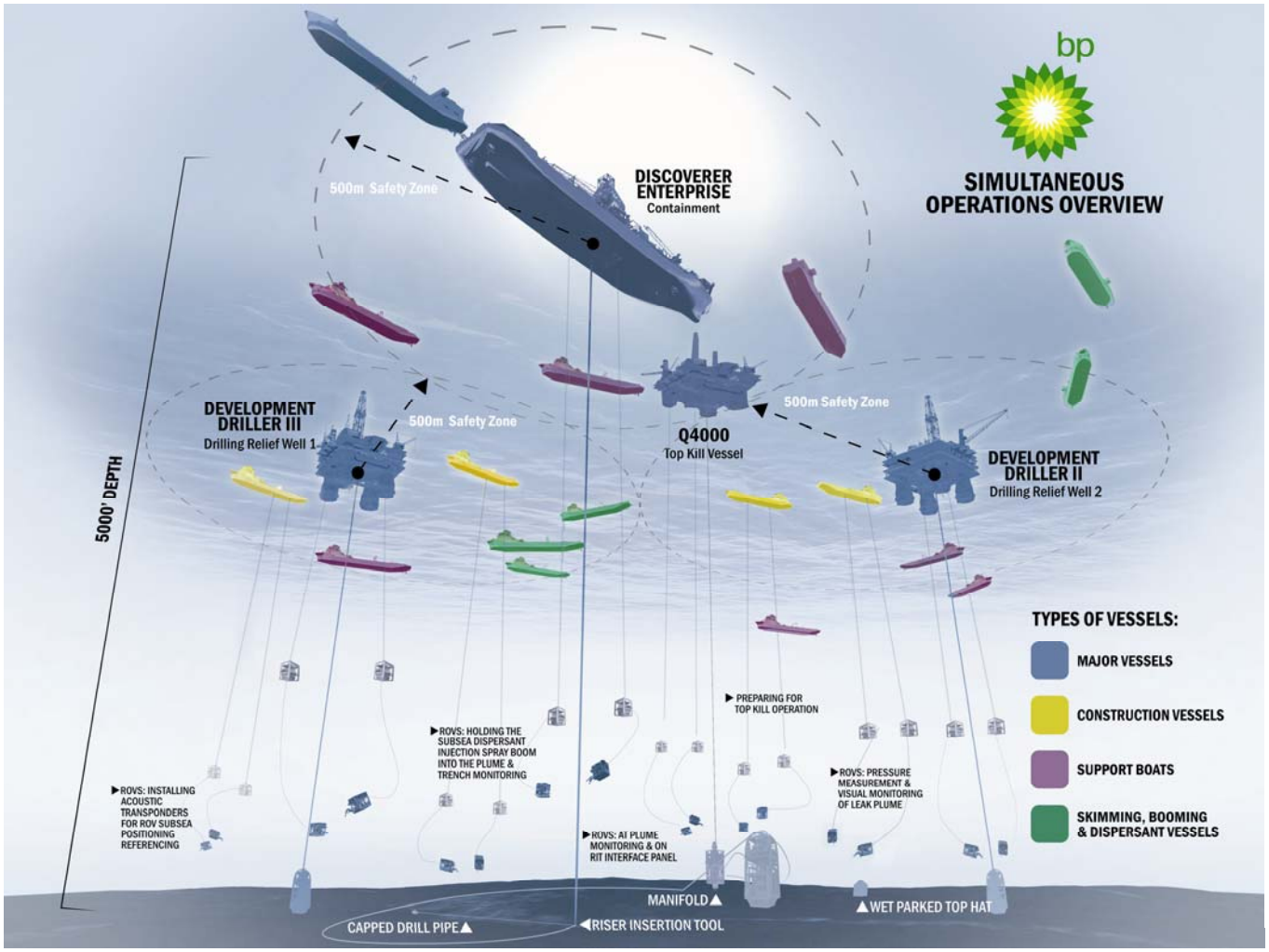
Future Response

- HPI is GOM based and is the best suited vessel for hydrocarbon containment
- Key is to keep the vessel in the GOM and make permanent modifications to meet response time goal

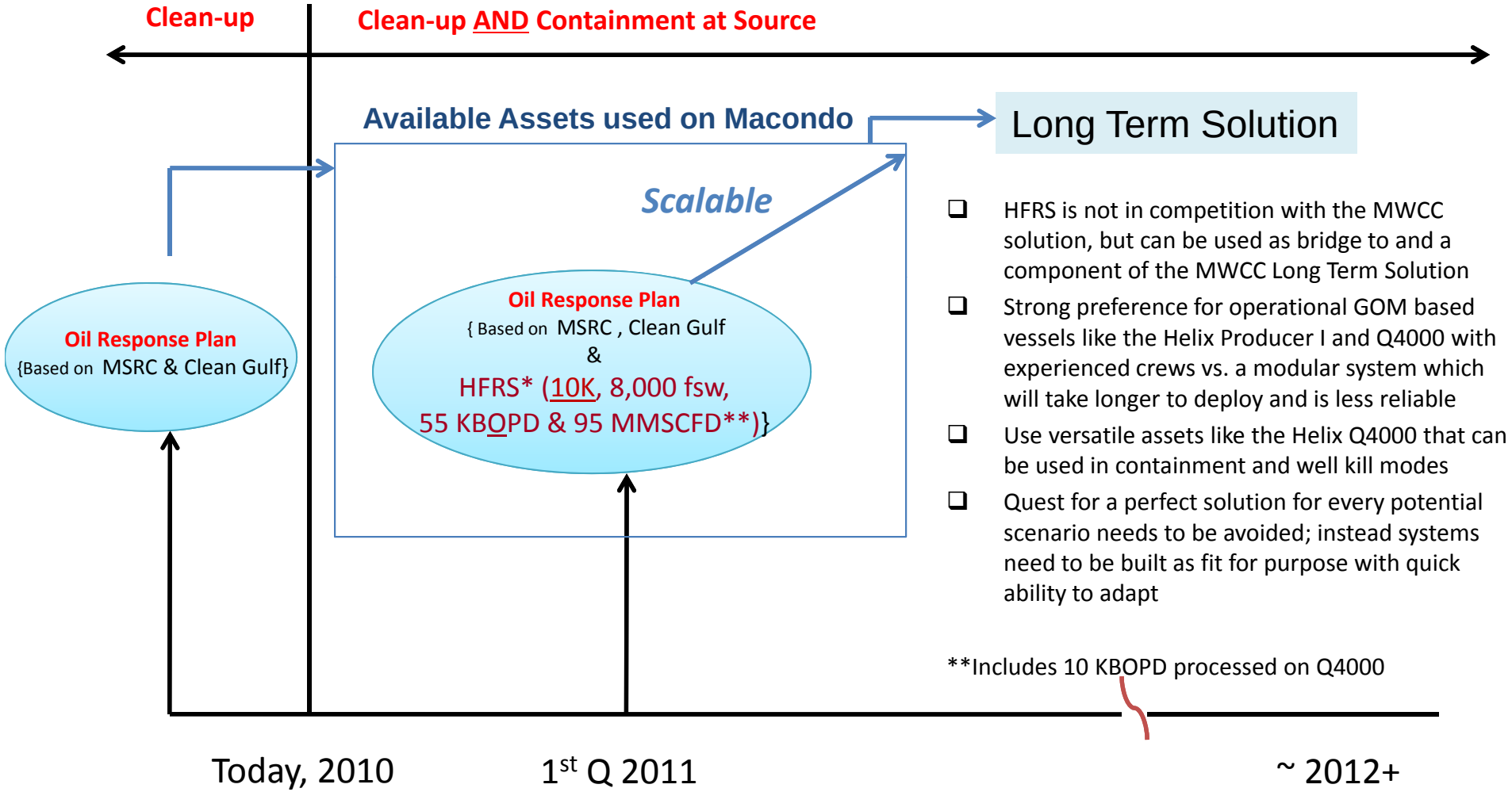
MSV DP2 Express

- 520 foot long DP2 reel lay vessel
- 450 Te. deck crane; 250 Te., A&R cable and 150 Te. AHC deepwater crane capable of reaching 10,000 ft.
- Reels hold 3,000 tons of rigid steel pipe up to 14 inches in diameter
- Open deck allows the vessel to carry multiple reels of flexible flowlines
- Carries up to three WROVs

SIMOPS subsea



Helix Fast Response System (HFRS)



- HFRS is not in competition with the MWCC solution, but can be used as bridge to and a component of the MWCC Long Term Solution
- Strong preference for operational GOM based vessels like the Helix Producer I and Q4000 with experienced crews vs. a modular system which will take longer to deploy and is less reliable
- Use versatile assets like the Helix Q4000 that can be used in containment and well kill modes
- Quest for a perfect solution for every potential scenario needs to be avoided; instead systems need to be built as fit for purpose with quick ability to adapt

**Includes 10 KBOPD processed on Q4000

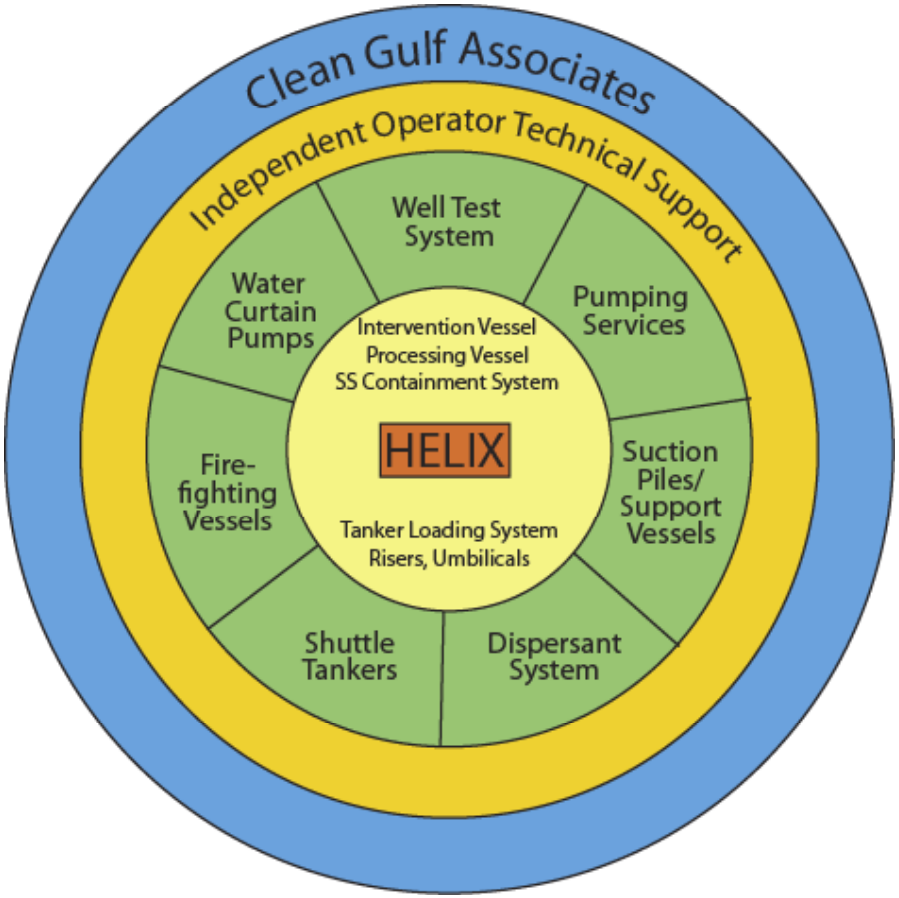
** HPI and Q4000*

Helix Fast Response System (HFRS)Administration

Helix Maintains and Stores Major Components

Pre-set Call-out Contracts with Multiple Providers of Support Services

Single Point Administration and Call Out by Clean Gulf



Industry Engagement

Anadarko Petroleum Corporation

ATP Oil and Gas

BHP Billiton (Americas)

Cobalt International Energy, LP.

Deep Gulf Energy, L.P.

Ecopetrol

ENI US Operating Co.

ERT

Hess

Houston, Energy, L.P.

LLOG Exploration Company, L.L.C.

Maersk Oil Houston, L.P.

Marathon Oil Company

Mariner Energy

Marubeni Oil and Gas (USA), Inc.

Murphy Oil Corporation

Nexen Petroleum USA

Noble Energy, Inc.

Petrobras America, Inc.

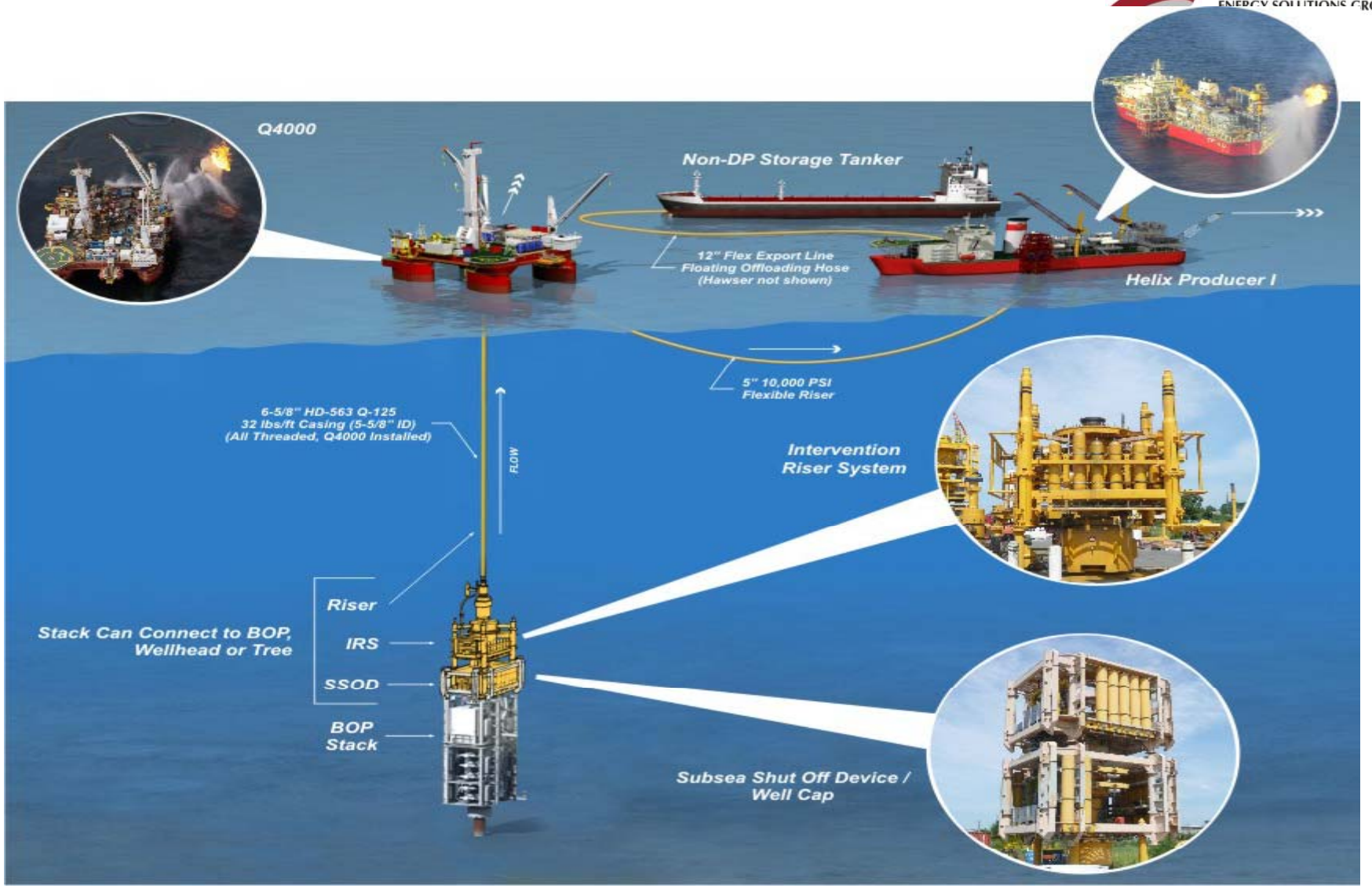
REPSOL USA

Stone Energy

Walter Oil and Gas

Woodside Energy USA

Helix Fast Response System (HFRS)



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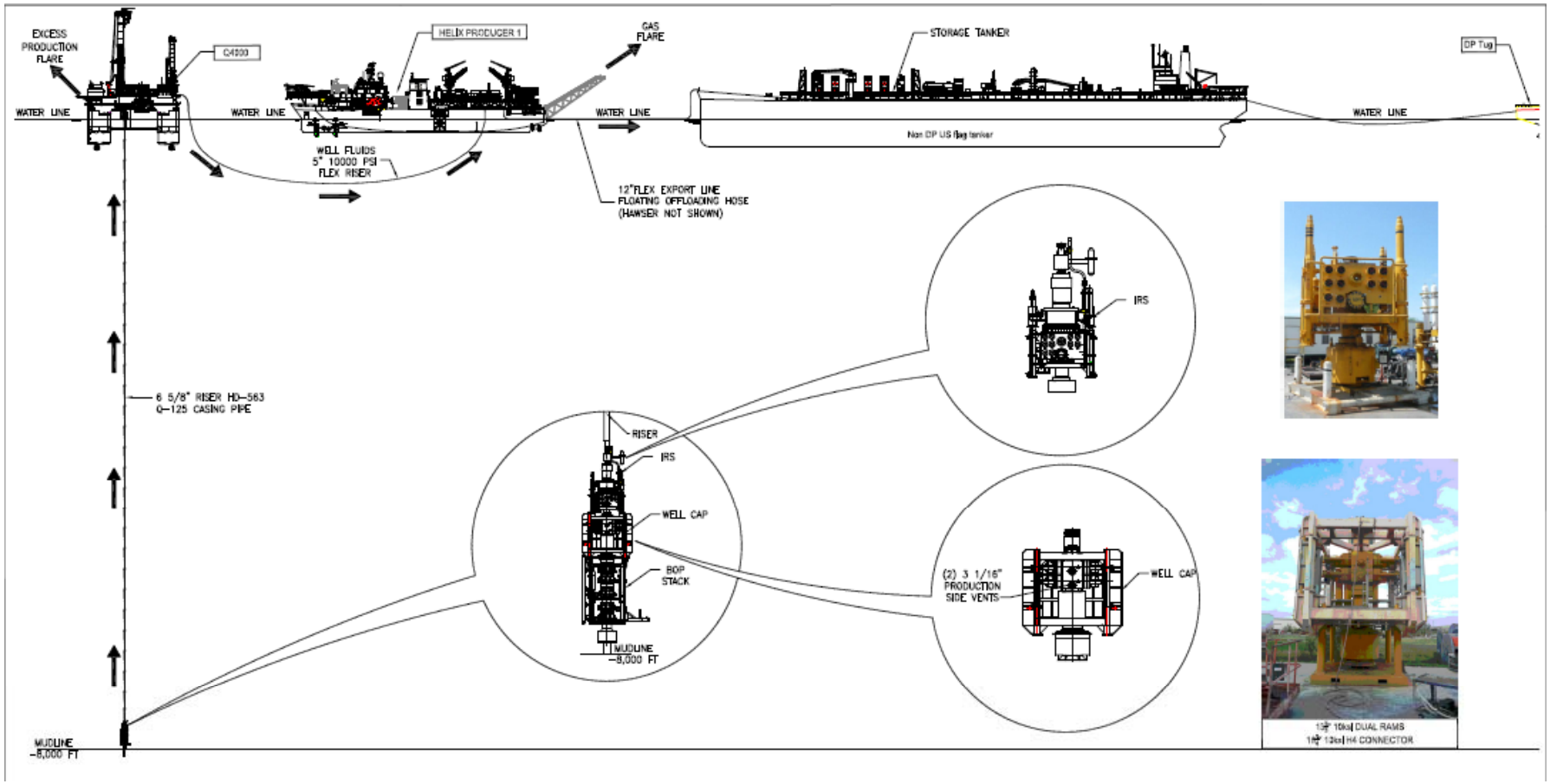
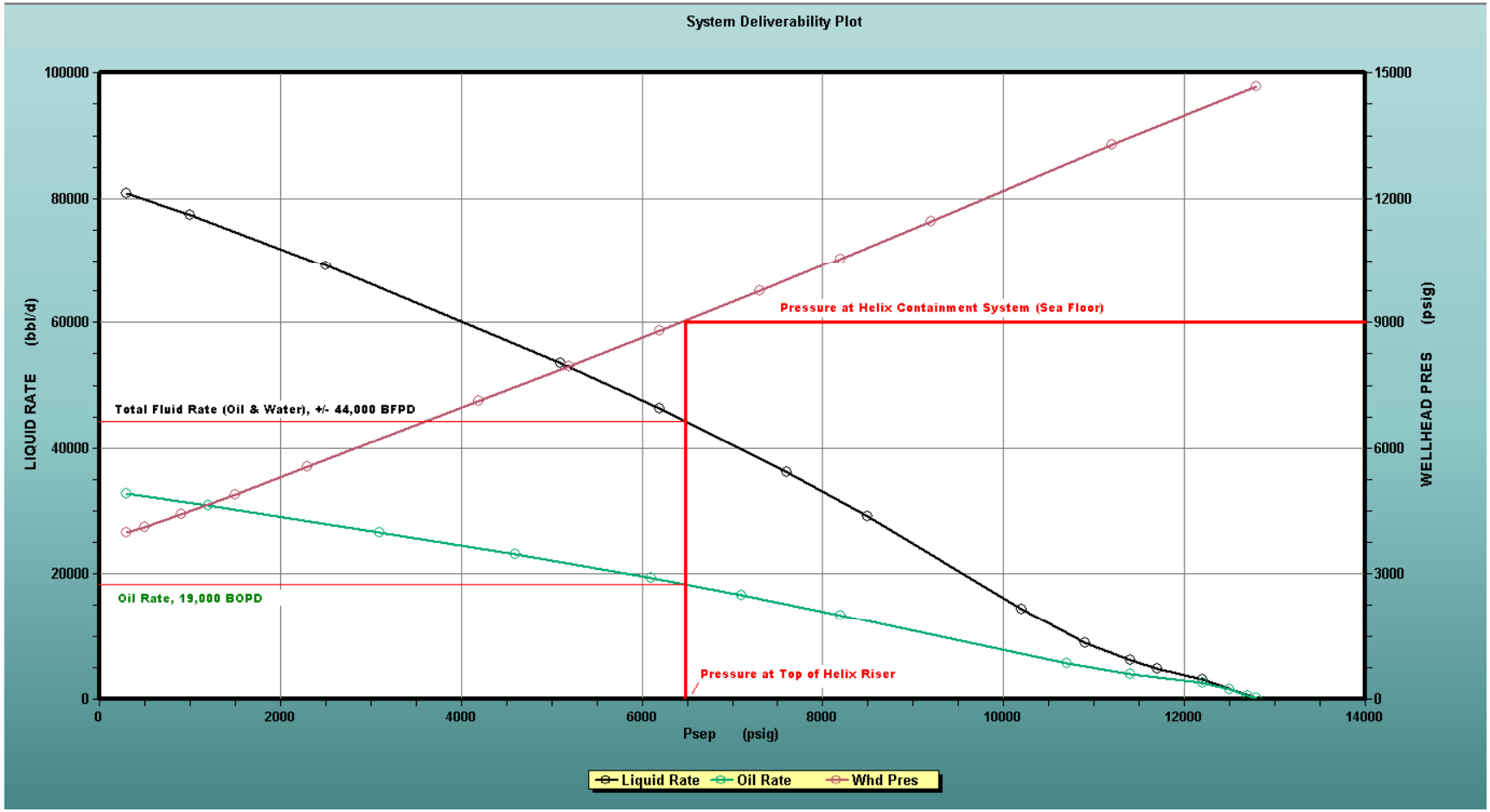


Containment Capacity Required << Well WCD

Real scenario of deepwater Miocene well: WCD = 92,000 BPD liquid (38,000 BOPD). Helix containment system reduces overall liquid flow to 44,000 BPD and oil to 19,000 BPD by applying a 6,500 psi back pressure at the Q4000



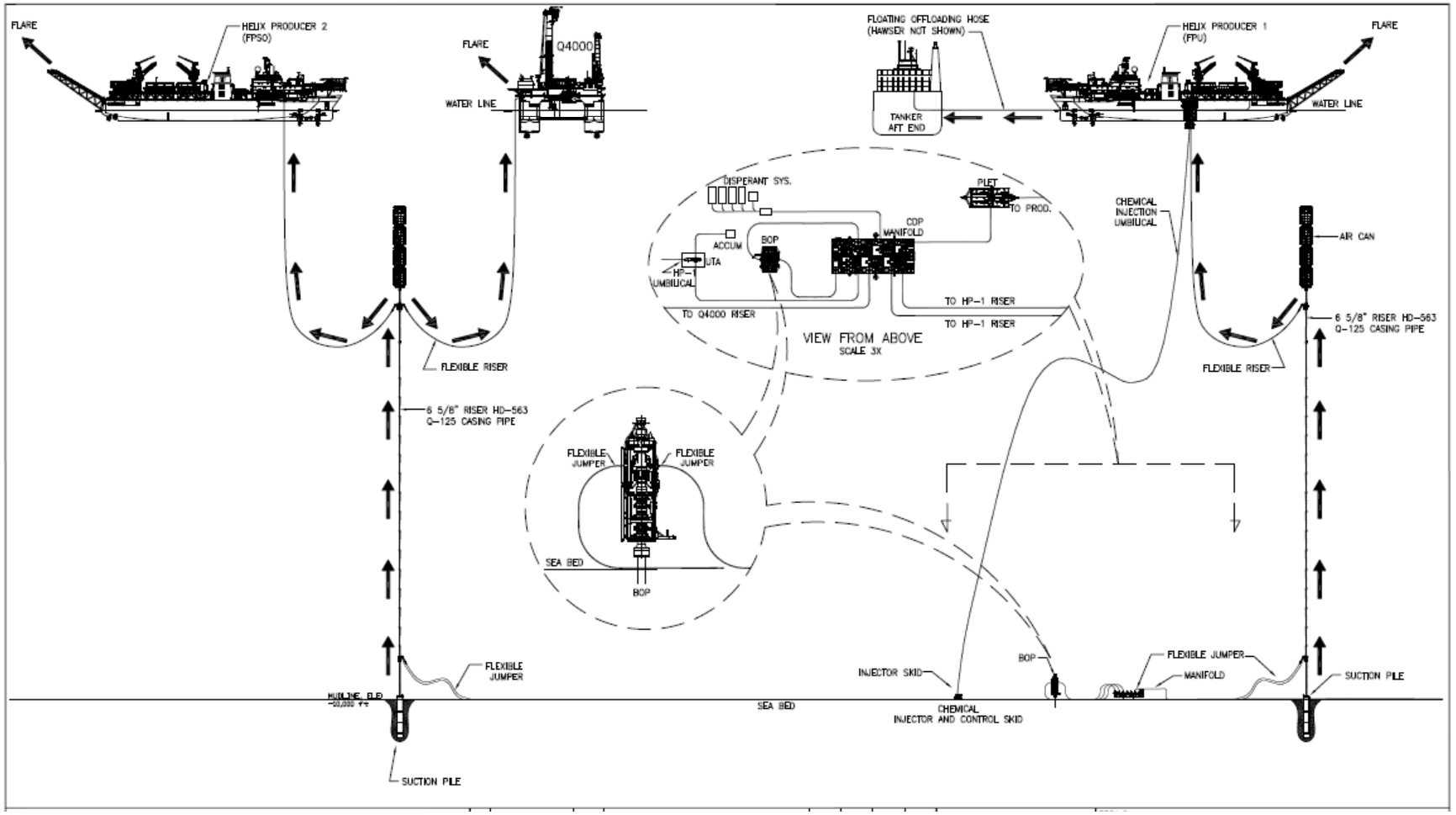
Open hole flow rate as parameter to size containment response capacity is not correct

Helix Fast Response System – Planning Stages

	HFRS	HFRS Expanded
MAOP (psi)	5,000	10,000
SIP (psi)	10,000	15,000
Max. Water depth (ft)	8,000	10,000
Well Control & Riser	Helix IRS, Helix SSOD	Helix IRS, Helix SSOD Freestanding Riser (HPI) Pipeline to host facility (extra)
Processing Facilities with estimated capacity	Total: 55,000 BPD and 95 MMCFD Q4000 @ 10,000 BPD and 15 MMCFD HPI @ 45,000 BPD and 80 MMCFD	Total: 110,000 BPD and 330 MMCFD Q4000 @ 20,000 BPD and 60 MMCFD HPI @ 45,000 BPD and 135 MMCFD HP2 @ 45,000 BPD and 135 MMSCD Plus pipeline capacity
Deployment time	10 days	17 days
Available	1st Q - 2011	2012 / 2013

Helix Deepwater Containment System – Phase 2

Target in-service date of 17 days from call-out



Additional production capacity and system redundancies will become available as the system evolves.

280,000 bbls. Oil burned on Q4000 over 33 days operation

Macondo by the Numbers

80 Barrels of kill fluid pumped every minute

through four vessels daisy chained to the Q4000 during the Top Kill operation

285,000 – Man hours Helix ESG and BP staff onboard the Q4000 during the blowout response

32,000 – Barrels of fluid used during the Static Kill

and cementing operation

135 – Days Q4000 worked at response site

Macondo by the Numbers

1,000,000 lbs.
Deepwater Horizon's BOP lifted from the sea-floor to the Q4000's deck

Key Take-Aways

- Ideal response resources are GOM based, self supporting and able to respond quickly in event of a subsea spill
- Industry participation is necessary to modify and prepare assets for specialized response
- HFRS and MWCS are not mutually exclusive. Containment response will expand and require industry standardization and research/development
- A staged approach must be taken in order to obtain early permitting wherever containment capability is appropriate
- The perfect solution for every conceivable scenario cannot be prepared. Focus should be on flexible systems with to adapt and respond.