

**From:** Caldwell, Jason  
**Sent:** Tue Jun 15 01:06:17 2010  
**To:** Dupree, James H; Shaw, Neil; Lynch, Richard; Tooms, Paul J; Looney, Bernard; Wells, Kent; Lynch, John E Jr. (Jack)  
**Cc:** Verchere, Christina C; Maguire, Niall J; Roberts, Jamie Y; Peijs, Jasper; Malone, Ryan P  
**Subject:** Secretary Salazar and Secretary Chu Meeting Slide Pack  
**Importance:** Normal  
**Attachments:** Secretary Salazar Chu June 15 2010\_final.ppt

Enclosed is the slide pack for tomorrow's meeting with Secretary Salazar and Secretary Chu.

Jason Caldwell

Executive Assistant to James Dupree

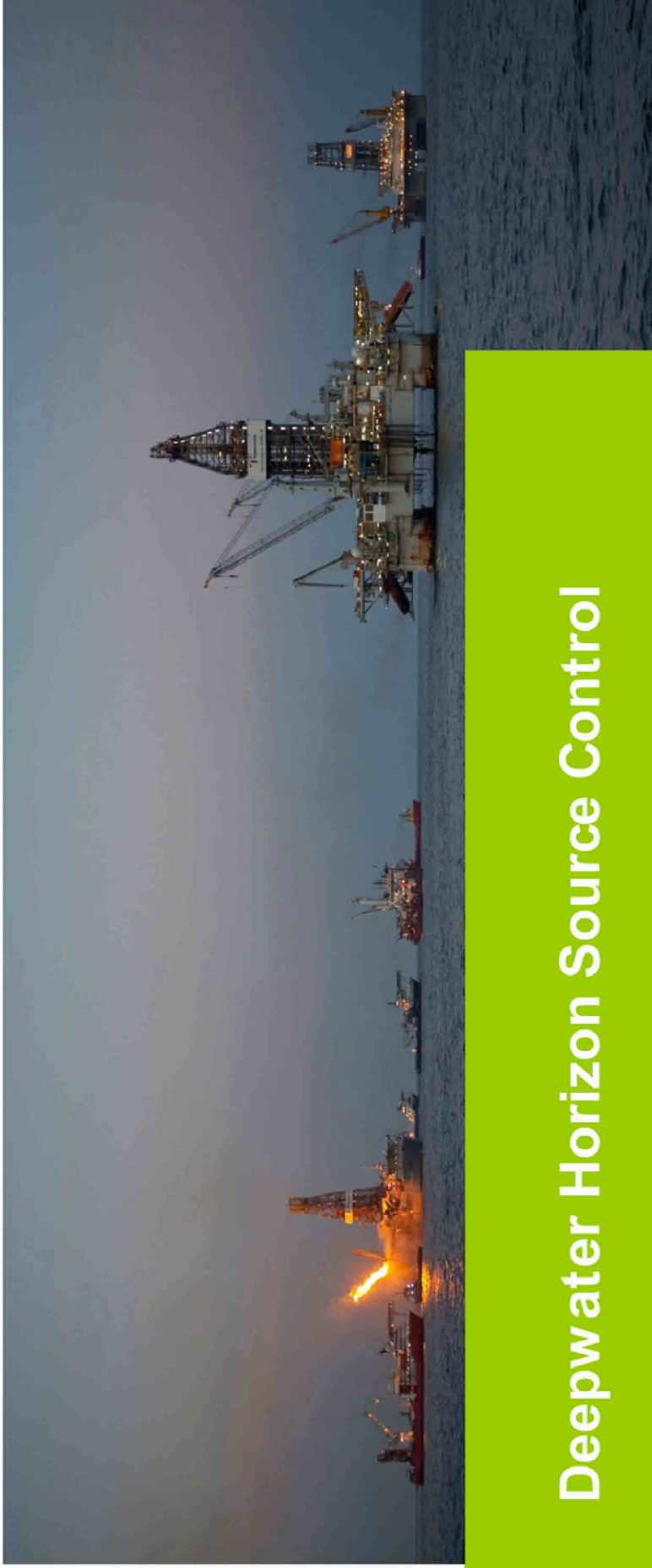
BP Gulf of Mexico SPU

281-366-1982 (O)

281-366-4300 (F)

713-249-1732 (M)

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# Deepwater Horizon Source Control

Tuesday June 15, 2010

# Agenda



- Forward Strategy
- External Involvement
- Learnings and Challenges
- Containment Options
  - Mid-June Containment
  - End of June Containment
  - Mid-July onward Containment
- Relief Wells

## Forward Strategy



- Long Term - Relief Wells
- Short Term – Containment
- Leveraging Industry and Government Expertise
- Multiple Parallel Options
- No Stone Unturned

# External Involvement



- **Government & Education** • **Industry** • **Service Providers**
  - US Navy - Oil and Gas companies: - 100+ companies incl:
  - US Coast Guard - ExxonMobil - Oceaneering
  - Department of Defense - Shell - Schlumberger
  - Department of Energy - Chevron - Cameron
  - Department of Interior - Conoco Phillips - Transocean
  - Environmental Protection Agency (EPA) - Anadarko - Wild Well Control
  - LSU faculty - Marathon - Boot & Coots
  - UT faculty - Hess - Cudd Well Control
  - - ENI - Halliburton
  - - Petrobras - GE
  - amongst others

## External Peer Reviews



- Top Kill
- Relief Well Ranging
- Latch Cap
- Stack on Stack
- Relief Well Kill

# Learnings and Challenges



- Rupture Disks
- Pressure drop in BOP
- Drill pipe in BOP – 2?
- Flex Joint and BOP inclination
- Single MUX cable
- Hydrates
- Subsea Dispersant
- SIM OPS / VOCs
- Hurricane Season

# Building Containment Capacity and Redundancy



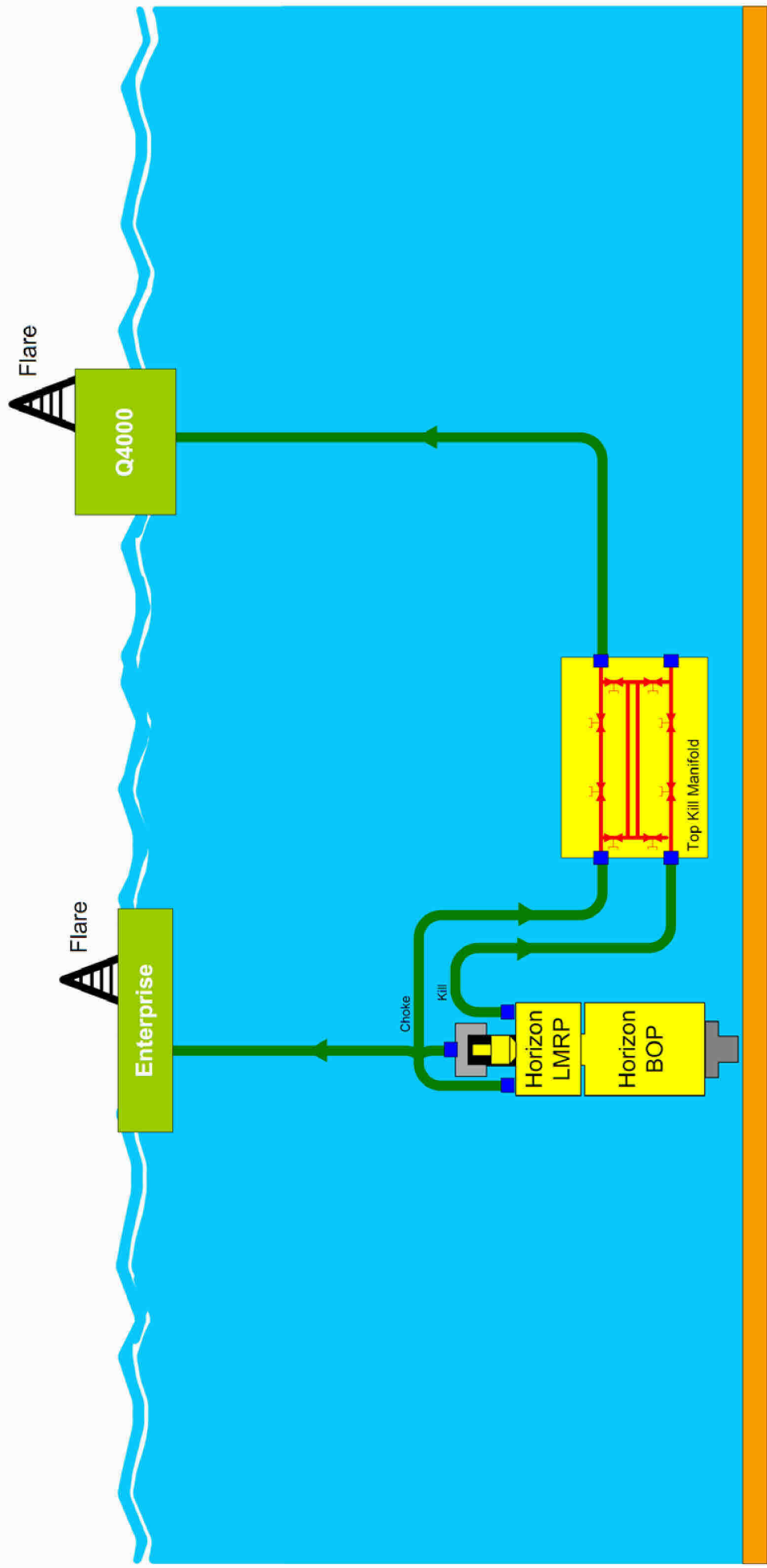
- 1
- 2
- 3

Timing	Capacity [mbd]	Production Vessel
Mid June	20-28	Enterprise + Q4000
End June	40-53	+ Toisa Pisces <u>or</u> Helix Producer
Mid July	60-80	+ Both Toisa Pisces <u>and</u> Helix Producer + Clear Leader



# Containment: Mid June

Capacity 20 – 28 mbd

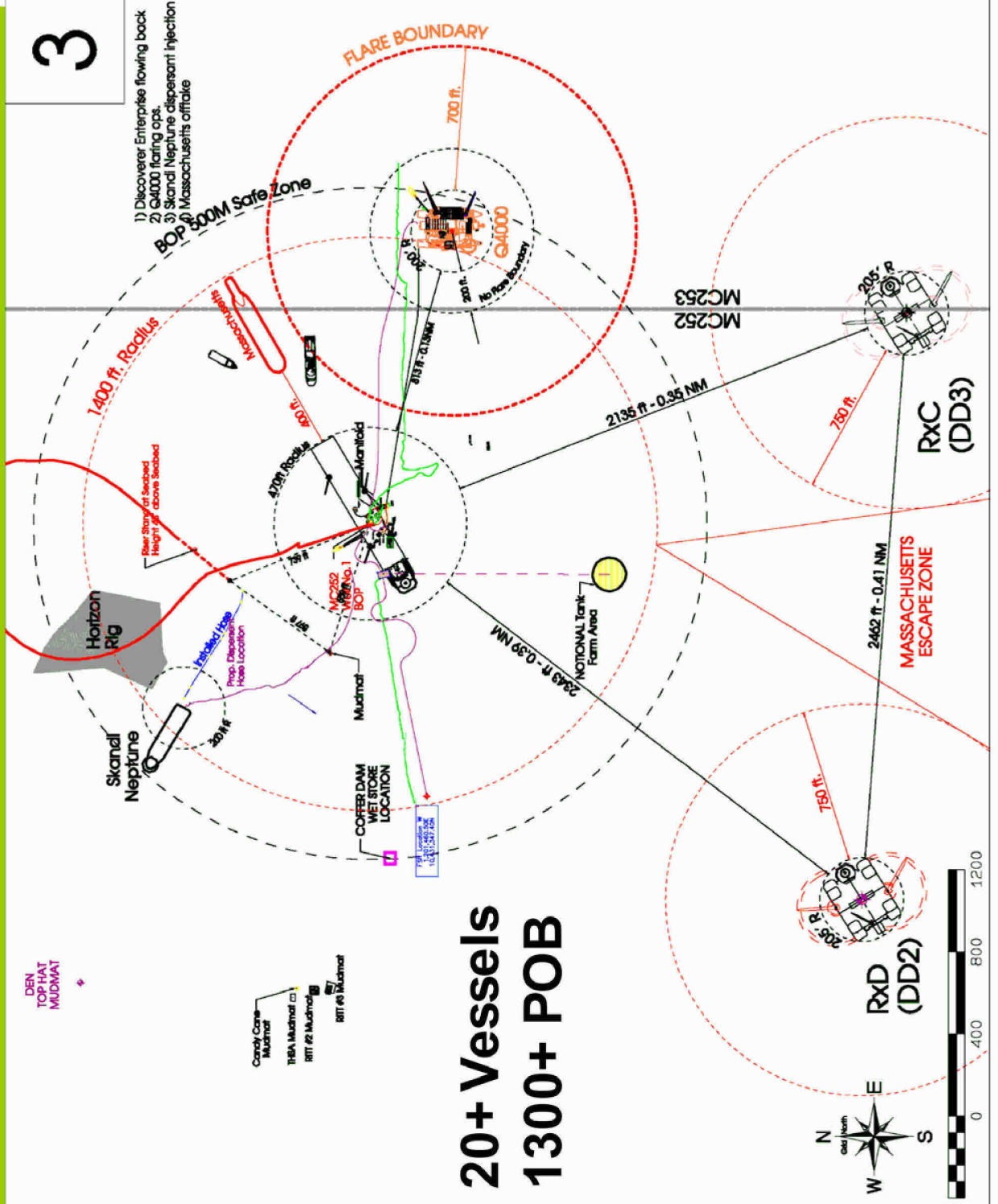




# Mid June SIM OPS

## 3

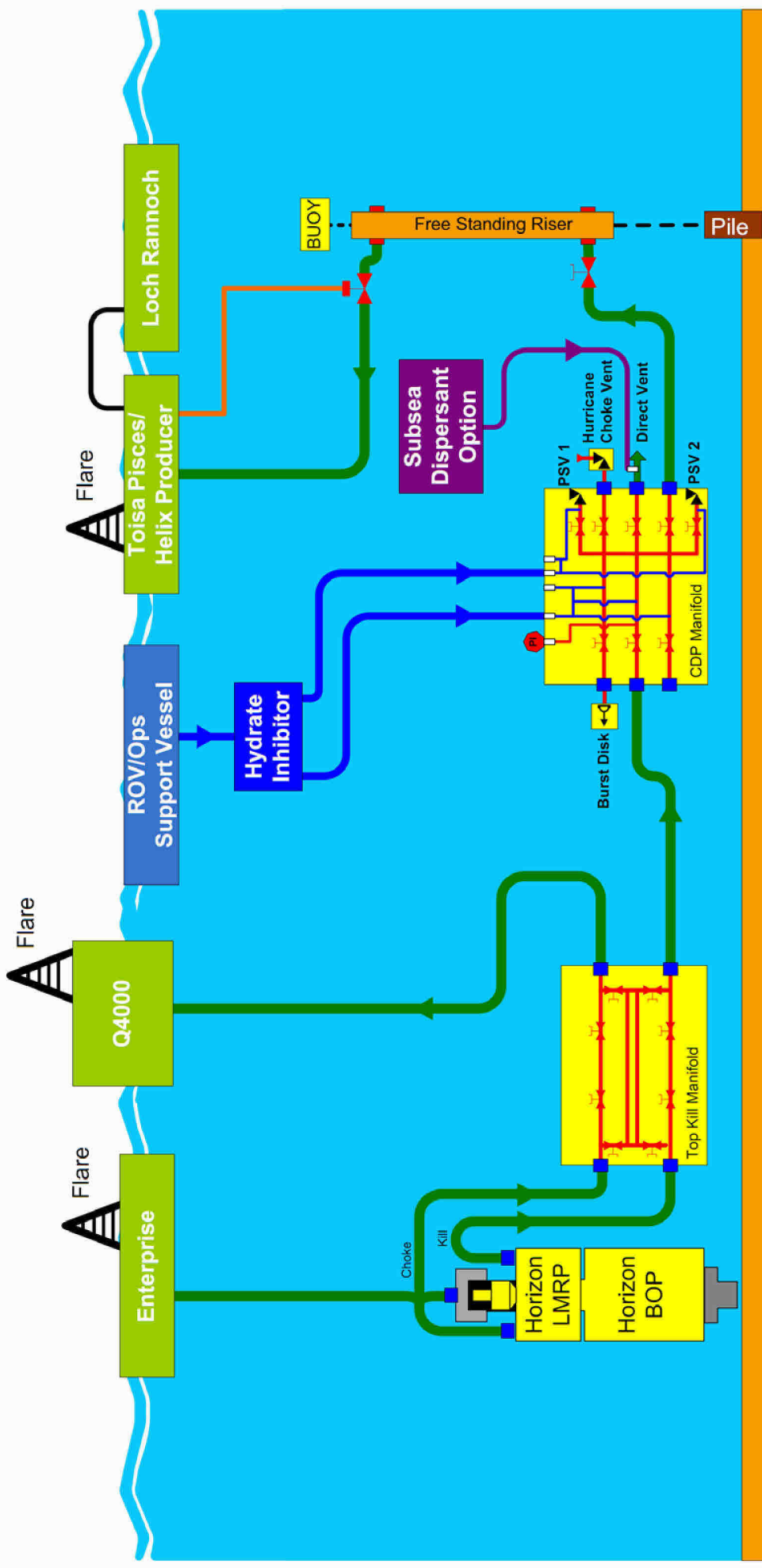
- 1) Discoverer Enterprise flowing back
- 2) G4000 flaring opt.
- 3) Skandil Neptune dispersant injection
- 4) Massachusetts offtake



**20+ Vessels**  
**1300+ POB**

# Containment: End June

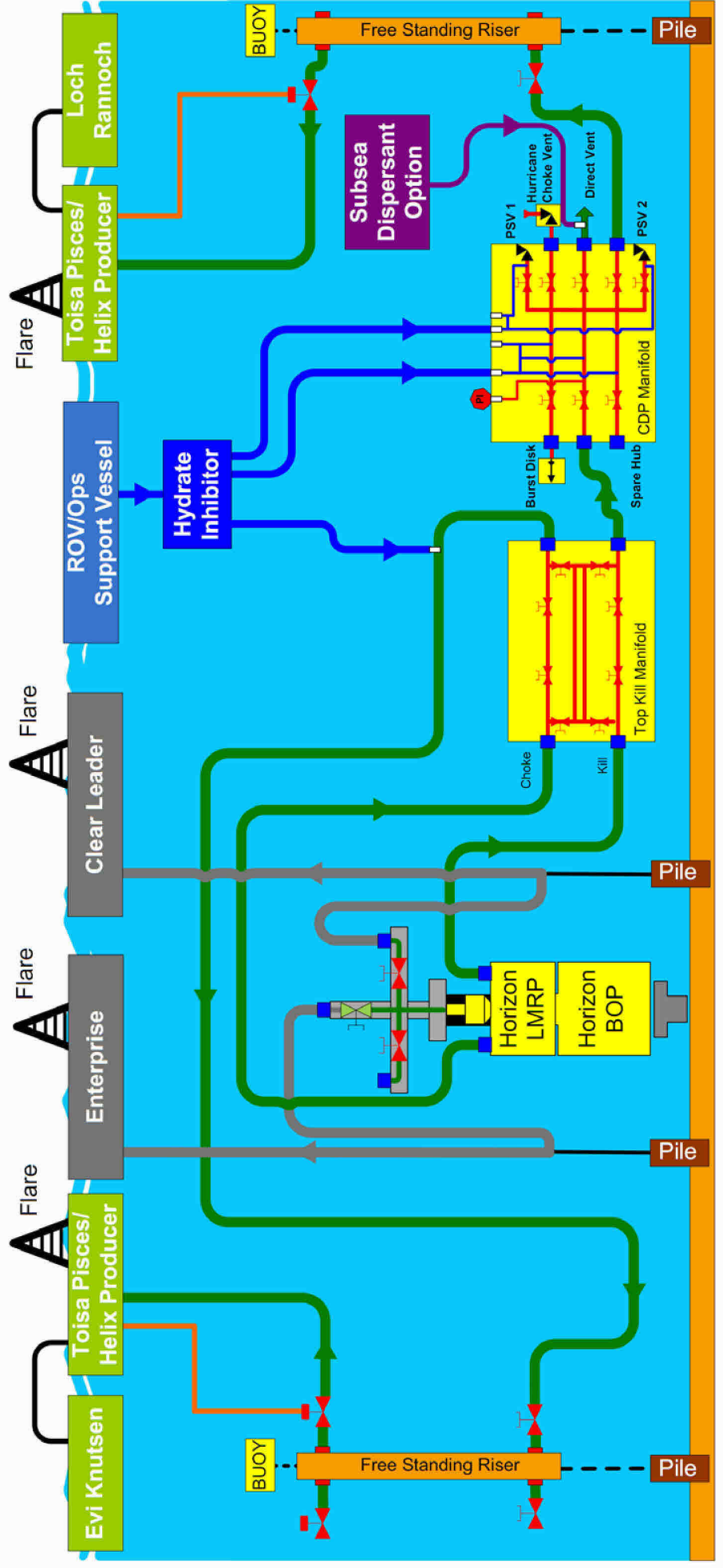
Capacity 40 – 53 mbd





# Containment: Mid July Onwards

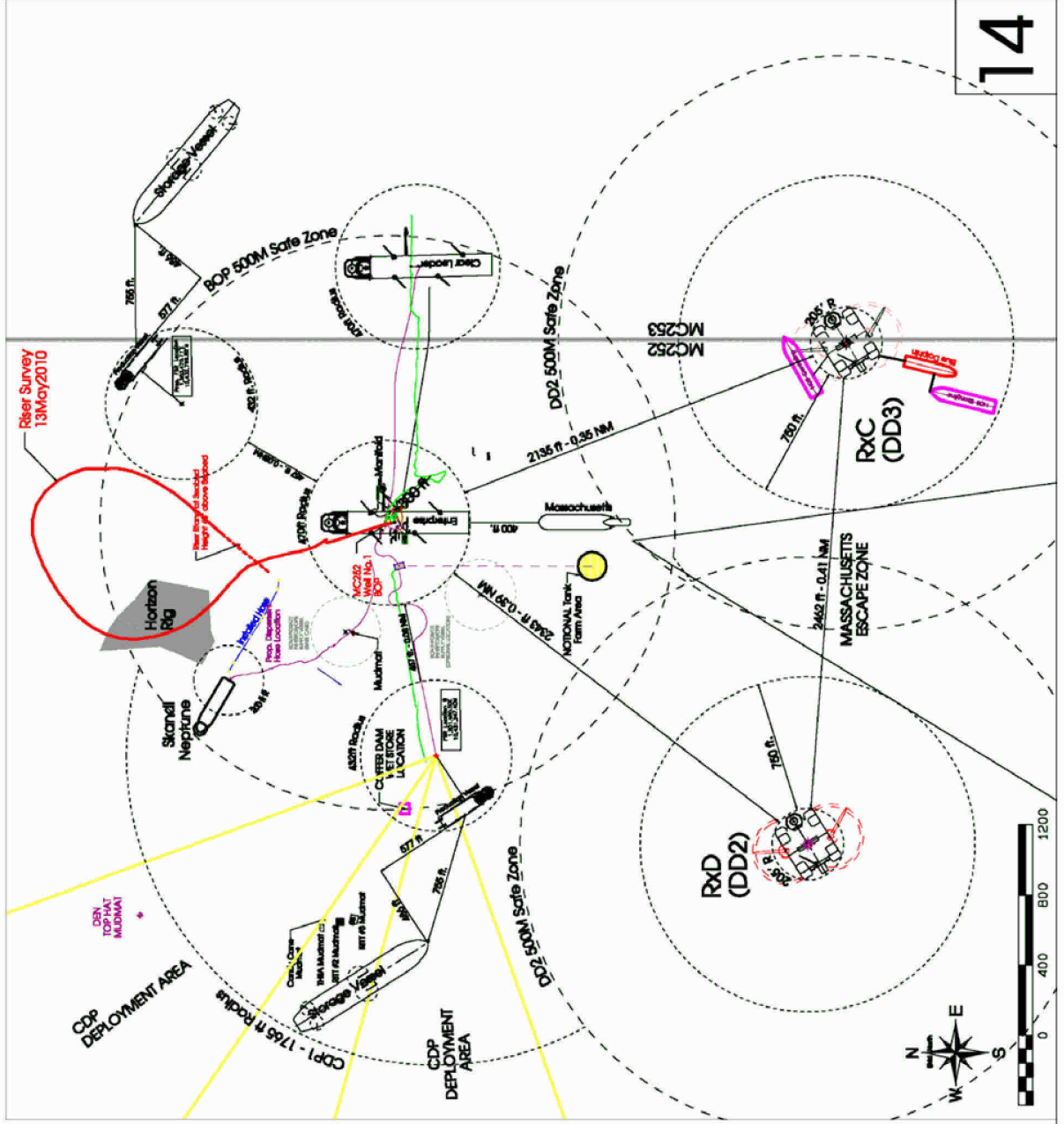
Capacity 60–80 mbd





# Mid July Onwards SIM OPS

## 25+ Vessels 1400+ POB





## Redundancy and Capacity Actions – Beyond Base Plan



- An **FP SO** has been mobilised from South America (ETA mid July) – redundancy in the event of a failure on the Toisa Pisces or Helix Producer
- **Two additional Lightering Tankers** have been mobilised from Europe on June 11 – in addition to the Loch Rannoch (mobilised from Europe on 27 May)
- **3,800ft of 6” coflexip** has been mobilised from Brazil and **6000ft of 6” coflexip** has been mobilised from France.
- Evaluating potential to **retrieve and repair the blue control pod** on the Deepwater Horizon BOP – yellow pod redundancy
- Work has begun on ensuring that the **Enterprise** or the **Clear Leader** drillships can connect to either of the **permanent riser systems**
- Work has started on building **additional heat capacity** into the test equipment on the Clear Leader in an effort to expand its installed capacity.

# Relief Wells

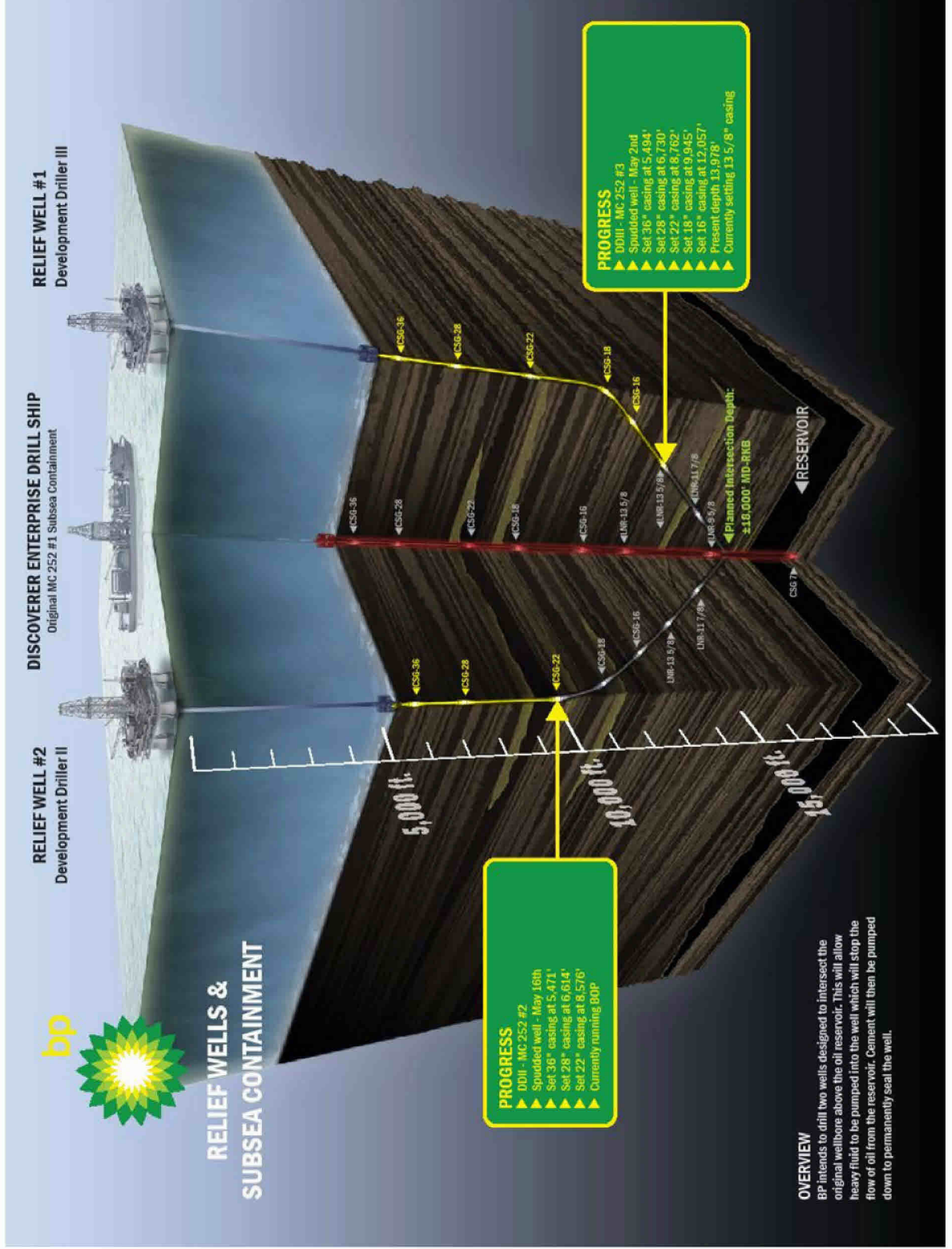


## RELIEF WELLS & SUBSEA CONTAINMENT

**RELIEF WELL #2**  
Development Driller II

**DISCOVERER ENTERPRISE DRILL SHIP**  
Original MC 252 #1 Subsea Containment

**RELIEF WELL #1**  
Development Driller III



**PROGRESS**

- ▶ DDIII - MC 252 #2
- ▶ Spudded well - May 16th
- ▶ Set 36" casing at 5,471'
- ▶ Set 28" casing at 6,614'
- ▶ Set 22" casing at 8,576'
- ▶ Currently running BQP

**PROGRESS**

- ▶ DDIII - MC 252 #3
- ▶ Spudded well - May 2nd
- ▶ Set 36" casing at 5,494'
- ▶ Set 28" casing at 6,730'
- ▶ Set 22" casing at 8,782'
- ▶ Set 18" casing at 9,945'
- ▶ Set 16" casing at 12,057'
- ▶ Present depth 13,978'
- ▶ Currently setting 13 5/8" casing

### OVERVIEW

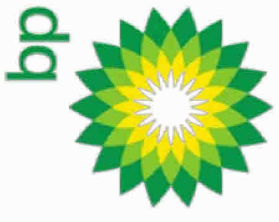
BP intends to drill two wells designed to intersect the original wellbore above the oil reservoir. This will allow heavy fluid to be pumped into the well which will stop the flow of oil from the reservoir. Cement will then be pumped down to permanently seal the well.

# Requests

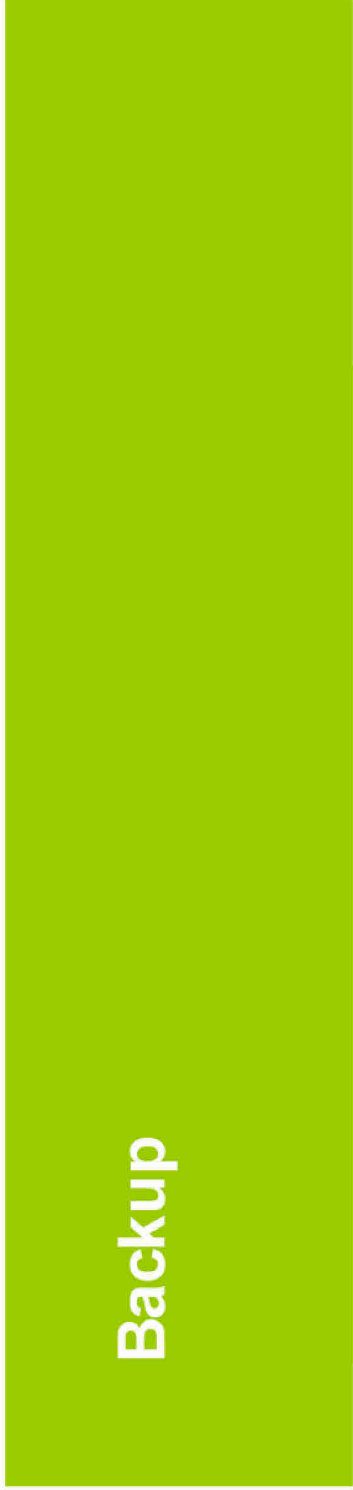


- ✓ Resourcing for Clear Leader – Chevron
- Resourcing for Seillean
- Ongoing Peer Reviews – Relief Well Kill
- Ongoing Resources for Houston Response Team





**Backup**





# Containment: Global Options

Vessel	Owned By	Location	Availability / Issues	Oil	Gas Flaring mmscfd	Storage 1000's of bbbls	Riser Type	Technical Viability
DP Vessels								
Discoverer Enterprise	TOI	Onsite	Secured	15 - 18	45+	139	FSR	
Helix Producer	Helix	GOM	Secured	20 - 25	80	None - requires off-take & storage	FSR	
Toisa Plisces	Sealion	GOM / Mexico	Secured	20 - 25	60	30	FSR	
Discoverer Clear Leader	TOI	GOM / Chevron	Secured	10 - 15	45+	125	FSR	
Q4000	Helix	On Site	Secured	5 - 10	60	No - Evergreen Oil Burner boom	FSR	
Selllean	Frontier Drilling Fearnley (Broker)	Brazil	Secured	20 - 25 upgrade	15+ rental	300	Top Tension Riser	
Discoverer Inspiration	TOI	GOM / Chevron	Sister ship to Clear Leader, without process facilities	tbd	tbd	125	FSR	
Discoverer Spirit	TOI	GOM / Anadarko	Sister ship to Enterprise, without process facilities or storage	8	tbd	tbd	FSR	
BW Carmen	BW Offshore	Norway	Norway, inspected 2010, significant preparations required	38	35	60	FSR	
Rubicon Vantage	Rubicon	Singapore	Singapore with Bow mooring - Single point mooring	40	32	570	Bow / SPM	
SBM Falcon	SBM	Far East	Far East - TBD contract status	165	118	2200	External Turret	
Uisgh Gorm	Bluewater	Rotterdam	Cold Stacked	57	20	594	Moored	
Griffin Venture	BHP	Far East	Stacked in Labuan	80	45	820	Bow Turret	