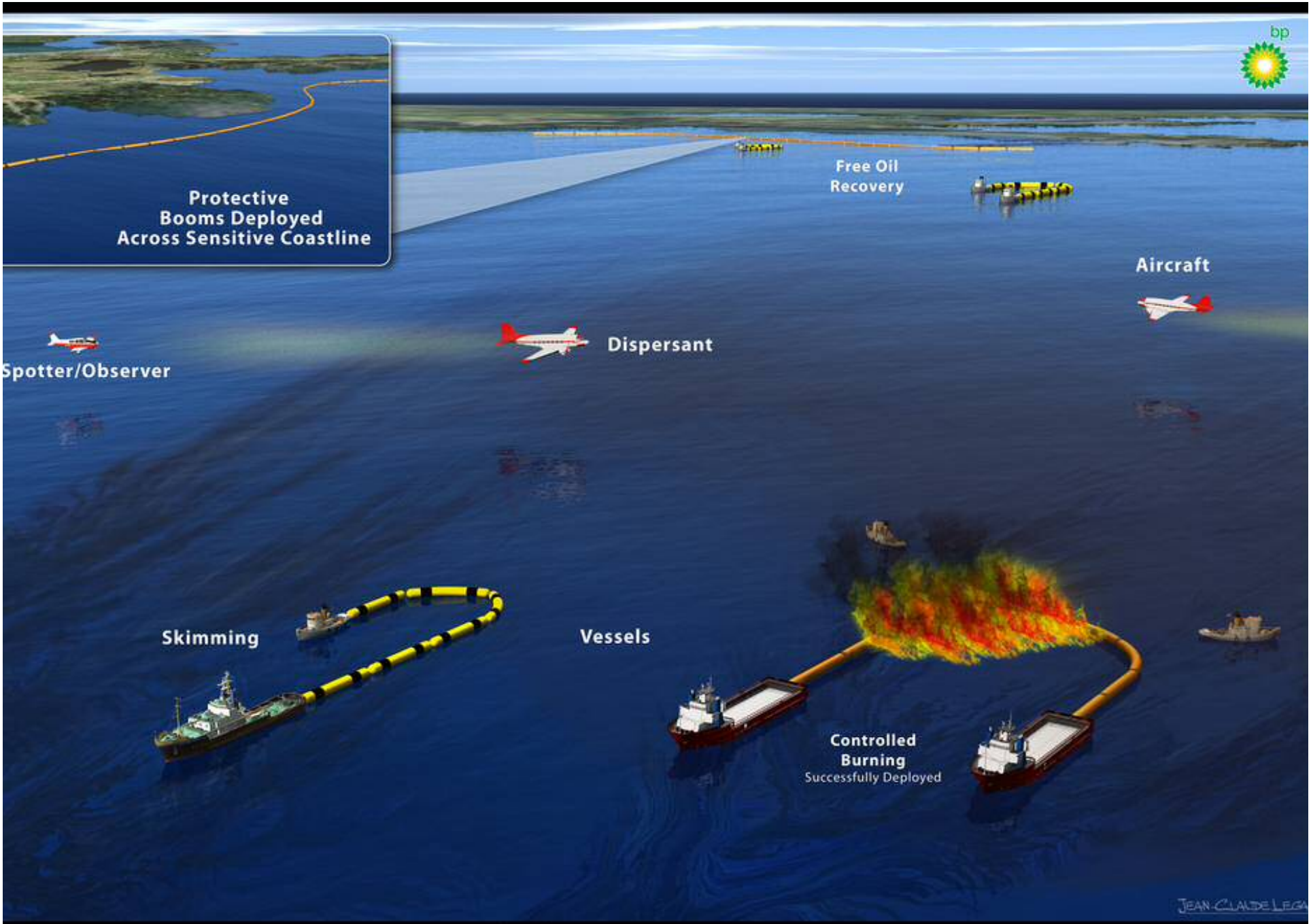
Deepwater Horizon
UAC Environmental Unit
Insitu Burning and Dispersants

Wyman Briggs
USCG, Sector Northern New England

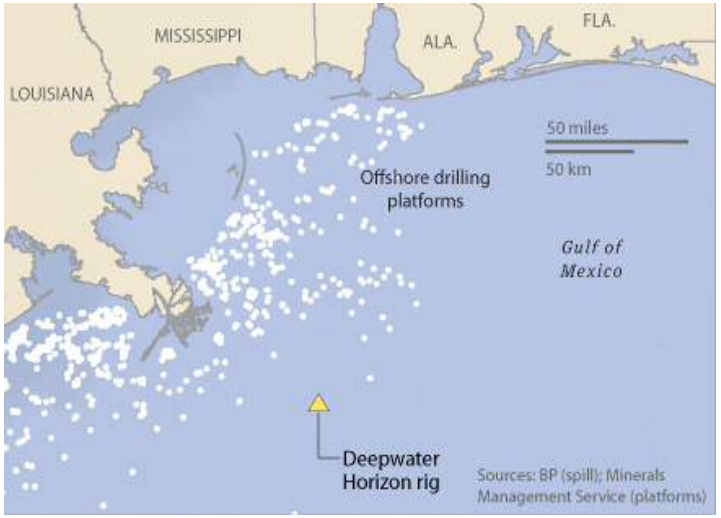
September 2010



Oil Spill Response Operation

Overview

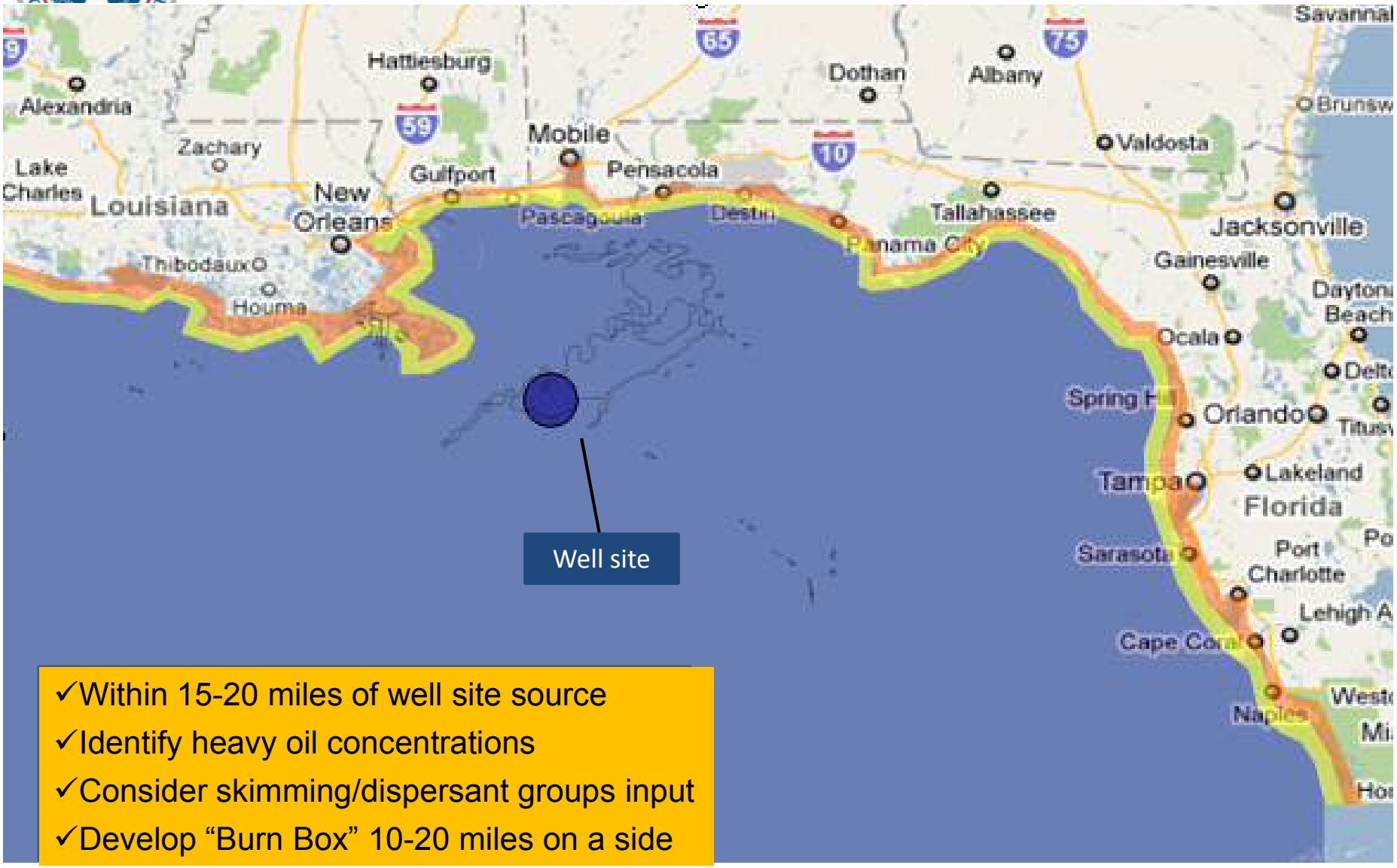
- Insitu Burning – Historical perspective
- ISB during DWH response
- Controlled Burn Operations Plan
- Air monitoring initiative
- Dispersant application during DWH response
- Bioremediation



ISB Historical Perspective

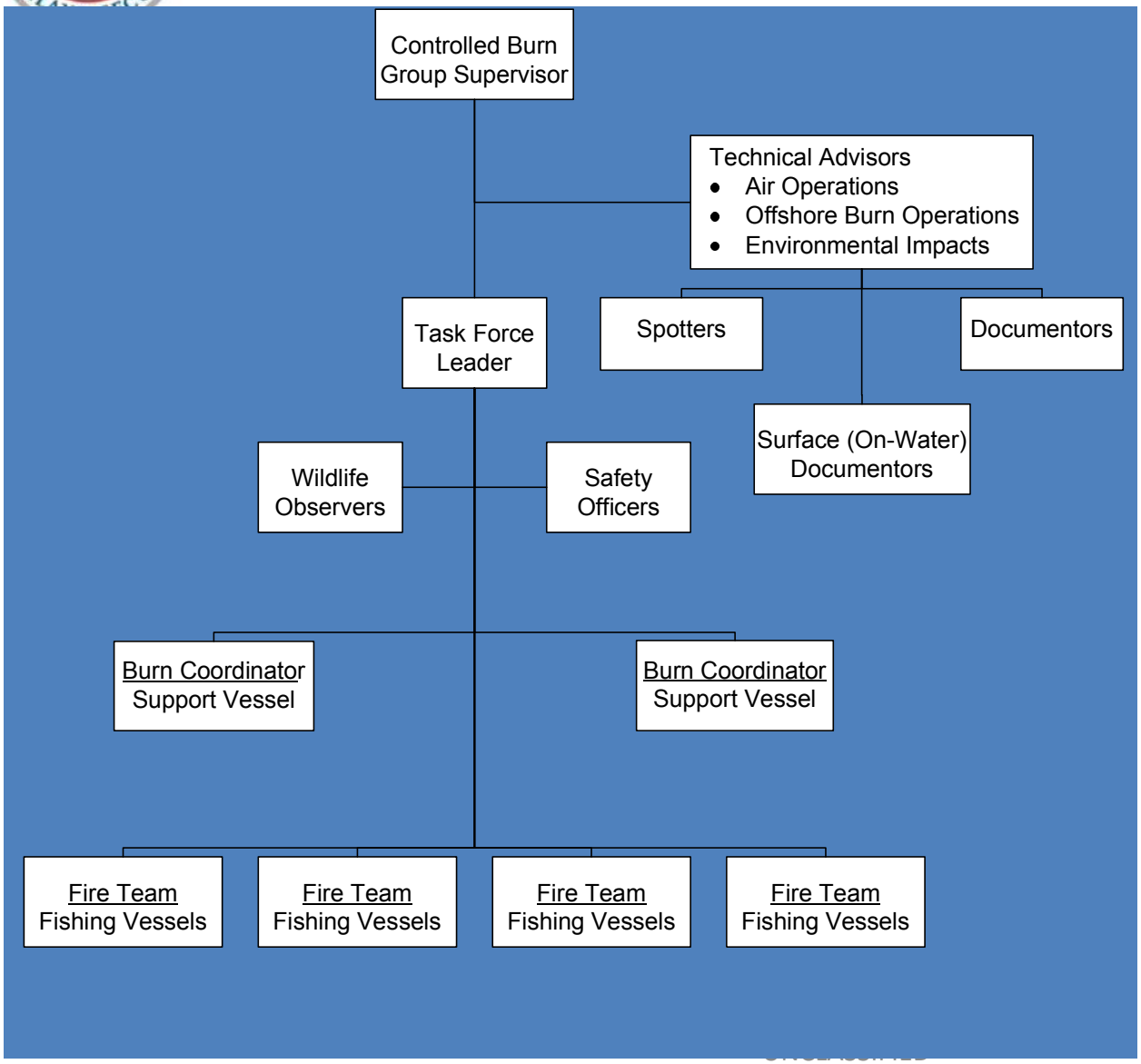
- Several test burns conducted during the Exxon Valdez response, in Canada and elsewhere with promising results.
- Used in response to accidental oil spills with varying success – particularly in difficult to reach and remote areas
- Trade-off:
  - Oil on water vs black sooty smoke plume
  - Long term vs short term

Controlled Burn Site Locations



- ✓Within 15-20 miles of well site source
- ✓Identify heavy oil concentrations
- ✓Consider skimming/dispersant groups input
- ✓Develop “Burn Box” 10-20 miles on a side

ISB Organization- ICP Houma



ISB Operations

1. Approved burn operations area (Burn Box) established previous day based on spotted oil locations, weather, skimming/dispersent ops

2. Spotter aircraft locates areas of concentrated fresh/thick oil and vectors in fire team vessels.

3. Control vessel coordinate with aerial observers and directs boom vessel collection and need/timing of ignition operations.

4. Igniter of choice is hand deployable device of gelled diesel in plastic container with foam flotation and road flare.

5. Safety considerations include:
   - Daylight operations
   - Area clear for at least 2 nautical miles
   - Safety technician, PPE, safety plan

Smoke Plume Sampling

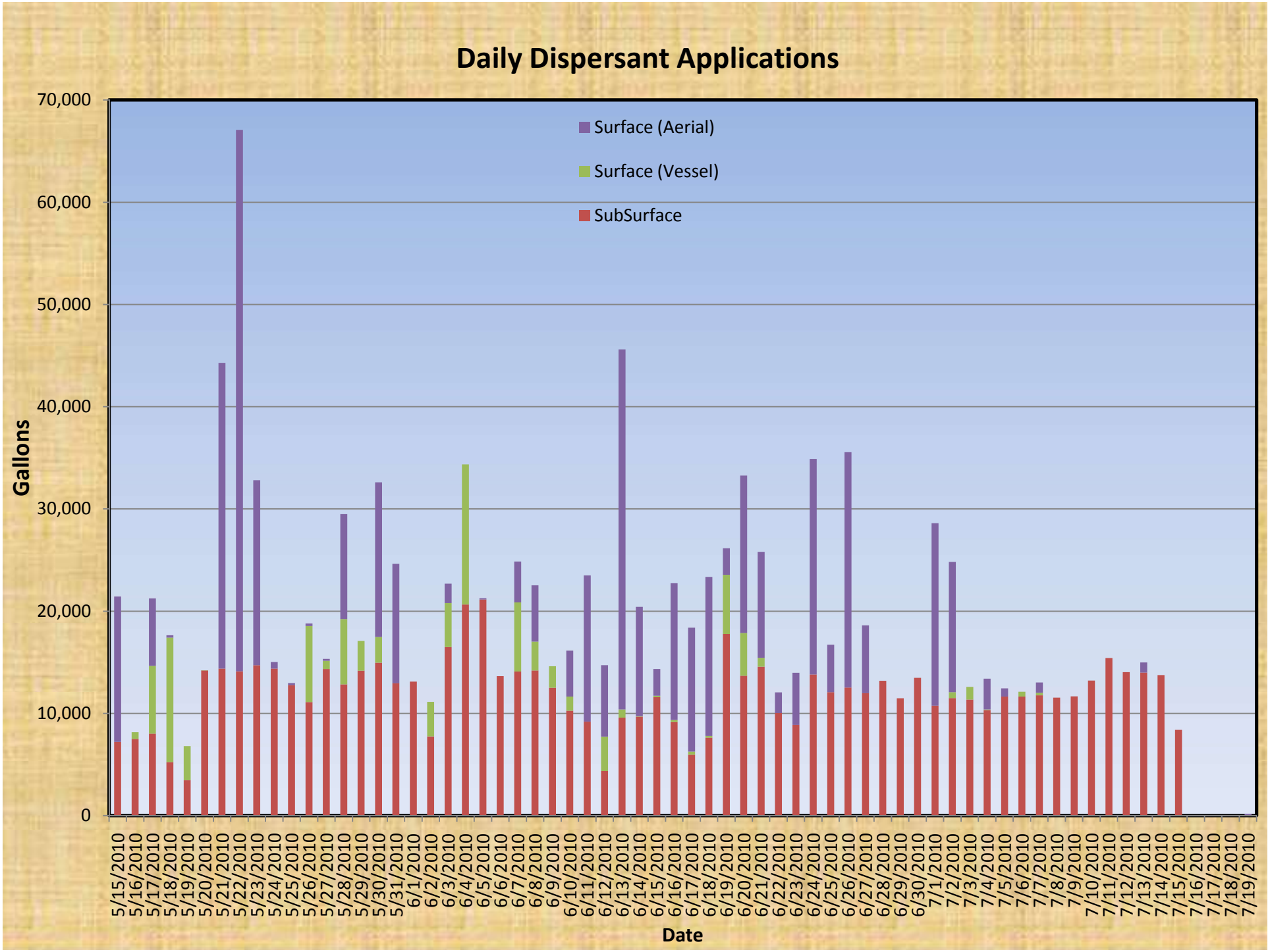
- Aerostat deployed to sample ISB smoke plume
- Results being evaluated

ISB Stats

- 411 controlled burns conducted as part of DWH response during the summer of 2010
- Up to 90+% efficiency rate
- Estimated 265,450 Bbls or 11,148,900 gallons burned for a total of 5% of the total quantity discharged. – more than Exxon Valdez release
- 60% more oil was burned than skimmed

Dispersant Application

- Traditionally one of the more controversial issues in spill response
- Reduces cohesiveness of slick so it can be broken into small droplets, dispersed and subject to natural biodegradation
- Environmental trade-off: water column vs potential shoreline impacts
- Aerial/vessel:1.07M gals, subsea:771K gals


Daily Dispersant Applications
Surface (Aerial)
Surface (Vessel)
SubSurface
Gallons
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
Date
5/15/2010
5/16/2010
5/17/2010
5/18/2010
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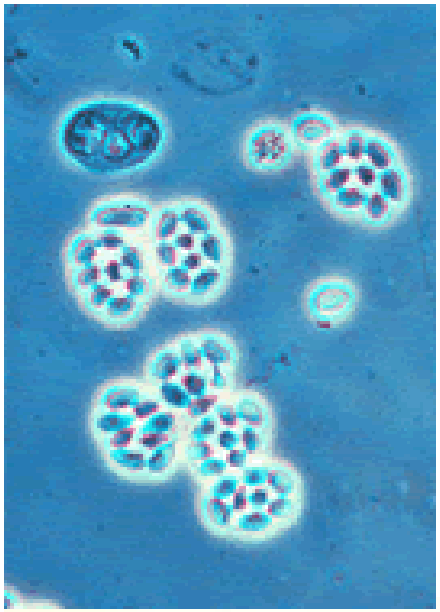


Bioremediation

- Bioaugmentation – add bacteria
- Biostimulation – add nutrients
- Limited value for oil discharges

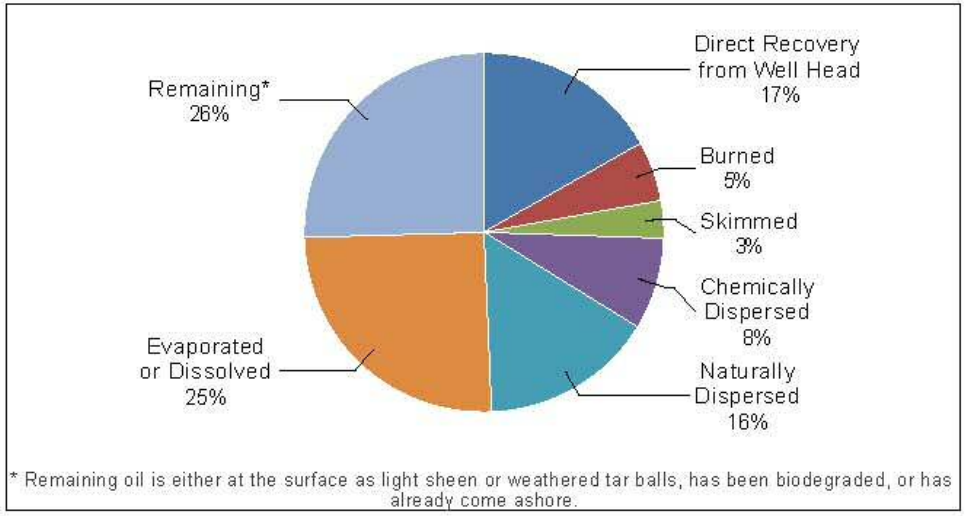
Deepwater Horizon MC252 Gulf Incident Oil Budget

Government Estimates - Through August 16 (Day 119)

Calculated Values	Cumulative	August 16
Discharged	4,928,100	0
Recovered via RITT and Top Hat	827,046	0
Dispersed Naturally	763,948	0
Evaporated or Dissolved	1,243,732	0
Available for Recovery	2,093,374	0
Chemically Dispersed	408,792	0
Burned	265,450	0
Skimmed	165,399	0
Remaining	1,253,733	0
Recorded Values		
Dispersant Used	43,900	0
Inland Recovery (Cumulative)	41,693 tons	

* All unlabeled values in barrels. See end notes for assumptions.

** Government estimate of discharge ranged from 62,200 bbl on April 22, 2010 to 52,700 bbl on July 14, 2010.



* Remaining oil is either at the surface as light sheen or weathered tar balls, has been biodegraded, or has already come ashore.

Deepwater Horizon MC252 Gulf Incident Oil Budget generated by jennifer.d.osetek@uscg.mil on 08/17/2010 04:39 AM MDT

Application operated by the USCG and provided by the USGS with calculations from NOAA and NIST.

Potential RRT 1 Issues

- Review ISB effectiveness
- Review ISB impacts
- Consider trade-offs
- Revisit RCP guidelines
- Revisit equipment availability

- Review dispersant effectiveness
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