2nd NOC-IOC Forum – Session 2

Robert Brunck – Chairman of the Board, CGGVeritas

April 7th, 2011

New safety challenges & repercussions

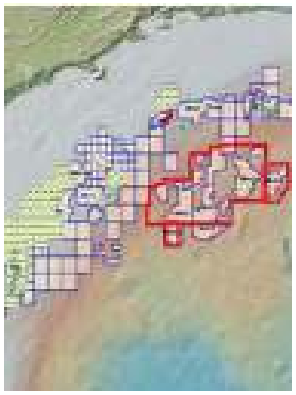
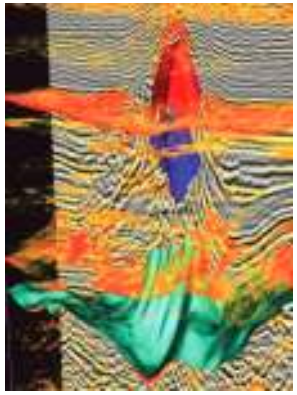
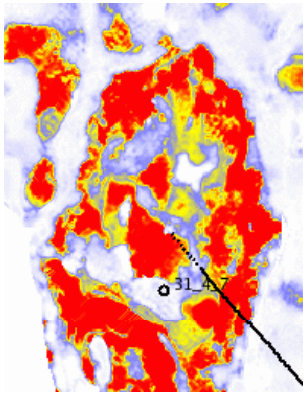
- **New challenges for operations**

Impact on governance

Driving up processing & imaging for geohazard assessment

CGGVeritas – An integrated seismic company

Concentrate our HSE concerns

Equipment	Services				
Sercel	Marine	Land	Multi-Client	Processing	Reservoir
					
Industry Leader	Leading High-End Global Fleet	Arctic, Desert, Shallow Water expertise	High quality library in key locations (Brazil, Gulf of Mexico…)	29 open centers & 13 dedicated centers	Seismic reservoir characterization services & software
2200 employees	1500 employees	1000 employees	100 employees	2000 employees	150 employees
US$1.0bn Revenue	US$0.8bn Rev.	US$0.4bn Rev.	US$0.5bn Rev.	US$0.4bn Revenue	

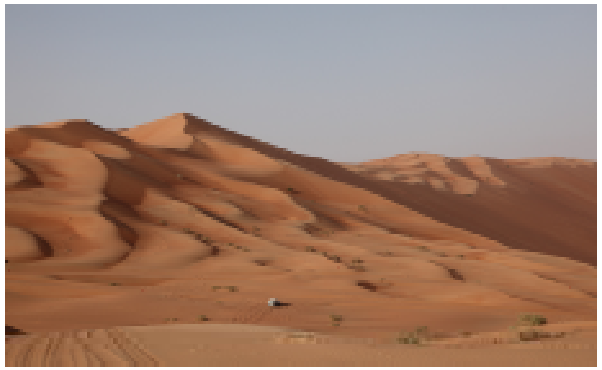
2010 Figures

- ~9000 employees
- Revenue: US$3bn

Working amid major risks - Onshore

Arctic extreme conditions

Operations with helicopters



Desert – Line opening, man lost, land transportation (25 Mkm/y)

Drilling & explosive handling

Shallow water – Small boat operations

Jungle – Line opening

- Onshore operations can often be hazardous for people, for company assets & reputation, and for the environment.

Working amid major risks - Offshore

People transfer

Work boat operations

Sea mammals

Close pass

Engine propulsion

Refueling at sea

- **Offshore operations can often be hazardous for people, for company assets & reputation, and for the environment.**

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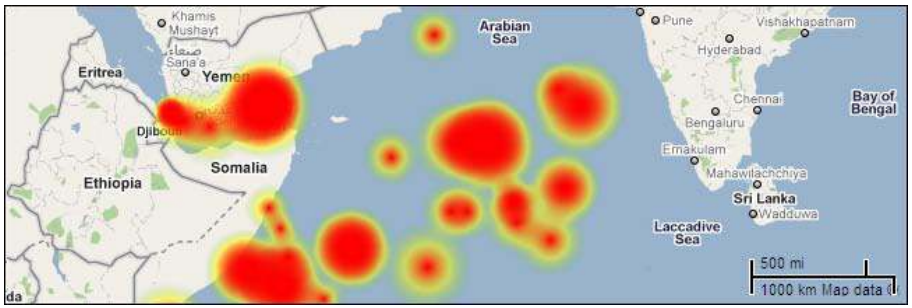
A new safety challenge – Piracy

- **Context : Vessel transit towards India**
  - Vessel hardened towards BMP 3 standard, with minimal crewing and security advisors
- **Incident : Close encounter with pirates in entering Indian waters**
  - Pirate mother ship sighted, skiffs deployed and started chasing, while our vessel launched alert and altered course to avoid.
  - Pirates deterred by avoidance maneuver, sighted hardening measures and over flight by a patrol plane.



New safety challenges & repercussions

New challenges for operations

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Driving up processing & imaging for geohazard assessment

HSE & SD/SR Governance – Mandate

- **2010 : Implementation of a Board HSE & SD/SR Committee, composed of 4 members**
  - Our HSE management is part of a global "social" concern, covering also Sustainable Development (SD) and Corporate Social Responsibility (SR).
- **Mandate of HSE & SD/SR Committee :**
  - Determine the principal areas for continuous improvement of the Group's HSE performance and regularly compare our progress with that of the other companies in the industry.
  - Review proven or unproven incidents (High Potential Incidents) whose consequences were assessed as serious, examine the analysis of the causes and corrective measures.
  - Monitor any major crises in the HSE field and the measures taken to resolve them.
  - Keep the Board informed of the measures taken by the Group in terms of HSE, and the initiatives relating to sustainable development.

HSE & SD/SR Governance

- **Less than 24 hr incident reporting of the following situations :**
  - Fatality
  - Permanent, partial or total disability case
  - Important spillage
  - Any crisis situation
  - Any situation deemed relevant by CGGVeritas COMEX
- **COMEX/CEO responsible for, among others :**
  - Field visits
  - Reviewing policies & targets objectives
  - Reviewing High Potential Incidents (HPI)

PRISM
our time. our planet. our vision.

- **Information gathered within all the company through PRISM, our QHSE reporting & management system**

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New safety challenges & repercussions

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- **Driving up processing & imaging for geohazard assessment**

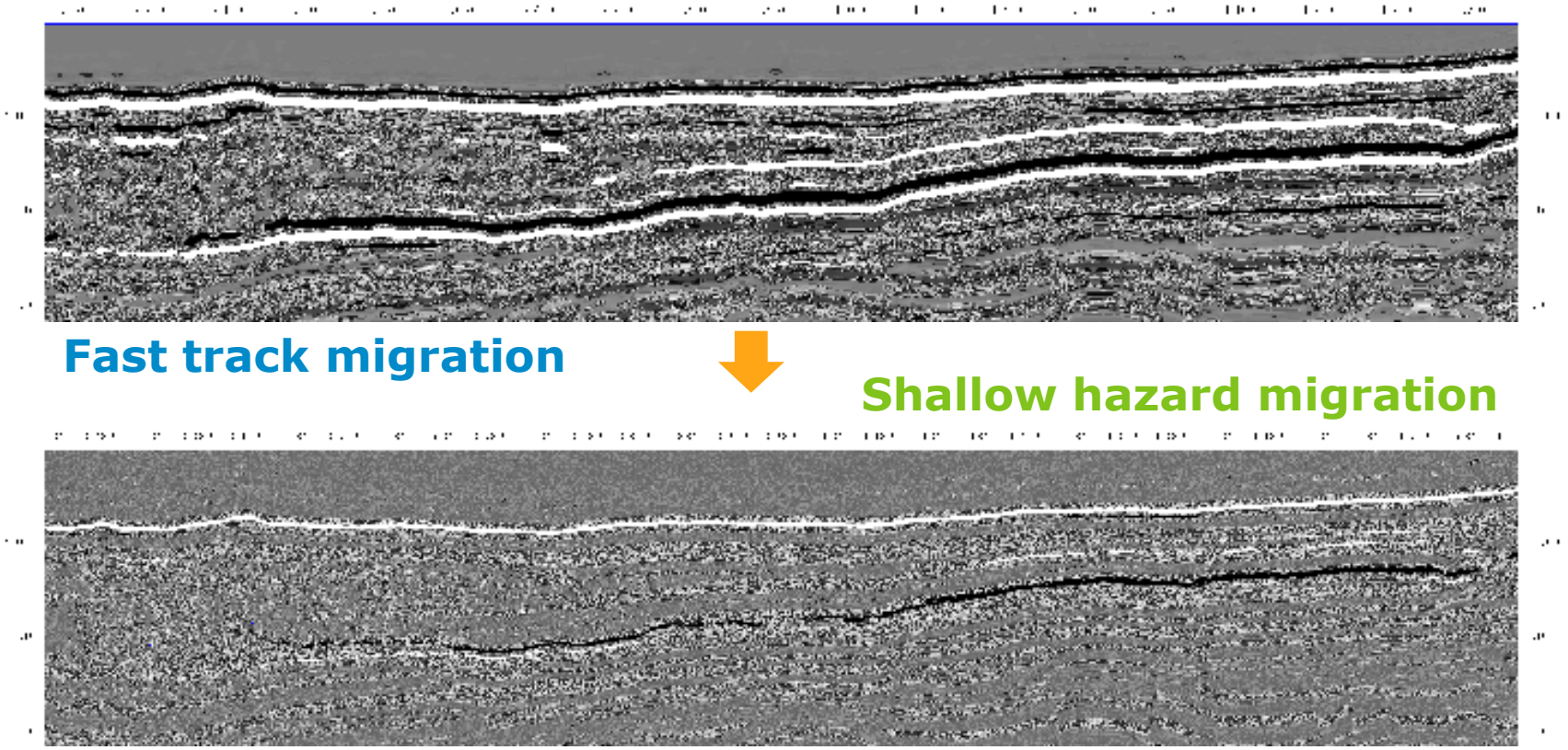
Hazard assessment with conventional seismic

- **Assessment of "near-surface" underground before drilling sometimes requires a specific "site survey" to identify :**
  - Gas pocket hazards & other drilling risks (HSE issue)
  - Rock layers to avoid (basalt) & best spots to drill (operational issue)
  - Geological structure close to mud line (impact for borehole stability)
- **Even more important after the Macondo accident, with local regulations becoming tougher**
- **CGGVeritas can help its customers**

Hazard assessment with conventional seismic

- **Many data already available in conventional 3D marine acquisition dataset**
- **CGGVeritas developed a specific processing method that uses this dataset and avoids the need to shoot a specific site survey (cost savings) :**
  - Specific focus on first 200-500 ms below water bottom (500-1000 m)
  - Specific processing flow developed
  - "Shallow hazard processing sequence" developed in Norway in coordination between CGGVeritas & Shell

Hazard assessment with conventional seismic



- **To be further developed with more precise imaging techniques**
  - BrodSeis in Marine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