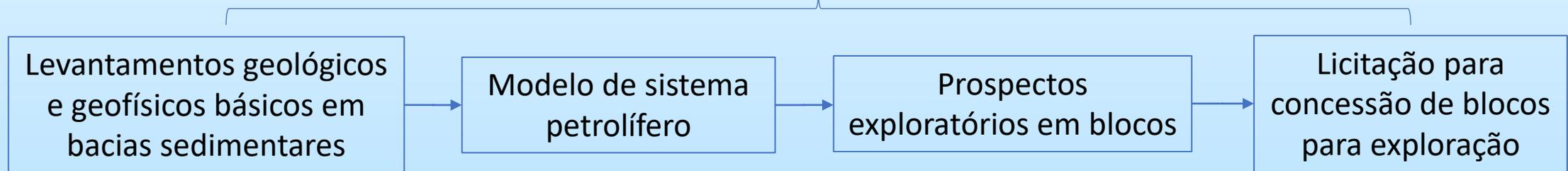


# Acompanhamento de poços

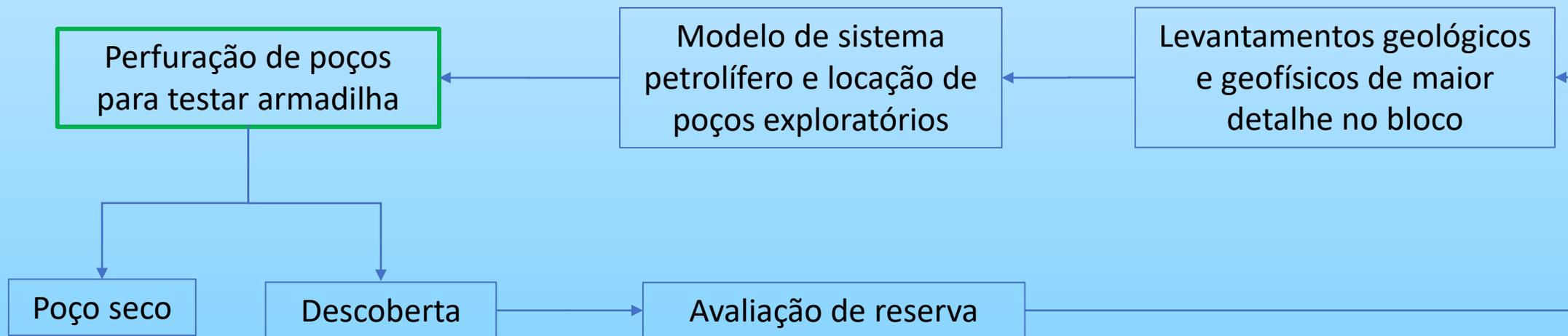
GSA0463-Geologia do Petróleo

## Exploração

*Agência Nacional do Petróleo (ANP)*



*Empresa operadora/consórcio*



## Produção...

Desenvolvimento de produção

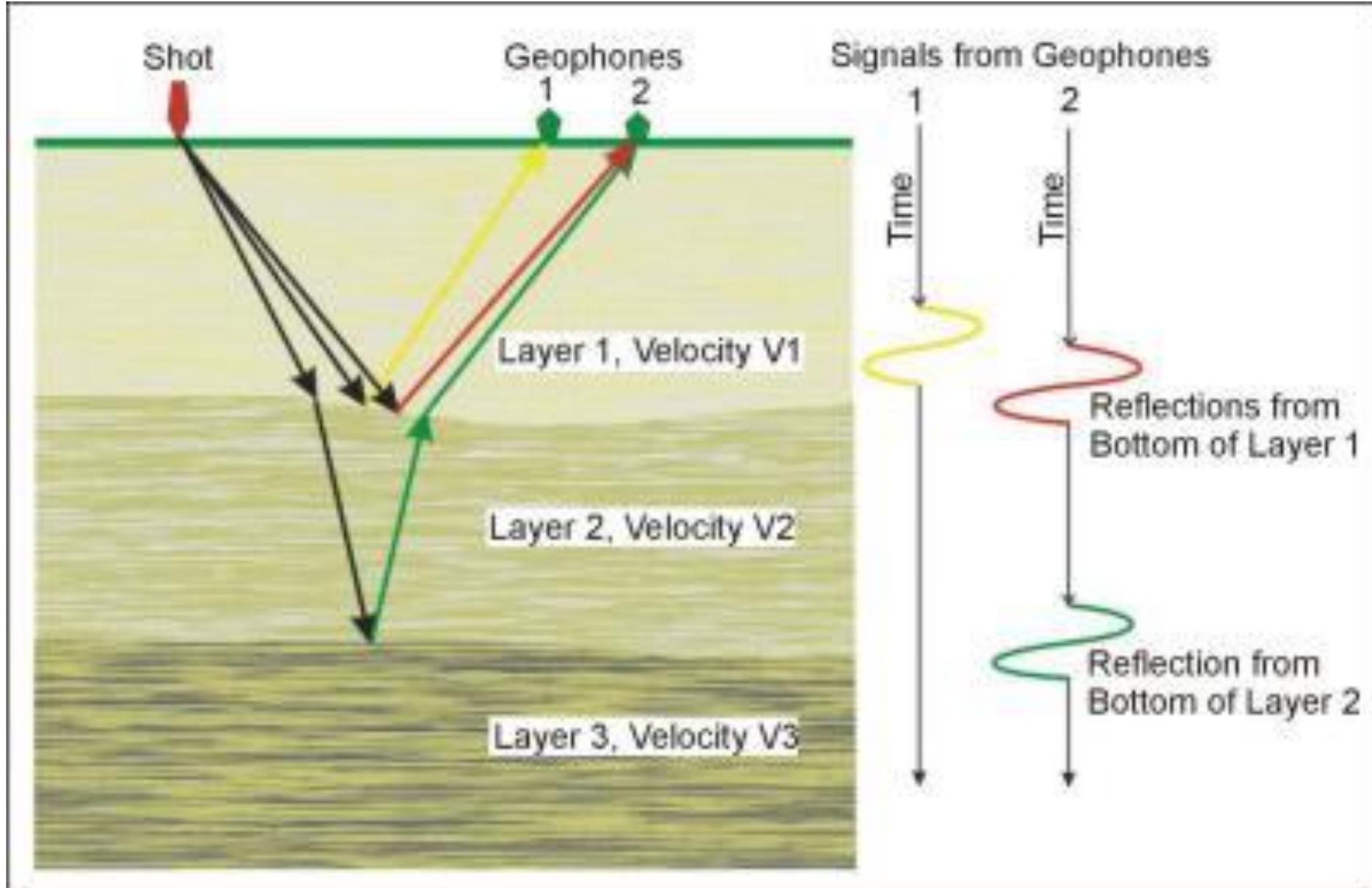


*Aquisição sísmica marinha*

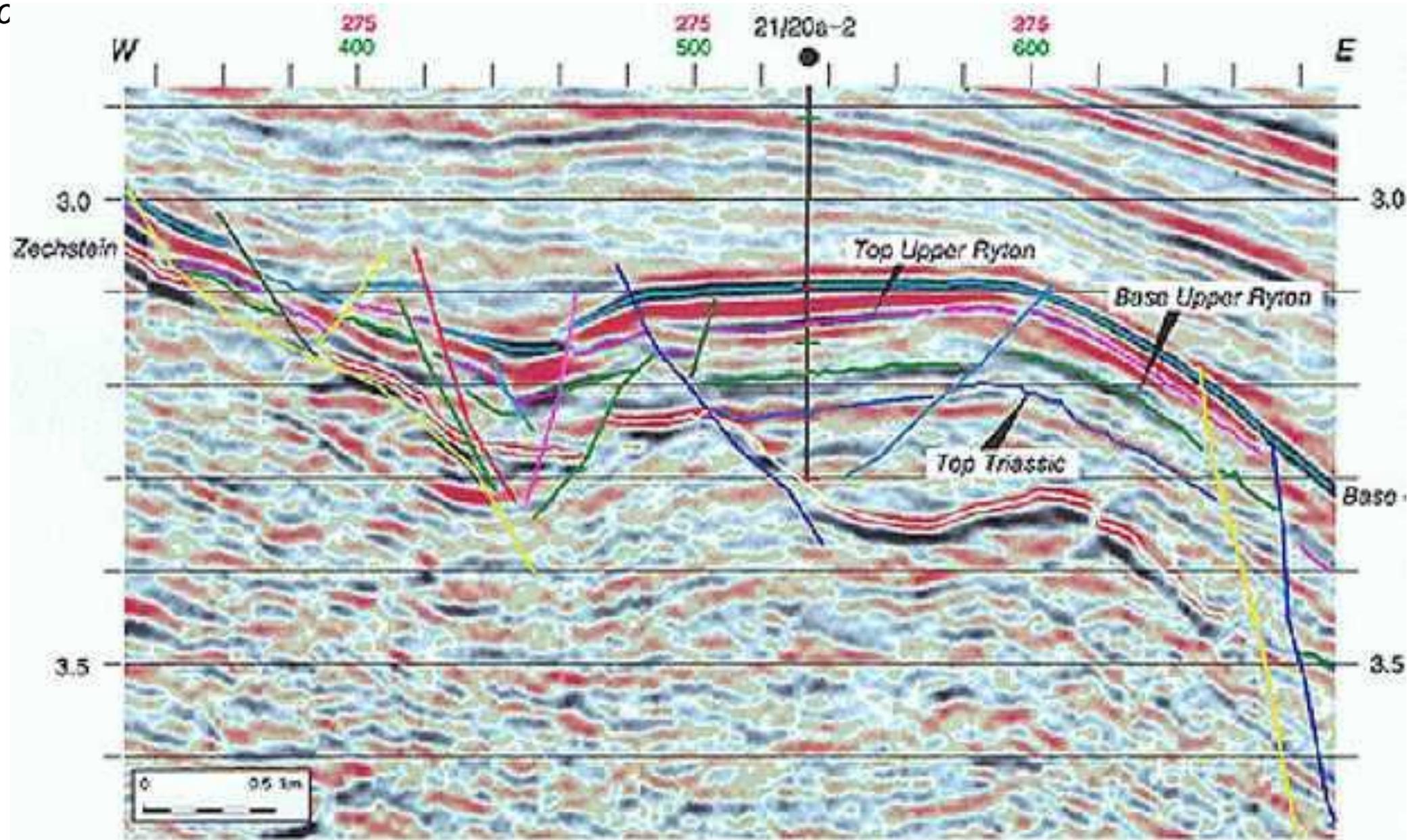


COURTESY: WESTERNGECO LLC

## Sísmica de reflexão



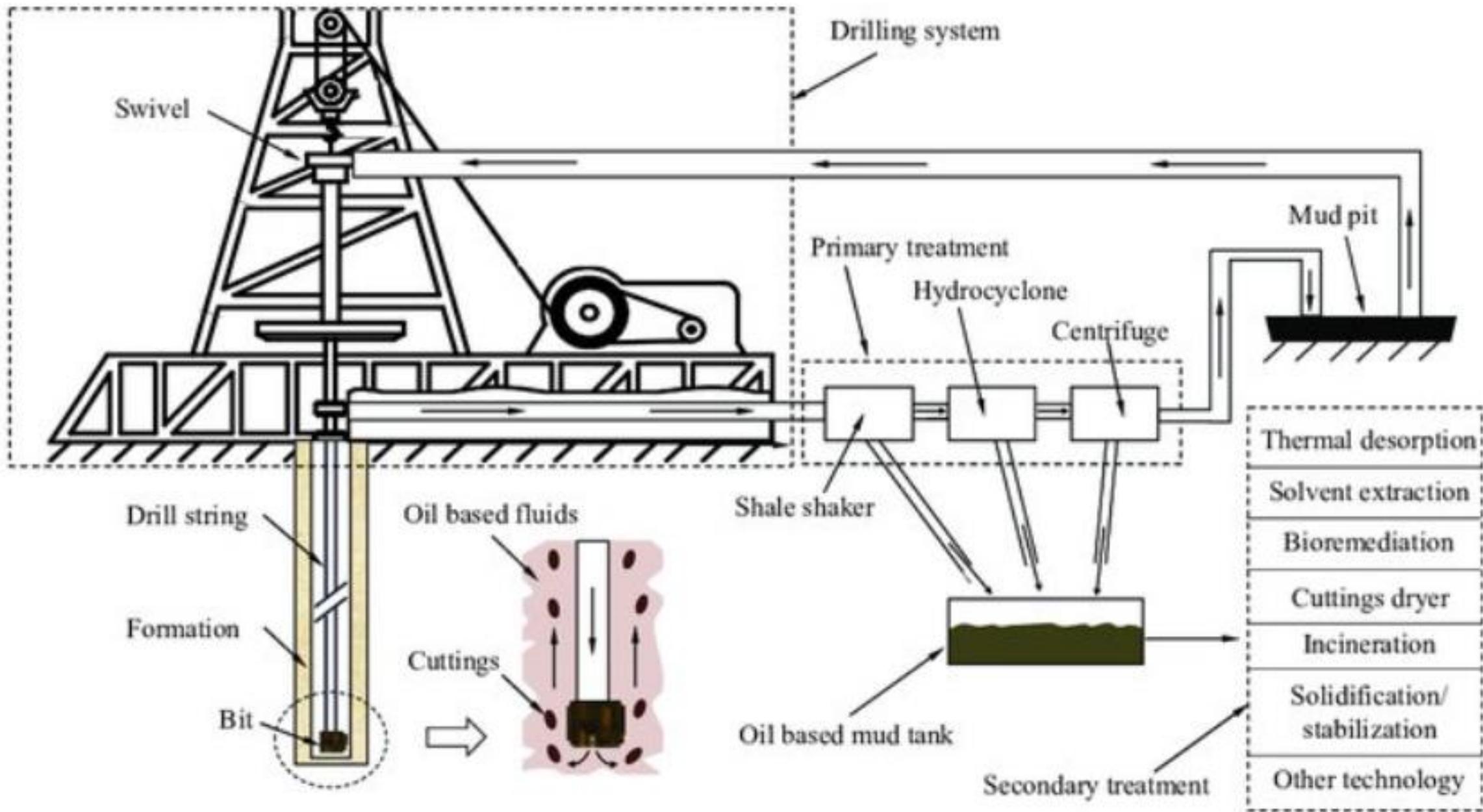
# Seção sísmica



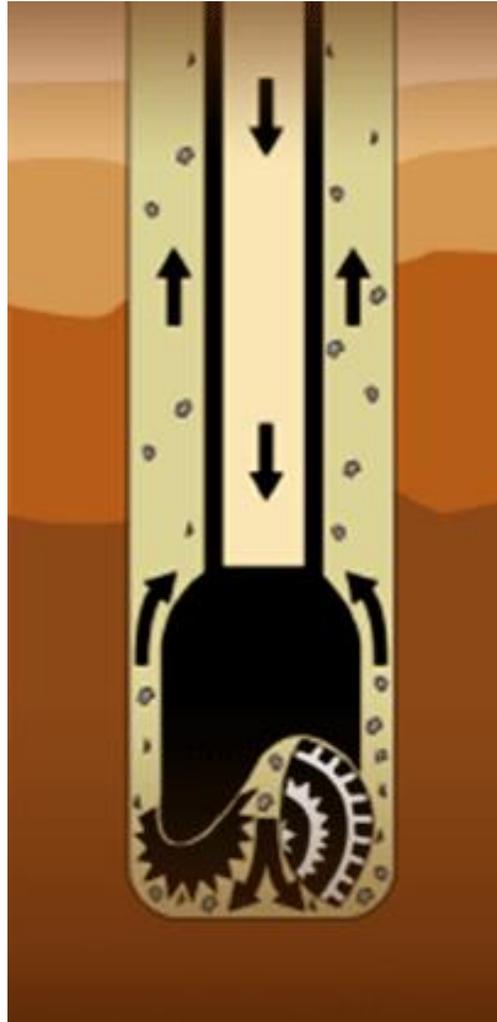
Campo Cook (Bacia do Mar do Norte, Reino Unido)

*JET Project (ICDP)*





*Amostras de calha (cuttings)*



Behrooz Esrafil-Dizaji (Cutting Analysis)

*Amostras de calha*



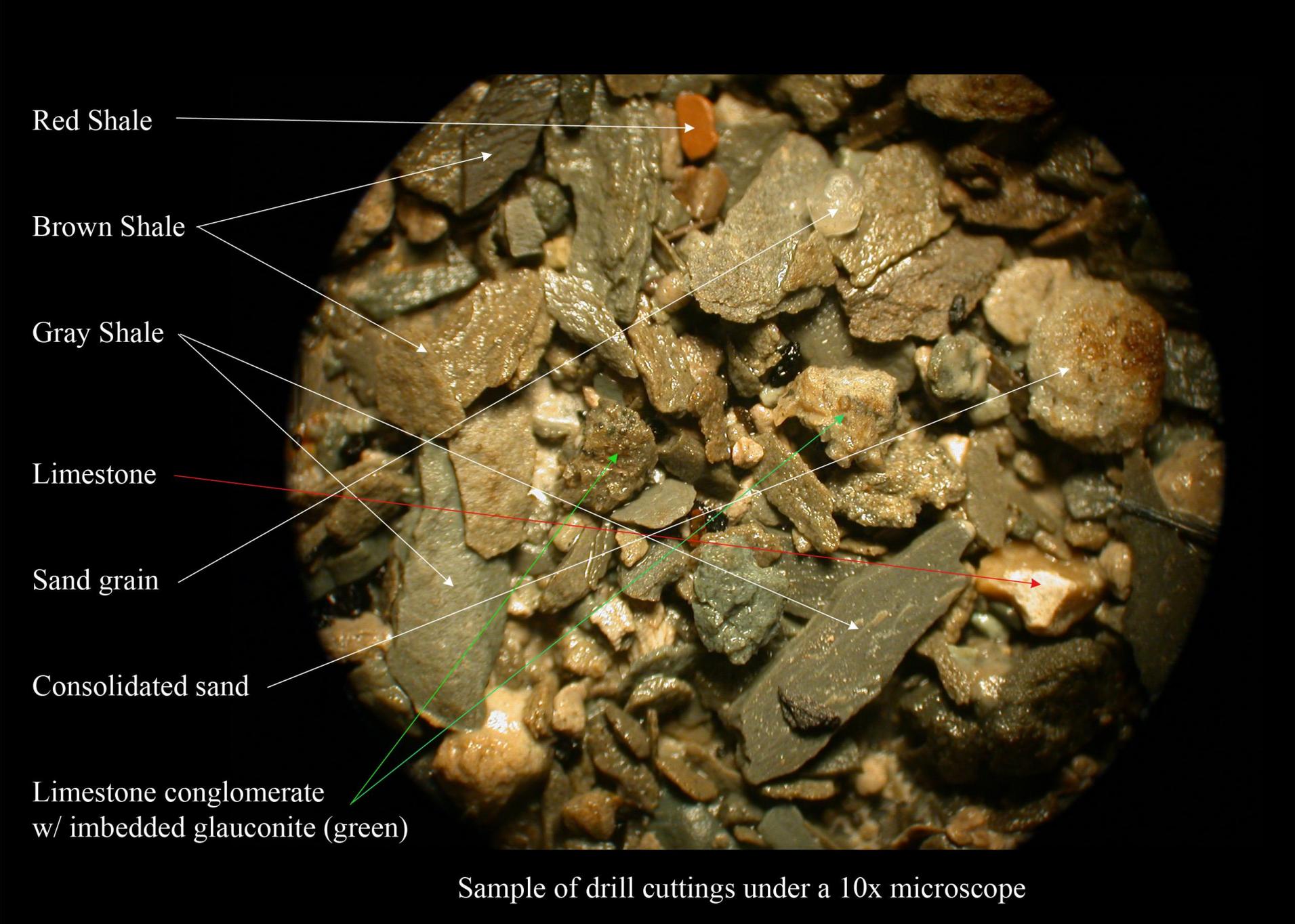
Amostra  
Fina



Amostra  
Grosseira



**PENEIRA DE AMOSTRAS DE CALHA**



Red Shale

Brown Shale

Gray Shale

Limestone

Sand grain

Consolidated sand

Limestone conglomerate  
w/ imbedded glauconite (green)

Sample of drill cuttings under a 10x microscope

*Fluoroscópio*

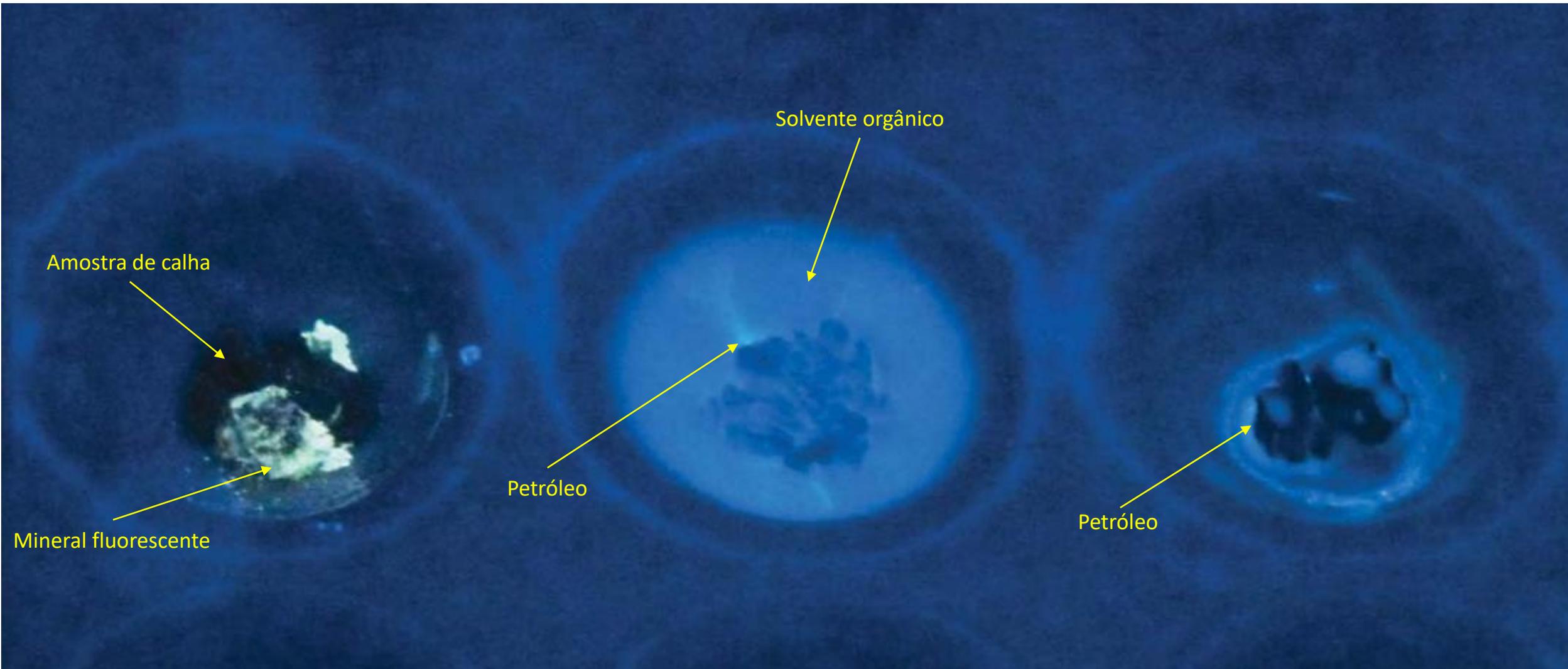


*Oil Fluoroscope*

*Praia da Flórida com areias impregnadas por hidrocarbonetos provenientes do vazamento do poço Deep Water Horizon – BP (2010) (National Geographic)*



## *Amostra de calha ao fluoroscópio*



# Mudlogger



## Cuttings Sample Description

1. Rock name
2. Color
3. Hardness, fissility
4. Elements or grains

Clastics	Carbonates
a. grain size	a. "grain" nature
b. roundness	b. "grain" size
c. sphericity	
d. sorting	
5. Cement and matrix

Clastics	Carbonates
a. abundance	a. abundance
b. nature	b. crystallinity
6. Accessories, fossils
7. Visual porosity estimation
8. Hydrocarbon indications
  - a. visual (stains and bleeding)
  - b. direct fluorescence (extent, intensity and color)
  - c. cut fluorescence (rate, intensity and color)

## Detecção de gás no fluido de perfuração

### High-Speed Sample Analysis

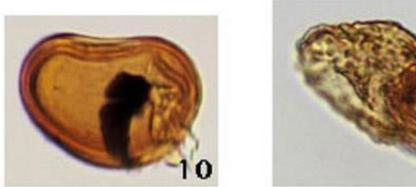
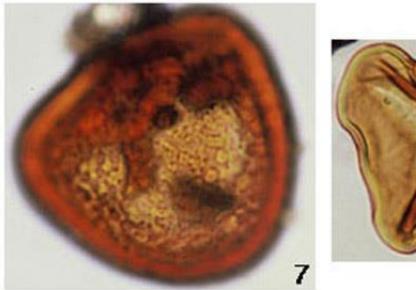
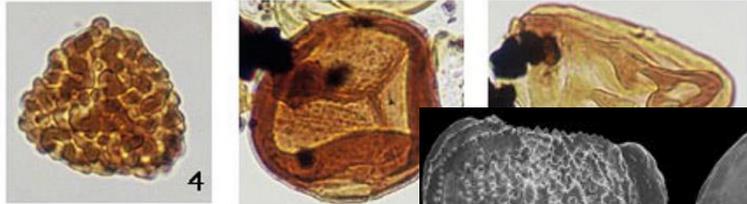
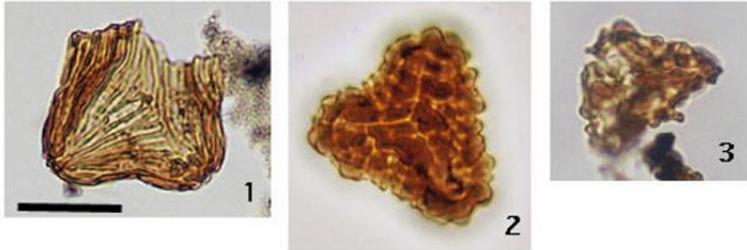
Mode	Range	Duration (sec.)
Standard	C <sub>1</sub> to C <sub>8</sub>	< 60
	C <sub>1</sub> to C <sub>10</sub>	~135
Express	C <sub>1</sub> to C <sub>5</sub>	< 30

GC Tracer (Weatherford)

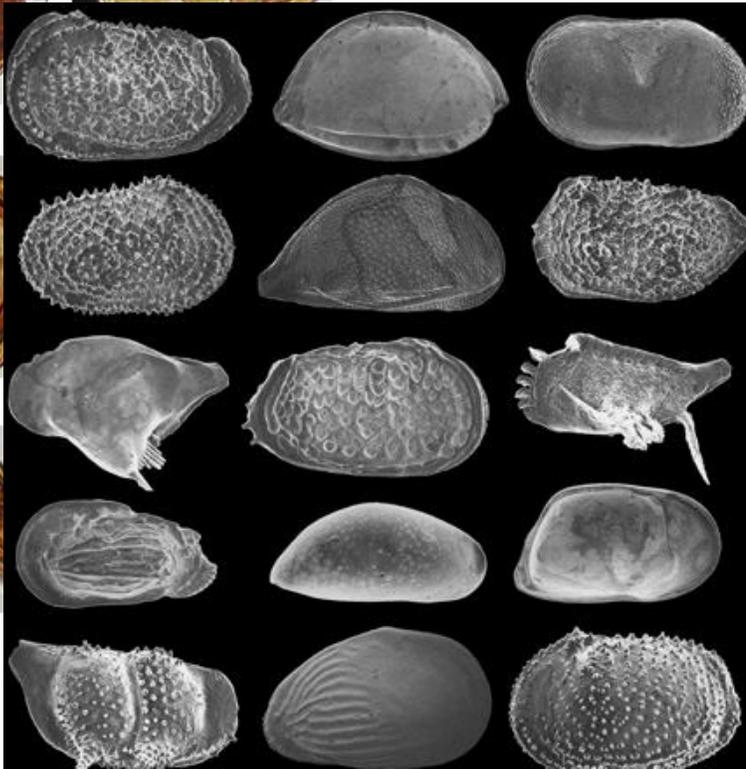


# Bioestratigrafia e paleocologia

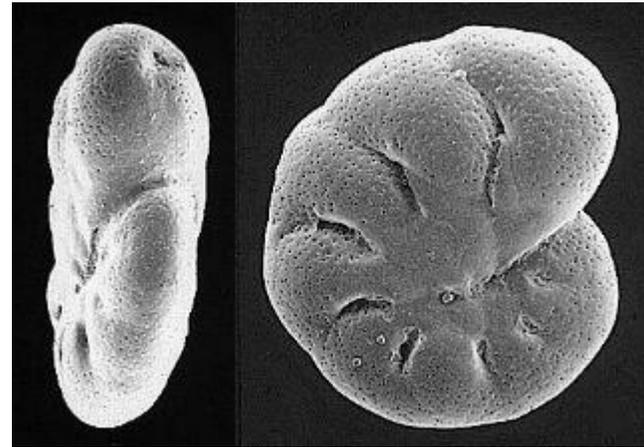
## Pólen e esporos



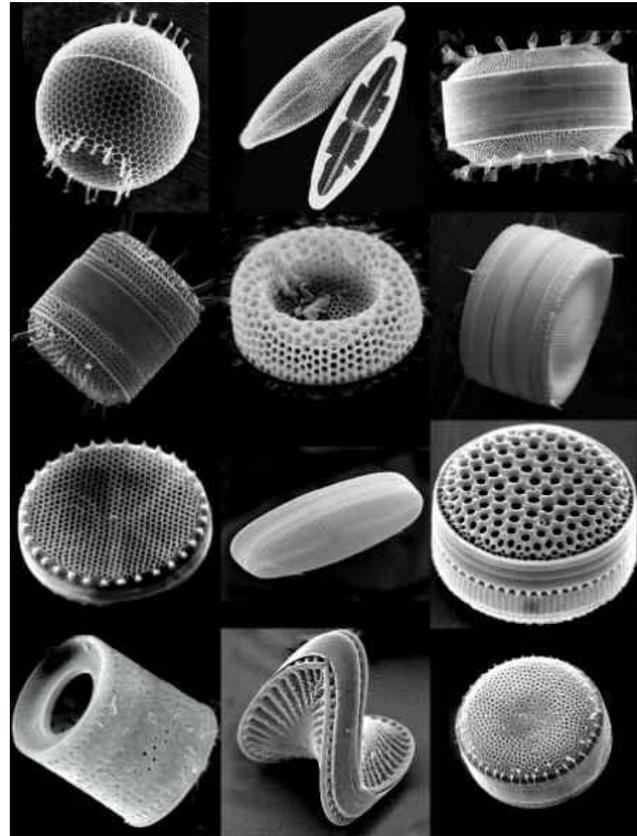
## Ostracodes

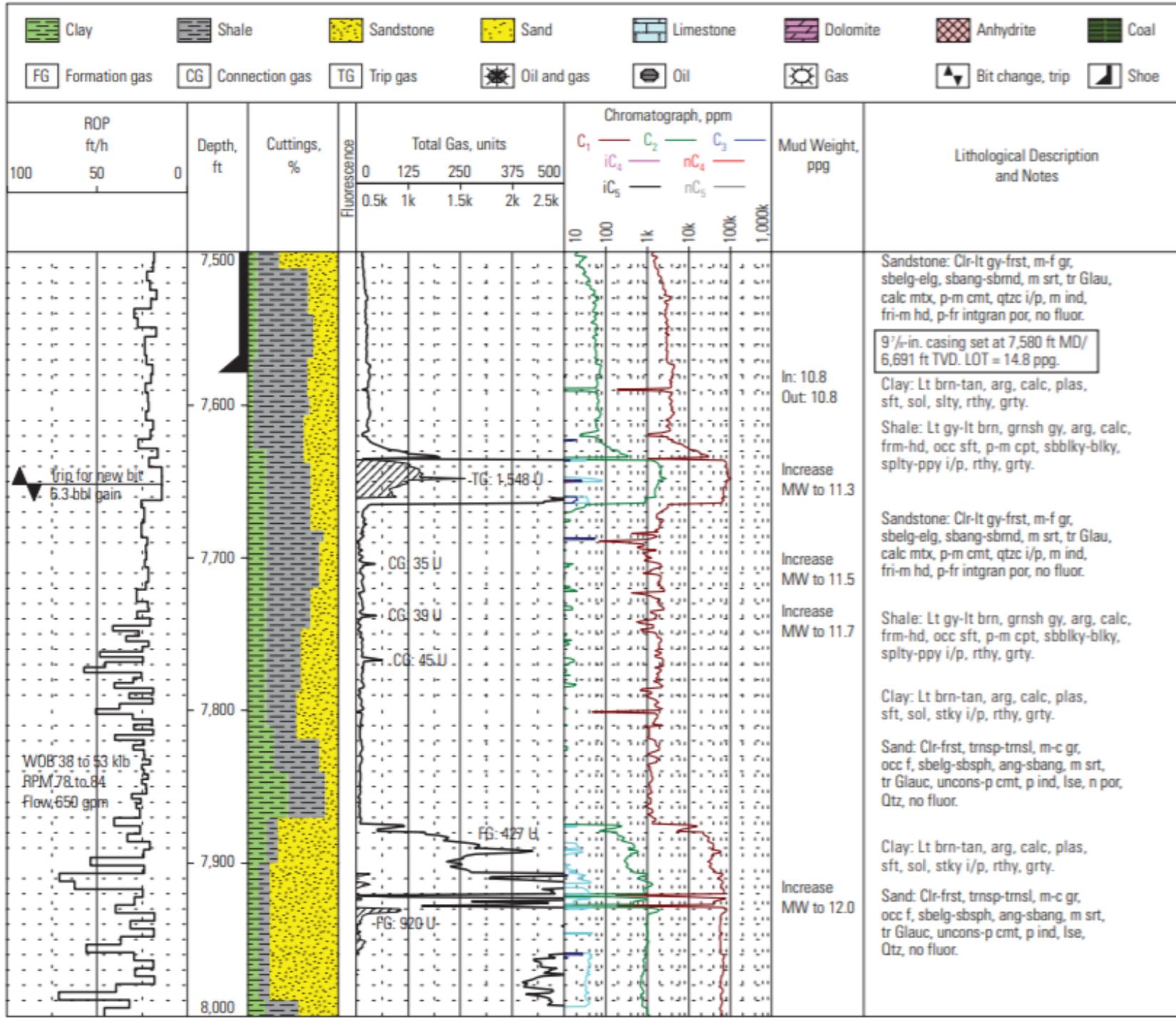


## Foraminíferos

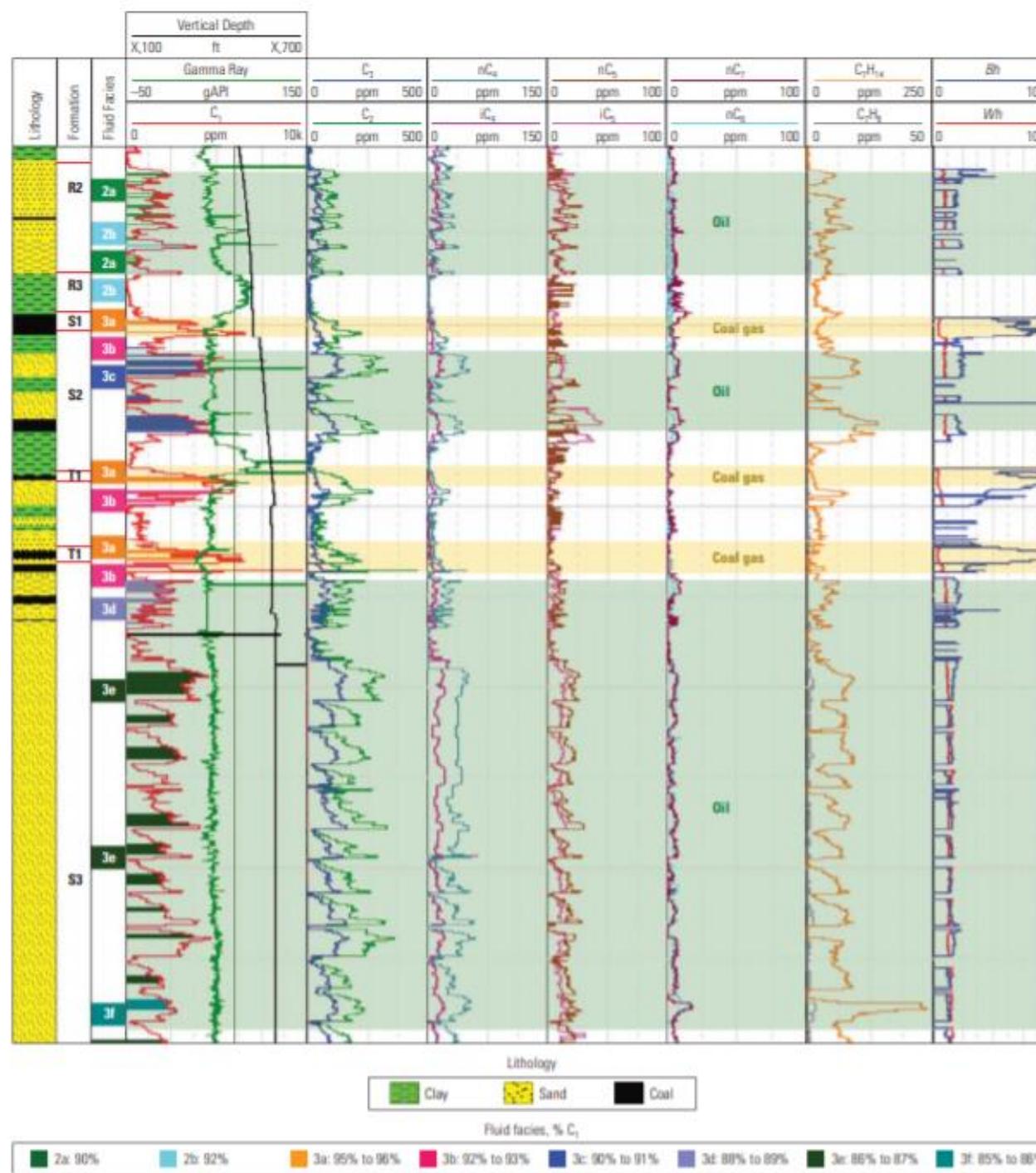


## Diatomáceas

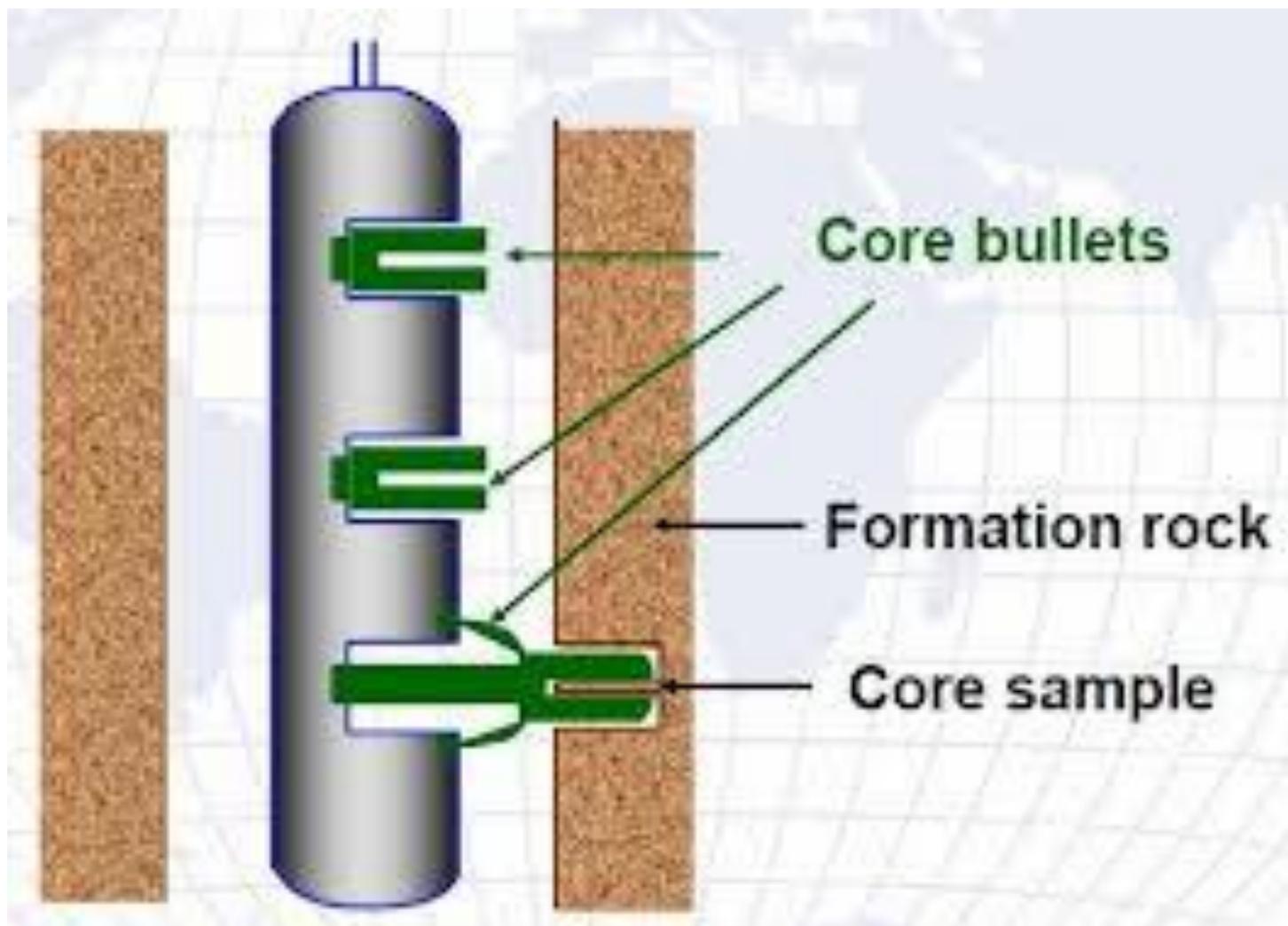




# Perfil de fluidos



*Amostras laterais*



Testemunhos (cores)





*Perfilagem geofísica*

