



Non-destructive investigations are those undertaken without damage to the lining. They virtually enable to carry out a continuous inspection of a facility and in particular to detect abnormalities that afterwards must be investigated in a destructive way using all appropriate means.

Special emphasis must be placed on non-destructive investigations as they cannot be used alone but associated with trial borings. In addition, non-destructive investigations may be used to specify the location of the trial borings and thus to improve their representative character.

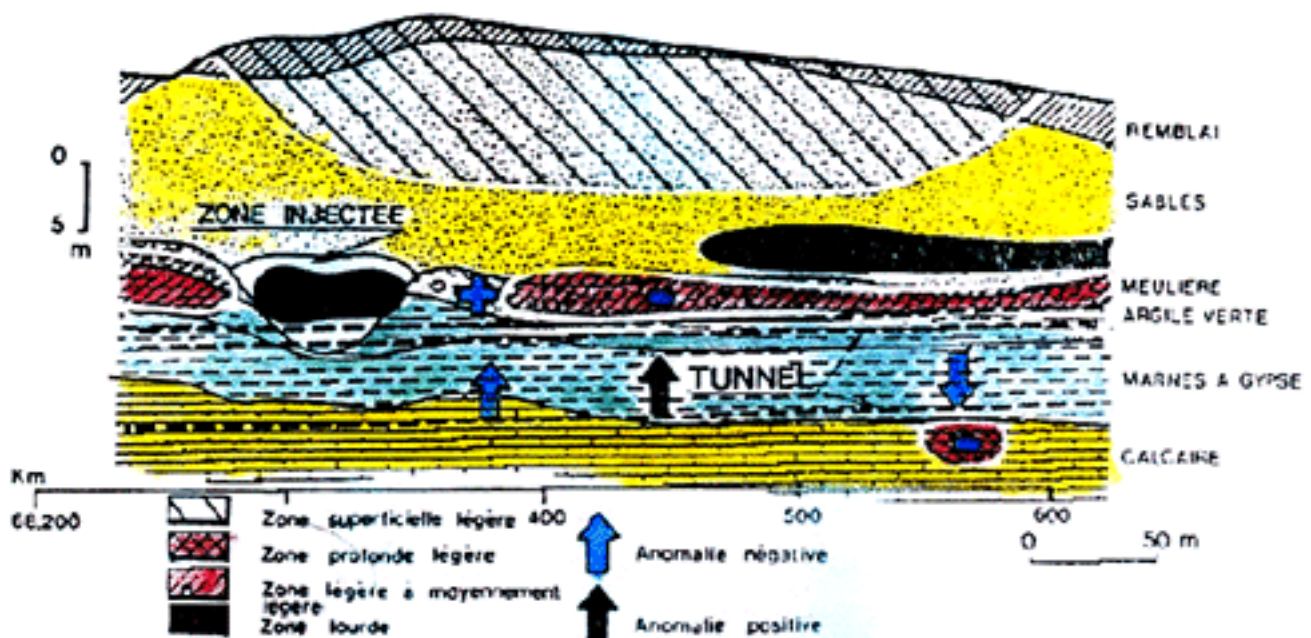


Fig. 7. TUNNEL DE BREVAL. Endoscopie microgravimétrique (EMG). Régression à 11 densités

- Electro-magnetic wave pulse reflectometry
- Other geophysical methods
  - Microseismic

- Microgravimetry
  - Electric methods
- Infrared Thermography
- Ultrasounds
- Internal Jacking test