Cuttings can improve your reservoir characterization when cores are not available.
In most of wells, properties measured on cuttings are representative of the matrix properties.

CYDAREX performs the following petrophysical measurements on cuttings:
- porosity
- permeability using DARCYLOG™ method (from 0.01 to 100 mDarcy)
- grain density

Need only a few cc of cuttings, with diameters from 1 to 3 mm

Permeability on rubble or side-wall cores

CYDAREX also commercializes the DARCYLOG™ equipment for permeability measurements on cuttings

www.cydarex.fr
Porosity and Permeability from Drill Cuttings

- **Porosity from Drill Cuttings**
  Conventional methods used for core porosity with improvements to account for the small size and the small volumes of cuttings:
  - *Volume of solid* from mass of dry cuttings using an average grain density
  - *Pore volume* from liquid saturation after drying using brine or oil
  **Accuracy** within 1 or 2 Porosity Unit

- **Permeability from drill Cuttings: DARCYLOG™ method developed and patented by IFP**
  **Principle**
  - Air is trapped inside the cuttings during spontaneous imbibition in viscous oil
  - Pressure is applied (10 bars) to force oil to flow inside the cuttings (and compress the air bubbles)
  - Permeability is derived by numerical calculation from the pressure relaxation curve like in a well test

  **Limits**
  - size of cuttings: 1-3 mm - volumes of cuttings > 3 cc
  - porosity > 5 % - permeability range: 0.01 to 100 mdarcy

- **Correlations K-Phi from cuttings**
  **Field application:** porosity on cuttings is compared to log porosity to control the quality of the results and adjust the lag time. K/phi correlations are derived and a “permeability log from cuttings” is provided

**References**
- Egermann, P., Doerler, N., Fleury, M., Behot, J., Deflandre, F. and Lenormand, R., “Petrophysical measurements from drill cuttings: an added value for the reservoir”