

## Traditional Reservoir Characterization

1. Extensive drilling program

2. Core sample extraction

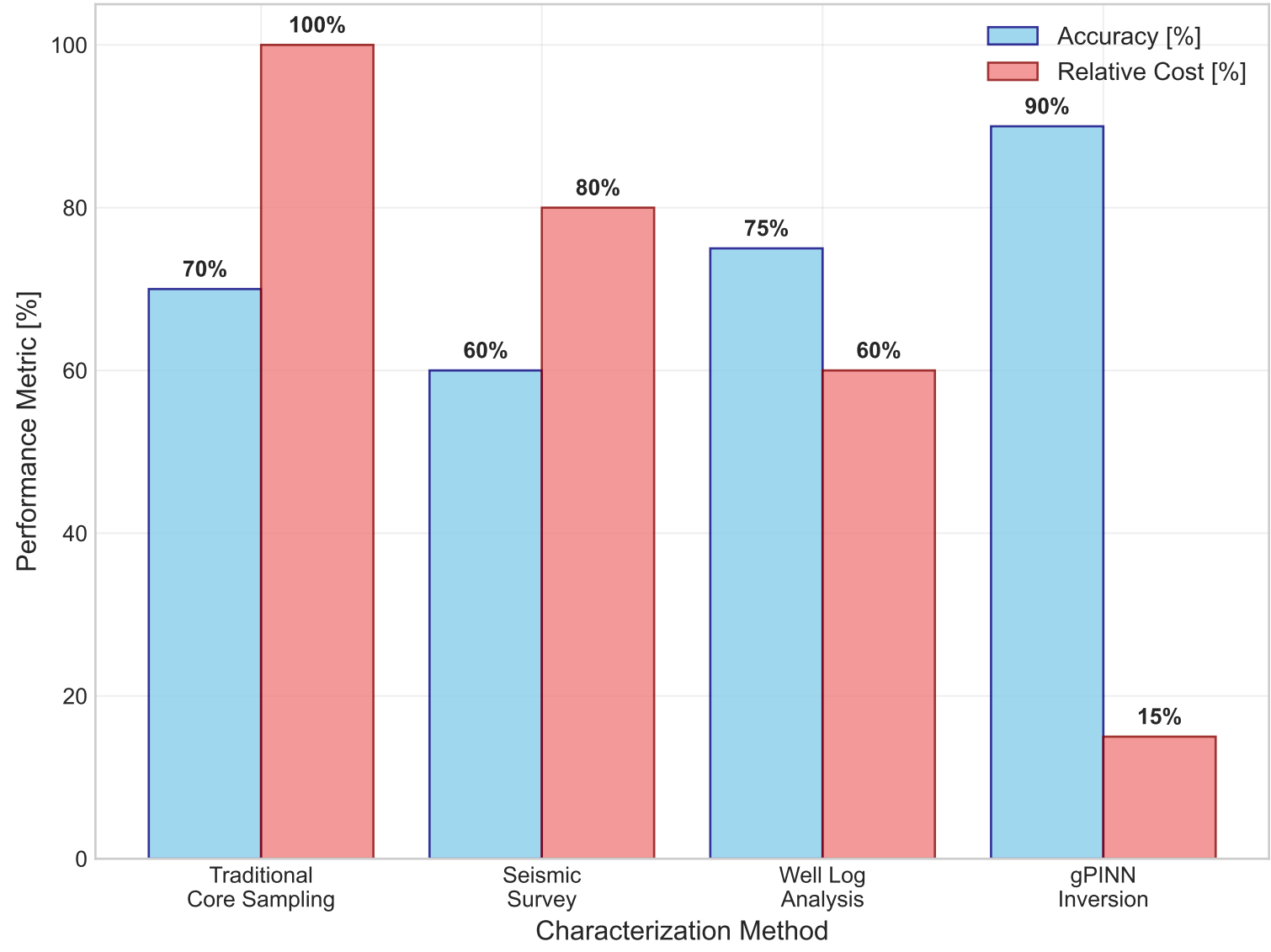
3. Laboratory permeability tests

4. Statistical interpolation

5. High uncertainty & cost

Cost: \$1-10M | Time: 6-24 months | Accuracy: Medium

Method Comparison: Accuracy vs Cost  
gPINN achieves higher accuracy at lower cost



## gPINN-Based Characterization

1. Minimal sensor wells (3-5)

2. Flow rate measurements

3. Physics-informed ML training

4. Simultaneous parameter inference

5. High accuracy & low cost

Cost: \$100K-1M | Time: 1-3 months | Accuracy: High

Project Timeline Comparison  
Faster reservoir characterization with gPINN

