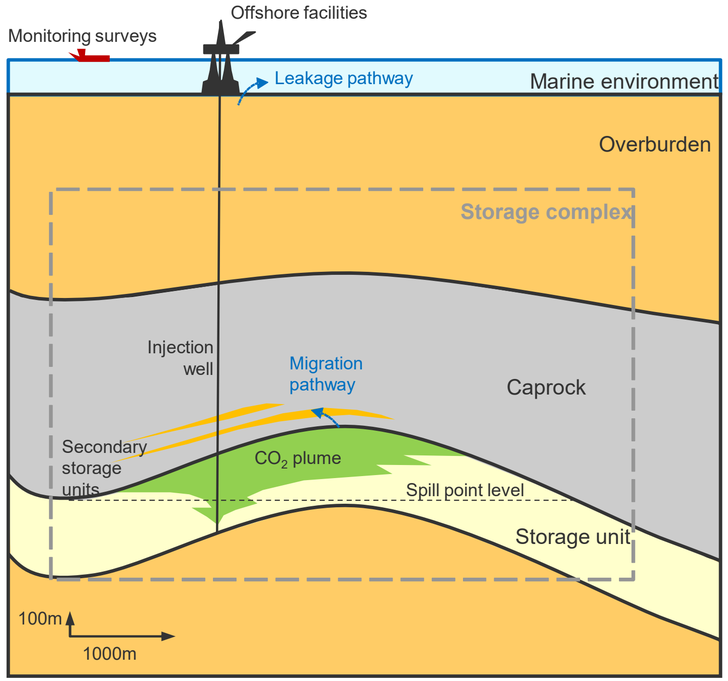
Some important terms/concepts for CO_2 Storage



- The storage complex versus the storage unit:
  - A larger volume of rock needs to be considered
- Migration versus leakage:
  - Leakage has a precise legal definition
- Specific legal frameworks:
  - e.g. EU Storage Directive
- Different project phases and timeframes:
  1. Site Selection
  2. Storage Operation
  3. Site Closure
  4. Post-closure Stewardship
- High level of public scrutiny / interest

Statoil

from Philip Ringrose

Geological Storage Timeline

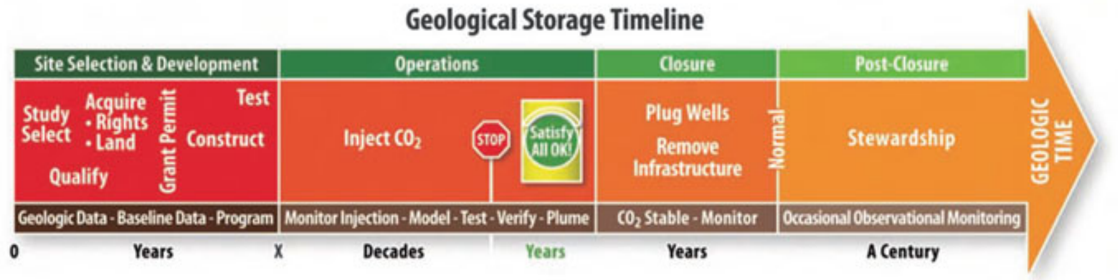


Fig. 2.4 Main phases of a CO_2 storage project (from Cooper et al. 2009; Reproduced with permission, CO_2 capture project, www.CO2captureproject.org/)

Rock systems are inherently complex define the storage system and the volume around it

- The *sedimentary basin* which contains the proposed storage units;
- The *storage complex* which defines the storage reservoir(s) and sealing units;
- The *storage unit(s)* themselves, referring to specific geological units;
- The *sealing formations* and *faults*;

- *Sufficient data shall be accumulated to construct a volumetric and three-dimensional static (3-D)-earth model for the storage site and storage complex, including the caprock, and the surrounding area, including the hydraulically connected areas.*
- EU defines ‘Leakage’ as any release of CO2 from the *storage complex*
- *‘Significant irregularity’ means ‘any irregularity in the injection or storage operations or in the condition of the storage complex itself, which implies the risk of a leakage or risk to the environment or human health.*

from Philip Ringrose