



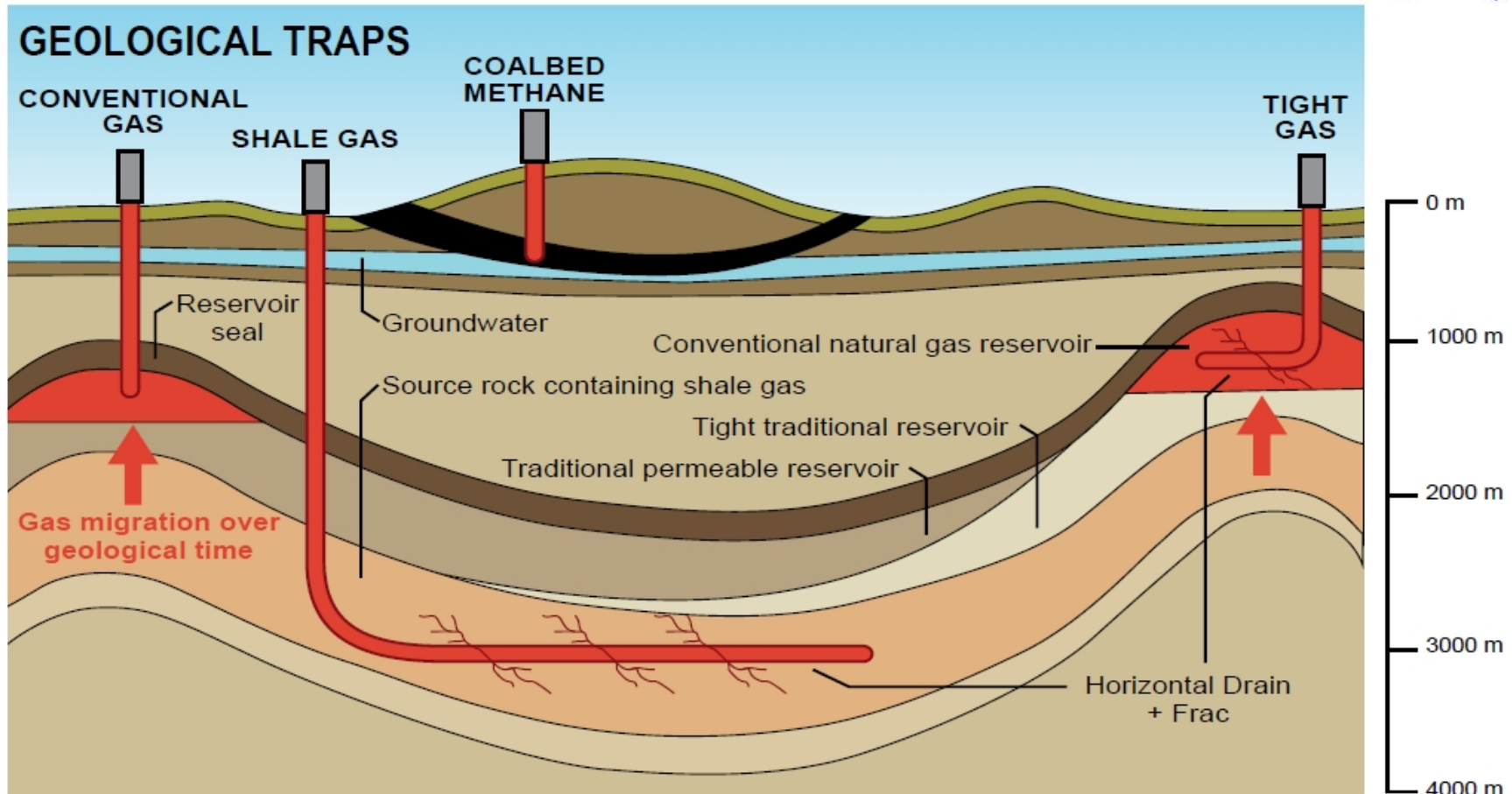
International Centre of Excellence in
Water Resources Management
ICE WaRM

CSG and Shale Gas Water Volumes



An Australian Government Initiative

Unconventional Gas Industry



- Source NT government

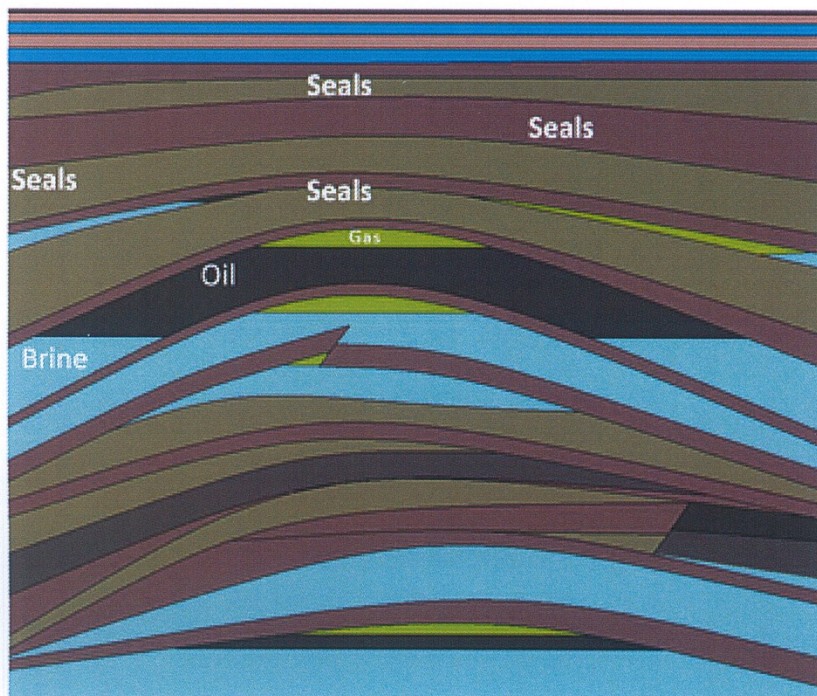


Figure 7: Seals and Structures

Gas and oil, as well as brines (salt water), have been held in place millions of years by literally hundreds of barriers and seals.

These massive seals also serve as one of the barriers that keep fractures from growing upwards towards fresh water supplies.

- Source: George E King: Apache Corporation

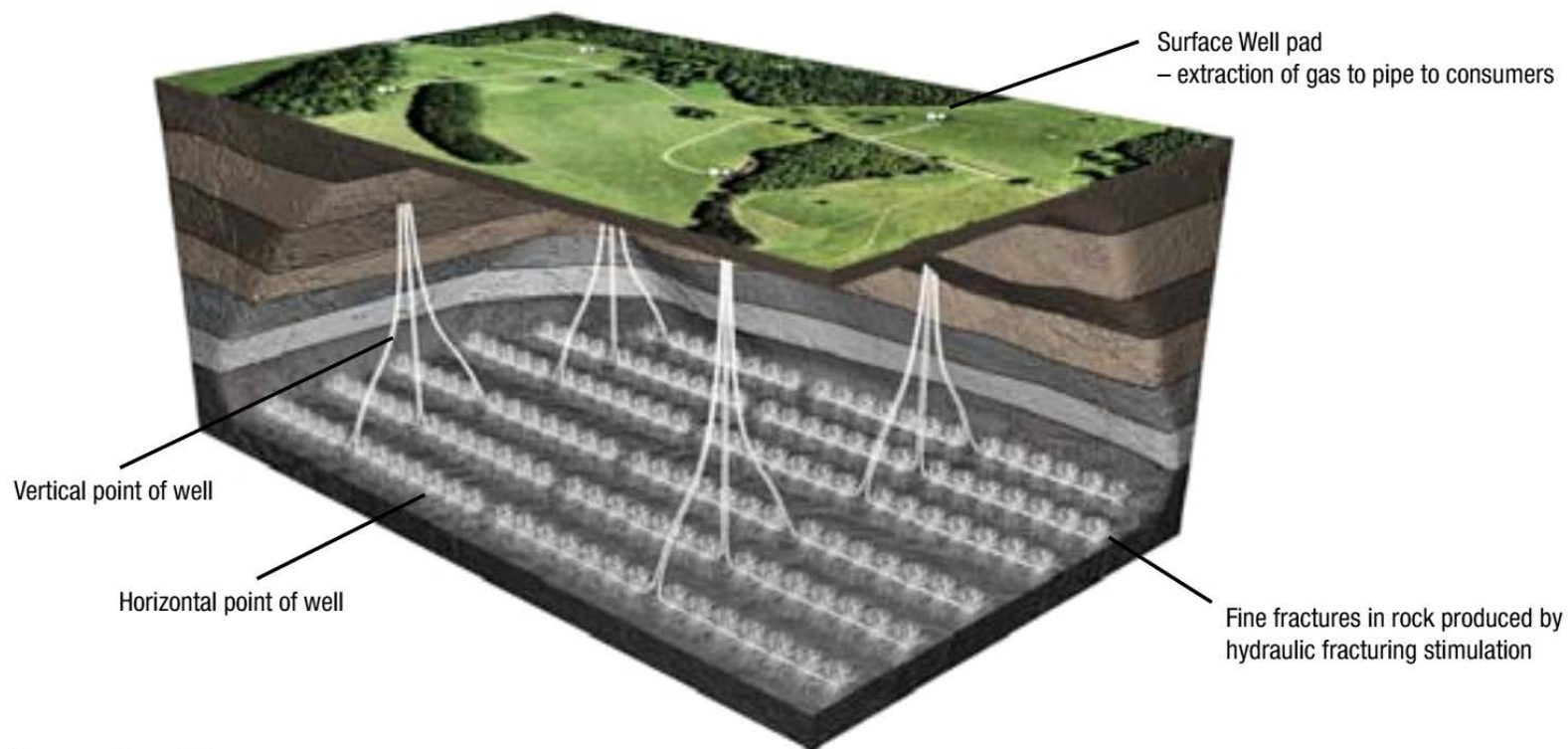
Unconventional Gas Industry



- Shale Gas
 - Commercially used since the early 1800's
 - Some shale rock allows for 'relatively' easy release of gas
 - Large world-wide increase in last 5 years
 - Coastal and inland reserves in Australia
- Tight Gas
 - Requires substantial fracking of the rock reservoir to release gas
 - Costly in Australia
- Coal Seam Gas/Coal Bed Methane Gas
 - Mainly inland reserves in Australia

CSG Wells

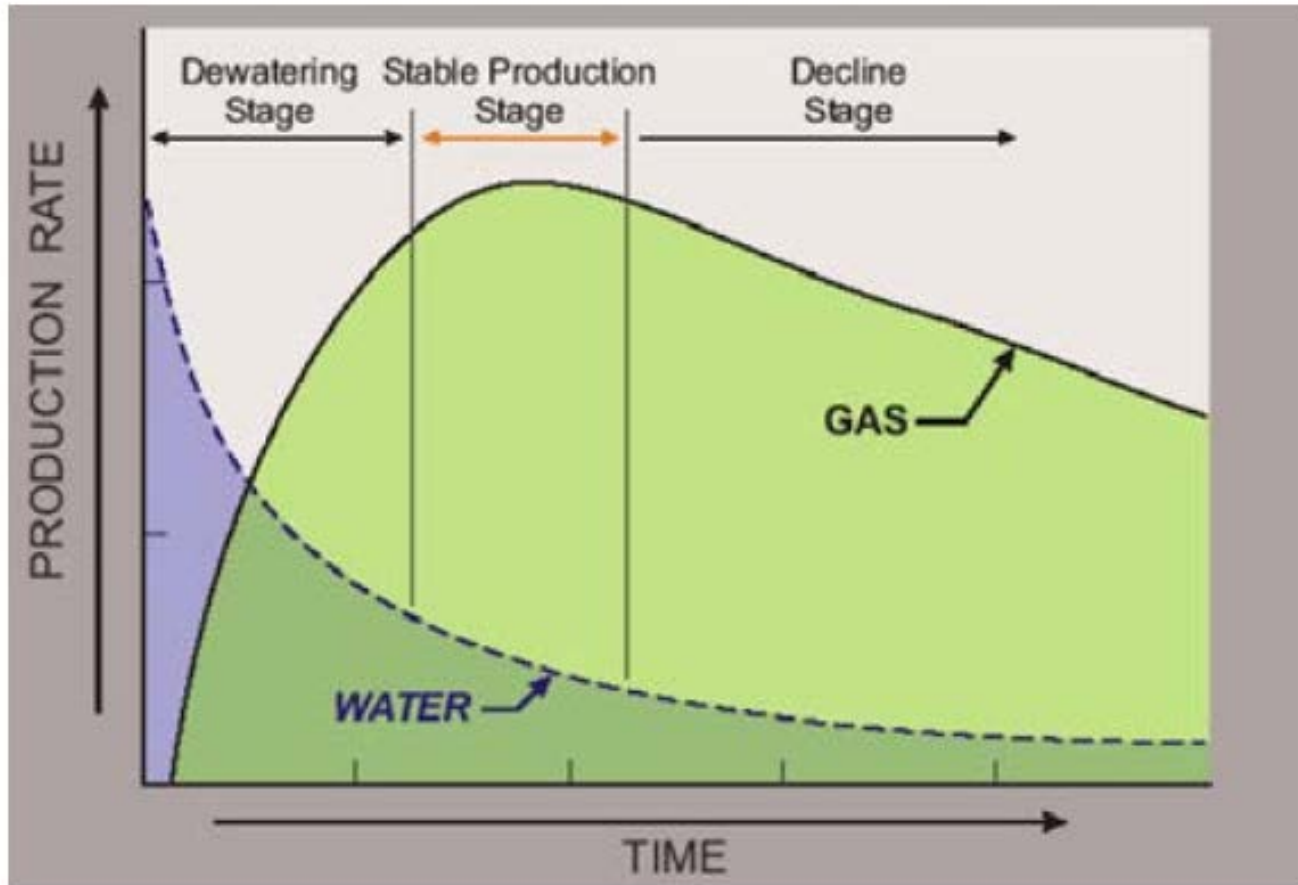




(Diagram not to scale)

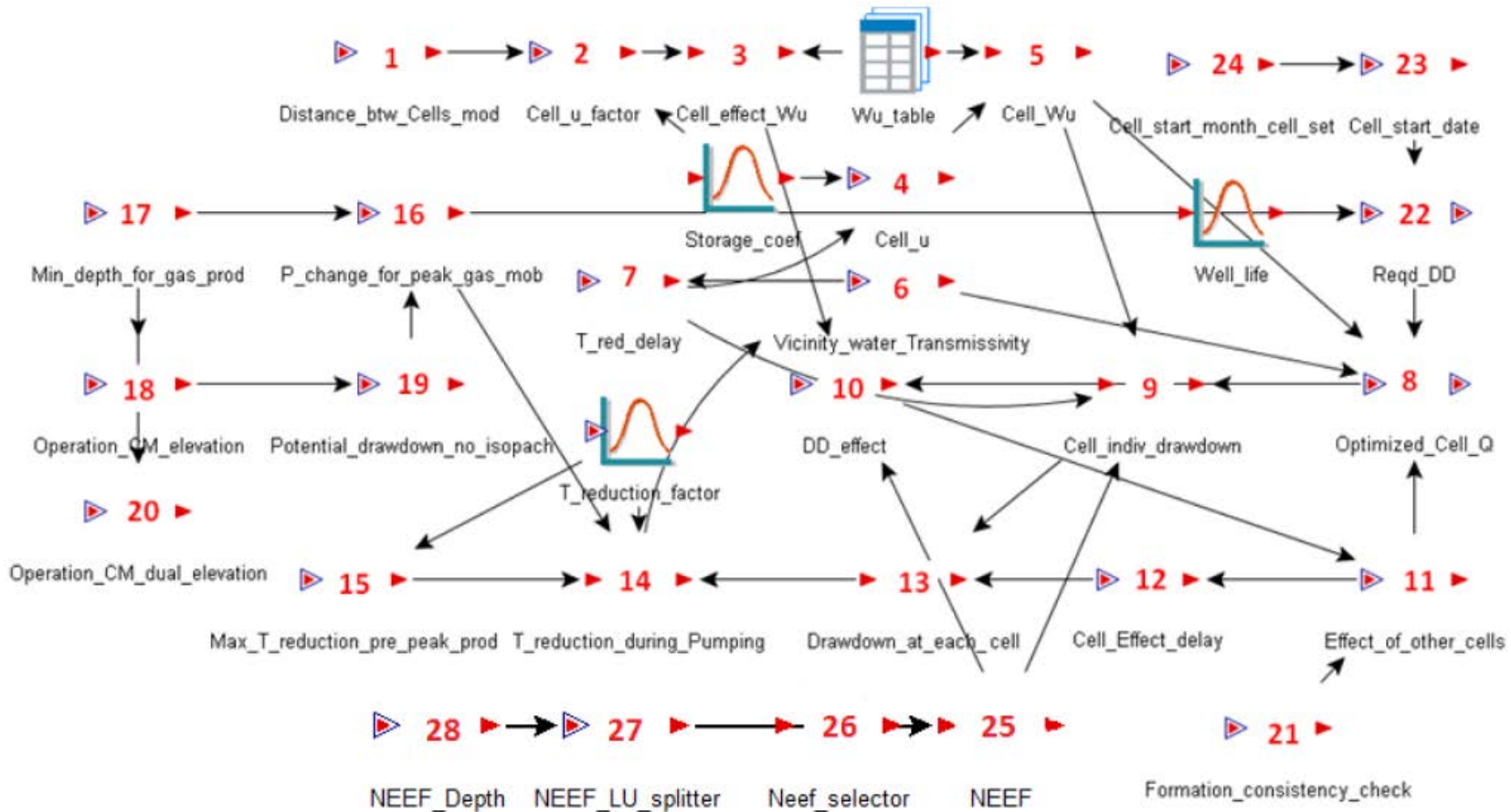
Source: Styles, Keele University, UK

Associated Water Volumes



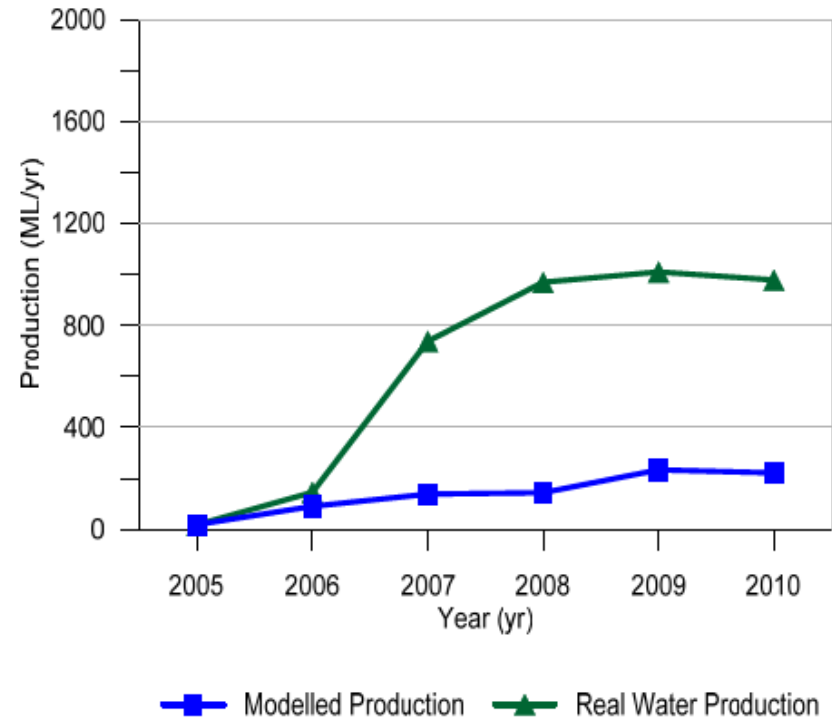
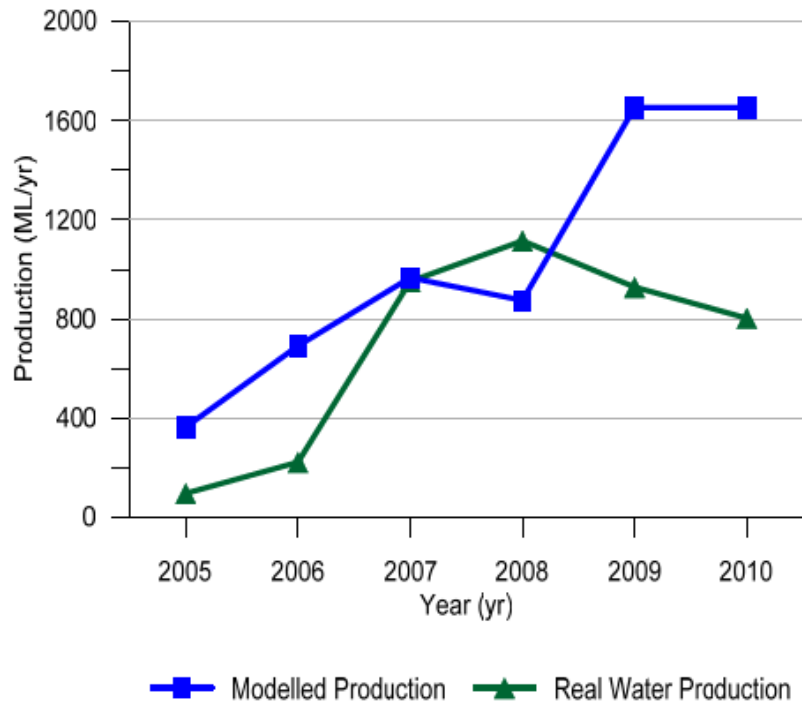
Source: DME 2008a

Associated Water Volumes



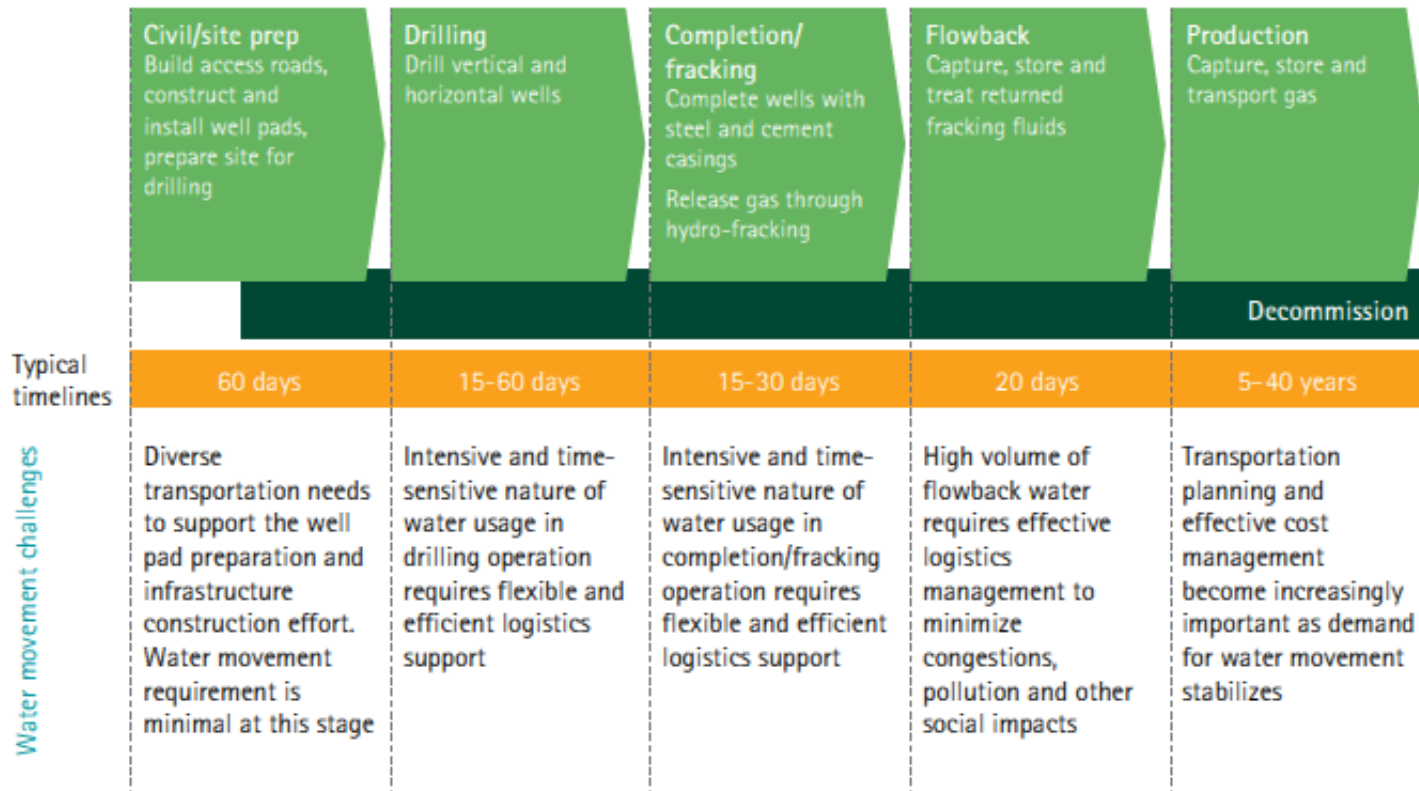
Source Qld
Government 2012:
Healthy Headwaters

Water Volumes



Source Qld Government 2012:
Healthy Headwaters

Shale Water Cycle



Source: Accenture