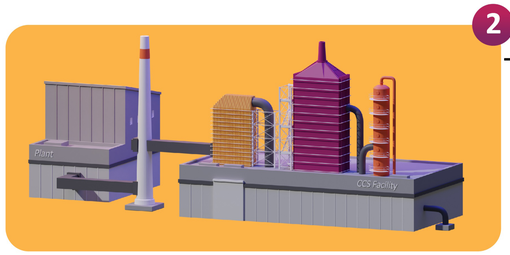
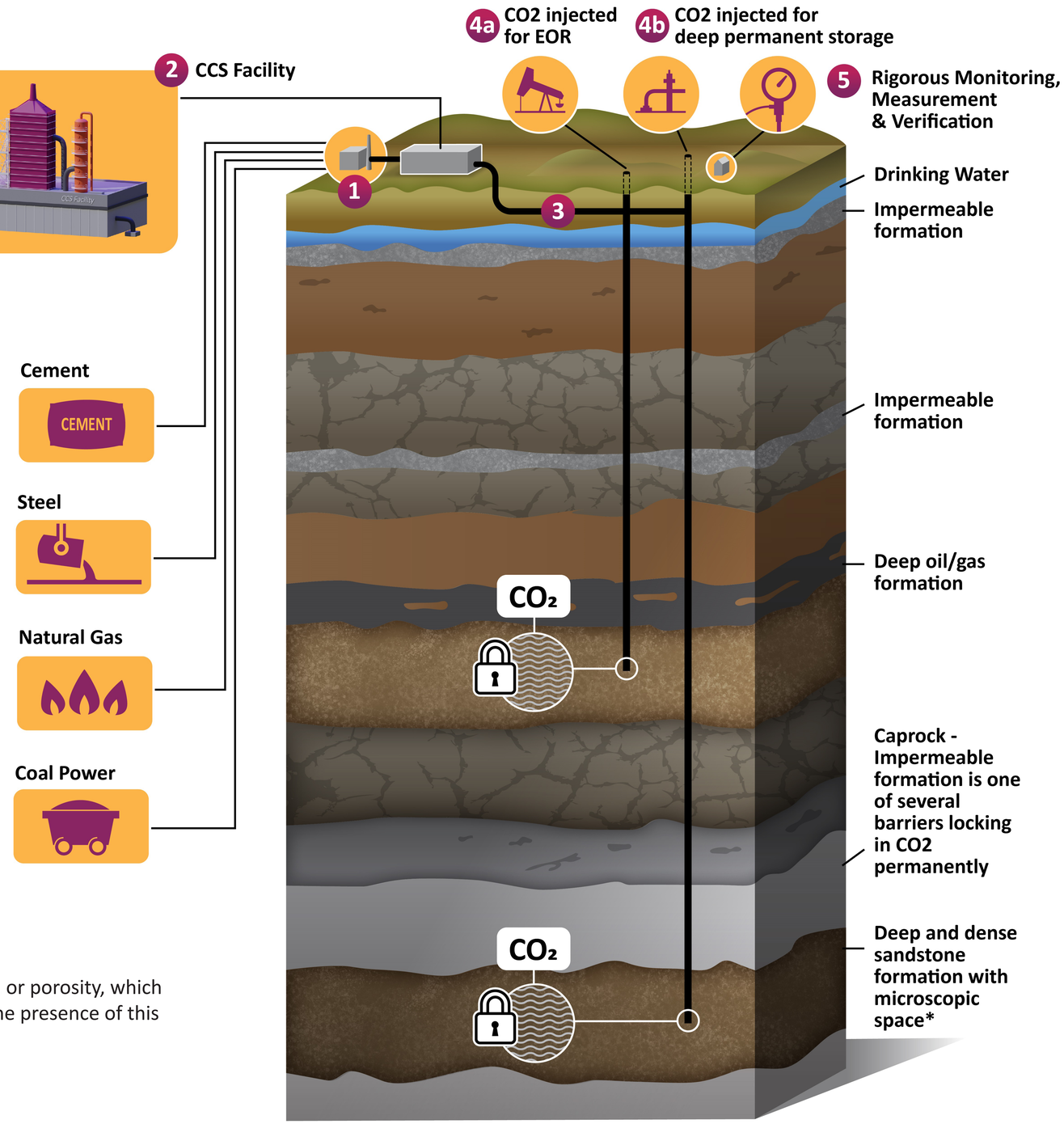
Carbon Capture Storage at a Glance

Accelerated CO_2 Emissions Reductions



1	Source of carbon dioxide (CO_2) emissions from industrial or energy plants. With carbon capture and storage (CCS), large amounts of CO_2 will be captured, recycled and permanently stored.
2	Capture rates potentially exceeding 90% of the CO_2 in the flue gas, is captured and is then compressed into a dense phase liquid for easy transport.
3	The CO_2 is transported by pipeline. The CO_2 may also be transported by truck, rail or ship, depending on the needs specific to the region where the CCS project is located.
4	The CO_2 is sent deep underground for: **a** Use in Enhanced Oil Recovery (EOR) – where CO_2 is recycled and eventually permanently stored safely in depleted oil/gas formations. **b** Permanent storage into the microscopic spaces between grains in a porous reservoir rock formation – with depths exceeding 1km, and layers of dense impermeable "cap-rock" formations above it ensures that the CO_2 remains there indefinitely.
5	Measurement, Monitoring & Verification (MMV) - Rigorous and sensitive MMV equipment and procedures are put in place that can detect changes in CO_2 pressure and concentration in the subsurface to ensure the plume is growing within acceptable conformance limits and is staying within the injection formation permanently. As well, surface monitoring is completed regularly to ensure there is no CO_2 leakage into the atmosphere, groundwater, or soil, related to injection or surface CO_2 operations

* The deep sandstone formation has microscopic spaces between its individual sand grains, or porosity, which allows it to hold high salinity water – that is 10 times more salty than the ocean. Due to the presence of this very salty brine, geologists refer to this type of formation as an aquifer.



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INTERNATIONAL CCS KNOWLEDGE CENTRE

The International CCS Knowledge Centre (Knowledge Centre) is dedicated to advancing the understanding and use of large-scale carbon capture and storage (CCS) as a means of managing greenhouse (GHG) emissions. Through experience-based guidance, the Knowledge Centre provides the know-how to implement and optimize large-scale CCS projects through the base learnings from both the fully-integrated Boundary Dam 3 CCS Facility and the comprehensive second-generation CCS study, known as the Shand Study. The Knowledge Centre was founded in 2016 as a non-profit organization by BHP and SaskPower. **ccsknowledge.com**

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