

## Myth Busting – Misconceptions and study facts:

Misconception	Study facts
<p>CO<sub>2</sub> captured is being converted to a jelly type substance and stored deep underground into a “Porous Sandstone Reservoir” which just happens to be the Precipice Sandstone aquifer which is part of the Great Artesian Basin.</p>	<p>CTSCo is assessing storing <a href="#">CO<sub>2</sub></a> in the <a href="#">Precipice Sandstone</a> aquifer which is part of the <a href="#">Great Artesian Basin (GAB)</a>. In this instance the CO<sub>2</sub> would occur in a <a href="#">supercritical liquid</a> state.</p> <p>In general terms, the density of supercritical fluids approach that of liquids with the viscosity tending towards that of a gas. It is not a gel or jelly</p>
<p>The town bores for Wandoan and Taroom and other areas and most stock and domestic bores in this region are in the Precipice Sandstone Aquifer.</p>	<p>In the region, the majority of the stock and domestic bores access the <a href="#">Hutton Sandstone</a> and Precipice Sandstone aquifers.</p> <p>Bores accessing the Hutton Sandstone are slightly more common, as the shallower bores are lower cost to install. This is dependent on the productivity of the formations at a specific location.</p> <p>There are also some bores accessing the shallow alluvial aquifers which are much closer to the surface.</p>
<p>The Pilot project would only be injecting a couple of tanker loads of CO<sub>2</sub> initially for a trial.</p>	<p>The study is investigating injecting 60,000 tonnes per annum for three years. This equates to approximately 150 tonnes per day. For reference 150 tonnes of water is equivalent to that of three (3) x 50 kL bushmans tanks.</p>
<p>(Project) already has the injection and monitoring bores drilled and has done a lot of other monitoring work.</p>	<p>The study has drilled a single deep core hole (~1293 m), and has drilled 16 shallow monitoring wells (between 1 m and 20 m depth).</p>
<p>Precipice Sandstone Aquifer ..... is porous, it is an ideal aquifer to inject the jelly CO<sub>2</sub> into.</p>	<p>The Precipice Sandstone aquifer is the region is highly porous. This makes it an ideal aquifer to inject the supercritical liquid CO<sub>2</sub> into. The supercritical liquid is not a jelly. It has the properties midway between a <a href="#">gas</a> and a <a href="#">liquid</a>.</p>
<p>APLNG is recharging this Precipice aquifer with treated CSG water at Reedy Creek under their beneficial use of CSG water. The monitoring is showing a rise in the water table up to 40 kms away in a few months providing the porous quality of this aquifer.</p>	<p>The <a href="#">Reedy Creek Aquifer Injection</a> Scheme is currently Australia’s largest treated water managed aquifer recharge (injection) scheme. With a designed treatment capacity of 40,000 m<sup>3</sup>/day and twelve injection bores, it is the sole management solution for the co-produced water for nearly 500 coal seam gas wells. The treated water is injected into the Precipice Sandstone, at approximately 1300 m depth. Injection commenced in early 2015 and over 10,000,000 m<sup>3</sup> has been injected to date (between 5,000 and 20,000 m<sup>3</sup> m<sup>3</sup>/day. The effect of this injection has been observed by an increase in Precipice water levels in bores approximately 80 km away from the injection site.</p> <p><i>[reference: Reedy Creek Aquifer Injection Scheme. Presented</i></p>

	<p><i>by Ryan Morris Origin Energy. SPE Meeting 30 November 2016</i>  As a point of comparison this Study is proposing to inject equivalent to 150 m<sup>3</sup>/day.</p>
<p>Hydrogeologists from the Water Commission and from the gas resources companies in this area are unaware of the CTSCo Study.</p>	<p>In relation to <a href="#">Queensland Water Commission</a> reference - we have had, and continue to have, ongoing open book discussion with agencies that regulate our activity direction including <a href="#">Department of Environment, Heritage and Protection (DEHP)</a> and <a href="#">Department of Natural Resources and Mines (DNRM)</a>. It is our intention to engage with the <a href="#">Office of Groundwater Impact Assessment (OGIA)</a> as part of our ground water modelling. Early discussions have already commenced.</p> <p>In terms of the CSG companies - we have had a formal technical relationship with QGC for some time. We have exchanged data and have an overlapping tenure agreement. It is important to remember that these are large organisations and therefore some individuals in the field may not be aware of the interactions we have with their organisation. With regards to other companies (APLNG) we have every intention to engage with the relevant departments as appropriate with the next stage of our study development - particularly as we move further into our regional assessment studies</p>