

# Water use for industry in Queensland



**324,058ML**

of groundwater is taken for non-gas related activities each year



**66,000 ML**

of groundwater is taken for petroleum and gas activities each year



**>1,500**

groundwater monitoring points exist in Queensland



**145,000ML**

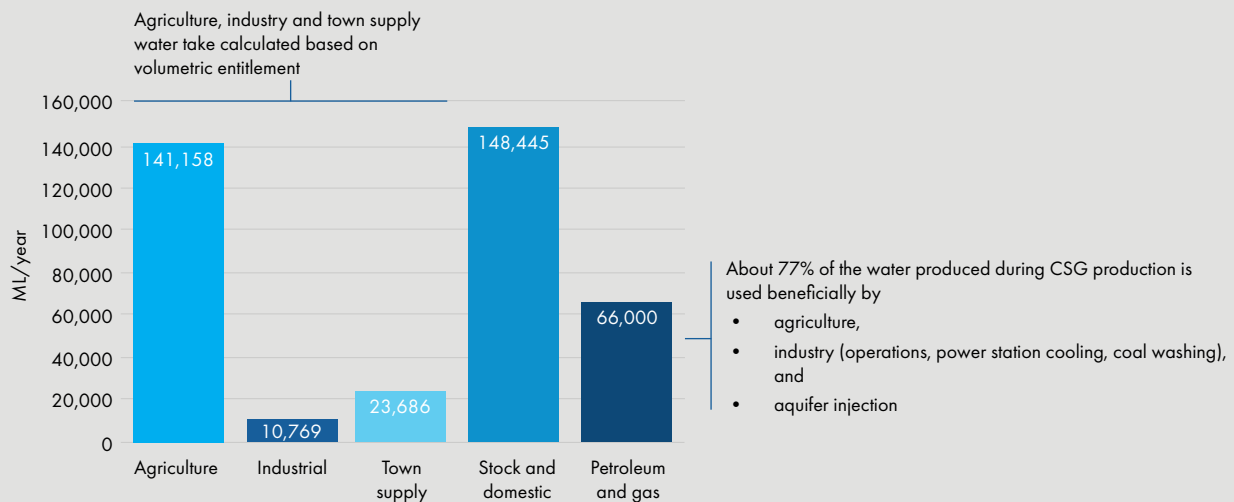
of treated water has been beneficially used for other purposes between July 2015 and June 2018

The estimated total groundwater take from all aquifers across the petroleum and gas producing areas of Queensland for all purposes is approximately 390,000 ML/year.

Most of this is used for agricultural (includes stock intensive and irrigation use) and stock and domestic purposes (Figure 1). Of the total water take, approximately 134,000 ML/year (34%) is drawn from the upper alluvial and volcanic aquifers that overlie the Bowen and Surat Basins for non-petroleum and gas activities (Figure 2).

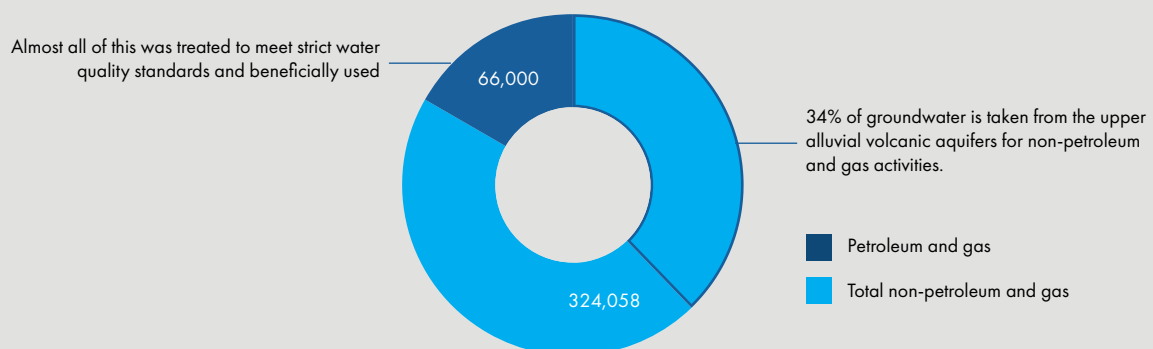
Approximately 66,000 ML/year or 17% of the total water take is for petroleum and gas purposes.

**Figure 1: Groundwater take across the petroleum**



Estimated total groundwater take in the petroleum and gas producing areas of Queensland by sector.

**Figure 2: Total groundwater take across the petroleum and gas producing areas of Queensland in 2018(ML/year)**



Total groundwater take across the petroleum and gas producing areas of Queensland by petroleum and gas activities and by non-petroleum and gas activities.

# Water use for industry in Queensland



## Beneficial use

An estimated total of more than 145,000ML of treated associated water has been beneficially used between July 2015 and June 2018.

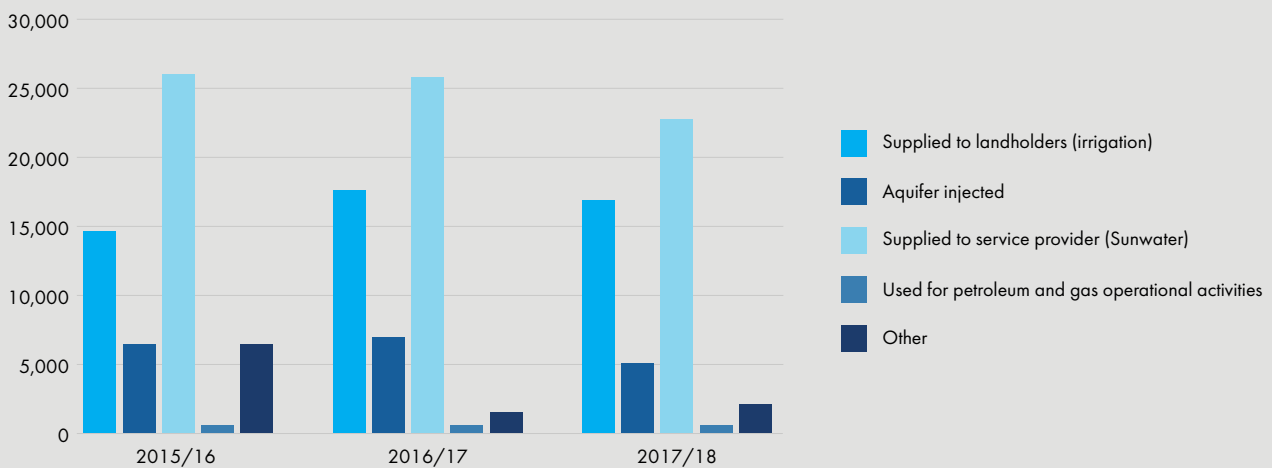
For associated water to be used for beneficial purposes it must meet strict conditions regarding water quality, including salinity and pH levels. In most cases associated water requires some treatment or amendment.

Almost all associated water is treated in reverse osmosis plants prior to use. The water quality after treatment in a reverse osmosis plant is equivalent to distilled water. This is too pure for most uses so water is either blended with another source or amended by adding minerals such as magnesium, calcium, sodium, sulfate etc.

The graph below shows the distribution of use of treated water over the last three financial years, with the dominant beneficial use being irrigation.

More than 20,000 ML (averaging around 5,000 ML/year) of treated water has also been injected into the Precipice Sandstone aquifer, since January 2015, in accordance with environmental approvals.

Beneficial use of associated water



Volume of associated water used beneficially for various purposes from 2015/16 to 2017/18.



## Baseline assessment

Under the Water Act, resource tenure holders are required to conduct a baseline assessment of all water bores within their tenure. A baseline assessment collects information about bores including water levels, water quality, bore construction and associated infrastructure to benchmark bores prior to petroleum and gas development.

The Office of Groundwater Impact Assessment indicated that there were 4,242 records of baseline assessments as at August 2019.



## Management of chemicals

The oil and gas industry's management of chemicals has been studied in recent years and found to be safe. For example, CSIRO found that subsurface risks to water and ecosystems that rely on groundwater are low or very low.<sup>1,2</sup>

A study by the Commonwealth Department of Agriculture, Water and the Environment and the National Industrial Chemicals Notification and Assessment Scheme (NICNAS) found the probability of an oil and gas industry surface spill damaging water resources is very low.<sup>3</sup>

1.CSIRO (2017) Report into The shale gas well life cycle and well integrity Prepared for the Northern Territory Hydraulic Fracturing Inquiry

2.CSIRO (2017) Deeper groundwater hazard screening for chemicals used in coal seam gas extraction - Overview , <http://www.environment.gov.au/system/files/resources/370d0bcd-8fe2-436f-88d7-1c3361ef8cd5/files/deeper-groundwater-hazard-screening-research-overview.pdf>

3.Department of Environment (2017) National Assessment of Chemicals (page 11) <http://www.environment.gov.au/system/files/resources/03137f85-1bea-46a4-b9e7-67d985b4aeb5/files/national-assessment-chemicals-overview.pdf>

Source: Shared Landscapes: Industry Trends, GasFields Commission Queensland (August 2019) (link) – accessed 4 February 2020