

HYDROGEN WATER SOURCE

Electrolysers require approximately 10kg high purity, demineralised water per kilogram of green hydrogen produced. Groundwater abstraction by borehole was deemed to be the most suitable method of obtaining water for the plant.

Alternatives which could also potentially contribute to the provision of water include rainwater harvesting and connection to the national water network.

Part of the site investigations for the location of the Preferred Proposed Hydrogen Plant included testing for a sustainable water source.

Sustainable water source means a source of water:

- Of sufficient quantity;
- That can be extracted without impacting nearby habitats and other water sources – eg local wells; and
- Of suitable quality to produce hydrogen.

TESTING

Minerex Environmental Ltd. performed site investigations on the hydrology at the Preferred Proposed Hydrogen Plant Site and the Original Proposed Hydrogen Plant Site.

These resulted in:

PREFERRED PROPOSED HYDROGEN PLANT SITE	ORIGINAL PROPOSED HYDROGEN PLANT SITE
Water strikes at 50m and 80m below the ground	No water strikes

For the Preferred Proposed Hydrogen Plant Site:

- Pumps were installed and a pumping test was carried out over a 23 day period from the 11th of July to the 3rd of August 2022.
 - High resolution water level sensors were placed in the pumping wells for the duration of the test.
- Regular measurements were taken during the test period from the main boreholes and a monitoring network of boreholes around the site.
 - A water level sensor was also installed in a neighbouring landowner’s well to identify any potential impacts as a result of the proposed abstraction.

Preferred Proposed Hydrogen Plant Site Results

- A sustainable yield of 2.25 l/s and 0.44 l/s was established for the respective wells.
- There was no apparent impact from the pumping test on the neighbouring landowner’s well.

Samples were taken from both pumping wells and local surface waters over the course of the pumping test and analysed for a comprehensive suite of microbiological and hydrochemical parameters.