

23 November 2023

ASX Announcement

Ramsay Project Operational Update

Hydrogen Detected in Ramsay 2 Well

Highlights:

- **Ramsay 2 spudded on Friday 17 November 2023, with surface casing set at 192m over the weekend.**
- **Hydrogen has so far been detected across the entire Parara Limestone section.**
- **With Hydrogen shows from shallow depths, wireline logs were run in the first 100m of the well below the surface casing, with MDT samples also recovered.**
- **MDT samples and other preliminary mud gas samples are being sent to a third-party lab for analysis.**
- **Further updates will be provided in due course following analysis of samples.**

Further to previous market releases regarding its flagship Ramsay Natural Hydrogen Project, the Directors of Gold Hydrogen Limited (**Gold Hydrogen**, ASX: **GHY**, the **Company**) are pleased to provide a preliminary operational update on the Ramsay 2 well.

Drilling at Ramsay 2 commenced on 17 November 2023, this being the second dedicated natural hydrogen exploration well in Australia, and a follow up to the successful Ramsay 1 well. Over the weekend, the surface casing on Ramsay 2 was set at 192m, in the top of the Parara Limestone. Hydrogen was measured in the mud gas from the commencement of drilling out of the surface casing at shallow levels of 192m, and has continued to be detected across selected zones within the Cambrian limestone section, with a current drilling depth of approximately 700m. Due to the encouraging signs of Hydrogen the decision was made to stop drilling at 290m and conduct wireline logs to obtain downhole reservoir samples to that depth. During this logging run, four (4) down hole samples were recovered to surface and preliminary analysis show elevated hydrogen levels in the gas recovered from the MDT sample from 201mMD. Drilling then recommenced, with an expected TD of the well early next week at a depth of approximately 1,100m. Further wireline logs will be obtained following well TD.

In addition to these down hole samples, numerous mud gas samples have been taken during drilling via the mud logging system with all samples being progressively transferred to a third-party lab for testing. Results of the testing will be received over the coming weeks, and once they are fully completed and interpreted, a further market update will be made.

Although the results are only preliminary and indicative, Ramsay 2 has confirmed the presence of Hydrogen as found in Ramsay 1 and the historical Ramsay Oil Bore. This further supports the view of the Company that there is a natural hydrogen accumulation in the area.

Gold Hydrogen Managing Director, Neil McDonald said: *“The MDT results are exciting for us as it demonstrates that the limestone has suitable porosity and permeability to allow natural hydrogen to be produced. Although early days, this result is likely to lead to Australia’s first natural hydrogen discovery.”*

Table 1 – Listing Rule 5.30 Information (Preliminary)

Name:	Ramsay 2
Location (UTM zone 53 GDA2020)	
X	747761.61
Y	6149371.41
Permit	PEL687 on Yorke Peninsula, South Australia
Entity holders	Gold Hydrogen 100%
Resources	Hydrogen
Formation	Parara Limestone
Gross thickness and net pay thickness*	281m Gross
Geological rock type	Fractured Limestones
Depth of the zones tested	201mMD
Type of test and duration	MDT sample
Phase recovered	Gas/Water
Other types of recovery	N/A
Flow rates, choke size, volumes recovered	N/A
Fracture stimulation	None
Material non-hydrocarbons	Nitrogen

* Insufficient information is presently available to determine net pay thickness

It is important to note that there remain both geological and potential development risks associated with the Ramsay Project and the Company’s commercial and business objectives. These risks relate to the presence, recovery and potential volumes of hydrogen, but also due to the location of the resource within agricultural areas and the proximity to National Parks on both Yorke Peninsula and Kangaroo Island, requiring significant landholder and community engagement. The worldwide, Federal and South Australian Government and industry efforts to secure hydrogen as an alternative energy source provides confidence that any technical and social concerns may be overcome.



About Gold Hydrogen

Gold Hydrogen is focused on the discovery and development of world class natural hydrogen gas in a potentially extensive natural hydrogen province in South Australia. This region has only recently had its natural hydrogen potential identified by the Company. The domestic and global demand for hydrogen, combined with new natural hydrogen exploration techniques and experienced personnel, provides Gold Hydrogen with an extraordinary opportunity to define and ultimately develop a new natural hydrogen gas province.

The combined natural hydrogen permit area of the Gold Hydrogen group is approximately 75,332km². Gold Hydrogen holds one granted petroleum exploration license (the Ramsay Project - PEL 687) and its two 100% owned subsidiary companies (White Hydrogen Australia and Byrock Resources) hold an additional seven (7) applications for natural hydrogen exploration within South Australia.

The Company's Prospective Resource Statement is attached as **Table 2**.

Gold Hydrogen is also the preferred applicant for four (4) gas storage exploration licenses applications (GSELA) covering an area of 8,107km² within the Yorke Peninsula portion of PEL 687 in South Australia. These storage licence applications are in addition to the granted exploration licence and application licences.

The group's permit areas are characterised by low population densities, cooperative stakeholders and aspects of the natural environment suited to the exploration and development of a future natural hydrogen gas province. Gold Hydrogen places considerable importance on close liaison with landholders, traditional owners and all other stakeholders, and this approach has led to the grant of its key tenement PEL 687 in South Australia. The Company intends to continue to invest in these efforts.

Further Information

Further information on the Gold Hydrogen group, its projects, and its Board and Management can be found on the Company's website (www.goldhydrogen.com.au) together with a copy of the Company's Replacement Prospectus of 29 November 2022.

Gold Hydrogen also has accounts on LinkedIn and Twitter ([@GHY ASX](https://twitter.com/GHY_ASX)), and copies of market releases will be emailed to all interested parties who register via info@goldhydrogen.com.au

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This announcement has been authorised for release by the Managing Director.

On behalf of the Board
Karl Schlobohm
Company Secretary



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Figure 1: Location of Ramsay 1 and 2 Relative to the Historic Ramsay Oil Bore

Table 2 – Prospective Resource Statement for Natural Hydrogen

Gold Hydrogen’s Ramsay Project: Prospective Resources* of Hydrogen in ‘000 Tonnes – 30 Sept 2021										
PEL	Prospects	SPE PRMS Sub-class	1U Low Estimate	2U Best Estimate	Mean	3U High Estimate		Pg	Pd	Pc
PEL 687	All Prospects and Leads		207	1,313	4,187	8,820		22%	48%	10%
Yorke Peninsula										
PEL 687	Ramsay FB	Prospect	124	931	2,712	6,989		22%	50%	11%
PEL 687	Ramsay Lst	Prospect	10	70	191	492		26%	50%	13%
PEL 687	Maitland	Lead	7	26	40	92		17%	35%	6%
Kangaroo Island										
PEL 687	Navigator	Lead	34	152	280	678		19%	40%	8%
PEL 687	Kanmantoo	Prospect	32	134	237	569		25%	40%	10%

***This estimate of Natural Hydrogen Prospective Resources must be read in conjunction with the notes in the Company's ASX release of 13 January 2023.**

It should be noted that the estimated quantities of Natural Hydrogen that may potentially be recovered by the application of a future development project(s) relate to undiscovered accumulations. These estimates have both an associated risk of discovery and a risk of development. Further exploration, appraisal and evaluation is required to determine the existence of a significant quantity of potentially recoverable Natural Hydrogen.

QPRRE Statement

The Prospective Resource Statement in this announcement is based on, and fairly represents, information and supporting documentation prepared by independent consultants "Teof Rodrigues & Associates" with an effective date of 30 September 2021, and which forms part of the Company's Replacement Prospectus dated 29 November 2022. The Prospective Resource Statement, together with all relevant notes, also appears in the Company's ASX release of 13 January 2023.

The Prospective Resource Statement has been included in this announcement under the approval of Mr Billy Hadi Subrata, Chief Engineer for Gold Hydrogen, who is a Qualified Petroleum Reserves and Resources Evaluator. Mr Hadi Subrata confirms that, as at the date of this announcement, there is no change to information or additional information, since the effective date of 30 September 2021, that would materially change the estimates of prospective resources quoted.

Forward Looking Statement / Future Performance

This announcement may contain certain forward-looking statements and opinion. Forward-looking statements, including projections, forecasts and estimates, are provided as a general guide only and should not be relied on as an indication or guarantee of future performance and involve known and unknown risks, uncertainties, assumptions, contingencies and other important factors, many of which are outside the control of the Company and which are subject to change without notice and could cause the actual results, performance or achievements of the Company to be materially different from the future results, performance or achievements expressed or implied by such statements. Past performance is not necessarily a guide to future performance and no representation or warranty is made as to the likelihood of achievement or reasonableness of any forward-looking statements or other forecast. Nothing contained in this announcement, nor any information made available to you is, or and shall be relied upon as, a promise, representation, warranty or guarantee as to the past, present or the future performance of Gold Hydrogen Limited.