20 February 2023

ASX Announcement

Airborne Geophysical Survey to Identify New Natural Hydrogen Targets in the Ramsay Project

Highlights:

- **A 10,529 line km priority airborne survey over mainland areas of Gold Hydrogen's 100% owned Ramsay Project (PEL 687) has received approval from the South Australian government.**
- **Survey commencement is expected in late March 2023, with arrangements currently being finalized.**
- **The survey is designed to identify, prioritize and refine future natural hydrogen targets for Stage One drilling which is expected to commence in Q3 CY2023.**
- **The reprocessed 2D seismic survey completed in December 2022, which showed better than expected subsurface conditions for hydrogen traps, coupled with the data collected during the airborne survey, is expected to continue to demonstrate this region as a potential world class natural hydrogen province.**
- **The program plan will quickly highlight areas of higher prospectivity and support, and guide future work program activities for the maturation of the independently assessed Prospective Resource of natural hydrogen gas in PEL 687.**
- **Gold Hydrogen controls a commanding position in South Australia with a combined natural hydrogen permit area of approximately 75,332 km^2. Historical drilling of wells within PEL 687 identified ~80% natural hydrogen gas at depths of up to 500m.**
- **Gold Hydrogen believes significant upside potential exists for deeper hydrogen sources and reservoirs throughout the Project Ramsay at untested depths from ~500m to 4,500m. It is the Company's intention to drill at these untested depths and create a pathway to commercial extraction.**

The Directors of Gold Hydrogen Limited (Gold Hydrogen, ASX: GHY) are pleased to advise that the Company has contracted Xcalibur Multiphysics to acquire a non-invasive 10,529-line km at 500-metre spacing airborne gravity-magnetic-digital terrain model survey across the mainland component of Ramsay Project (PEL 687) in South Australia (refer Figure 1 and Figure 2). The Company has also received approval for the survey from the South Australian Government Department for Energy and Mining under Section 74(3)(a) of the South Australian Petroleum and Geothermal Energy Act 2000.

The non-invasive airborne survey is scheduled to commence in late March 2023. Xcalibur provides fast and efficient data acquisition of passive gravity and magnetic geophysical data. The Xcalibur magnetic and gravity tools rely on no controlled sources, but seek out naturally occurring variations in the Earth's gravity and magnetic fields.

This high-resolution geophysical data will support building up from the foundation of the historical data sets which helped define the current Prospective Resources, and geology around the documented natural hydrogen occurrences in the Ramsay Oil Bore 1 and American Beach Oil 1 wells located in PEL 687. Gases were sampled by the State of South Australia at the rig sites of these wells at the time, and by later laboratory analysis it was determined that these gases had a very high natural hydrogen content of between 66% and 89%.

The acquisition of this new data is also a valuable exploration tool in defining additional new subsurface structures and differentiating rich natural hydrogen source rocks around and away from the historic Ramsay Oil Bore 1 and American Beach Oil 1 wells. Upon completion of processing, the new data will be integrated with the reprocessed 2D seismic, completed in December 2022, and integrated with Gold Hydrogen's static and dynamic subsurface models developed with Schlumberger and Total Seismic.

As further new data is collected, including gas-soil surveys and data from new drilling scheduled to commence in Q3, 2023, these models will become a strategic tool for high-grading potential areas for further seismic acquisition, play, lead, and prospect analysis, new drilling and associated production testing to support maturing the Company's independently assessed Prospective Resource, advancing the title to a production license, and generating a field development plan (refer Table 1 for full details of the Prospective Resource Statement for the Ramsay Project).

Gravity readings on Earth are not the same everywhere. Gold Hydrogen is looking for the rocks underfoot that are relatively dense and heavy. These gravity highs are likely associated with iron-rich source rocks and gravity lows associated with low iron content source rocks or country rocks. Similarly, high magnetic anomalies are typically related to iron-rich rocks and useful for also delineating faults and contacts between different rock-types.

Areas with both high gravity and high magnetic anomalies are likely associated with denser and more iron-rich rock-types, such as the natural hydrogen source rocks of the Hiltaba and Wallaroo, which are considered to be highly prospective in the Company's 100% operated Ramsay Project (PEL 687).

Following the acquisition of the data, which is expected to take three weeks, workflows involving processing will produce a range of grids that will support the generation of litho-structural interpretations.

Often after this final interpretation is complete, the resulting elevated subsurface definition across the surveyed area can be broken down into geological domains, prioritized by prospectivity, and also act as guide for future activities to be less impactful to surface owners and the community.

Table 1 – 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.

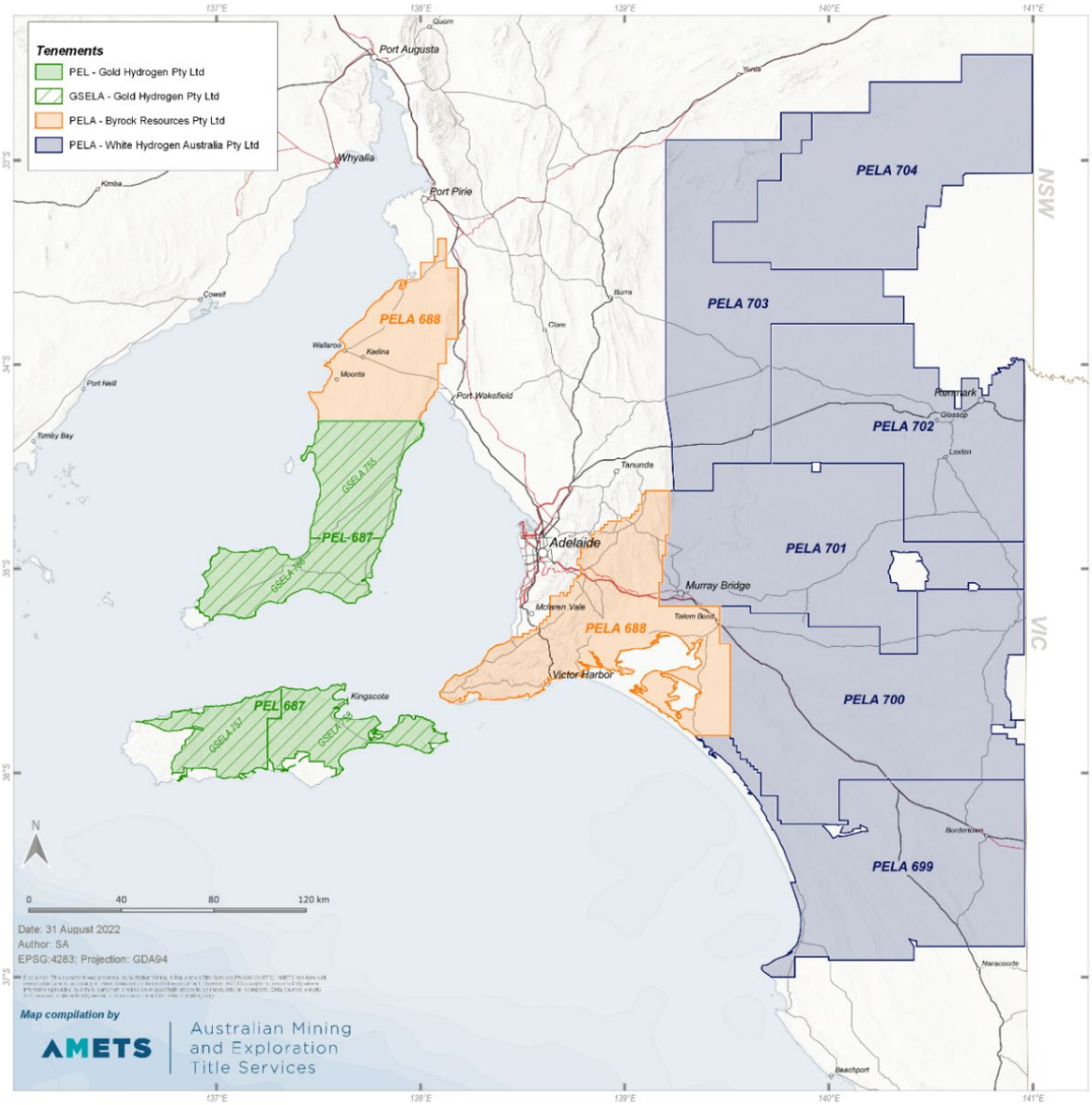

Figure 1 – Gold Hydrogen Group tenement and areas under application located in South Australia.

Figure 2 – Gold Hydrogen Stage 1 airborne geophysical magnetic and gravity survey area located in PEL 687 on the Yorke Peninsula, SA.

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 75,332km^2. 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 applications for natural hydrogen exploration within South Australia. Gold Hydrogen is also the preferred applicant for four gas storage exploration licenses applications (GSELA) covering an additional 8,107km^2 within the renewable energy zone of PEL 687 of the Yorke Peninsula region of South Australia.

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 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), and copies of market releases will be emailed to all interested parties who register via info@goldhydrogen.com.au

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The Board looks forward to providing regular updates to the market as preliminary exploration efforts commence on the Company's flagship Ramsay Project.

This announcement has been authorised for release by the Board.

On behalf of the Board
Karl Schlobohm
Company Secretary

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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 Luke Titus, Executive Director of Gold Hydrogen, who is a Qualified Petroleum Reserves and Resources Evaluator. Mr Titus 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.