16 December 2025

ASX Announcement

Ramsay Project Operational Update

Significant Natural Hydrogen and Helium Gas Formation Continuity in Ramsay 4

Highlights:

- **On the back of the strategic investment from Toyota Motor Corporation, Mitsubishi Gas Chemical and ENEOS Xplora, Ramsay 4 has been drilled to a total depth of 855m. This is the second successful well drilled in the Company's 2025 drilling campaign.**
- **Ramsay 4 was drilled 500m away from Ramsay 2, and successfully penetrated a number of highly porous and permeable zones within the Parara, Kulpara and Winulta Formations.**
- **Formation evaluation of Ramsay 4 highlights strong lateral correlation with Natural Hydrogen and Helium bearing formations that were sampled and tested in Ramsay 1 and 2. This preliminary interpretation highlights the potential for a significant Natural Hydrogen and Helium resource base.**
- **Baker Hughes wireline data also indicates Ramsay 4 has penetrated thick gross formation intervals within the Kulpara Dolomite and Winulta Sandstone sections where Helium concentrations up to 36.9% (air and nitrogen corrected) were seen from the Ramsay 1 extended flow test in August 2024.**
- **The Natural Hydrogen and Helium bearing reservoir properties in the Ramsay Project appear to be aligned with other global Natural Hydrogen and Helium field developments, based on the preliminary technical analysis of the wireline logs.**
- **Multiple samples of mud-gas and wellhead gas have been collected for third party laboratory analysis, and ongoing interpretation of the results for Ramsay 4 will continue.**
- **The Ramsay 4 well will be suspended for near term testing where the Company plans to maximise fluid flow rates during its Completions and Well Test Program (in late Q1 2026), which will form the basis for the Ramsay field development plan.**

Gold Hydrogen Managing Director, Neil McDonald said: *"The Ramsay 4 results are very encouraging and demonstrate the further extension of the Natural Hydrogen and Helium systems across the Ramsay Project area. This information will be instrumental in decisions around a potential pilot project development and Ramsay commercialisation strategy. With the support of our Strategic Investors, we look forward to our upcoming testing program starting in Q1 2026, where we plan to determine flow rate potential, a significant milestone in preparation for future Ramsay field development plans."*

The Directors of Gold Hydrogen Limited (**Gold Hydrogen**, ASX: **GHY**, the **Company**) are pleased to provide a preliminary operational update on the Ramsay 4 well.

Drilling at Ramsay 4 commenced on 3 December 2025, this being the fourth dedicated Natural Hydrogen and Helium exploration well in Australia, and a follow-up to the successful Ramsay 1, 2 and 3 wells. The Ramsay 4 well is located 500m away from the Ramsay 2 well (see **Figure 1**). Over the past 2 weeks, the surface casing on Ramsay 4 was set at 180.9m at the top of the Parara Limestone section. The well was then drilled to a total depth of 855m on 13 December 2025, to the top of the Hiltaba Granite.

A full suite of high-quality wireline logs including Nuclear Magnetic Resonance (**NMR**), acoustic and resistivity imaging logs has been acquired. Multiple samples of mud-gas were taken throughout the Parara Formation and wellhead gas samples were also collected while drilling continued below a mud losses zone encountered at approximately 330m. This zone is interpreted to be the same interval penetrated in Ramsay 1 which showed excellent fracture connectivity and provides confidence for the potential of future successful flow testing. Third party laboratory analysis of samples collected is ongoing and will continue to be integrated into the Ramsay 4 evaluation and subsurface models.

Preliminary results and interpretation of Baker Hughes wireline logs indicate continuity of several stacked porous and permeable gas bearing zones found in Ramsay 1 and 2. In Ramsay 4, elevated levels of Natural Hydrogen were measured from mudgas through the SLB DQ1000 gas chromatograph within the Parara Formation, and wireline log interpretation highlights a 310m gross formation thickness with strong gas anomalies from NMR log analysis. Refer Table 1.

The Company's interpretation of the Baker Hughes wireline logs for the deeper Kulpara Formation indicate a combined gross formation thickness of 180m which correlates to the tested Helium zones in Ramsay 1 and 2 where purities of up to 36.9% were measured on an air and nitrogen corrected basis. Refer Table 2 appended from previous testing. Interpretation of NMR logs indicate several gas bearing intervals with good porosity and permeability characteristics throughout the Kulpara Dolomite and Winulta Sandstone.

Wireline logs from all four wells drilled to date indicate excellent correlation and formation continuity across the Ramsay Project area. This interpretation will form the basis for future volumetric assessments and potential Ramsay field development plans. The Natural Hydrogen and Helium bearing reservoir properties in the Ramsay Project appear to be aligned with other global Natural Hydrogen and Helium field developments based on the preliminary technical analysis of the wireline logs.

Planning is underway for the Ramsay 4 well to be completed by installing an Electronic Submersible Pump (ESP) and production testing with a temporary surface production facility, which will also have a gas compressor integrated. The Completions and Well Test Program is scheduled to take place in late Q1 2026 following the completion of the drilling campaign, and the scope will be finalized once formation evaluation datasets have been fully integrated from all wells. The Completions and Well Test Program will be a test of the Natural Hydrogen and Helium flow potential of all prospective formations intersected in the Ramsay Project area to date.

The Condor Energy Services Rig #1 is in the process of being demobilised from the Ramsay Project area, and the focus will now shift to preparing for the Completions and Well Test Program which is scheduled to take place in late Q1 2026.

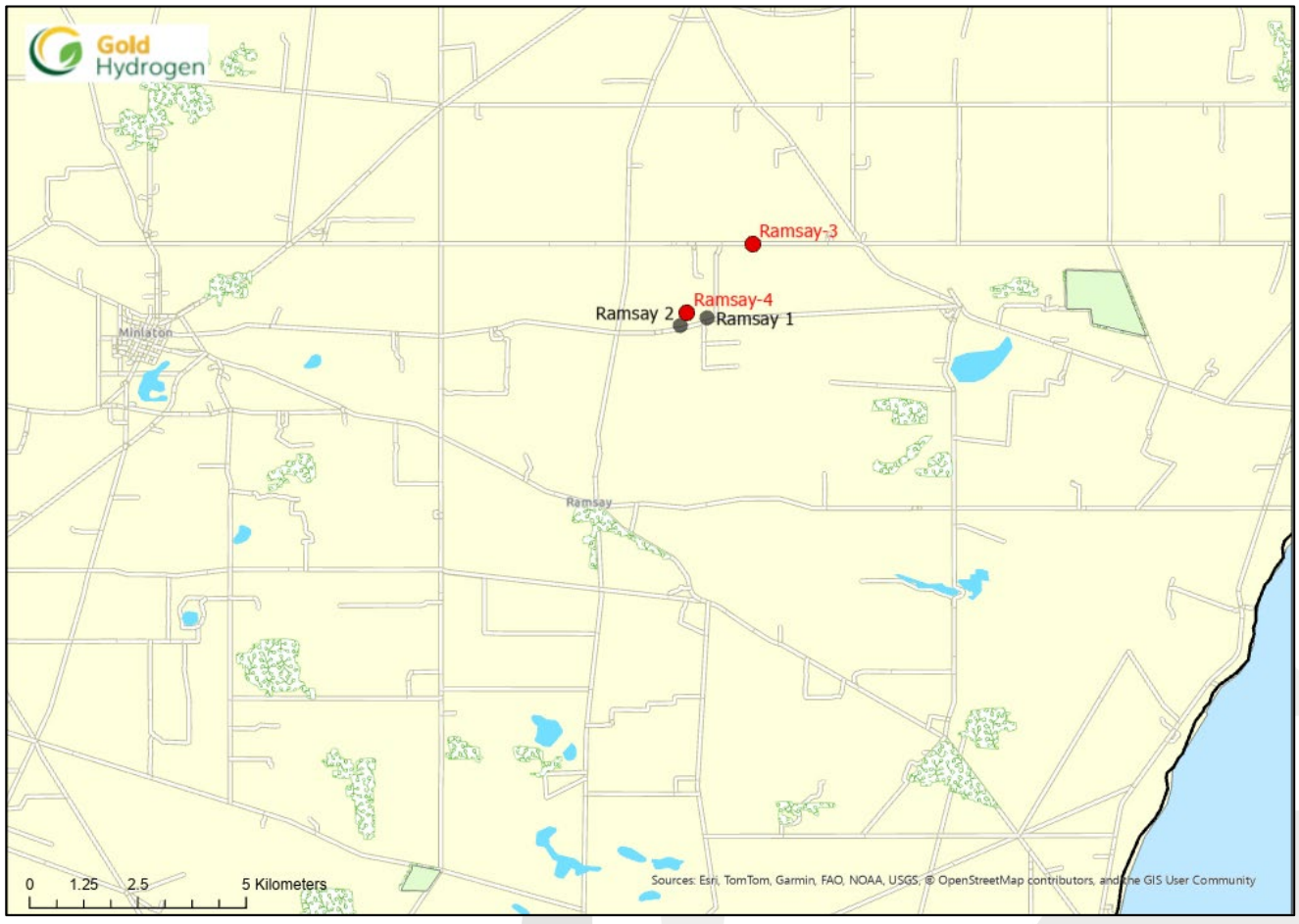

Figure 1: Location of the Ramsay 4 well in relation to the Ramsay 1 and Ramsay 2 wells drilled by the Company in 2023

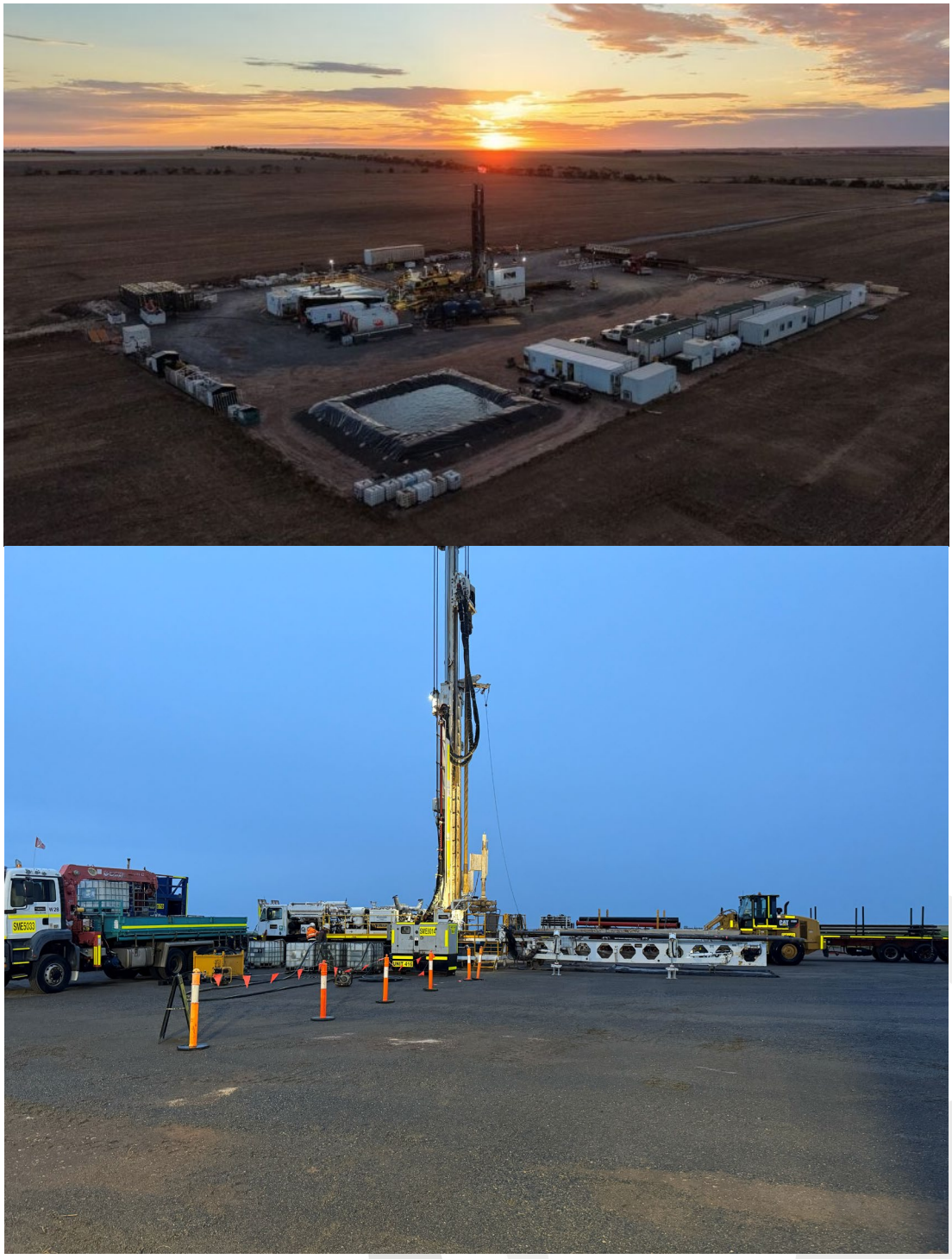

Image 2: Ramsay 4 wellsite during drilling

Table 1 – Listing Rule 5.30 Information (Preliminary)

Name:	**Ramsay 4**
Location (UTM zone 53 GDA2020)	
X	747787 mE
Y	6149863 mN
Permit	**PEL 687**
Entity holders(s)	**Gold Hydrogen 100%**
Resources	**Hydrogen, Helium**
Formation	**Parara, Kulpara Limestone, Kulpara Dolomite, Winulta Sandstone**
Gross thickness and net pay thickness	**Parara 310m gross, Kulpara Limestone 130m gross, Kulpara Dolomite 180m gross, Winulta Sandstone 60m gross**
Geological rock type	**Limestones, Dolomites, Dolomitic Sandstones**
Depth of the zones tested	**Parara 160 – 450m, Kulpara Limestone 450 – 580m, Kulpara Dolomite 580 – 760m.580-760, Winulta Sandstone 760 – 820m**
Type of test and duration	**Calibrated mud gas log data, Isotubes, wireline log data**
Phase recovered	**Gas/water**
Other types of recovery	**N/A**
Flow rates, choke size, volumes recovered	**N/A**
Fracture stimulation	**N/A**
Material non hydrocarbons	**Hydrogen, Helium, Nitrogen, CO2**

Insufficient information is presently available to determine net pay thickness.

Important Risk Commentary

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 both Natural Hydrogen and Helium, but also due to the location of the gas systems 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 and Helium gases in a potentially extensive province in South Australia. This region had its Natural Hydrogen and Helium potential confirmed by the Company via its maiden 2023 / 24 drilling and well testing campaigns.

The domestic and global demand for Hydrogen and Helium, combined with new exploration techniques and experienced personnel, provides Gold Hydrogen with an extraordinary opportunity to define and ultimately develop a new Natural Hydrogen and Helium gas province.

The combined natural hydrogen permit area of the Gold Hydrogen group is in excess of 75,000km^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 (7) applications for Natural Hydrogen and Helium exploration within South Australia.

The Company's Prospective Resource Statements are appended as **Tables 3 and 4 appended**.

Gold Hydrogen is also the preferred applicant for four (4) gas storage exploration licenses applications (GSELA) covering an area of 8,107km^2 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. A 100% owned Gold Hydrogen subsidiary, Sustainable Minerals Group Pty Ltd, also holds a mineral lease on the Yorke Peninsula potentially prospective for iron-oxide, copper and / or gold mineralisation.

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

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

On behalf of the Board
Karl Schlobohm
Company Secretary

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Prospective Resource Statements

The Prospective Resource Statements for Natural Hydrogen and for Helium have been included in this announcement under the approval of Mr Billy Hadi Subrata, Chief Technical Officer 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 are no changes to information or additional information, since the effective dates, 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.

Table 2 – Helium Sample Analysis Table – Ramsay 1 Well – Stage 2 (originally released 17 October 2024)

Name:	**Ramsay 1**
Location (UTM zone 53 GDA2020)	
X	748,208.07
Y	6149545.7
Permit	PEL687
Entity holders	Gold Hydrogen 100%
Zones tested	Zone 2 and 3
Resources	Helium
Formation	Kulpara Dolomite
Gross thickness and net pay thickness	180m Gross
Geological rock type	Dolomite
Depth of the zones tested	900 mMD
Type of test	Commingled pressure test
Phase recovered	Gas/Water
Corrected H2 and He concentration in gas recovered from downhole sample	36.9% He
Flow rates, choke size, volumes recovered	1 Mscf/day gas constraint by pump capacity and flow intermittently with water; choke size 20/64 inch; volumes recovered 0.55 Mscf
Fracture stimulation	None
Material non hydrocarbons	Nitrogen, Hydrogen

Table 3 – 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 below, and 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.**

Notes:

1. This reserves statement presents Gold Hydrogen's Prospective Resources. Gold Hydrogen currently has no Reserves and no Contingent Resources.
2. Estimates are assessed to comply with the ASX Listing Rules for Prospective Resources and SPE-PRMS 2018 with the understanding that naturally occurring hydrogen may be considered a hydrocarbon since it has energy content and can be used stand alone and/or blended with sales gas. "U" implies Prospective Resources.
3. Per ASX Listing Rules 5.28.4 and 5.28.5 estimates are unrisked and aggregated arithmetically by category, hence caution that the aggregate low estimate may be a very conservative estimate and the

aggregate high estimate may be a very optimistic estimate due to the portfolio effects of arithmetic summation.

4. Probabilistic methods are used to prepare the estimates. The distribution of the estimates is the "full distribution" and has not been truncated by application of the MEPS (minimum economic pool size concept).
5. The Reference Point is at the wellhead/edge of lease (i.e. wellhead facilities) so the estimates have no deduction for flare, vent or fuel consumed in operations.
6. Pg (Chance of Geologic Discovery), Pd (Chance of Development) and Pc (Chance of Commerciality = Pg x Pd) are calculated as a weight average of the P50's of the H2 ('000 Tonnes) of the prospects.
7. Pg incorporates Play Risk and Prospect Risk.
8. Pd incorporates an assessment across all SPE-PRMS Commerciality Criteria (i.e. not just economics).
9. Information in the table is rounded. Some totals in the tables may not add due to rounding.
10. This reserves statement:
    a. is based on, and fairly represents, information and supporting documentation prepared by the qualified petroleum reserves and resources evaluators listed in note 14 below. Details of each qualified petroleum reserves and resources evaluator's employment and professional organisation membership are set out in note 14 below;
    b. has been approved by Luke Titus, who is a qualified petroleum reserves and resources evaluator and whose employment and professional organisation membership details are set out in note 14 of this reserves statement;
    c. is issued with the prior written consent of Luke Titus and Teof Rodrigues & Associates ("TRA" - involving Teof Rodrigues, Paul Strong, and Greg Horton, whose employment and professional organisation membership details are set out in note 14 of this reserves statement) as to the form and context in which the estimated Natural Hydrogen resources and the supporting information are presented.
11. There is no change to information or additional information, since the effective date of 30 September 2021, that Gold Hydrogen and TRA are aware of that would materially change the estimates in this reserves statement.
12. Gold Hydrogen engages independent experts TRA to evaluate reserves and resources.
13. Qualified Petroleum Reserves and Resources Evaluators are:

Name	Employer*	Professional organisation
Luke Titus	Gold Hydrogen	SPE
Teof Rodrigues	Teof Rodrigues & Associates	SPE, PESA
Paul Strong	Teof Rodrigues & Associates	GSL, AAPG, PESA
Greg Horton	Teof Rodrigues & Associates	SPE

* As at 30 September 2021

Table 4: Prospective Resource Statement for Helium

Gold Hydrogen Prospective Resources* of Helium in Bcf - Ramsay Project (PEL 687 Yorke Peninsula) 21 February 2024											
PEL	**Prospects**	**SPE PRMS Sub-class**	**Formation**	**1U Low Estimate**	**2U Best Estimate**	**Mean**	**3U High Estimate**		**Pg**	**Pd**	**Pc**
PEL 687	**All Prospects**		**All Formations Total**	**7**	**41**	**96**	**243**		**17%**	**60%**	**10%**
PEL 687	**Ramsay Fault Block**	**Prospect**	Kulpara Formation	0.8	3.6	7.0	17.1		29%	60%	17%
			Winulta Formation	0.1	0.6	1.6	4.0		12%	60%	7%
			Fractured Basement	0.7	3.8	6.9	16.7		13%	60%	8%
			Total	**2**	**8**	**15**	**38**		**20%**	**60%**	**12%**
PEL 687	**South of Ramsay Fault Block**	**Prospect**	Kulpara Formation	2.1	12.8	30.5	77.6		23%	60%	14%
			Winulta Formation	0.3	2.4	7.7	19.8		8%	60%	5%
			Fractured Basement Hilbata Suite	1.6	10.3	25.5	65.2		12%	60%	7%
			Fractured Basement Yorke Peninsula Heel	1.4	7.7	17.0	42.7		12%	60%	7%
			Total	**5**	**33**	**81**	**205**		**16%**	**60%**	**10%**

*** This estimate of Helium Prospective Resources must be read in conjunction with the notes below.**

These Helium Prospective Resources are estimated quantities of Helium 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 (Pg) and a risk of development (Pd). Further exploration, appraisal and evaluation is required to determine the existence of a significant quantity of potentially recoverable Helium.

Notes:

1. This table presents Gold Hydrogen's Prospective Resources for Helium in the Ramsay Field of Yorke Peninsula only. Gold Hydrogen currently has no Reserves and no Contingent Resources.
2. Estimates are assessed to comply with the ASX Listing Rules for Prospective Resources and SPE-PRMS 2018. SPE have provided guidance regarding the Extension of PRMS Principles to Non-Hydrocarbon/Non-Traditional Situations including Helium (and Hydrogen).
   Refer: https://www.spe.org/en/industry/reserves/non-hydrocarbons/

3. Per ASX LRs 5.28.4&5 estimates are unrisked and aggregated arithmetically by category, hence caution that the aggregate low estimate may be a very conservative estimate and the aggregate high estimate may be a very optimistic estimate due to the portfolio effects of arithmetic summation.
4. Probabilistic methods are used to prepare the estimates. The distribution of the estimates is the "full distribution" and has not been truncated by application of the MEPS (minimum economic pool size) concept.
5. The Reference Point is at the wellhead/edge of lease (i.e. wellhead facilities) so the estimates have no deduction for flare, vent or fuel consumed in operations.
6. Pg (Chance of geologic Discovery), Pd (Chance of Development) and Pc (Chance of Commerciality = Pg x Pd) are calculated as a weight average of the P50's of the Helium Bcf (Billion Cubic Feet) of the prospect formations.
7. Pg incorporates Play Risk and Prospect Risk.
8. Pd incorporates an assessment across all SPE-PRMS Commerciality Criteria (i.e. not just economics).
9. Information in the table and throughout the Report is rounded. Some totals in the tables may not add due to rounding.
10. There is no change to information or additional information, since the effective date of 21 February 2024, that Gold Hydrogen and TRA are aware of that would materially change the estimates in this reserves statement.

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” (Mr Teof Rodrigues, Mr Paul Strong and Mr Greg Horton) and Mr Billy Hadi Subrata, Chief Technical Officer for Gold Hydrogen, with an effective date of 21 February 2024.

The Prospective Resource Statement has been included in this announcement:

(1) under the approval of Mr Billy Hadi Subrata, Chief Technical Officer for Gold Hydrogen, who is a Qualified Petroleum Reserves and Resources Evaluator; and

(2) with the prior written consent of Mr Billy Hadi Subrata and “Teof Rodrigues & Associates” (Mr Teof Rodrigues, Mr Paul Strong and Mr Greg Horton) as to the form and context in which the helium prospective resource statement and supporting information are presented.

The employment and professional organisation membership details of Mr Billy Hadi Subrata, Mr Teof Rodrigues, Mr Paul Strong and Mr Greg Horton are as follows:

Name	Employer	Professional organisation
Billy Hadi Subrata	Gold Hydrogen	SPE
Teof Rodrigues	Teof Rodrigues & Associates	SPE, PESA
Paul Strong	Teof Rodrigues & Associates	GSL, AAPG, PESA
Greg Horton	Teof Rodrigues & Associates	SPE