

Early Insights from Geological Hydrogen Exploration Drilling in Kansas

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Competent Person Statement Information

The resources estimate information and supporting documentation referred to in this announcement was reviewed by HyTerra's Chief Technical Officer and Executive Director, Mr Avon McIntyre, who is a full-time employee of the Company. Mr McIntyre is a qualified oil and gas geologist with over 20 years of international experience. He has extensive experience of oil and gas exploration, appraisal, strategy development and reserve/resource estimation. Mr McIntyre has a BSc, MSc and PhD in geology from The University of Waikato, New Zealand and is a member of The Society of Petroleum Engineers (SPE). Mr McIntyre is qualified in accordance with the ASX Listing Rules and has consented to the form and context in which this statement appears.

Important Risk Commentary

It is important to note that there remains both geological and potential development risks with these projects and the Company's commercial and business objectives. This is an emerging frontier with the potential to unlock significant low-carbon hydrogen gas supplies but with equally significant risk and uncertainty. Key risks include the presence, concentrations, recovery, and commercial potential of both hydrogen and helium gases. For more information on risks please refer to the ASX release 'Entitlement Issue Prospectus' on April 8th, 2024: <https://wcsecure.weblink.com.au/pdf/HYT/02793318.pdf>.

Our purpose

To deliver the world's cheapest, cleanest, and most profitable hydrogen.

How we will get there.

- 01 Deliver a comprehensive exploration program.
- 02 Secure key partnerships and customers.
- 03 Demonstrate a commercial project.

July 2025. Drilling McCoy 1 at the Nemaha Project, Kansas.



Firstly, what is geologic hydrogen?

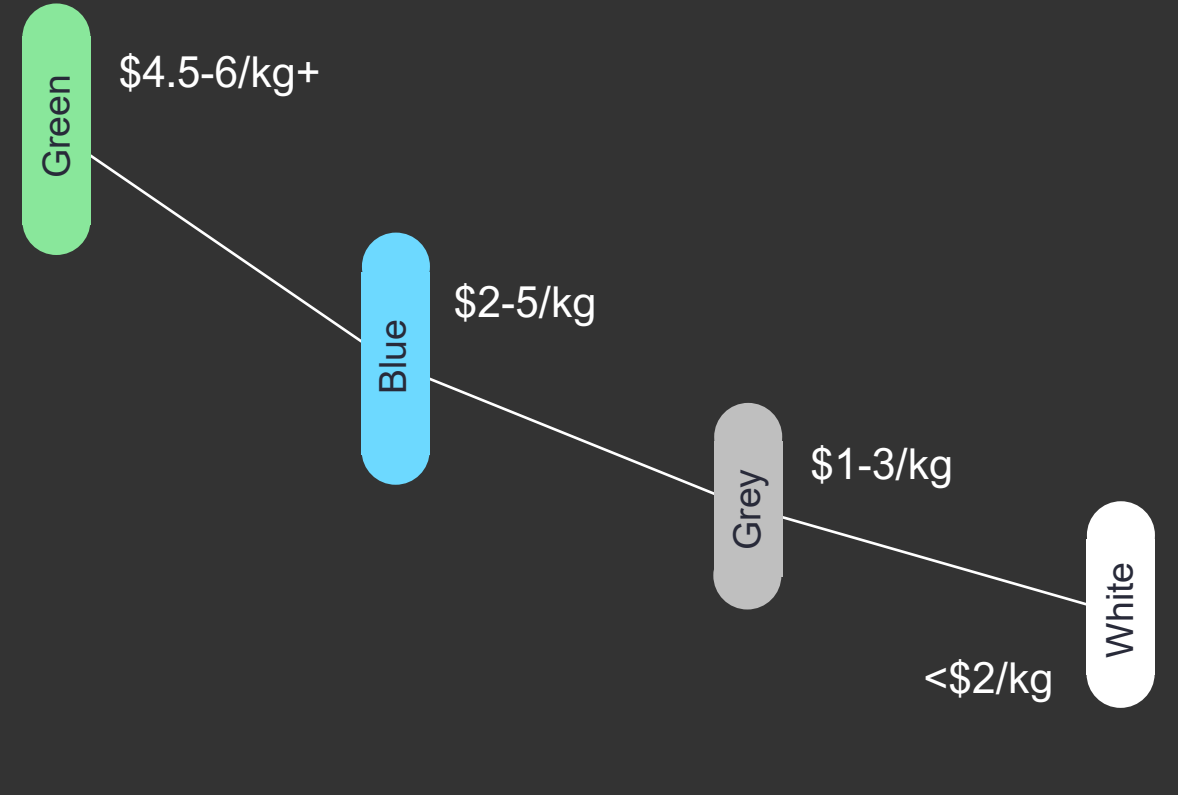
Geologic hydrogen is hydrogen gas that exists naturally within the Earth's crust, unlike hydrogen produced through industrial processes like steam methane reforming (grey hydrogen) or electrolysis using renewable energy (green hydrogen).

- Geologic hydrogen is cleaner, greener, and cheaper to produce than man-made hydrogen.
- It requires minimal processing and may be recovered from underground reservoirs using conventional oil and gas techniques.

Modified from <https://koloma.com/geologic-hydrogen/>. Values obtained from 2022 GREET Model. Carbon intensity of hydrogen production for natural hydrogen was calculated based on Brandt, A. Greenhouse Gas Intensity of Geologic Hydrogen Produced from Subsurface Deposits. 2023. EarthArXiv preprint. <https://doi.org/10.31223/X5HM1N>". Calculation maintained consistency with GREET methodology. <https://gh2.org/our-initiatives/gh2-green-hydrogen-standard#:~:text=Green%20hydrogen%20is%20hydrogen%20produced,a%2012%2Dmonth%20period>

*Geologic hydrogen (white) has a carbon intensity of 0.37 kg CO₂e per kilogram of hydrogen when including the embodied emissions of the well casing and hydrogen emissions, according to a published paper in Joule by Stanford's Dr. Adam Brandt.

Hydrogen production cost ranges 2022-2023[^], \$US



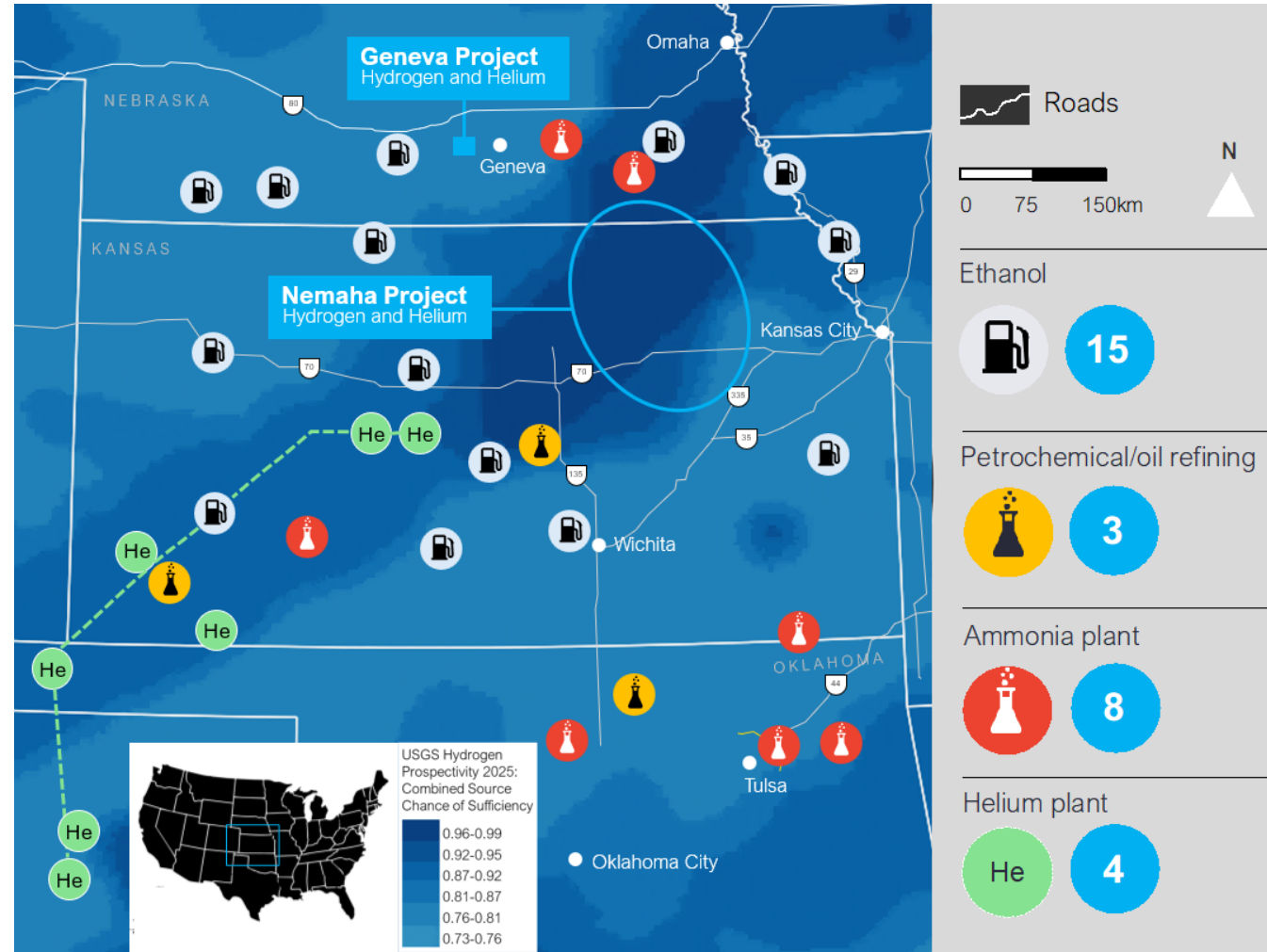
Carbon intensity of hydrogen production



[^] Numerous ranges of production costs exist due to changing variables such as, but not limited to, technology advancement, existing infrastructure, feedstock price etc. Source: Ranges sourced from BloombergNEF, IEA, Lazard, IRENA. 'At the dawn of a hydrogen era', Clota Varde Feb 2023,

Why Kansas?

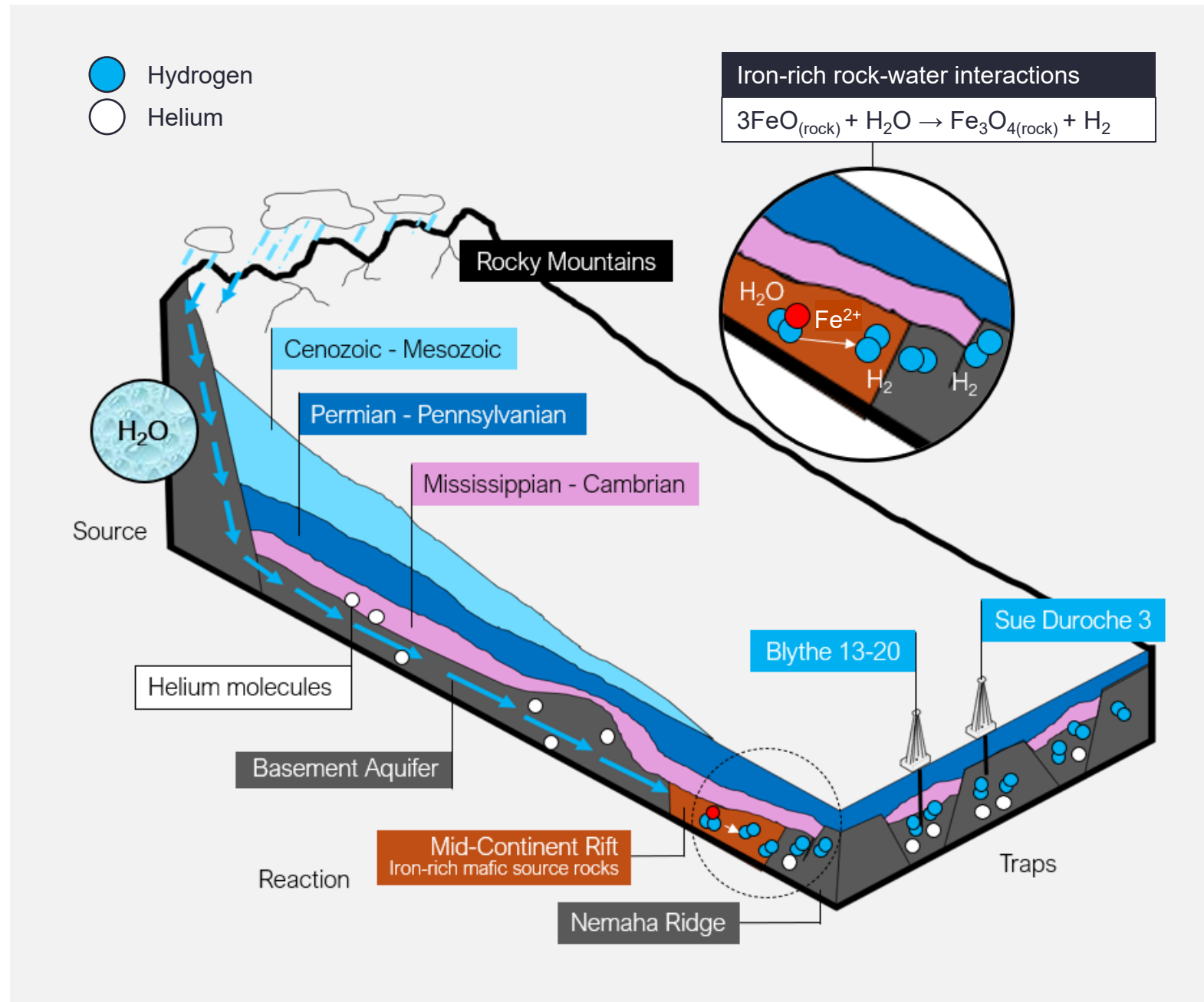
- Prospective subsurface above the Mid-Continental Rift with strong well control, historical offset data and active research support.
- Stable, standardised jurisdiction with supportive local, State and Federal agencies across approvals, contractors and technical requirements.
- Established energy services and workforce built on decades of oil and gas activity, giving a skilled local contracting base.
- Fast path to market near ammonia and helium plants, so gas is not stranded and could be commercialised quickly.



Background: USGS Geologic Hydrogen Prospectivity Maps 2025: Combined Source³

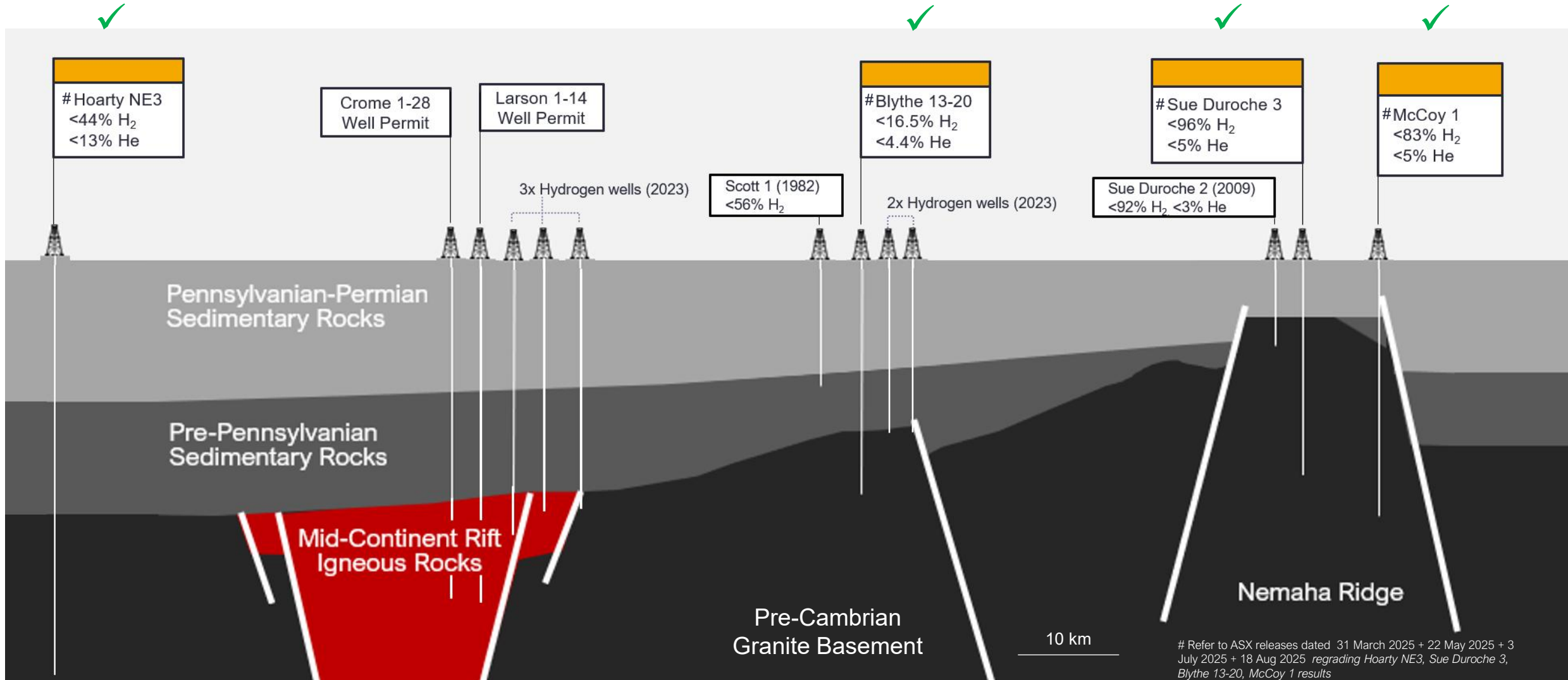
Hydrogen and Helium in Kansas

- Water from the Rocky Mountains seeps underground and flows eastward.
- The underground water reacts with iron-rich rocks at elevated temperatures to make H₂, which migrates upwards into various traps along the Nemaha Ridge.
- Helium is also present.



Clear strategy to explore and appraise resource potential.

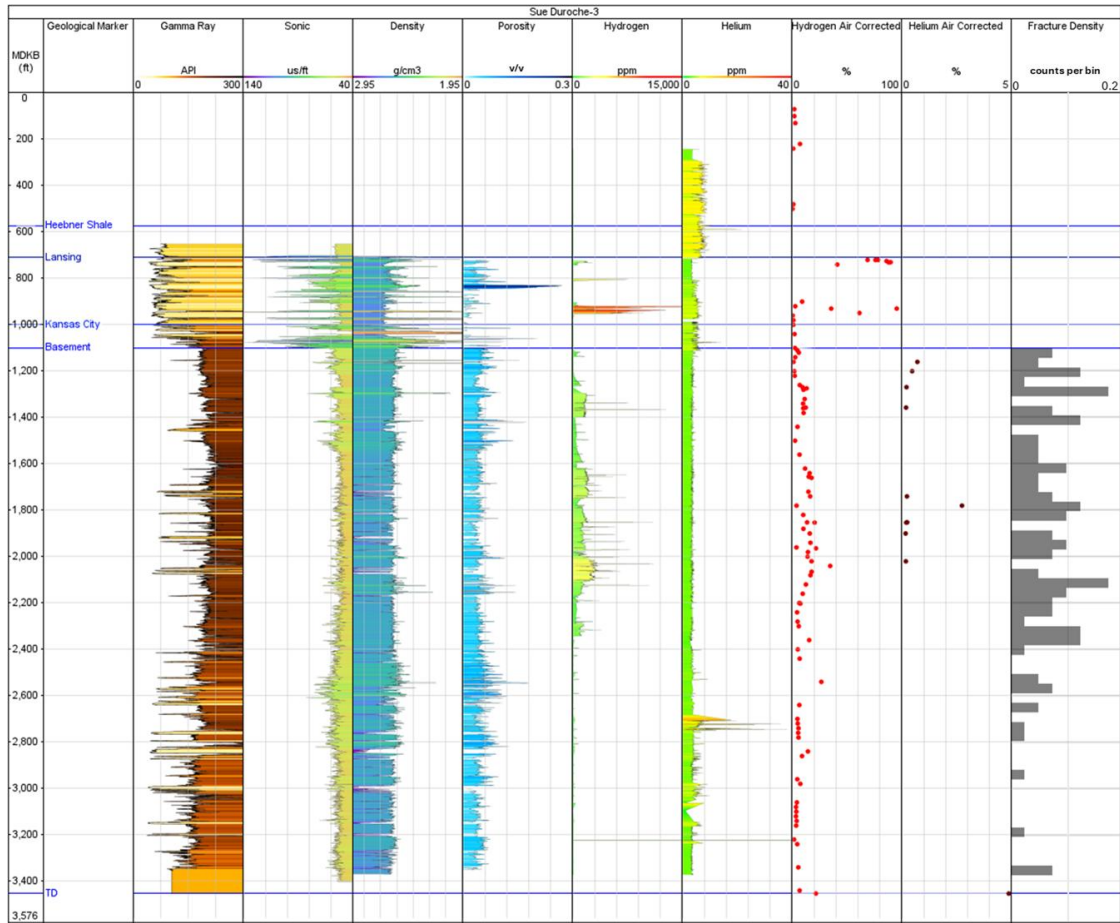
Multiple wells in multiple plays to methodically de-risk commercial viability.



Refer to ASX releases dated 31 March 2025 + 22 May 2025 + 3 July 2025 + 18 Aug 2025 regarding Hoarty NE3, Sue Duroche 3, Blythe 13-20, McCoy 1 results

All three wells found hydrogen and helium

Fractured basement seen in all 3 wells



Sue Duroche 3 well logs. SLB H₂ and He mud gas logs¹ (ppm) are not air corrected. Air corrected hydrogen and helium data points (volume %) are from mud gas sample laboratory analyses¹. Fracture density is based on preliminary image log analysis.

- Geologic hydrogen and helium is present in the Precambrian basement¹
- Precambrian basement contains open fractures which show a general correlation with mud gas shows
- Early appraisal results demonstrated that the Precambrian basement is capable of inflow

¹Mud gas logs and samples carry residual uncertainty due to the nature of gas detection, drilling parameters and equipment, and behaviour of the gas due to geological and operational processes. Samples are air corrected to account for atmospheric contamination when collected at surface. Corrected hydrogen values were reported by Isotech Laboratories Inc. in Champaign, Illinois, and corrected helium values were calculated by HyTerra using a methodology endorsed by Isotech Laboratories Inc.

2025 program advanced beyond initial well twinning and delivered key technical milestones.

Mining, Oil, and Gas geoscience and geophysical workstreams established the foundation for future drilling.

- Applied proven exploration methods to hydrogen, targeting areas with confirmed shows.
- Completed airborne surveys, seismic acquisition and offset well reviews to refine prospectivity.
- Geophysically defined drilling targets, looking into the hard rocks below the oil and gas systems
- Progressed from twinning wells to standalone exploration well locations (McCoy 1)



Nemaha Project returned hydrogen concentrations up to 96% in the Sue Duroche 3 well¹.

Laboratory analyses of mud gas samples validate the historical occurrences of up to 92% hydrogen measured in the historic Sue Duroche 2 well (2009)².

- These concentrations of hydrogen are amongst the highest ever reported in the USA³.
- The Sue Duroche 3 exploration well was immediately converted into a long-term surface pressure and gas monitoring well via a work-over rig.

¹ Refer ASX release dated 22 May 2025 *Sue Duroche 3 finds both Hydrogen and Helium*.

² Guelard J., Beaumont V., Guyot F., Pillot D., Jezequel D., Ader M., et al. (2017) Natural H₂ in Kansas: Deep or shallow origin? *Geochem. Geophys. Geosyst.*, 18, 1841-1865; Coveney R. M., Goebel E. D., Zeller E. J., Dreschhoff G. A. M., and Angino E. E. (1987) Serpentinization and the origin of hydrogen gas in Kansas. *Am. Assoc. Pet. Geol. Bull.*, 71(1), 39-48. H₂ + He + N% reflects occurrences of published gas analyses recovered from the wellbore. Uncertainty remains on historic well operations, sampling techniques, and analyses. The values are considered up to a % of H₂ or He.

³ <https://www.usgs.gov/data/natural-gas-compositional-analyses-dataset-gases-united-states-wells>.



Blythe 13-20 returned hydrogen and helium concentrations up to 16.5% and 4.4%¹.

Laboratory analyses of mud gas samples validate the historical occurrences of up to 56% hydrogen measured in the historic Scott 1 well (2009)².

- Encouraging hydrogen and helium results confirm the presence of an active system in the area.
- The Blythe 13-20 exploration well was immediately converted into a long-term surface pressure and gas monitoring well via a work-over rig.

¹ Refer ASX release dated 3 July 2025 *High Concentrations of Helium Found in Blythe 13-20*.

² Guelard J., Beaumont V., Guyot F., Pillot D., Jezequel D., Ader M., et al. (2017) Natural H₂ in Kansas: Deep or shallow origin? *Geochem. Geophys. Geosyst.*, 18, 1841-1865; Coveney R. M., Goebel E. D., Zeller E. J., Dreschhoff G. A. M., and Angino E. E. (1987) Serpentinization and the origin of hydrogen gas in Kansas. *Am. Assoc. Pet. Geol. Bull.*, 71(1), 39-48. H₂ + He + N% reflects occurrences of published gas analyses recovered from the wellbore. Uncertainty remains on historic well operations, sampling techniques, and analyses. The values are considered up to a % of H₂ or He.

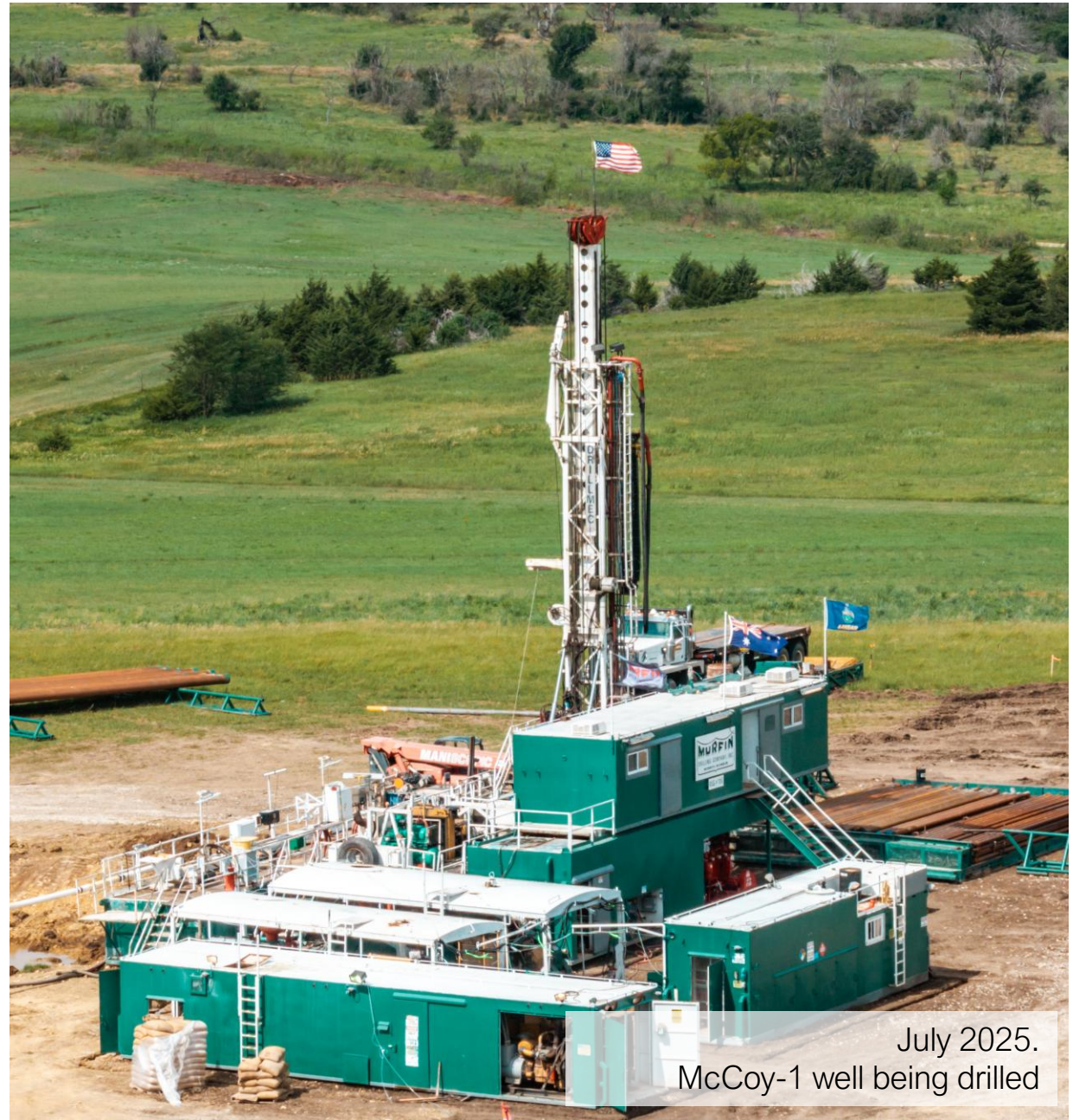


Nemaha Project returned hydrogen concentrations up to 83% in the McCoy 1 well¹.

Laboratory analyses of mud gas samples confirm up to 83% hydrogen and 5% helium in the first non-twin well

- Confirms the validity of in-house IP and subsurface understanding
- The McCoy 1 exploration well was immediately converted into a long-term surface pressure and gas monitoring well via a work-over rig.

¹ Refer ASX release dated 18 August 2025 *McCoy 1 finds both Geologic Hydrogen and Helium.*

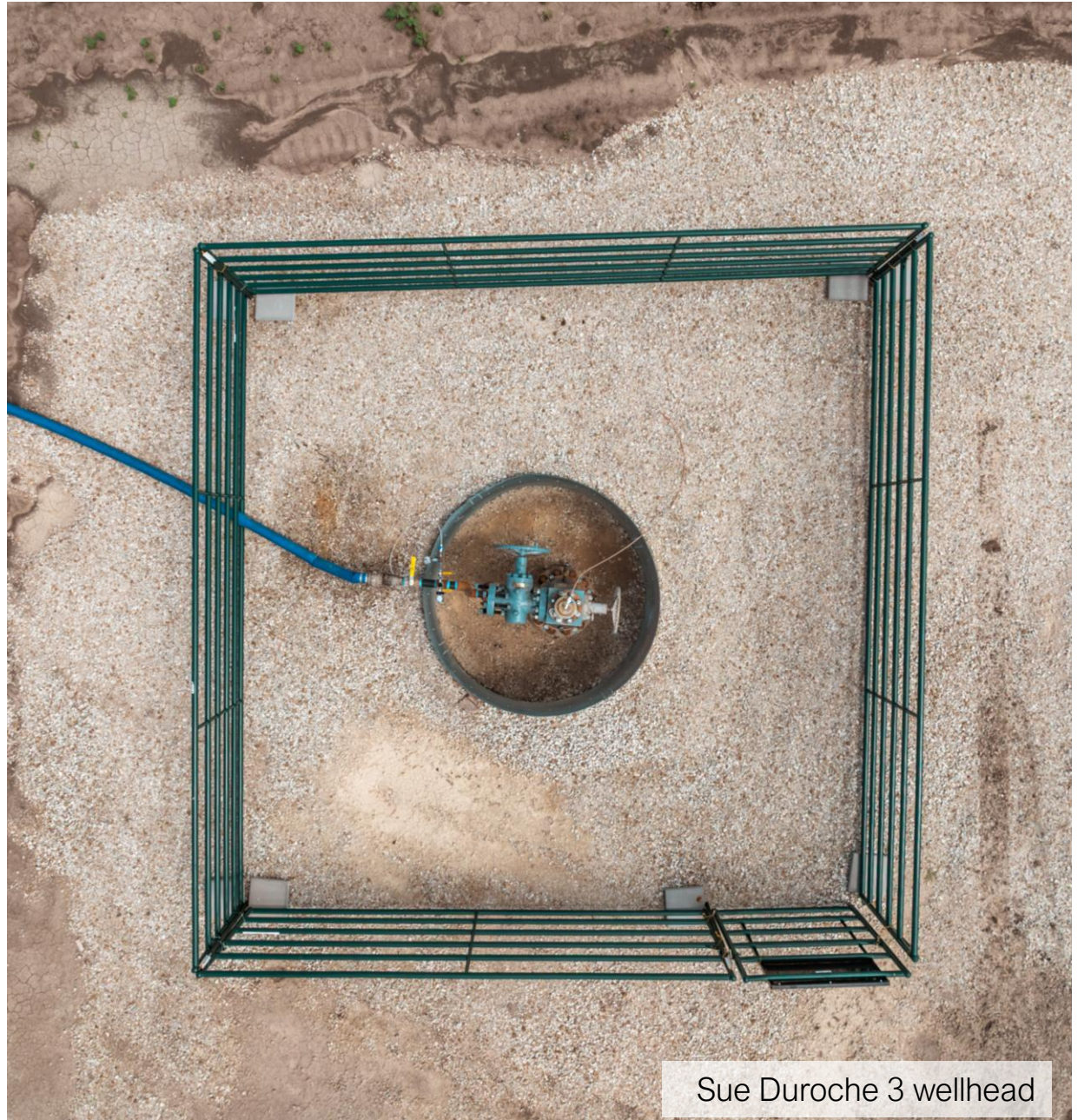


Sue Duroche 3 and Blythe 13-20 gas shows¹

Wellhead gas shows observed during clean-up

- Sue Duroche 3; 2 days flow and shut-in to remove drilling fluids with well free-flowing water from open-hole Precambrian basement section (2,227 ft total)
- Blythe 13-20; 2 days of swabbing and shut-in to remove drilling fluids from open-hole Precambrian basement section (2,372 ft total)
- In Blythe 13-20, fluid levels were recharged overnight indicating inflow
- Gas shows in both wells were dominated by nitrogen and helium.

¹ Refer ASX release dated 8 October 2025 *Flowing hydrogen and helium gas shows recorded in McCoy 1.*

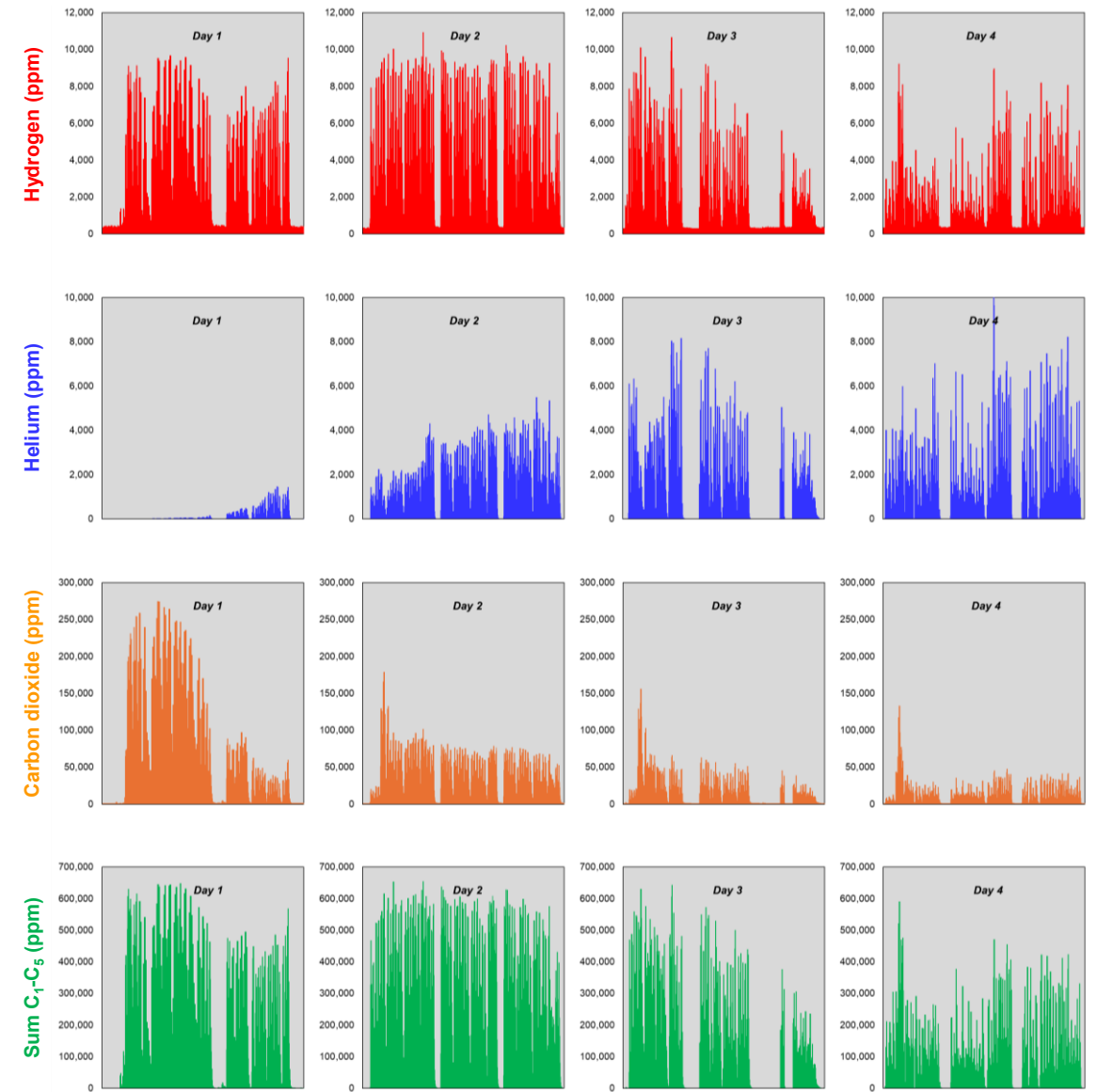


Sue Duroche 3 wellhead

McCoy 1 flowing gas shows¹

Real-time monitoring of flowing gas shows during well clean-up swabbing

- 4 days of swabbing to remove drilling fluids from open-hole Precambrian basement section (4,132 ft total)
- Fluid swabbed from well exceeded losses and well-bore volume, indicating basement is capable of flow
- Flowing gas show concentrations changed throughout the well clean-up process:
 - Hydrogen concentrations constant
 - Helium concentrations rise
 - Carbon dioxide concentrations drop
 - Methane concentrations constant

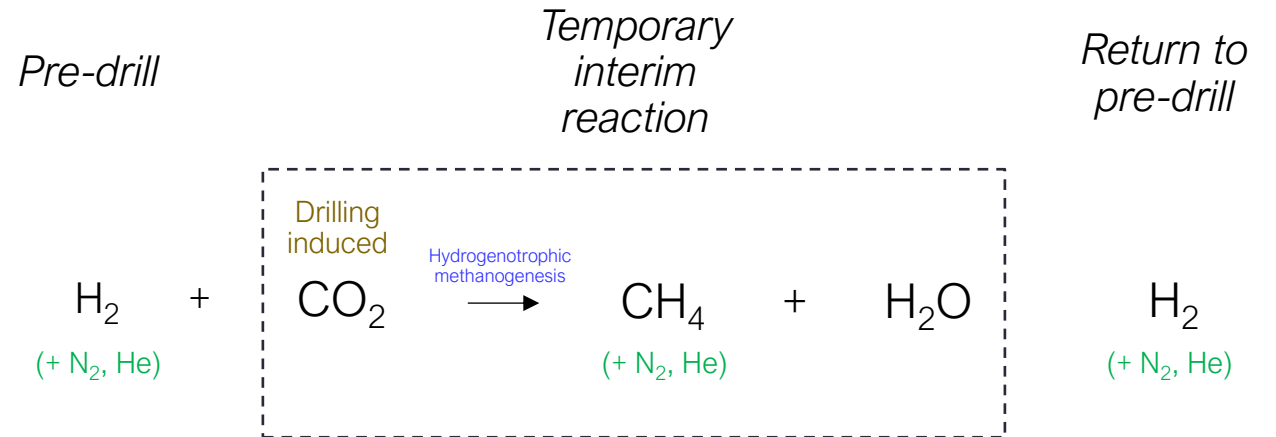


¹ Refer ASX release dated 8 October 2025 *Flowing hydrogen and helium gas shows recorded in McCoy 1.*

Drilling induced hydrogen gas reaction series

Drilling may have a temporary effect on subsurface gas compositions, particularly hydrogen

- Pre-drill subsurface gas compositions stable (geologic hydrogen present in subsurface)
- Drill bit metamorphism generates CO₂ (mainly from the thermal decomposition of mud additives)
- CO₂ reacts with geologic H₂ to generate CH₄, consuming the CO₂
- CH₄ is displaced over time by geologic hydrogen, and subsurface gases return to pre-drill compositions
- Return to original pre-drill H₂ compositions may be accelerated by a well testing program or production (carbon clean-up)



Hydrogen drilling is similar to oil and gas, but with unique challenges.

It's similar, but different.

We had to adapt traditional approaches to exploration drilling for hydrogen.

- Standard exploration methods still apply; do your homework, clear well objectives, cost options and detailed planning.
- Challenges include new formations, different gas behaviours and drilling in new areas.
- Success depends on strong technical teams with adaptable skills and experience.



A world of opportunity.

HyTerra is advancing hydrogen and helium projects in the heart of an established agriculture and manufacturing hub.

- 01** All three wells found hydrogen and helium (mud gas)
 - 02** 2025 program advanced beyond initial well twinning and delivered key technical milestones.
 - 03** Hydrogen drilling is similar to oil and gas, but with unique challenges.
 - 04** Geological hydrogen systems understanding requires bespoke analyses and interpretation.
 - 05** Local capability supported by global expertise delivered safe and efficient wells.
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