

# AI Targeting Advances Gold Discovery Potential at 14 Mile Well



Iceni Gold Limited (ASX: ICL) (Iceni or the Company) is pleased to provide the results from the application of Artificial Intelligence (AI) algorithms to generate and predict gold targets at the **14 Mile Well Gold Project** located between Leonora and Laverton.

## Highlights

- A gold targeting program led by consultants **SensOre** applying **artificial intelligence (AI), machine learning (ML)** and other scientific computing techniques using Iceni's high quality geoscience datasets over the 14 Mile Well Project has been completed.
- This **new generative approach, applying integrated AI/ML algorithms** to the Company's large geological, geochemical and geophysical data sets by **SensOre**, has been used to find the digital fingerprints of and generate AI-enhanced gold discovery predictions.
- **Forty (40) new AI-generated targets** have been defined over the 14 Mile Well Project that are grouped into twelve key SensOre target areas.
- Many of the targets generated by the SensOre work correspond to existing Iceni gold prospects, which further **reinforces and highlights the prospectivity** of the underexplored project.
- Evaluation and ranking of the combined target portfolio is underway, with drill testing of the priority targets to be carried out during CY24.

## Commenting on the AI Targeting, Iceni Managing Director Wade Johnson said:

*"We are very pleased with the results from the AI targeting exercise that has not only reinforced that the 14 Mile Well Project has the potential to be a highly gold endowed land position, but it has also generated new targets for early-stage drill evaluation. Importantly, many of the 40 newly generated targets support some of the Company's existing target areas, particularly under areas of cover, which is a current area of focus to deliver new gold discoveries".*

*"In addition, the spread of new and existing targets across the land package further supports the prospectivity of the area and now provides a portfolio of targets to evaluate and accelerate the opportunity for discovery. We are excited and keen to commence initial drill testing of priority targets over the remainder of 2024 and deliver a new gold discovery."*

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### Corporate

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**Keith Murray**  
Non-Executive Director

**James Pearse**  
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Company Secretary

### Project

14 Mile Well

### Capital Structure

Shares: **272,761,052**  
Listed Options: **35,992,828**

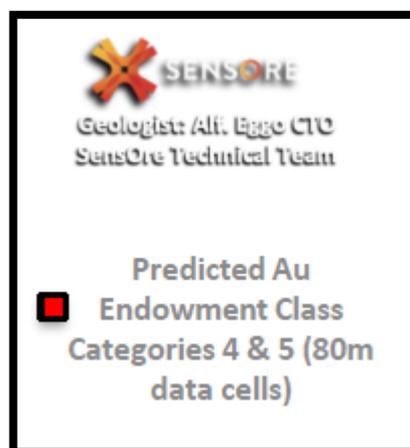
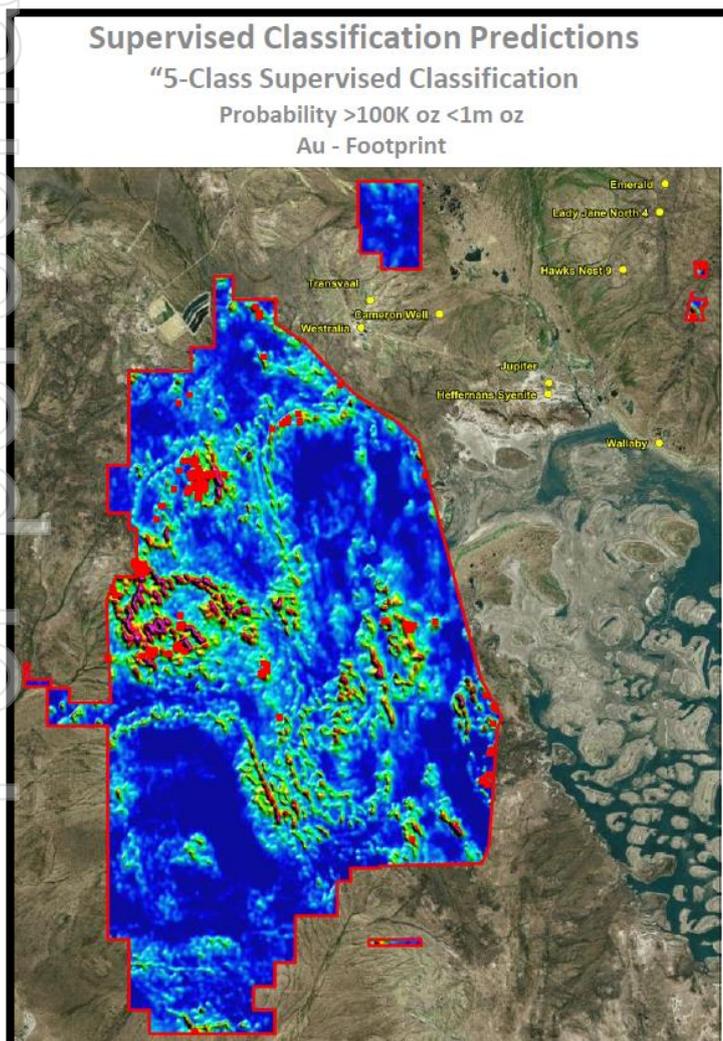
## AI Enhanced Gold Exploration

The Company commenced a gold targeting exercise with SensOre\_X Pty Ltd (SensOre) in April 2024, using their deployment of **Artificial Intelligence (AI) and Machine Learning (ML) technologies** to allow predictive analytics to generate targets for discovery of gold systems that could be progressed to resource at the 14 Mile Well (14MW) project.

SensOre is an industry leading technology services provider of AI/ML applications to the minerals exploration and mining industry. SensOre’s technologies have been developed over many years and involve the application of new computer assisted statistical approaches and ML techniques across the mineral cycle to provide the next generation of exploration discoveries. SensOre aims to become the top global minerals targeting company through deployment of big data, AI/ML technologies and geoscience expertise.

The Company committed to this new technological approach to gold exploration at 14MW to reinforce the existing generative exploration undertaken by the Company and also deliver new “out of the box” targets for gold mineralisation that may have been overlooked or not defined by conventional exploration targeting.

In addition, the Company has built a large and impressive database of geological, geochemical, and geophysical information since listing in April 2021 that is considered a key attribute for the application of the AI/ML technology to accelerate the discovery process. The data layers used in the AI/ML processing include results from 17,000m of diamond drilling, 43,000m of aircore drilling, 15,000 Ultra fine fraction soil samples and 8000 rock chip samples, in addition to detailed aeromagnetic and gravity data, all collected by the Company.



**Figure 1** 14 Mile Well Project highlighting AOI supervised classification footprint, (warm areas represent areas of greater probability of a gold system with higher endowment) and SensOre target data cells.

The 14MW project is contained within an area of influence (AOI) where a “data cube” was constructed covering the four 100k scale regional map sheets containing 80m x 80m cells. This data cube contains 1,440,000 cells x 1,618 variables where the AI/ML technology was applied.

The application of the machine learning approach applied by SensOre to the very large database of geochemical, geological and geophysical information compiled over the Company’s AOI has demonstrated the **highly gold prospective nature of the 14MW project**. Application of the machine learning algorithms modelled the probability of gold systems with an endowment within the range **100,000oz up to 1Moz of contained gold** within the AOI and more specifically the 14MW project. This required 112 variables for discrimination that were applied to the 80m-by-80m cells within the AOI.

The distribution and characteristics of each cell, that include class, predicted endowment and predicted grade, were then grouped into targets. Forty discrete targets (e.g. ICN\_01) were defined that are made up of 1 to 58 grouped cells. The majority of the targets contain fewer than 10 cells. Each target was characterised by host rock, previous drilling, surface geochemistry, proximity to granite contact and a low, moderate or high predicted endowment. Most of the targets were based on geophysical prediction.

In many cases the areas considered by SensOre to be highly prospective have not been drill tested, yet their spatial patterns and trends are associated with predictions of gold system prospectivity, gold nugget distribution and, in part, the distribution of highly anomalous gold assays recorded from previous drilling if completed.

The spatial distribution and general characteristics of the **40 targets** were refined down to 12 key SensOre target areas that are widely spread over the 14MW project. Three of these new target areas are close to or coincident with the original IPO targets generated by the Company, and include Crossroads, Goose Well and the **15km long Guyer Trend**.

Of particular significance is the new large target known as Deep Well. This is a granite intrusive style target in the NW part of the tenement area that was generated by the AI/ML to have a probable dioritic character, based on geophysical evidence. SensOre consider this to be a high priority target.

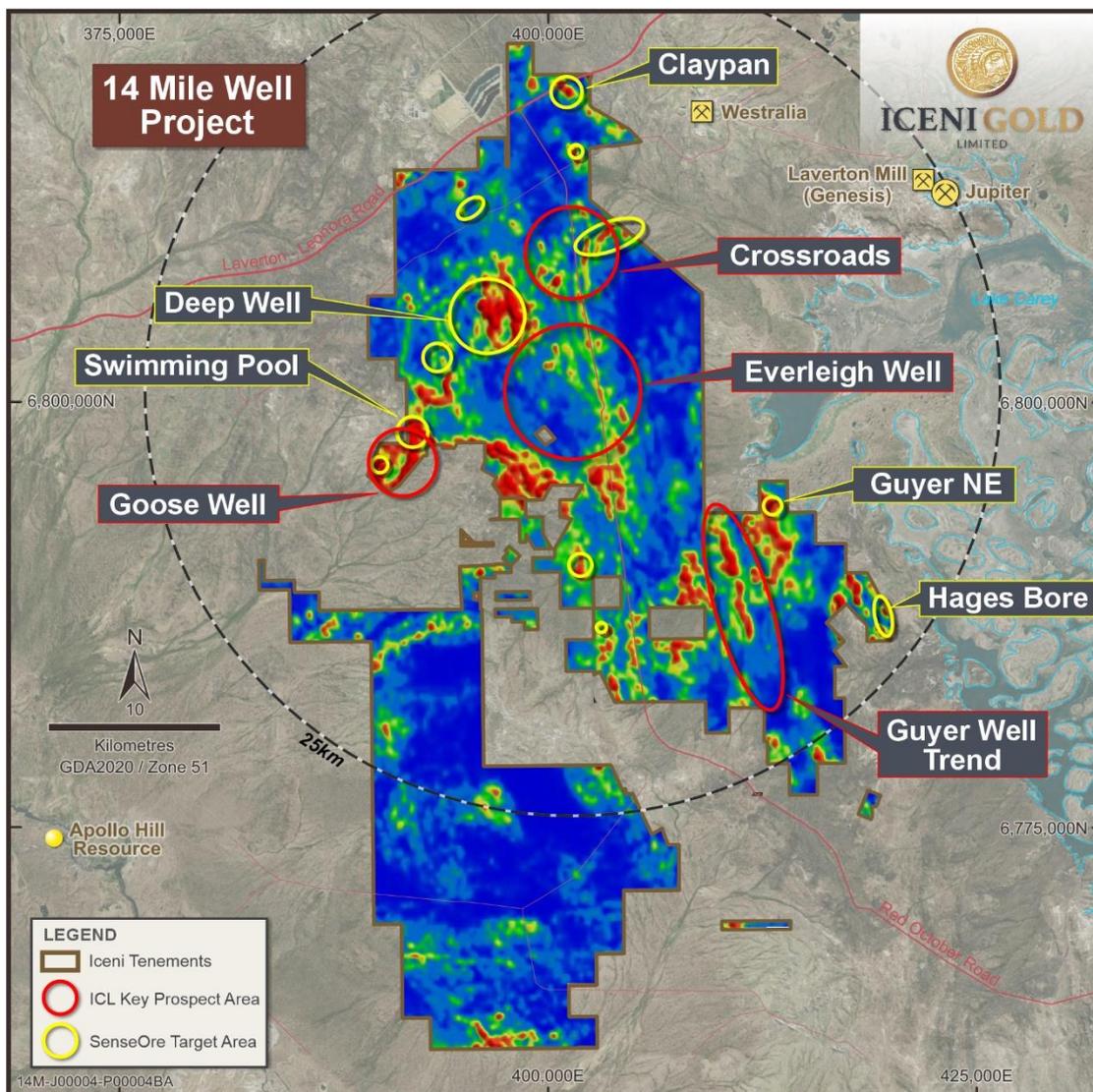
## Next Steps

The application of the SensOre AI/ML technology to the 14MW project has delivered multiple new target areas considered **highly prospective** for gold mineralisation that could deliver well-endowed gold discoveries. The work has also enhanced and supported existing Company targets generated by empirical methods.

The SensOre generated targets will be assessed in further detail by the Company’s geologists and geological consulting cohort team and incorporated into the generative exploration portfolio pipeline. The target areas within the combined enhanced portfolio will then be ranked and prioritised for drilling during CY24. Initial evaluation of the targets by wide spaced aircore drilling is considered the most cost effective, efficient and quick technique to gain an early-stage appreciation of the target merits.

Early stage wide spaced aircore (AC) drilling has been conducted at the priority Deep Well target area, in conjunction with a drilling program along the Guyer Trend and Crossroads in mid-August, with assay results expected in September. Final gold and multielement results for the diamond drilling completed at Christmas Gift and Goose Well are pending and also expected in September.

The Company has scheduled further campaigns of aircore drilling testing additional priority targets, including those generated by the SensOre work, to commence in September.



**Figure 2** 14 Mile Well project highlighting spatial distribution of the combined prospect areas over image of gold endowment probability and proximity to the Genesis Mining Limited owned Laverton Mill

Authorised by the board of IcenI Gold Limited.

### Enquiries

For further information regarding IcenI Gold Limited please visit our website [www.icenigold.com.au](http://www.icenigold.com.au)

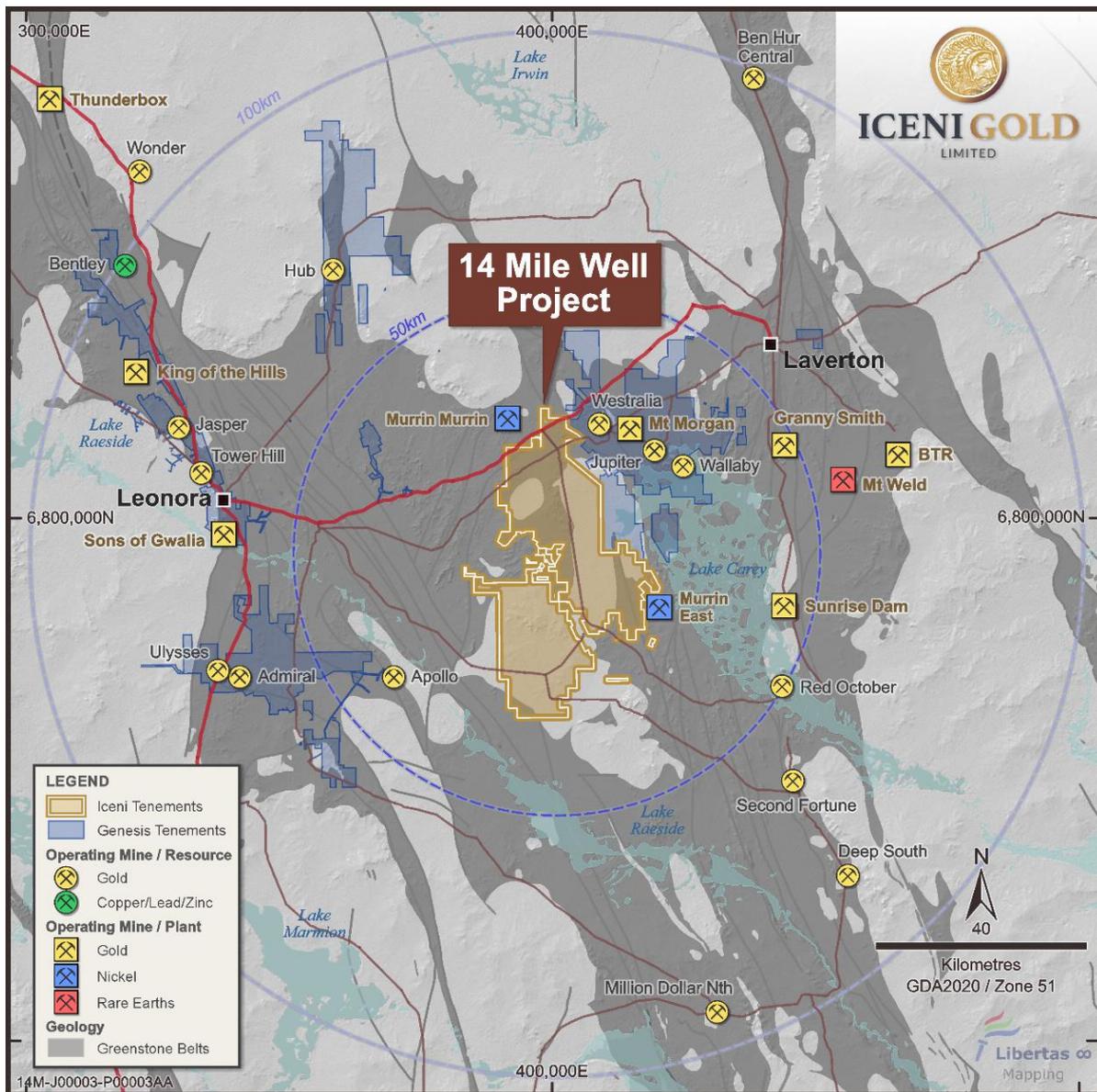
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### About Icen Gold

Iceni Gold Limited (Iceni or the Company) is an active gold exploration company that is exploring the 14 Mile Well Project in the Laverton Greenstone Belt of Western Australia. The project is situated midway between the gold mining townships of Leonora and Laverton and within 75kms of multiple high tonnage capacity operating gold mills (Figure 3).

Iceni is focussed on multiple high priority target areas within the ~900km<sup>2</sup> 14 Mile Well tenement package. The large contiguous tenement package is located on the west side of Lake Carey and west of the plus 1-million-ounce gold deposits at Mount Morgan, Granny Smith, Sunrise Dam and Wallaby. The 14 Mile Well Project makes Iceni one of the largest land holders in the highly gold endowed Leonora Laverton district.

The majority of the tenements have never been subject to systematic geological investigation. Iceni is actively exploring the project using geophysics, metal detecting, surface sampling and drilling. Since May 2021 this foundation work has identified priority gold target areas at Everleigh, Goose Well, Crossroads and the 15km long Guyer trend.



**Figure 3: Map highlighting the location of the Iceni Gold 14 Mile Well Gold Project in the centre of the Leonora Laverton district of the Eastern Goldfields.**

## Supporting ASX Announcements

The following announcements were lodged with the ASX and further details (including supporting JORC Tables) for each of the sections noted in this Announcement can be found in the following releases. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements. Note that these announcements are not the only announcements released to the ASX but specific to exploration reporting by the Company of previous SensOre work at the 14 Mile Well Project

- **13 May 2024** Company Update Presentation
- **30 April 2024** March 2024 Quarterly Activities/Appendix 5B Cash flow Report
- **18 September 2023** Mining News Select Conference Presentation
- **8 August 2023** Gold Discovery at Claypan

## Competent Person Statement

The information in this announcement that relates to exploration targets and exploration results is based on information compiled by Wade Johnson a competent person who is a member of the Australian Institute of Geoscientists (AIG). Wade Johnson is employed by Iceni Gold Limited. Wade has sufficient experience that is relevant to the style of mineralisation and type of deposits under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 edition of the JORC Code. Wade Johnson consents to the inclusion in this announcement of the matters based on his work in the form and context in which it appears.