

Lefroy to recommence exploration of high-grade gold targets

ASX:LEX

HIGHLIGHTS

- Lefroy has completed a comprehensive target review, resulting in an expanded exploration portfolio with a significant pipeline of projects.
- Resource delineation and growth opportunities will now be tested, with the first exploration program commencing in April 2024.
- Numerous high-grade intersections at Lucky Strike and Havelock projects that remain untested along strike / down plunge, including:
 - **8m @ 18.66g/t Au** from 145m, including **5m @ 28.1g/t Au** from 145m (LEFR217)
 - **11m @ 3.48 g/t Au** from 170m (LEFR216)
 - **22m @ 2.49 g/t Au** from 63m (LEFR152)
 - **3m @ 13.37 g/t Au** from 118m (LEFR330)
- Several early-stage targeting frontiers identified to unlock the next generation of gold discoveries and value for Lefroy shareholders.

Lefroy Exploration Limited (“Lefroy” or “the Company”) (ASX:LEX) is pleased to announce completion of an internal exploration project review and is set to recommence exploration activity with several exciting gold targets ready for testing in April 2024.

LEFROY EXPLORATION CEO GRAEME GRIBBIN COMMENTED:

“Following the Company’s corporate restructure and cost reductions, we are now rapidly advancing towards unlocking value from our diverse portfolio of exploration projects around the extensive 635km² Lefroy Project.

“Our experienced team has worked methodically and systemically across the entire Company of projects since the start of 2024 to identify the highest-ranking targets for testing. Anticipation is rising as we recommence our gold exploration program in April.

“Lucky Strike, which has an existing 80,000 ounce resource declared in 2020 and nearby Havelock represent stand-out near-surface exploration and resource extension opportunities, close to existing infrastructure.



“Additionally, coupled with exploration upside presented by our Location 45 property, numerous emerging prospective gold districts in the Western Lefroy JV and Lake Johnston, this represents a very exciting chapter for the Company.”

DOMINANT LAND HOLDING IN THE PROLIFIC KALGOORLIE – KAMBALDA DISTRICT

Lefroy Exploration holds a commanding presence within the world-class Kalgoorlie and Kambalda gold and nickel mining districts.

The Company controls a contiguous land package of 635km² with a growing mineral resource inventory currently containing approximately 1.1 million ounces of gold; 58,000 tonnes of contained copper and 14,780 tonnes of contained nickel ([refer to LEX 2023 Annual Report](#)).

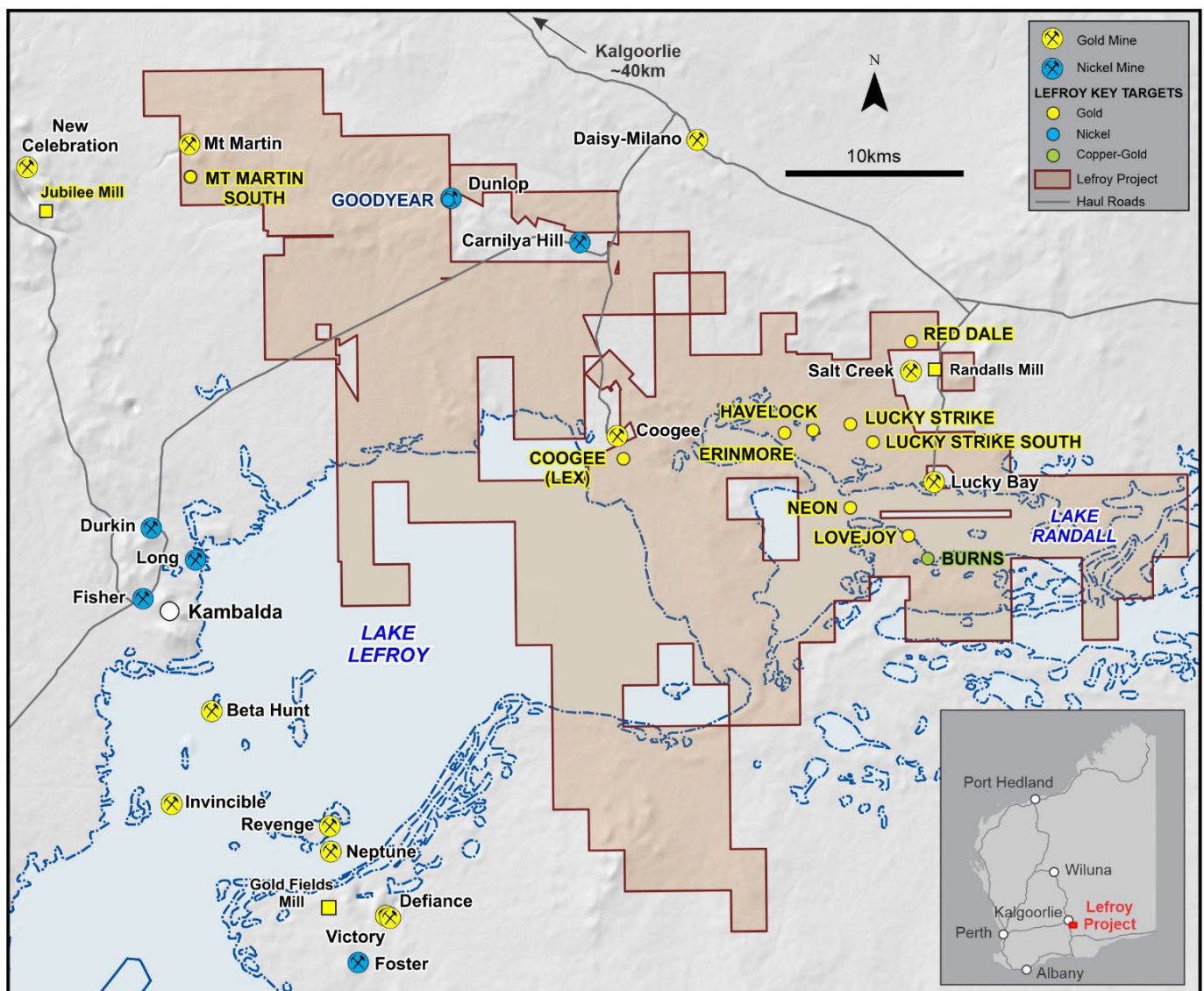


Figure 1: Lefroy tenure and key targets in the Kalgoorlie – Kambalda district



ADVANCING DIVERSE PORTFOLIO OF EXPLORATION TARGETS

The Company understands the pathway to exploration success and growth is through the development of a diversified portfolio of exploration targets.

This portfolio diversity ideally has a spread of projects from more advanced (resource-defined) through to emerging, early-stage, large scale, highly prospective, and potentially Company defining discovery projects.

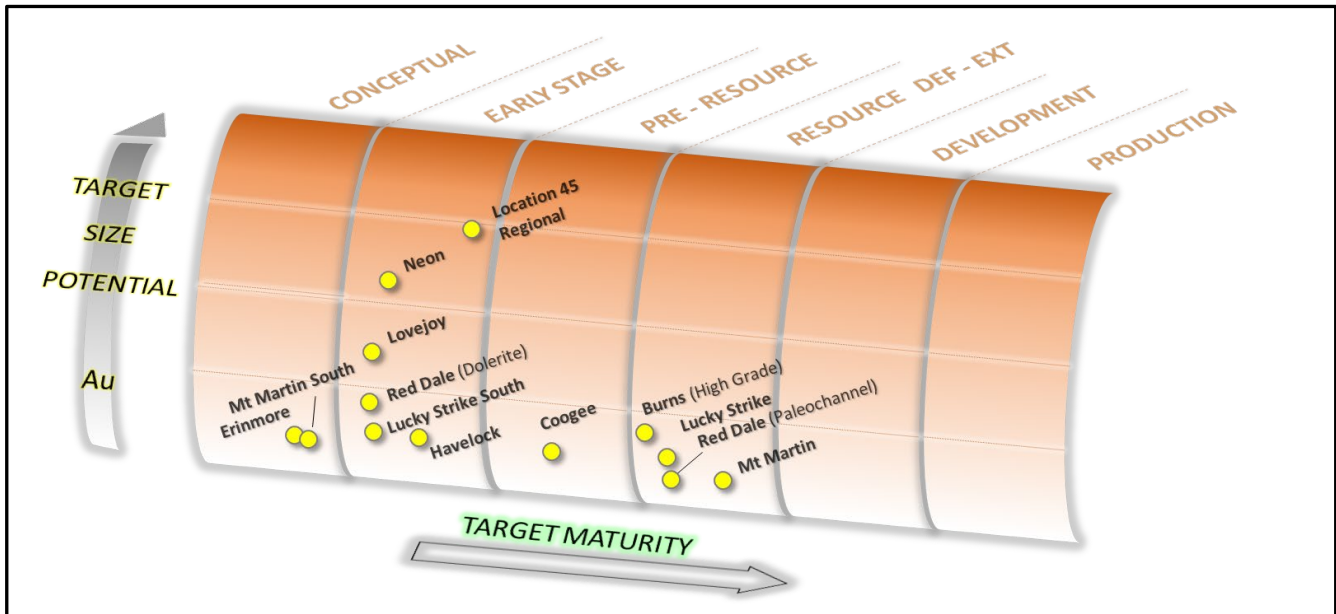


Figure 2: Lefroy Exploration project pipeline depicting maturity versus potential relative target size.

The Company has completed a thorough internal review and ranking exercise of its exploration targets, guided by three strategic principles:

- **Growing the resource base** with an ongoing view towards **near-term commercialisation**.
- Generate **targeted, systematic** exploration programs with **measurable success hurdles**.
- Maintain a **balanced, diverse** exploration pipeline of targets leading to **new discoveries**.

EXPLORATION TO COMMENCE IN APRIL 2024

Guided by the principles outlined above, the recently completed internal project review has focused the Company’s attention to projects with a strong pathway towards near-term commercialisation, resource growth and discovery.



Drilling priorities are as follows:

1. Resource growth, extension and discovery within the **Mt Martin** and **Lucky Strike** project areas.
2. Advancing pre resource exploration targets with significant upside and discovery potential at **Lucky Strike South, Havelock, Erinmore** and **Coogee**.
3. Early-stage exploration targeting frontiers across the entire **Location 45** area, **Western Lefroy JV** and **Lake Johnston** project areas.

The Company is pleased to announce that exploration drilling programs will commence in April 2024, with an initial focus on the Lucky Strike and Havelock projects in the eastern half of the Lefroy Project area.

LUCKY STRIKE DISTRICT

Stradling the regionally significant Mt Monger Fault, a primary control to gold mineralisation in the broader Kalgoorlie terrain, the exploration district extends from Lucky Strike west to Erinmore and incorporates a significantly underexplored corridor prospective for banded iron formation (BIF) hosted gold mineralisation (refer Figure 3 overpage).

Historic exploration of the BIF trends has been limited to broad-spaced, shallow aircore (AC) drilling and there remains significant potential for additional discoveries through focused exploration.

Lucky Strike

Lucky Strike is located approximately 35km northeast of Gold Fields' St Ives processing plant and 5km southwest of the Randalls' Processing Plant operated by Silver Lake Resources (ASX:SLR).

Gold mineralisation at Lucky Strike is structurally controlled and hosted by quartz veining and sulphide replacement within multiple northwest trending BIF units, interbedded with shale and siltstone.

Lucky Strike is within a gold mineralised trend defined by wide spaced AC drilling that has a 3km strike length (Figure 3).

Drilling activity conducted by the Company was last completed in 2020, culminating in several significant high-grade gold intersections within 150m (vertical depth) from surface (refer ASX announcement 26 February 2020) including:

- **8m @ 18.66 g/t Au** from 145m, including **5m @ 28.1g/t Au** from 145m (LEFR217)
- **22m @ 2.49 g/t Au** from 63m (LEFR152)
- **3m @ 7.79 g/t Au** from 130m (LEFR190)
- **11m @ 3.48 g/t Au** from 170m (LEFR216)

Importantly, these intersections remain untested both down-plunge and along strike, forming the focus of the upcoming drilling program at Lucky Strike. Target corridors are depicted in Figure 4 (overpage) and will be tested by reverse circulation (RC) drill holes.

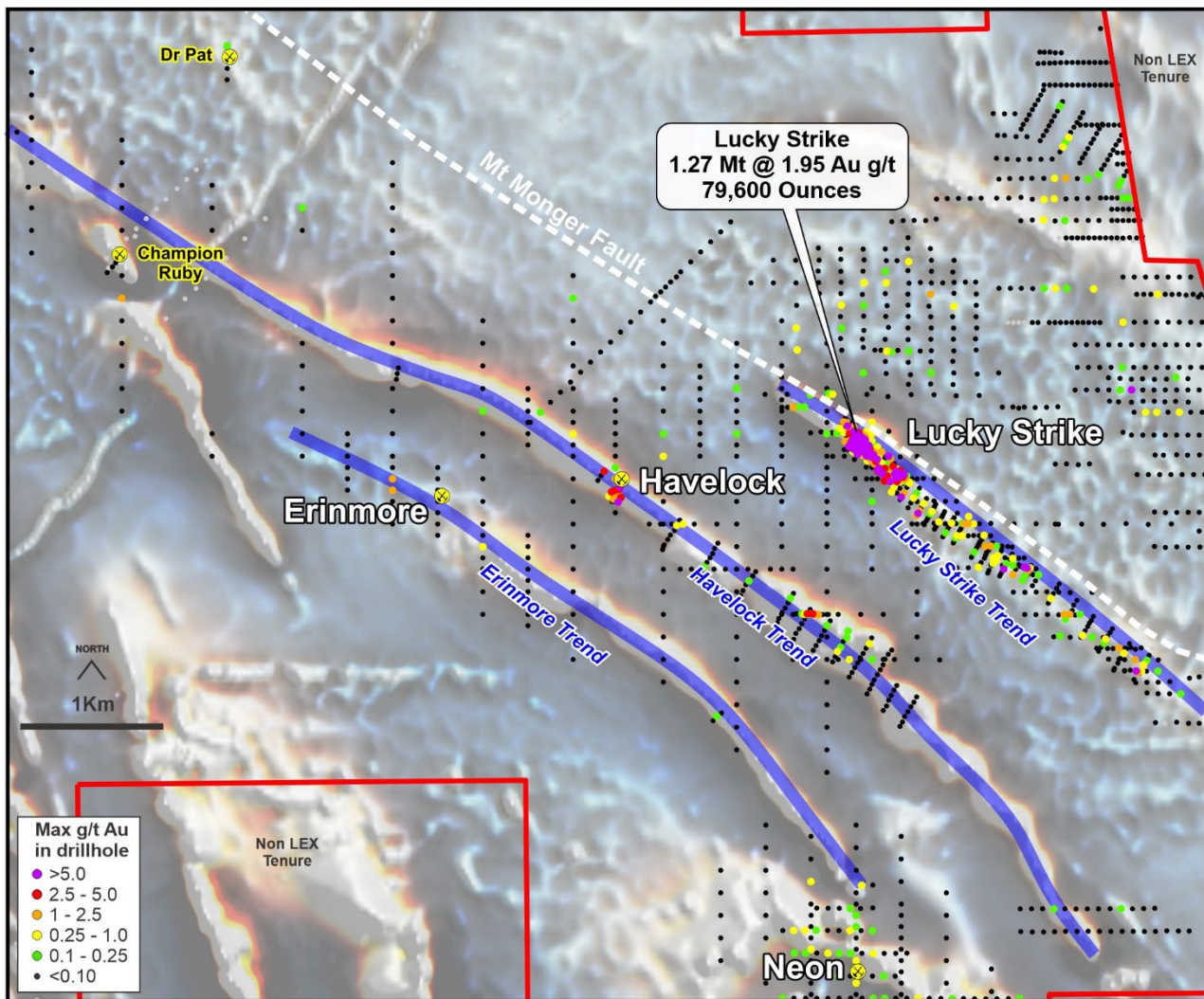


Figure 3: Lucky Strike project area and banded iron formation (BIF) hosted exploration targets.

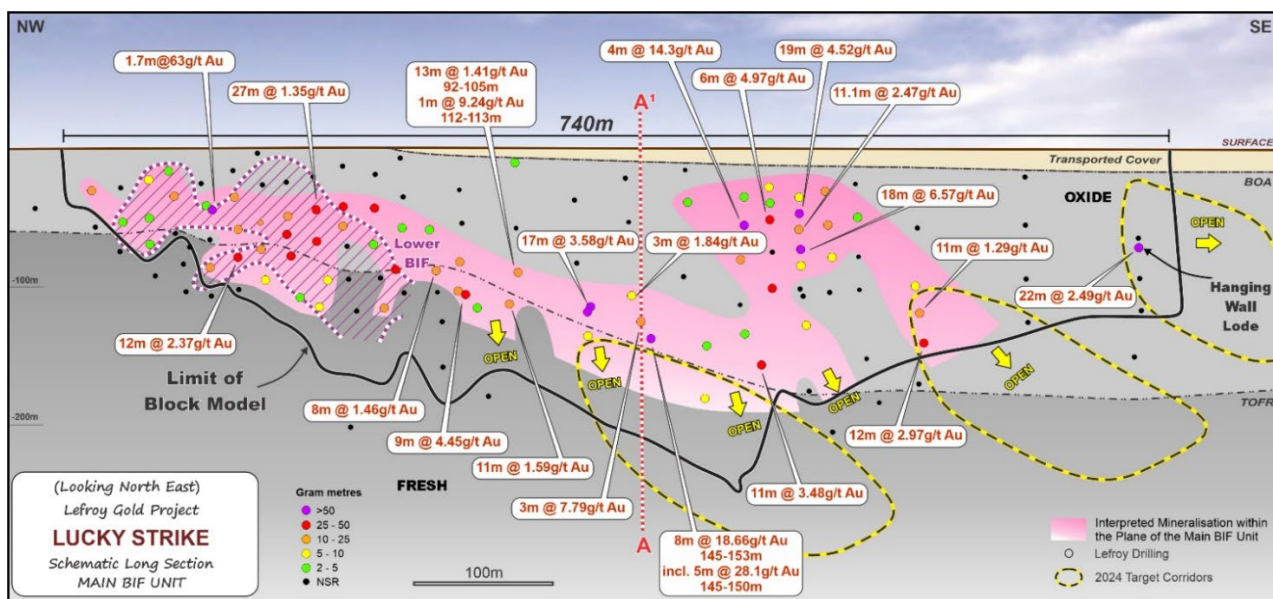


Figure 4: Lucky Strike Long Section and key drill target corridors.



Following the last drilling program in 2020, Lefroy delivered its maiden resource at Lucky Strike (refer ASX announcement 20 May 2020), delivering a resource of 1.27Mt @ 1.95 g/t Au for 79,600oz of gold.

The Company considers there is significant potential to expand the maiden resource. This will form a secondary key focus of the upcoming drilling program at Lucky Strike.

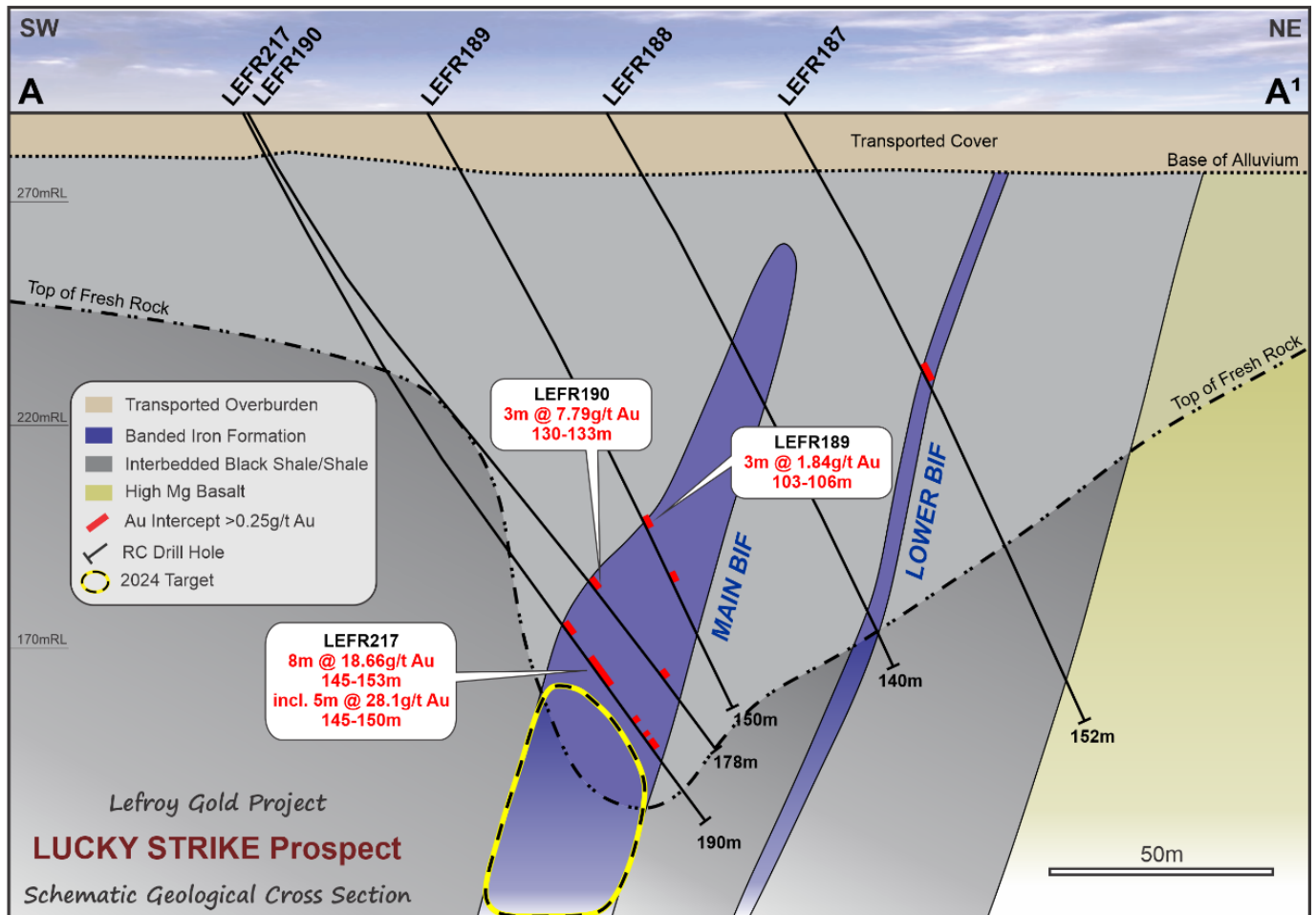


Figure 5: Lucky Strike Cross Section (refer to the section line in Figure 4)

Havelock

Originally identified by Lefroy as a prospective target in 2018, the Havelock target corridor is defined by a 9.5km linear magnetic unit parallel to and southwest of the Lucky Strike trend (Figure 3).

A single aircore (AC) drill line completed in July 2020 intersected strong quartz veining in an oxidised BIF unit, interpreted at the time to be similar to the rocks hosting mineralisation at Lucky Strike (refer LEX ASX release 1 September 2020). The best result from this program returned 5m @ 1.2g/t Au from 50m in hole LEFA774.

Follow-up AC drilling at Havelock in December 2020 confirmed the prospectivity of this corridor, with additional significant intersections including 1m @ 5.37 g/t Au from 20m in LEFA897 and 3m @ 1.04 g/t Au from 57m to EOH in LEFA898 (refer ASX announcement 9 February 2021).



The last phase of drilling at Havelock, completed in June 2022, involved RC drilling following up on the emerging gold corridor identified at Havelock from earlier AC programs. The program was a spectacular success, with several highly mineralised intersections reported (refer ASX release 7 July 2022), including:

- **3m @ 13.37 g/t Au** from 118m (LEFR330)
- **13m @ 1.82 g/t Au** from 76m (LEFR331), including **7m @ 2.69/t Au** from 78m
- **7m @ 1.48 g/t Au** from 38m (LEFR216), including **2m @ 2.78/t Au** from 41m

Owing to the Company's focus on the Burns Gold-Copper Project drilling program in 2022, no follow up drilling has been completed on these highly significant intersections. The Company believes the Havelock trend has very high potential to host a mineral system similar to that already defined at Lucky Strike.

The presence of diorite porphyry intrusions within the mineralised zone at Havelock (Figure 6) suggests a potential genetic relationship with intrusion-related mineralisation at the Burns and Neon prospects along strike to the south. RC drilling programs to test the immediate along strike potential of Havelock will also commence in April 2024.

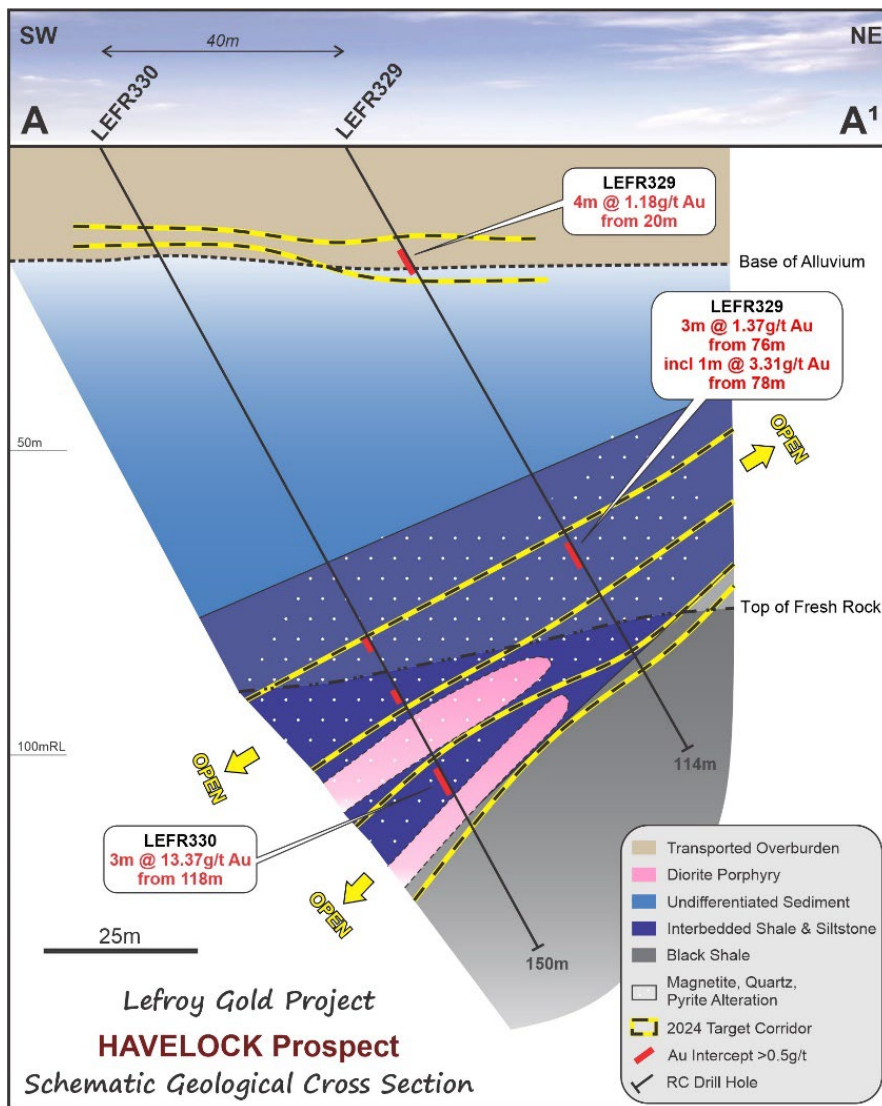


Figure 6: Havelock cross section and exploration upside.



Lucky Strike to Erinmore: Regional upside

Apart from immediate testing of the advanced targets at both Lucky Strike and Havelock, the broader district offers significant regional exploration upside, which has received limited historical exploration focus.

The broader Erinmore and Havelock trends coupled with the southern Lucky Strike trend represent more than 15km of strike length within BIF host rocks considered prospective for additional gold discoveries (Figure 7).

Lefroy is advancing target generation efforts throughout this district, with additional high priority exploration targets to be added to the Company’s existing portfolio in the short term.

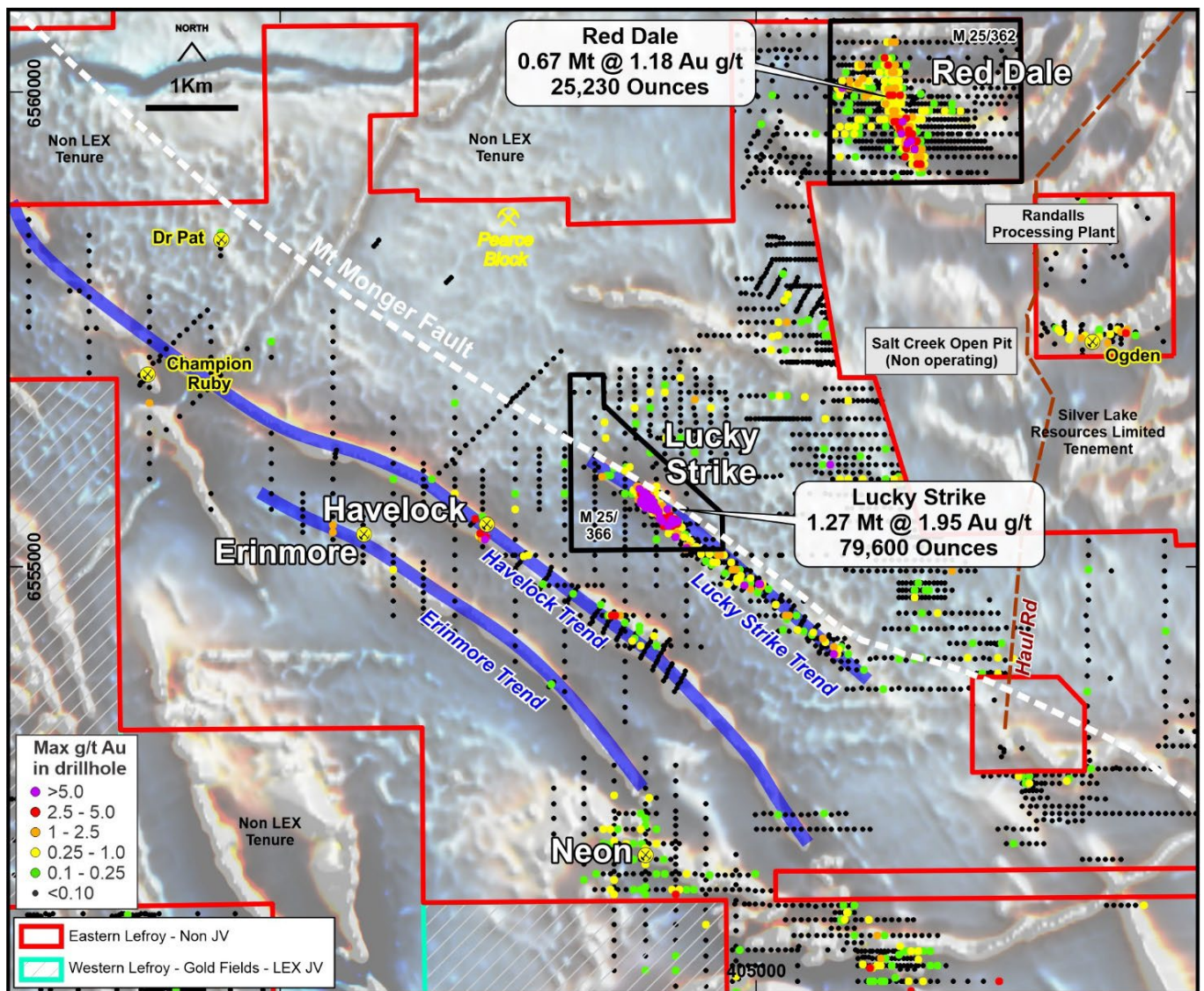


Figure 7: The Lucky Strike district with superimposed prospective BIF corridors.



LOCATION 45

Lefroy acquired the mineral rights to the Location 45 freehold property in May 2023 through a Mineral Rights Agreement between title holder Franco Nevada Pty Ltd (Franco) and Lefroy's wholly owned subsidiaries (refer to ASX announcement [23 May 2023](#)).

In this agreement LEX, through its subsidiaries, acquired all mineral rights from Franco for an initial 21-year term in exchange for a minimum annual exploration expenditure of \$100,000 and 4% royalty upon production.

The Location 45 freehold property, represents a new frontier for the Company, acquiring the Mt Martin gold resource of 8.7Mt @ 1.79 g/t Au (for 501,175 oz) (refer to ASX release 5 September 2023) along with the Goodyear Nickel resource (392,000t @ 3.78% Ni for 14,780t of contained nickel), reported and classified with JORC Code 2012 (refer to ASX release 23 August 2023).

Additional to the contained resources held by the Company on Location 45, the entire 76.3km² freehold property, located in the world class Kalgoorlie–Kambalda district has received minimal modern exploration for either gold or nickel.

This represents a significant opportunity for the Company to grow its dual commodity resource base and position itself for additional exploration success through discovery.

Mt Martin (Au)

Following completion of a 29 RC drill hole program at Mt Martin in December 2023 and the announcement of significant assay results (refer ASX release 18 January 2024), the Company has compiled the results, completed data validation and updated the mineral wireframes.

There is promising resource upside potential at Mt Martin and the Company aims to release an updated mineral resource estimate in the June FY24 quarter, with future resource delineation, extension and exploration plans to be announced upon completion of this work.

Coincident with the Company's pursuit of advancing and growing its resource base through targeted exploration, it continues to engage with regional operating parties, and advance commercial discussions relating to its more advanced resource projects, including development opportunities at Mt Martin.

Regional upside at Location 45

The broader exploration upside of Location 45 cannot be understated, with negligible on ground exploration undertaken for gold in almost 20 years.

Historical mapping observations, combined with limited geophysical interrogation (owing to a scarcity of recent geophysical surveys) has delineated numerous late-stage, predominantly north-south trending structures, interpreted by the Company to control gold mineralisation on Location 45.

These features, coupled with new data from geochemical sampling, additional mapping and structural interpretation will guide the exploration team in its target generation efforts.

Figures 8(a) and (b) overpage highlight the extraordinary lack of drilling performed on the regional Location 45 freehold land.



Depicted in Figure 8(a) most drilling has been heavily focused towards the immediate surroundings of Mt Martin Gold Mine, with a secondary broader nickel and gold focus centered on the Goodyear and Wren prospects.

The Company is working towards the first phase of regional exploration on Location 45 in early FY25.

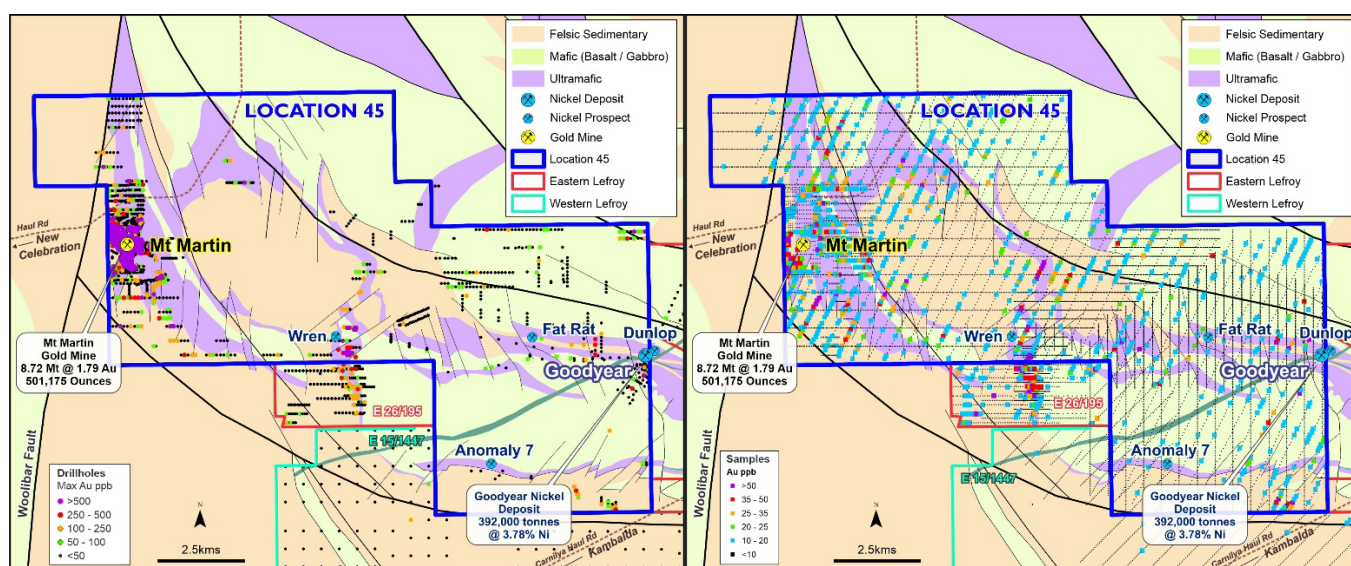


Figure 8(a): Location 45 drill holes and anomalism.

Figure 8(b): Location 45 surface samples and anomalism.

Goodyear (Ni)

As mentioned in the Company’s December 2023 quarterly report (refer ASX release 29 January 2024) and more recently (refer ASX release 23 February 2024), Lefroy initiated a pause on nickel exploration.

The Company holds significant tenure prospective for nickel, with its flagship Goodyear Nickel Deposit at Location 45, along with highly prospective tenure in the Lake Johnston district.

Minimal holding costs apply to this tenure, and the Company will continue to maintain and grow its in-house portfolio of nickel targets to ensure the Company is well placed for the next upturn in the nickel market.

Recent drilling completed in December 2023 has also solidified the Company’s view on the exploration and resource expansion potential at Goodyear.

EARLY-STAGE TARGET GENERATION

While the Company’s short-term exploration and growth strategy will continue to centre around progressing several of its more advanced resource related targets, including at Lucky Strike and Mt Martin, it is committed to promoting and advancing a pipeline of early-stage exploration opportunities.

The Company is fortunate to hold several early-stage targeting frontiers, considered prospective for identifying the next generation of gold discoveries for Lefroy.



Apart from the ongoing regional targeting work (previously outlined) centred on Location 45, the entire 635km² of Lefroy-held tenure covering the Lefroy Project remains highly prospective.

This includes the Western Lefroy JV project, held between Lefroy and Gold Fields Limited (JSE:GFI), the Eastern Lefroy project along with significantly underexplored tenure held by the Company at Lake Johnston, prospective for both gold and nickel.

-Ends-

This announcement has been authorised for release by the Board of Directors.

Graeme Gribbin
CEO

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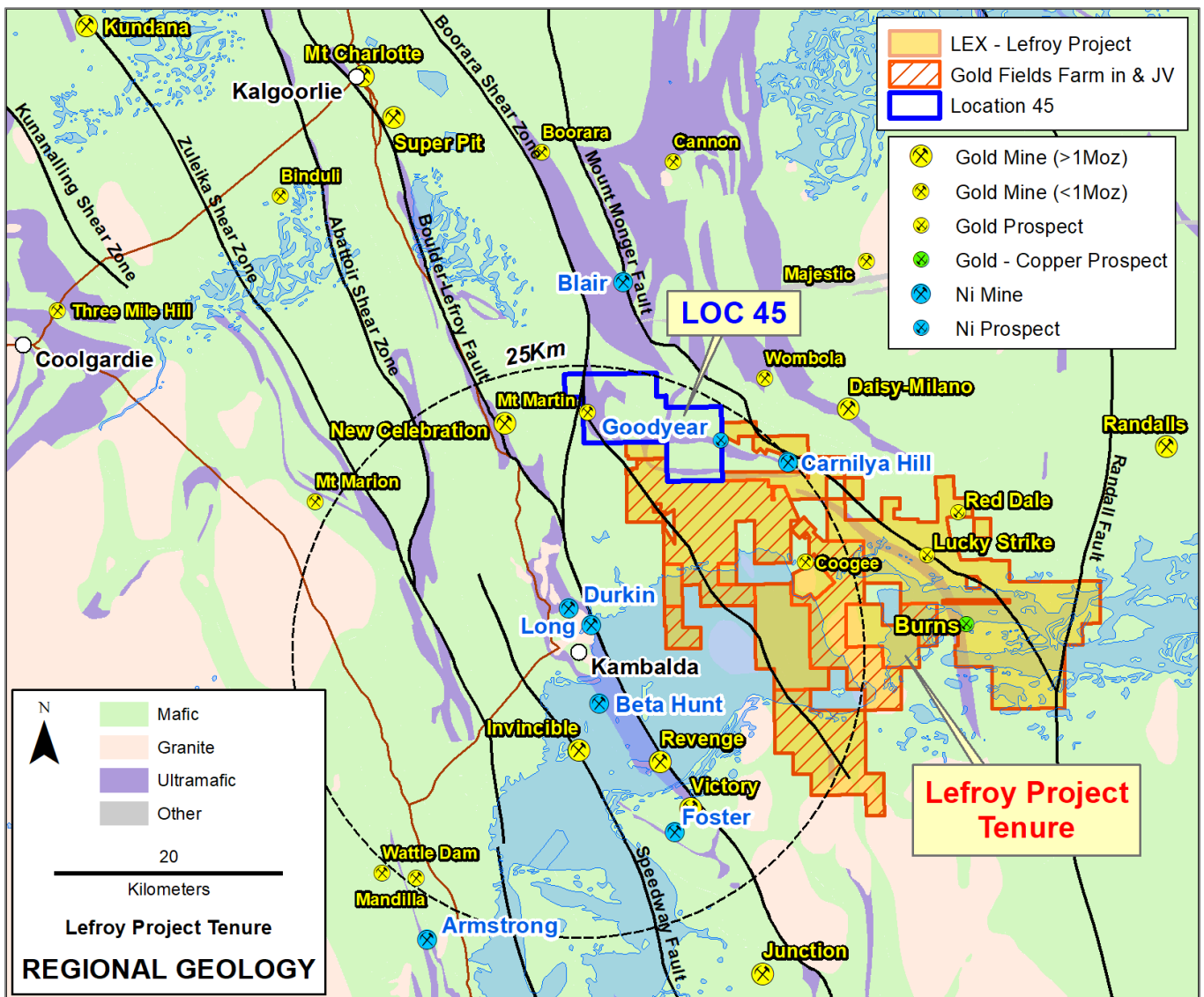
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ABOUT LEFROY EXPLORATION LIMITED

Lefroy Exploration Limited (ASX:LEX) is an active West Australian exploration company. The Company’s portfolio of high-quality projects includes the Lefroy Project, located in the heart of the world-class Kalgoorlie and Kambalda gold and nickel mining districts, the Lake Johnston Project 120km west of Norseman and the large 2,872km² Glenayle Project, 210km north of Wiluna.

The Lefroy Project is a contiguous land package of 635km² with a mineral resource inventory of approximately 1.1 million ounces of gold, plus 58,000 tonnes of contained copper and 14,780 tonnes of contained nickel, as at August 2023 (refer to LEX 2023 Annual Report).





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. In the case of all Mineral Resource Estimate's (MRE), the Company confirms that all material assumptions and technical parameters underpinning the estimates continue to apply and have not materially changed.

- Outstanding Results Reinforce Lucky Strike Potential – 26 February 2020
- Maiden Gold Resource at Lucky Strike – 20 May 2020
- Red Dale Resource Increase by 28% to 25,230oz – 3 June 2020
- Multiple Gold Trends Confirmed from Eastern Lefroy Baseline Exploration – 1 September 2020
- Drilling Outlines New Gold System along Havelock BIF Trend – 9 February 2021
- High-Grade Gold Result Confirms New Discovery at Havelock – 7 July 2022
- Half a Million Ounces of Gold in Burns Central maiden Resource – 4 May 2023
- Lefroy Increases Gold Resources to 602,000oz – 15 May 2023
- Acquisition of Mineral Rights Transforms Lefroy – 23 May 2023
- Lefroy Confirms High-Grade 15KT Resource at Goodyear – 23 August 2023
- Growth Potential for Mt Martin Gold Mine Confirmed – 5 September 2023
- Lefroy Exploration Investor Update Presentation – 6 September 2023
- \$6.2M Raised to Advance Nickel and Gold Projects at Location 45 – 22 September 2023
- LEX 2023 Annual Report – 2 October 2023
- Resource Extension Drilling Underway at Mt Martin – 24 November 2023
- Drilling Commences at High-Grade Goodyear Nickel Deposit – 30 November 2023
- First Drillhole hits massive nickel sulphides at Goodyear – 12 December 2023
- Assay Results confirm High Grade Nickel Sulphides at Goodyear – 10 January 2024
- Drilling Extends Gold Mineralisation at Mt Martin Gold Mine – 18 January 2024
- Executive Update – Leadership Changes – 6 February 2024

COMPETENT PERSON STATEMENT

The information in this announcement that relates to exploration targets and exploration results is based on information compiled by Graeme Gribbin, a competent person who is a member of the Australian Institute of Geoscientists (AIG). Mr Gribbin is employed by Lefroy Exploration Limited. Mr Gribbin 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. Mr Gribbin consents to the inclusion in this announcement of the matters based on his work in the form and context in which it appears.

Table 1: Total Indicated and Inferred Lefroy Gold Project Mineral Resource Estimate

| Deposit | Indicated | | | | | Inferred | | | | | Total Resource | | | |
|----------------------------|-------------|-------------|-------------|----------------|---------------|--------------|-------------|-------------|----------------|--------------|----------------|-------------|------------------|---------------|
| | Mt | Au (g/t) | Cu (%) | Oz | Cu (t) | Mt | Au (g/t) | Cu (%) | Oz | Cu (t) | Mt | Au (g/t) | Oz | Cu (t) |
| Burns Central ¹ | 32.31 | 0.38 | 0.16 | 394,308 | 50,253 | 10.65 | 0.30 | 0.08 | 103,165 | 8,047 | 42.96 | 0.36 | 497,472 | 58,300 |
| Red Dale ² | 0.64 | 1.21 | - | 24,660 | - | 0.03 | 0.60 | - | 570 | - | 0.67 | 1.18 | 25,230 | - |
| Lucky Strike ³ | 0.70 | 1.93 | - | 43,400 | - | 0.57 | 1.97 | - | 36,200 | - | 1.27 | 1.95 | 79,600 | - |
| Mt Martin ⁴ | 5.31 | 1.82 | - | 311,048 | - | 3.41 | 1.73 | - | 190,127 | - | 8.72 | 1.79 | 501,175 | - |
| TOTAL | 39.0 | 0.62 | 0.16 | 773,416 | 50,253 | 14.66 | 0.70 | 0.08 | 330,062 | 8,047 | 53.62 | 0.64 | 1,103,477 | 58,300 |

Total Indicated and Inferred Lefroy Gold Project Mineral Resource Estimate as at 30 June 2023.

¹ The Burns Central MRE was announced to the ASX on 4 May 2023

² The Red Dale MRE was announced to the ASX on 3 June 2020

³ The Lucky Strike MRE was announced to the ASX on 20 May 2020

⁴ The Mt Martin MRE was announced to the ASX on 23 May 2023



Table 2: Goodyear Mineral Resource Estimate

| Zone | Tonnes | Grade Ni % | Contained Ni Tonnes |
|-----------------------|----------------|-------------|---------------------|
| 1 | 148,000 | 3.06 | 4520 |
| 3 | 224,000 | 4.13 | 9230 |
| 4 | 20,000 | 5.13 | 1030 |
| TOTAL INFERRED | 392,000 | 3.78 | 14,780 |

The Goodyear MRE was announced to the ASX on 23 August 2023