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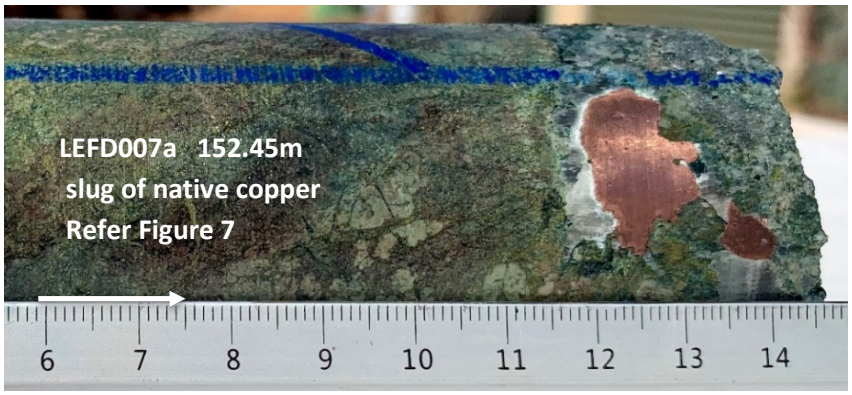
Drilling Continues to Define Larger Scale to Burns Au Cu System

- **The EIS co-funded diamond drill hole, LEFD006, has been completed to a downhole depth of 1245.8m. This is the deepest hole completed at Burns to date.**
- **LEFD006 intersected a suite of diorite-porphyry units over a broad 195m downhole interval, from 710m to 905m. These units are broadly grouped as the Central Porphyry, and has established that the vertical continuity of the intrusive system previously found by shallower drilling extends to 1000m from surface and that it remains open for further extension along strike and at depth**
- **In addition, the hole has established four key geological domains, including the Central Porphyry suite, which when combined define a 600m width to the intrusive system and provide further evidence that Burns is a large-scale mineral system.**
- **Each of the four geological domains has a different alteration and mineralisation assemblage, which evidences that Burns is a multi-stage mineral and porphyry system.**
- **Core samples from LEFD006 have been submitted in batches to the laboratory, with first results expected in September**
- **The second diamond drill hole, LEFD007a, is at 231m downhole, with a planned 500m hole depth. LEFD007a is 240m south of LEFD006 and has intersected multiple intervals containing native copper within the altered Western Basalt (see below).**



Lefroy Exploration Managing Director Wade Johnson said *"This is an exciting phase of drilling at Burns where we are now demonstrating the larger scale of the alteration zonation and the extent of the multiphase porphyry intrusions, which extend to at least 1000m below surface. There is a large body of altered rock outboard of the Central Porphyry, with a width of at least 600m, which now extends at least 240m to the south of LEFD006, as observed in LEFD007a. We continue to believe it is indicative of a mineralised, hydrothermal, Archean-age porphyry system, with an alteration footprint that is broader than we have anticipated."*

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Lefroy Exploration Limited (ASX: LEX) ("Lefroy" or "the Company") is pleased to provide a progress report for the two-hole diamond drill program underway at the Burns Au-Cu intrusion-related mineral system. Burns is within the Company's wholly owned Eastern Lefroy Gold Project, located 70km southeast of Kalgoorlie. The first hole, LEFD006, has been completed to a downhole depth of 1245.8m, with the second hole, LEFD007a, located 240m to the south now underway.

Burns is a new and unique style of an intrusion-related, gold (Au)-copper (Cu)-molybdenum (Mo)-silver (Ag) mineral system, hosted by Archean age rocks in the Eastern Goldfields Province (EGP) of Western Australia. LEX is aiming to advance the understanding of the scale and genesis of the system through this deep drilling program.

The gold, copper, silver (and lesser molybdenum) mineralisation, hosted by multiple, diorite-porphyry intrusives and high-magnesium basalt, are considered by the Company to be a new and unique style of gold-copper mineralisation near Kalgoorlie, located within a land holding dominated by LEX.

First Deep Diamond Drill Hole

The first hole of the two-hole diamond drill program LEFD006 (Table 1 and Figure 1), commenced on 12 July (refer LEX ASX release 12 July 2022) and is now completed to a downhole depth of 1245.8m. Co-funding for this hole is being provided under the Exploration Incentive Scheme (EIS) managed by the WA Department of Mines, Industry Regulation and Safety (DMIRS) (refer LEX ASX release 29 October 2021)

LEFD006 was designed to evaluate the Burns Au-Cu mineralised diorite porphyry host rock, to a target (vertical) depth of 1000m from surface with key aims to:

- Expand the continuity of the mineralisation discovered to date on a vertical scale
- Test the lateral extent of the system by 250m west of the main known mineralisation
- Provide geological and geochemical information to support ongoing research
- Demonstrate further that Burns is a new, large Au-Cu intrusion related mineral system

The initial 570m of LEFD006 (Figure 1) intersected a wide downhole interval of predominantly high-Mg basalt (refer LEX ASX release 1 August 2022). The basalt is variably epidote-biotite-magnetite-altered with localised hydrothermal breccia intervals, gypsum veins and narrow cross-cutting porphyry intervals.

Mineralisation within the basalt interval includes fracture-fill native copper (Figure 4), with vein and/or fracture-fill chalcopyrite, pyrite, chalcocite and molybdenite (refer LEX ASX release 1 August 2022). This interval of altered basalt has increased the lateral extent of the copper mineralised Western Basalt zone by approximately 250m to the west. The alteration assemblage supports a large hydrothermal alteration cell which is consistent with an intrusion related system.

Within this basalt unit, a new 40m interval (400m-440m) containing multiple cross-cutting diorite intrusives (porphyry) was intersected (Figure 1). The interval contains predominantly potassic-altered hematite and biotite, with associated pyrite-chalcopyrite and trace molybdenite mineralisation. (Figure 5).

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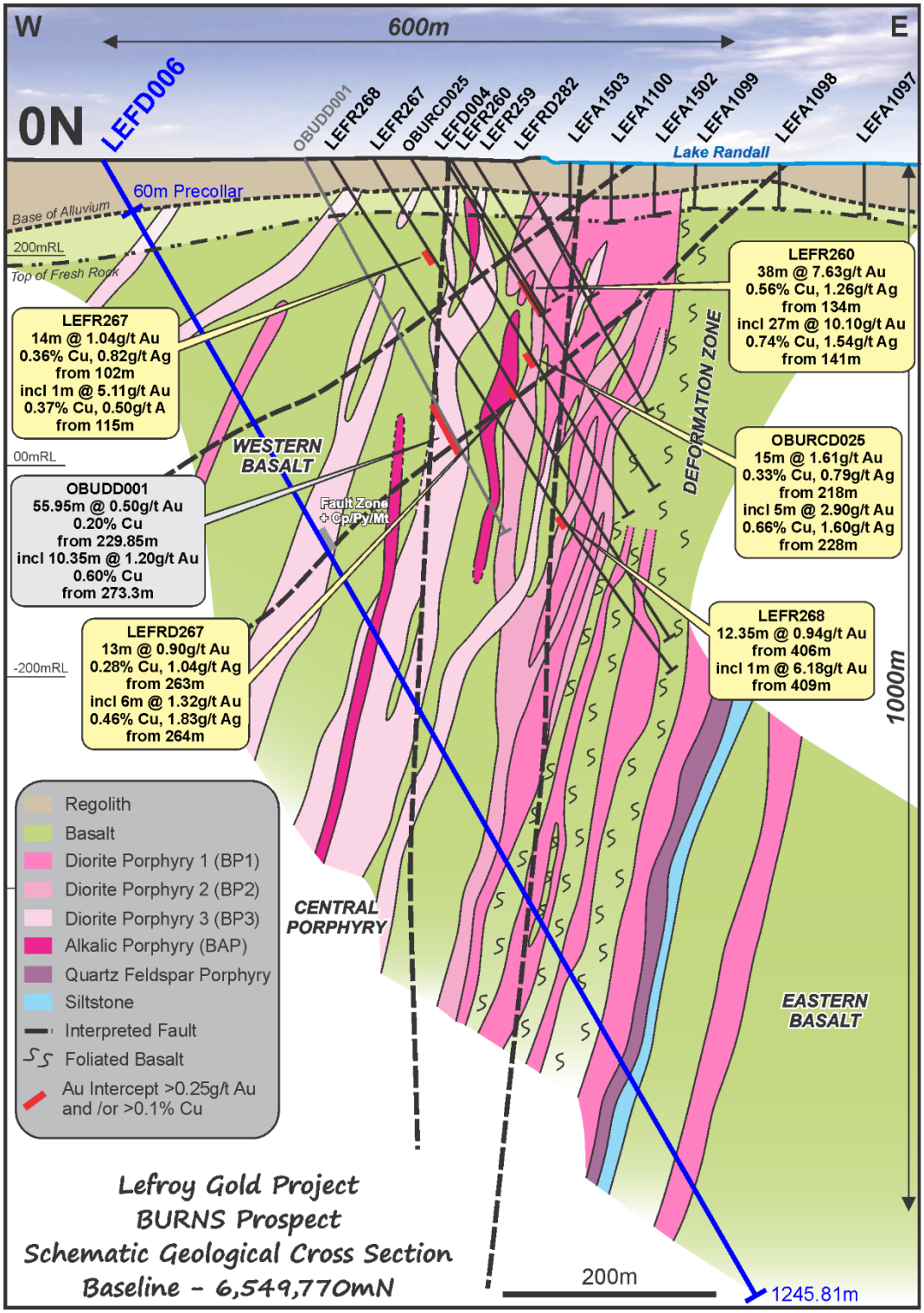

Figure 1 Burns baseline drill section (0N) showing completed drill holes, extent of the multiphase porphyries that make up the eastern porphyry and the position of diamond hole LEFD006

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The chalcopyrite is stringer or fracture fill (Figure 5) and is most abundant between 415-440m (refer Figure 4 Lex ASX release 1 August 2022). This intersection of diorite porphyry is separate to the main porphyry (that is deeper) and has created an additional target for follow up drilling (Figure 1).

From 510m to 710m downhole, four texturally different and variably altered diorite porphyry units were intersected. Importantly this contains the Burns Alkalic Porphyry (BAP) unit, which is interpreted by the Company to be a control on gold and copper mineralisation. The porphyry units are now grouped to form the Central Porphyry (Figure 1).

Below the Central Porphyry, from 710m to 905m, a broad zone of biotite-altered, calcite-veined, sheared basalt was intersected. This 195m downhole interval contains multiple, massive porphyry units that are variably pyrite altered (Table 2) and is termed the Deformation Zone (Figure 1). Both the sheared basalt and porphyry are crosscut by later pink calcite veins, some containing rare anhydrite (calcium sulphate) and chalcopyrite (copper sulphide).

A new zone of sulphide-altered, fine-grained sediment (siltstone) and porphyry was intersected from 905m to 1034m. This 33m interval of siltstone is variably pyrite-pyrrhotite altered (Figure 6).

Below 1034m, to the end of hole (EoH), is an interval of weakly altered, massive basalt, which includes one porphyry unit. This 211m downhole interval is termed the Eastern Basalt and marks the eastern limit of the Burns system.

The completion of LEFD006 has established four broad geological domains, each with contrasting alteration and geology, which now demonstrate that the Burns system has a width of at least 600m, with the western limit yet to be defined. The hole has also established continuity to the multiple porphyry units, approximately 300m below the existing drilling on the baseline section (0N) and to 1000m vertically below surface. The system remains open at depth and along strike (Figure1).

Multiple sample batches from the drillhole have been submitted to the laboratory for gold, copper, and multi-element analysis. The interval from 400m to 480m that had significant chalcopyrite content (Figure 5) has been prioritised for assay, with results expect in late September. Due the delay at the laboratory in Perth, subsequent results are not expected until October and November.

Second Deep Diamond Drill hole

The second diamond hole, LEFD007a, is currently underway and is at 231.07m downhole. The hole has a planned depth of 500m and is designed to intersect the down-plunge extent of a modelled high-grade Au Cu zone defined by holes LEFR260 & 320 (refer to long section Figure 3). The collar position of this hole is located 240m south of the baseline (0N) section (Figures 2 & 3).

Interrogation of Company drill data including gold, copper, silver, and molybdenum 3D metal models highlighted a large, northwest trending, gently southerly plunging mineralised (Au, Cu, Ag, ± Mo) shell. Included within this shell is a higher-grade, northerly trending Au-Cu component (Figure 3), which provided the model to design and plan LEFD007a.

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As of 29 August, LEFD007a had intersected a 177.2m interval of the Western Basalt, which is the same unit as seen in the upper part of LEFD006. The fresh basalt interval is variably epidote-chlorite altered, with localised gypsum and calcite veining. Within the altered basalt are two 30m downhole intervals (149.15m to 184m and 205.56m to 230.77m) containing blebs of native copper that often occur with gypsum veins with associated magnesite (refer figures 7, 8, and 9 and Table 3).

From 207.24m to 231.07m the basalt is magnetite-altered, occurring as veinlets, blebs, or breccia matrix. The increasing magnetite content (Table 3) supports the Company's view that the contact of the main porphyry target-zone is in the near vicinity. The anticipated target depth of this contact is approximately 350-450m downhole that is expected to be intersected later this week.

This new, wide downhole interval of altered basalt has increased the lateral extent of the copper-mineralised Western Basalt zone 240m to the south of the baseline section and is open along strike and down dip. The alteration assemblage continues to support and expand an interpreted large, zoned, hydrothermal-alteration system around the diorite intrusions.

LEFD007a is expected to be completed in early September, with assay results anticipated in November, dependent on laboratory turnaround.

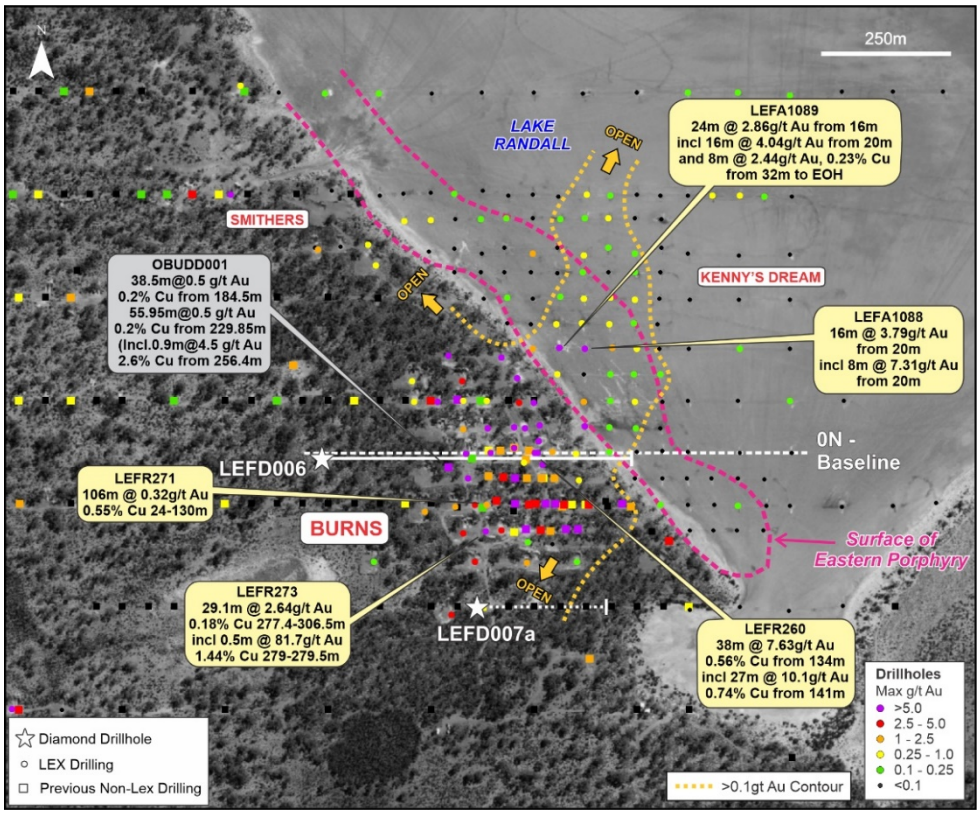

Figure 2 Burns site plan highlighting the extent of the recent AC drilling on Lake Randall and interpreted extent of the Eastern Porphyry and gold anomaly (>0.10g/t Au) at Burns. Position of the holes LEFD006 and LEFD007a are shown.

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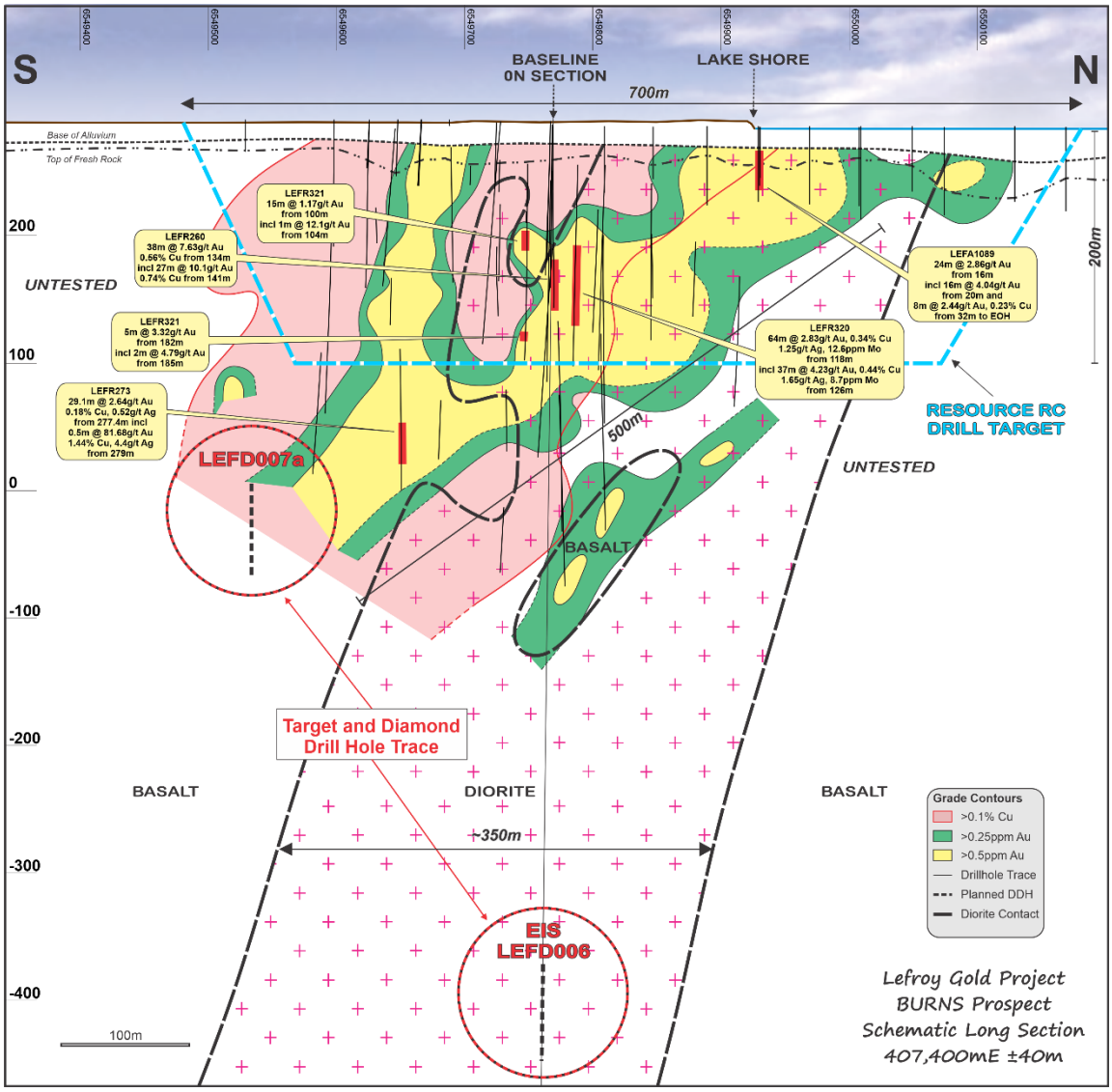

Figure 3 Schematic Longitudinal Section 407400N looking west showing drill hole traces, modelled grade contours and selected previous and recent drill hole intercepts to demonstrate the system. Planned drill traces of the diamond drill holes to test the two target positions are shown.

This announcement has been authorised for release by the Board

Wade Johnson
Managing Director

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TABLE 1 LEFD006 Collar Details

Hole ID	Collar E (MGA)	Collar N (MGA)	Collar RL	Depth (m)	Azimuth	Dip	Drill type	Comments
LEFD006	407000	6549760	290	1245.8	90	-60	Diamond	Mud rotary pre-collar to 60m
LEFD007a	407243	6549520	290	In progress	90	-60	Diamond	Mud rotary pre-collar to 53.9m

Photographs of selected examples of core from LEFD006 and LEFD007a within the broader geological intervals are shown below (Figures 4,5,6,7,8,9). These are not the only mineralised zones but are relevant examples to highlight the style of the chalcopyrite mineralisation in the host altered porphyry and native copper in the basalt.

Figure 4 LEFD006 interval 224.5 to 224.8m shows high-magnesium Western Basalt, mineralised by native copper along fracture plane with a gypsum film, with epidote alteration and minor ex-sulphides (LEX ASX release 1 August 2022)

Figure 5 LEFD006 interval 435.6-435.8m showing Burns diorite porphyry altered by pervasive hematite, cross-cut by chalcopyrite and pyrite stringer veining (LEX ASX release 1 August 2022).

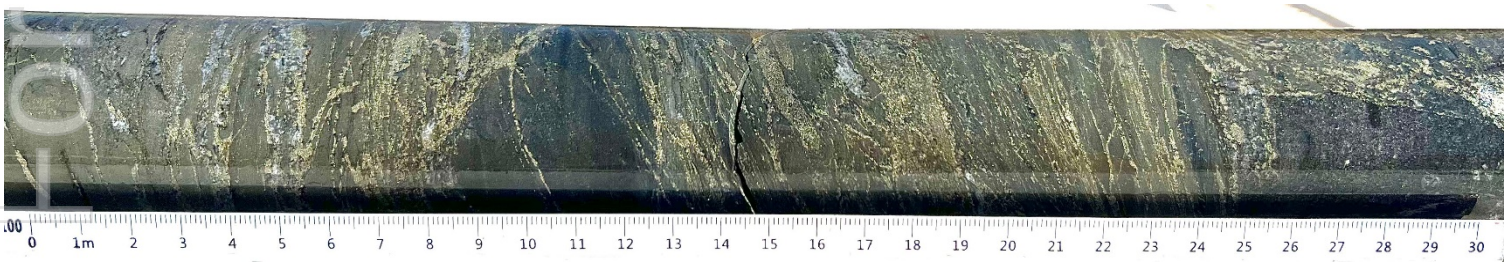

Figure 6 LEFD006 interval 1031.95-1032.25 4 Carbonate and quartz altered siltstone. Sub massive pyrite and pyrrhotite with rare chalcopyrite

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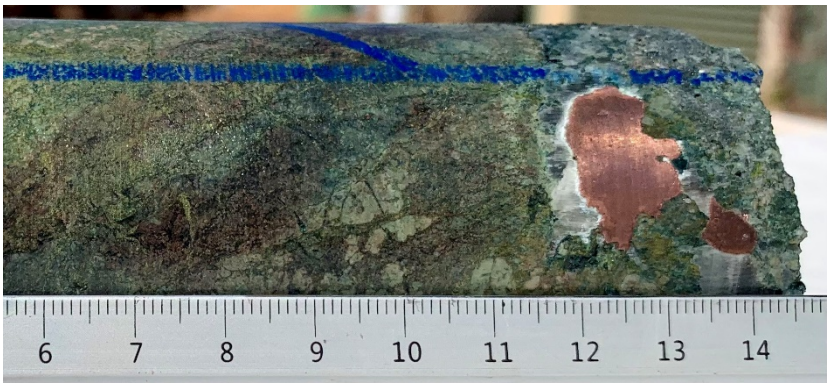

Figure 7 LEFD007a drill core interval 152.45m-152.53m epidote chlorite altered Western Basalt with native copper and gypsum

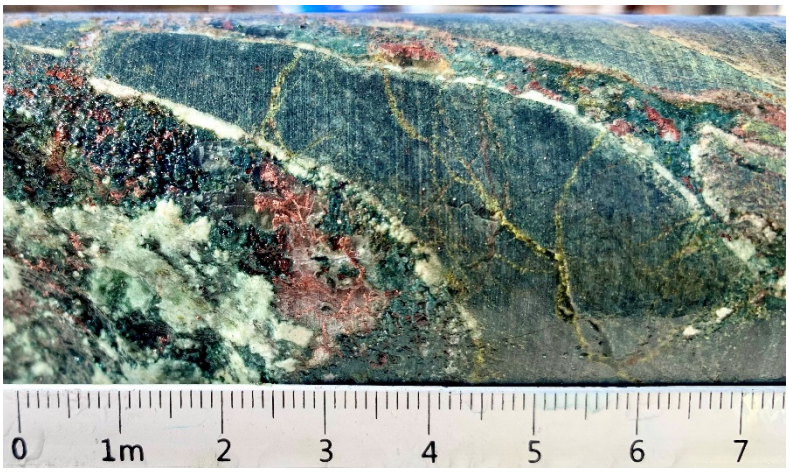

Figure 8 LEFD007a drill core interval 227m-227.07m epidote chlorite altered Western Basalt with native copper, pyrite veinlets, gypsum, and magnesite (white mineral)

Figure 9 LEFD007a Native copper in fracture plane drill core 152.53m

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TABLE 2 Visual Estimate of Sulphide Mineralisation by Type from Alteration Zones in LEFD006

From (m)	To (m)	Interval (m)	Description	Mineral	Logged Visual Estimate (%)	Style
571.5	580.5	9.0	High Mg Basalt cross-cut by pink calcite veins with 1% blebby chalcopyrite and trace native copper in fractures.	Cu	2	Fracture fill
				Cpy	1	Blebby
580.5	599.5	19.0	Diorite porphyry (BP3) with calcite-biotite-epidote alteration and 1% disseminated pyrite and trace chalcopyrite in fractures.	Py	1	Disseminated
				Cpy	0.5	Fracture fill
603.4	612.9	9.5	Diorite porphyry (BP3) with hematite dusting, epidote and chlorite alteration. Trace native copper in fractures as well as trace disseminated chalcopyrite.	Cpy	0.5	Disseminated
				Cu	0.5	Fracture fill
612.9	636.1	23.2	Epidote-biotite-calcite-chlorite altered high Mg basalt with blebby/vein/fracture fill chalcopyrite.	Cpy	1	Blebby
636.1	653.2	17.1	Diorite porphyry (BP3) with calcite veining and weak epidote. Blebby chalcopyrite and pyrite in veinlets.	Cpy	1	Blebby
				Py	1	Blebby
653.2	713.1	59.9	High Mg basalt with calcite-gypsum-epidote-biotite-chlorite alteration. Blebby chalcopyrite, pyrite and pyrrhotite.	Py	1	Disseminated
				Cpy	0.5	Blebby
				Po	0.5	Blebby
713.1	719.9	6.8	Shear zone with strong biotite alteration and quartz-calcite veining. 1% disseminated pyrite.	Py	1	Disseminated
719.9	734.1	14.2	High Mg basalt with biotite-epidote-chlorite alteration and cross-cut by pink calcite veins with blebby pyrite.	Py	0.5	Blebby
734.1	735.2	1.1	Shear zone with strong pink calcite veining, anhydrite, biotite and disseminated pyrite.	Py	1	Disseminated
735.2	749.1	5.0	Biotite-epidote altered diorite porphyry (BP2) with disseminated pyrite.	Py	2	Disseminated
749.1	749.5	0.4	Shear zone with strong pink calcite veining, anhydrite, biotite and disseminated pyrite.	Py	1	Disseminated
758.9	760.2	1.3	Diorite porphyry (BP2) cross-cut by calcite veins. Disseminated pyrite.	Py	3	Disseminated
760.2	769.9	5.4	Shear zone with strong pink calcite veining, anhydrite, biotite and disseminated chalcopyrite.	Cpy	2	Disseminated
791.2	799.2	8.0	Biotite altered diorite porphyry (BP1) with cross-cut by pink calcite veins. Blebby pyrite and Chalcopyrite.	Py	1	Blebby
				Cpy	0.5	Blebby
799.2	813.6		Sheared basalt with white/pink calcite veining and biotite alteration. Possible fine flecks of visible gold within calcite veins. Blebby chalcopyrite and pyrite.	Py	0.5	Blebby
				Cpy	0.5	Blebby
				Au	0.5	Blebby
833.4	842.4	9.0	Sheared basalt with calcite veining, biotite, gypsum and anhydrite alteration. Blebby chalcopyrite and pyrite.	Cpy	1	Blebby
				Py	0.5	Blebby
854.1	880.8	26.7	Sheared/massive biotite-chlorite altered basalt cross-cut by pink calcite veins with pyrite and chalcopyrite.	Py	2	Disseminated
				Cpy	0.5	Blebby
886.6	951.2		Chlorite-biotite-calcite altered basalt with intervals of foliated basalt. Disseminated pyrite and chalcopyrite. Rare bornite.	Py	1	Disseminated
				Cpy	0.5	Disseminated
				Bo	0.5	Blebby

Cpy-Chalcopyrite, Py-Pyrite, Bo-Bornite, Au-Gold, Po-Pyrrhotite, Cu-Copper

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TABLE 2 Visual Estimate of Sulphide Mineralisation by Type from Alteration Zones in LEFD006

From (m)	To (m)	Interval (m)	Description	Mineral	Logged Visual Estimate (%)	Style
951.2	958.6	7.4	Carbonate-epidote-biotite altered diorite porphyry (BP1) cross-cut by calcite-hematite veins. Disseminated pyrite.	Py	2	Disseminated
958.6	960.8	2.1	Shear zone with biotite and calcite vein alteration with disseminated pyrite.	Py	5	Disseminated
960.8	985.9	25.1	Diorite porphyry (BP1) with weak chlorite-biotite-calcite alteration. calcite veins around. Trace disseminated pyrite.	Py	0.5	Disseminated
985.9	999.1	13.2	Diorite porphyry (BP4) cross-cut by calcite-biotite-pyrite veins and quartz. Disseminated pyrite.	Py	1	Disseminated
999.1	1001.6	2.5	Sericite-carbonate-silica altered Quartz-Feldspar Poprhyry Feldpsar with disseminated pyrite.	Py	6	Disseminated
1001.6	1003.2	1.6	Bedded siltstone that is highly deformed. Submassive-massive sulphide (pyrrhotite-pyrite-chalcopyrite and sphalerite) overprints the rock. Around 80% massive sulphide.	Po	60	Massive
				Py	10	Massive
				Cpy	7	Stringer
				Sph	3	Stringer
1003.2	1005.3	2.1	Sericite-carbonate-silica altered Quartz-Feldspar Poprhyry Feldpsar with disseminated pyrite and cross-cut by calcite veins.	Py	6	Disseminated
				Cpy	1	Disseminated
1027.3	1029.4	2.1	Carbonate-sericite altered diorite porphyry cross-cut by calcite veins. Disseminated pyrite.	Py	7	Disseminated
1029.4	1029.5	0.1	Bedded siltstone with submassive-massive sulphide (pyrrhotite-pyrite-chalcopyrite and sphalerite) overprinting the rock. Around 80% massive sulphide.	Po	60	Massive
				Py	10	Massive
				Cpy	9	Stringer
				Sph	1	Stringer
1029.48	1030.9	1.42	Carbonate altered diorite porphyry (BP4) with 7% disseminated pyrite.	Py	7	Disseminated
1030.9	1031.26	0.36	Bedded siltstone cross-cut by grey quartz veining and pink calcite plus 80% massive sulphide (pyrrhotite-pyrite-chalcopyrite).	Po	60	Massive
				Py	10	Massive
				Cpy	10	Massive
1031.26	1031.89	0.63	Biotite-carbonate altered Quartz-Feldspar Porphyry with disseminated pyrite.	Py	6	Disseminated
1031.89	1032.21	0.32	Bedded siltstone with around 80% submassive-massive sulphide (pyrrhotite-pyrite-chalcopyrite).	Po	60	Massive
				Py	10	Massive
				Cpy	10	Massive
1032.21	1034.3	2.09	Biotite-carbonate altered Quartz-Feldspar Porphyry with 6% disseminated pyrite	Py	6	Disseminated
1034.3	1034.8	0.5	Bedded Siltstone with foliated biotite. 50% sub massive/stringer sulphide (pyrrhotite, pyrite, chalcopyrite)	Po	35	Stringer
				Py	10	Stringer
				Cpy	5	Stringer
1034.8	1037.3	2.5	Biotite-silica-calcite altered pillow basalt. 2% stringer sulphides	Po	1	Stringer
				Cpy	1	Stringer
1037.26	1042.97	5.71	Amphibole-calcite altered basalt with patchy pyrrhotite and chalcopyrite.	Po	3	Stringer
				Cpy	0.5	Blebby
1054.9	1101.86	46.96	calcite-sericite-biotite-chlorite altered basalt with blebby pyrite/pyrrhotite.	Po	0.5	Blebby
				Py	0.5	Blebby
1102.8	1119.44	16.64	calcite-sericite-biotite-chlorite altered basalt with blebby patchy pyrrhotite.	Po	1	Stringer
1146	1147	1	Diorite Porphyry (BP1) cross-cut by quartz-pink calcite-anhydrite veins. Trace blebby pyrite.	Py	0.5	Blebby
1176	1176.37	0.37	Sericite altered Diorite Porphyry (BP1) with epidote-pink calcite-quartz-purple anhydrite-pyrite vein	Py	10	Disseminated
1176.37	1185.07	8.7	Magnetite-biotite-sericite-epidote altered Diorite Porphyry (BP1) with 2% disseminated pyerite.	Py	2	Disseminated
1185.2	1220.53	35.3	Carbonate-biotite-sericite altered basalt with patchy magnetite and blebby chalcopyrite and pyrrhotite.	Cpy	1	Blebby
				Po	1	Blebby
1220.53	1227.15	6.62	Quartz vein with massive pyrrhotite and stringer chalcopyrite.	Po	10	Massive
				Cpy	2	Stringer
1227.15	1245.81	18.65	Biotite-epidote altered basalt cross cut by calcite veins. Trace chalcopyrite and pyrrhotite.	Cpy	0.5	Blebby
				Po	0.5	Blebby

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TABLE 3 Visual Estimate of Sulphide Mineralisation by Type from Alteration Zones in LEFD007a

From (m)	To (m)	Interval (m)	Description	Mineral	Logged Visual Estimate (%)	Style
0.0	53.9	53.9	Mud rotary pre-collar. No sample.			
83.1	92.7	9.6	Epidote-chlorite altered high-Mg basalt with trace chalcopyrite.	Cpy	0.5	Blebby
92.7	96.5	3.8	Epidote-chlorite-calcite altered high-Mg Basalt with trace chalcopyrite.	Cpy	0.5	Blebby
96.5	96.9	0.5	Epidote altered high-Mg basalt with 3% chalcopyrite.	Cpy	3	Blebby
110.1	113.6	3.5	Epidote-calcite altered high-Mg basalt with trace pyrite.	Py	0.5	Blebby
116.7	122.0	5.3	Epidote-gypsum-calcite altered basalt with trace chalcopyrite.	Cpy	0.5	Blebby
122.0	128.3	6.3	Epidote-gypsum-calcite altered basalt with oxidised sulphides and blebby chalcopyrite.	Cpy	0.5	Blebby
128.3	131.0	2.6	Epidote-gypsum altered basalt with trace chalcopyrite.	Cpy	0.5	Blebby
149.2	184.0	34.9	Epidote-chlorite altered baslt with native copper in fractures and blebby pyrite and chalcopyrite.	Cu	1	Fracture fill
				Cpy	1	Blebby
				Py	1	Blebby
184.0	186.9	2.9	Epidote-calcite altered basalt with vein chalcopyrite.	Cpy	3	Vein
186.9	205.6	18.7	Epidote-gypsum-pink calcite-magnesite altered basalt with chalcocite, pyrite and chalcopyrite.	Py	0.5	Blebby
				Ce	0.5	Fracture fill
				Cpy	0.5	Blebby
205.6	207.2	1.7	Epidote-biotite-calcite altered basalt that is brecciated. Native copper in fractures.	Cu	0.5	Fracture fill
207.2	223.5	16.3	Epidote-gypsum-calcite-magnesite-magnetite altered basalt with native copper in fractures.	Cu	1	Fracture fill
223.5	224.0	0.4	Magnetite-epidote-gypsum altered basalt that is brecciated. Trace chalcopyrite. Native copper in fractures in association with gypsum.	Cu	0.5	Fracture fill
				Cpy	0.5	Blebby
224.0	230.8	6.8	Magnesite-epidote-gypsum altered basalt with fracture fill native copper in	Cu	0.5	Fracture fill
			Cpy = Chalcopyrite, Py = Pyrite, Ce = Chalcocite, Cu = Native Copper			

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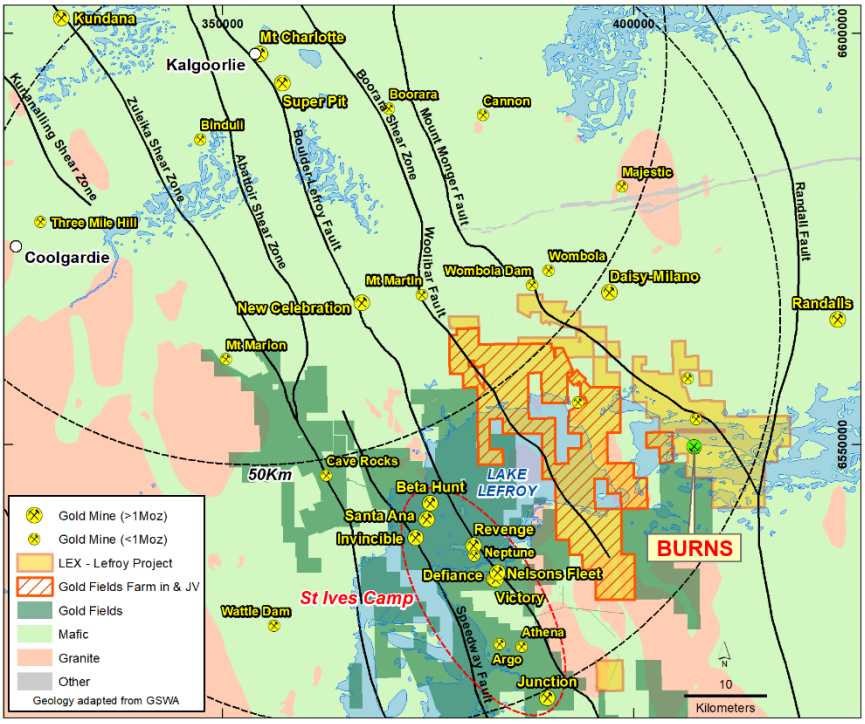
About Lefroy Exploration Limited and the Lefroy Gold Project

Lefroy Exploration Limited is a WA based and focused explorer taking a disciplined methodical and conceptual approach in the search for high value gold deposits in the Yilgarn Block of Western Australia. Key projects include the Lefroy Gold Project to the southeast of Kalgoorlie and the Lake Johnston Project 120km to the west of Norseman.

The 100% owned Lefroy Gold Project contains mainly granted tenure and covers 534km^2 in the heart of the world class gold production area between Kalgoorlie and Norseman. The Project is in close proximity to Gold Fields' St Ives gold camp, which contains the Invincible gold mine located in Lake Lefroy and is also immediately south of Silver Lake Resources' (ASX:SLR) Daisy Milano gold mining operation. The Project is divided into the Western Lefroy package, subject to a Farm-In Agreement with Gold Fields and the Eastern Lefroy package (100% Lefroy owned). The Farm-In Agreement with Gold Fields over the Western Lefroy tenement package commenced on 7 June 2018. Gold Fields can earn up to a 70% interest in the package by spending up to a total of $25million on exploration activities within 6 years of the commencement date.



Location of the Lefroy Gold Project relative to Kalgoorlie. The Western Lefroy tenement package subject to the Gold Fields joint venture, and Gold Fields tenure is also highlighted

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Lefroy Exploration

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Notes Specific-ASX Announcements

The following announcements were lodged with the ASX and further details (including supporting JORC Reporting Tables) for each of the sections noted in this Announcement can be found in the following releases. Note that these announcements are not the only announcements released to the ASX but specific to exploration reporting by the Company of previous exploration at Burns at the Lefroy Gold Project.

- Outstanding High-Grade Gold and Copper Mineralisation Intersected at Burns: 23 February 2020
- Exploration Update-Drilling Extends Porphyry at Burns: 26 March 2021
- Drill Results Extend Copper Gold Zones at Burns: 29 April 2021
- Multiple Intervals of Altered Porphyry Intersected at Burns: 3 May 2021
- Burns Drilling Update-first hole on 40N section confirms significant mineralisation extends to the north: 18 June 2021
- Exploration Update-RC drilling commences at the Burns Cu Au prospect: 20 July 2021
- Burns Update-Cu-Au mineralisation confirmed on 0N section, step out drilling extends system: 2 August 2021
- June 2021 Quarterly Activities Report: 28 July 2021
- Exploration Update-Advancing the Burns and Coogee South Prospects: 18 August 2021
- Results from 40N section Further Enhance Burns Cu-Au System: 21 September 2021
- Multiple magnetic anomalies highlight 3000m trend at Burns: 28 September 2021
- Drill testing of multiple magnetic targets underway at Burns: 5 October 2021
- Massive drilling planned for the Western Lefroy JV:13 October 2021
- Burns Update-Drill Results continue to support larger Cu-Au-Ag system: 3 November 2021
- Burns Update Drilling underway at Lovejoy anomaly: 22 November 2021
- Major Drilling Programs Recommenced at Lefroy: 19 January 2022
- RC Drill Results Outline New Gold Zone at Burns: 25 January 2022
- High-Grade results expand the Burns Cu Au System: 21 February 2022
- Impressive Au-Cu intersection in New RC Hole at Burns: 19 April 2022
- AC Drill Results Continue to Expand the Burns Gold-Copper System Beneath Lake Randall: 4 July 2022
- Exploration Update 1200m Deep Diamond Hole Underway at Burns :12 July 2022
- Burns 1200m Diamond Drill hole Update: 1 August 2022

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 Lefroy Exploration 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

END

JORC CODE, 2012 Edition-Table 1 Report –Lefroy Project –Burns Cu-Au Prospect LEFD006 Diamond Hole

SECTION 1: SAMPLING TECHNIQUES AND DATA

Criteria	JORC Code Explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	• The sampling noted in this release has been carried out using Diamond drilling (DD) at the Burns Copper (Cu) – Gold (Au) prospect. The drill program is attached this ASX release and reports on holes LEFD006 and LEFD007a. Hole depths and collar details are detailed in Table 1 of the report. • Sampling and QAQC protocols as per industry best practice with further details below. DD was conducted utilising HQ and NQ sized core as the pre-collar drilled into fresh competent rock. This was left to drillers' discretion. Core was collected in core trays where it was marked up and logged by the supervising geologist. It was noted that there was excellent core recovery and only minor zones of core loss which were recorded by the geologist. Hole LEFD006 has been sampled to 1100m. Cutting and sampling is completed by first cutting the core in half using an Almonte core saw and collected in calico bags with a minimum sample width of 0.2m and a maximum 1.2m to produce a 2-4kg sample through the interpreted mineralised zone. Once at the lab samples will be dried, crushed and prepared to produce a 40g charge for fire assay analysis for gold (Au) by Atomic Absorption Spectrometry (AAS). Additional elements, will derived using a mixed acid digest with ICP finish for Cu, Ag, As, Mo, Fe, Pb, S, Te, W and Zn.
Drilling techniques	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• The diamond drilling (DD) is being drilled by Raglan Drilling (Kalgoorlie). The diamond holes were commenced using mud rotary to approximately 60m, then HQ sized core. NQ sized core was primarily used as core was generally competent. Accurate bottom of hole orientation marks were captured using an Ace tool.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• Diamond core was measured and compared to drilled interval indicated by the drillers. From this, a percentage of recovery can be calculated. Where core loss occurred, this has been diligently noted by the drill crew and geologist. • The use of professional and competent core drilling contractors minimised the issues with sample recoveries. An honest and open line of communication between the drill crew and the geologist allowed for a comprehensive understanding of where core loss may have occurred.
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	• Detailed logging of, regolith, lithology, structure, veining, alteration, mineralisation and recoveries recorded in each hole by qualified geologist. • Hole LEFD006 was logged for the entire length. Logging of LEFD007a is underway. • Diamond core underwent detailed logging through the entire hole with data to be transferred to the Lefroy drilling database after capture • Analysis of rock type, colour, structure, alteration, veining and geotechnical data were all routinely collected. • Geological logging is qualitative in nature and relies on the geologist logging the hole to make assumptions of the core character based on their experience and knowledge. • Recovery, RQD (rock quality designation) and magnetic susceptibility measurements were recorded and are considered to be quantitative in nature. • Core within the core trays for each hole was photographed using a purpose made camera stand and a quality digital SLR camera and stored in the database. • All drill holes are logged in their entirety (100%).

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Criteria	JORC Code Explanation	Commentary
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	**DD** • Half drill core has been sampled and placed in numbered calico bags. • Sample intervals are determined by the logging geologist on nominal 1m intervals. Care is taken to ensure samples are representative of lithological and mineralised boundaries. • Sampling is checked by both field staff and geologist. • Field duplicates are not taken for half diamond core. • The remaining half core is retained in core trays for future reference.
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	• The DD Samples will be analysed for gold using the 40gram Fire Assay digest method with an AAS finish at Bureau Veritas's Perth Laboratory. Additional elements, will derived using a mixed acid digest with ICP finish for Cu, Ag, As, Mo, Fe, Pb, S, Te, W and Zn. • Selected samples were analysed for an additional 61 elements using a mixed acid digest with ICP-MS finish. • Quality control process and internal laboratory checks demonstrate acceptable levels of accuracy. • Certified standards and blanks are inserted into sample batches by LEX staff at regular intervals. At the laboratory regular assay repeats, lab standards, checks and blanks are analysed. • Results of the sample analysis have not yet been received.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• Capture of field logging is electronic using Toughbook hardware and Logchief software. Logged data is then exported as an excel spreadsheet to the Company's external database managers which is then loaded to the Company's DATASHED database and validation checks completed to ensure data accuracy. Assay files are received electronically from the laboratory and filed to the Company's server and provided to the external database manager. • No assay data to report
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• Drill hole position was surveyed using a GPS operated by the rig geologist/field assistant. Post drilling, drill hole collars are surveyed using a DGPS by a third-party contractor. Down holes surveys are completed by Raglan drill crew using a multi-shot gyro which records a survey every 30m down the hole during the drilling. • Grid System – MGA94 Zone 51. Topographic elevation captured by using the differential GPS.
Data spacing and distribution ***Data spacing and distribution***	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	• Mineralisation at the Burns prospect is primarily hosted by a magnetite-biotite altered High Mg basalt which has been intruded by a later felsic to intermediate porphyry intrusion. The contacts of which are not uniform however the intrusion appears to be roughly vertical. Mineralisation is predominantly Cu plus Au. There is an association between Cu and Au mineralisation but they can occur independently of one another. There is a strong upgrade of Cu and Au in the supergene environment approximately 50-100m down-hole and this is typically flat in its orientation. A primary system (hypogene) occurs in the fresh rock below 100m depth and at this stage the orientation and main controls on mineralisation is not known. It is thought that the mineralisation may dip toward the west-south-west and plunge toward the south-east, hence the drill orientation toward the east.

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Criteria	JORC Code Explanation	Commentary
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• The roughly east-west orientated drill traverses considered effective to evaluate the roughly north-south to north-west south-east trending stratigraphy. • The drill orientation is a more effective test of "true" width of the host rock due to the fact the host rock unit is striking roughly North-West/South-East. • At this stage the primary controls on the hypogene copper-gold (Cu-Au) system are not completely understood, however analysis of previous drilling in conjunction with this drilling have determined the drill hole orientation is optimum to determine the true width of mineralisation and improve geological knowledge of the system.
Sample security	• *The measures taken to ensure sample security.*	• Samples were bagged in labelled and numbered calico bags, collected and personally delivered to the Bureau Veritas Laboratory (Kalgoorlie) by Company field personnel. Samples were then on sent to the BV lab in Perth. Samples were then sorted and checked for inconsistencies against lodged Submission sheet by Bureau Veritas staff. • Bureau Veritas checked the samples received against the Lefroy Exploration Limited (LEX) submission sheet to notify of any missing or extra samples. Following analysis, the sample pulps and residues are retained by the laboratory in a secure storage yard.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• 1m intervals of core have been sampled from 60m to 1100m • The Managing Director and Senior Geologist reviewed the logging of LEFD006 and LEFD007a.

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Section 2: REPORTING OF EXPLORATION RESULTS – LEFROY PROJECT- Burns Cu-Au Prospect LEFD006 Diamond Drilling program

Criteria	JORC Code Explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• The Lefroy Project is located approximately 50 km in south east from Kalgoorlie, Western Australia and consists of a contiguous package of wholly owned tenements held under title by LEX or its wholly owned subsidiary Monger Exploration Pty Ltd. The work described in this report was completed on Exploration lease E 15/1715. • E 15/1715 is held 100% by Monger Exploration Pty Ltd a wholly owned subsidiary of Lefroy Exploration Limited • The tenements are current and in good standing with the Department of Mines and Petroleum (DMP) of Western Australia.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• 1968-1973 BHP: The earliest recognition of the magnetic anomaly was by BHP. The area fell within TR 3697, which had been taken up for nickel. The anomaly stood out on the BMR aeromagnetic contoured plans and BHP was testing aeromagnetic anomalies that could have an ultramafic source. The anomaly was confirmed by ground magnetics but an attempt to drill test with two percussion holes failed to identify any bedrock and no further work was attempted. • 1984 Coopers Resources/Enterprise Gold Mines: The ground encompassing Burns was taken up as three Els, E15/19-21. • 1985 BHP: BHP farmed into E15/21 having re-interpreted the magnetic feature as a potential carbonatite. BHP's E15/57 covered the western one third of the anomaly. Following ground magnetic traverses, BHP drilled two diamond core holes, LR 1 and 2. LR 1 falls within Goldfields E15/1638 and LR 2 falls within P15/6397. The results, which are covered in the next section, did not indicate a carbonatite and so BHP withdrew their interest in the area. • 1985-1989 CRAE: Meanwhile CRAE was conducting exploration for gold on adjacent tenements and had engaged Jack Hallberg to carry out geological mapping. He mapped suites of intermediate dykes (plagioclase-quartz-hornblende porphyry) intruding basalt in outcrops to the north west of Burns. • 1992: M. Della Costa took up E15/304 over aeromagnetic anomalies including Burns. The EL was vended into Kanowna Consolidated Gold Mines as part of the St Alvano project. • 1996-2001 WMC: WMC joint-ventured into the St Alvano project, which comprised a total of 12 ELs. They flew 50m line-spaced aeromagnetics and engaged EHW to interpret. Burns was not highlighted as such but the magnetic anomalies forming portions of the annular ring were tested with air core, leading to the discovery of the Neon prospect. Subsequent to the EHW study a gravity survey was conducted which did identify the Burns intrusive as a gravity low. • 2001-2003 Goldfields: Goldfields took over exploration and conducted further air core drilling at Neon. They identified S11 as a target to the south of Burns. The target was secondary gold dispersion in weathered bedrock associated with magnetite enrichment. A series of north-south air core traverses were drilled on 640 X 160m. Results were regarded as disappointing and the project was dropped. • 2005-2008 Gladiator Resources: The area was taken up by Sovereign following their assessment of previous work. They identified Homer's Inlet and the S11 area as priority targets. In 2007 a JV was established with Newmont/Sipa covering the gold rights. In 2008 the southern and eastern sectors of W15/774 was surrendered and taken up as E15/1030. The northern sector including Burns was surrendered. • 2008 Gold Attire: The ground surrendered by Sovereign over Burns was taken up as E15/1097.

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Criteria	JORC Code Explanation	Commentary
		• 2008-2010 Newmont: Newmont joint ventured into the Sovereign and Gold Attire ELs. It conducted an 800 X 400m gravity survey to trace a north-south "Salt Creek-Lucky Bay" corridor through the tenements. This was tested by four lines of aircore on 640 X 160m spacing. Two aircore traverses on a 1200 X 320m spacing were also and conducted across the interpreted intrusion and the surrounding magnetic halo. Infill drilling was conducted following up on the 2.0m @ 5.0 g/t Au intercept in a Goldfields hole, SAL 1089. The hole was re-entered and a diamond core tail drilled. This hole falls just inside E15/1638 close to the boundary with P15/6397. • 2010-2019 Octagonal Resources: Three phases of AC to define a gold in regolith anomaly east of the main intrusive body. Two phases of RC identified Ag-Cu-Au mineralisation on four sections spaced approx. 40m apart. The drilling recognised Cu mineralisation which due to the host rock association, Octagonal believed there was potential for a much larger intrusion related system so the emphasis was switched from orogenic gold style exploration to predominately copper focussed intrusion related hosted mineralisation. In 2013 surface geophysical techniques were applied looking for conductors that might represent massive sulphides. Ground EM failed to identify any bedrock conductors, but the magnetic surveys did identify anomalies. In 2014, a diamond core hole, OBUDD001, was drilled at -60 degrees to 090 east to 401.5m in order to test the source of the magnetic anomalism, which occurred within the area tested by the RC drilling. It intersected a 3.6m wide zone of mafic-dominant breccia including 0.9m of massive magnetite-chalcopyrite which returned 4.5 g/t Au, 2.6% Cu from 256.4m, within a low-grade zone of 55.95m @ 0.5 g/t Au and 0.2% Cu from 229.85m It was interpreted to be a west-dipping structure and the feeder conduit for the mineralization. A second zone of low-grade mineralization of 38.5m @ 0.5 g/t Au and 0.2% Cu was intersected from 184.5m. An EIS grant in 2015 and a loan from a third-party company allowed for two more DD holes to be completed, however by 2016 the Company was acquired by the third-party loan company and subsequently delisted from the ASX.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The Lefroy Project is located in the southern part of the Norseman Wiluna Greenstone Belt and straddles the triple junction of three crustal units, the Parker, Boorara and Bulong Domain. The Lefroy project tenements are mostly covered by alluvial, colluvial and lacustrine material with very little outcrop. Burns is proximal to the Lake margin and is subsequently under >20-25m of lake sediment and surface sand dune cover. A stripped profile below this cover means that there is no significant dispersion or oxide component to the Burns prospect. Mineralisation is hosted with a High Mg Basalt and in an intermediate composition porphyry which intrudes the basalt. Mineralisation is primarily gold associated with magnetite alteration and copper occurring as native copper and chalcopyrite in veins and veinlets throughout the basalt and porphyry.
Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* • *easting and northing of the drill hole collar* • *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* • *dip and azimuth of the hole* • *down hole length and interception depth* • *hole length.* • *If the exclusion of this information is*	• Table containing drill hole collar details are included in the Table in the body of the announcement. • No Information has been excluded. • Table 1 of drill hole collars completed by Lefroy is noted in this announcement.

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Criteria	JORC Code Explanation	Commentary
	justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low-grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• No assay data to report for holes LEFD006 and LEFD007a that is in progress
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	• All historical results are based on down-hole metres. • Previous drill coverage has provided guidance for the presence of steeply dipping geology comprising a package of rocks containing basalt intruded by diorite porphyry. The data from this and modelling of prior ground magnetic data provides support for orientation of the drilling. Results from this drill program do not represent 'true widths' however holes are designed to intercept the host sequence perpendicular to its strike.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• Appropriate summary diagrams (plan) are included in the accompanying announcement.
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• No assay data to report from holes LEFD006 and LEFD007a.
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• All relevant data has been included within this report.
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• The appropriate next stage of exploration planning is currently underway and noted in the body of the report. • The diamond drill program is ongoing.

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