Ardea Resources Limited

QUARTERLY OPERATIONS REPORT

For the Quarter ended 30 September 2020

ASX & Media Release

27 October 2020

ASX Symbol

ARL

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Issued Capital

Fully Paid Ordinary Shares
127,670,582

Directors/Employee Performance Rights
3,711,000

ABN 30 614 289 342

CORPORATE

Workflows on Ardea's Western Australian project portfolio, notably RC drilling programs, continue with no disruption from COVID-19.

$4.8M raised from Placement and Share Purchase Plan (SPP) before costs[1].

Cash position at the end of the September Quarter was **$11.6M** with a further $1.3M raised post Quarter end via the SPP. Funds raised are being used to accelerate gold exploration and resource definition drilling, whilst budgeted funding continues on GNCP development work and nickel sulphide exploration.

DEVELOPMENT

Goongarrie Nickel Cobalt Project (GNCP)

- **Strategic Partner** process is being assisted by improved sentiment around increased nickel prices, with Ardea able to customise project scale and end product specifications to meet the needs of the preferred project partner to ensure secure, ethical, long-term supplies of nickel and cobalt.
- **Project Enhancements** continue and include the Goongarrie Line and Highway resource updates, targeting >1% nickel leach feed grade and plant optimisation predicated on mineralised neutraliser.

EXPLORATION

WA Gold and Nickel Sulphide

Emerging gold discoveries and a pipeline of compelling nickel-copper-PGE sulphide targets defined, with active exploration programs ensuring strong results.

- **Bardoc Tectonic Zone Gold (BTZ)** – First-pass RC drilling at the Aphrodite North and Grafter areas has returned significant gold mineralisation below transported cover, including[2]:
  - AANR0001: **6m at 3.60g/t Au** from 44m;
  - AANR0001: **8m at 4.94g/t Au from 172m to end of hole**;
  - AANR0002: **10m at 1.52g/t Au** from 76m; and
  - ABFR0286: **8m at 6.57g/t Au** from 24m.
- **Priority follow-up RC drilling program completed** on 20 October 2020 with 44 holes drilled on six different gold targets for 5,819m. Assay results are awaited.
- **Excellent Metallurgical Results** from Big Four Gold with overall gold extractions of 97.7% and no refractory issues or deleterious contaminants.
- **CSIRO behaviour of gold within GNCP study commenced.**
- **Nickel Sulphide** initial targeting review completed with several compelling targets identified. Follow-up ground EM and DHEM surveys are scheduled for the December 2020 Quarter, along with diamond drilling at Emu Lake where historic drill hole intersections confirm nickel sulphide fertility and project prospectivity.

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[1] ASX release 9 October 2020
[2] ASX release 13 and 24 August 2020

September Quarter, 2020

Nickel Sector Commentary

Consumers continue to demand supply chain transparency to ensure sustainable, ethically sourced minerals are used in goods that they purchase. This factor is particularly relevant to the lithium-ion battery (LIB) supply chain where purchasers of electric vehicles (EV) need to ensure that the mineral components are ethically sourced. The most critical mineral component of lithium-ion batteries (LIBs) is nickel, as the global resources and reserves are in the least abundance.

Nickel is an essential ingredient in LIBs, as it helps provide critical range and battery life. With Ardea's Kalgoorlie Nickel Project hosting one of the largest nickel-cobalt resources in the developed world, **773Mt at 0.7% nickel and 0.05% cobalt (5.5Mt of contained nickel metal and 405kt of contained cobalt metal)**‡, Ardea is well placed to provide essential supplies of ethically sourced nickel and cobalt, along with other Critical Minerals (notably scandium).

1. GOONGARRIE NICKEL COBALT PROJECT

The Goongarrie Nickel Cobalt Project (GNCP) is located 70km north of the mining city of Kalgoorlie-Boulder and is Ardea's most advanced development project, within the broader Kalgoorlie Nickel Project (KNP) (Figure 1 and 3). GNCP resources extend over 25km of strike and are located on granted mining leases (Figure 1) with Native Title Agreement in place with tenure controlled 100% by Ardea, with no encumbrances. The project also has mobile coverage and ready access to high quality infrastructure with the Goldfields Highway, rail line and power infrastructure passing through the project area (Figure 2). The Goldfields gas pipeline is located some 30km to the east (Figure 3).

Feasibility Programs

Ardea's "**WINNER**" (Water, In-pit Neutraliser and Nickel Enhanced Reserve study) strategy continues with a focus on leveraging off Ardea's extensive reserve and resource base additional to its flagship GNCP. Other projects within short haulage distance of the planned GNCP High Pressure Acid Leach (HPAL) process plant, initially the Highway and Siberia North deposits, are being appraised for selective high-grade (>1% nickel) plant feed.

The aim is to optimise plant feed grades to a 2Mtpa HPAL plant exceeding 1% nickel for at least 15 years. Options such as developing a second 2Mtpa HPAL train will also be considered, dependent upon the needs of the successful Strategic Partner. Ardea is in a unique position of having this resource optionality due to the large size and exceptional quality of the nickel and cobalt resources, facilitating high grading and selective recovery of key geo-metallurgical mineralisation types.

Resource Modelling

Resource modelling is continuing on the Goongarrie Hill and Highway nickel-cobalt deposits. Goongarrie Hill is the northernmost zone of nickel-cobalt-scandium mineralisation on the 25km long Goongarrie Line (Figure 1) and Highway is located only 30km north, with ready access via the sealed Goldfields Highway. Drill pulp assay results have been received for Critical Minerals including scandium and Rare Earth Elements (REE) and are to be quantified. These are being incorporated into the updated resource models leading to flow-sheet modifications to potentially recover additional by-product metals.

‡ See Appendix 1 for resource breakdown, last disclosed in Ardea 2019 Annual Report, ASX Release 24 October 2019.
Per Goongarrie Expansion Study ASX release, 24 July 2018. All the material assumptions underpinning the forecast financial information derived from a production target, in the initial public report referred to in rule 5.17 continue to apply and have not materially changed.

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High Grade Mine Schedule

Goongarrie and Highway will be included in the Life of Mine (LOM) plan and updated mining study once the resource updates have been completed, with the aim of maintaining HPAL feed grades over 1% nickel.

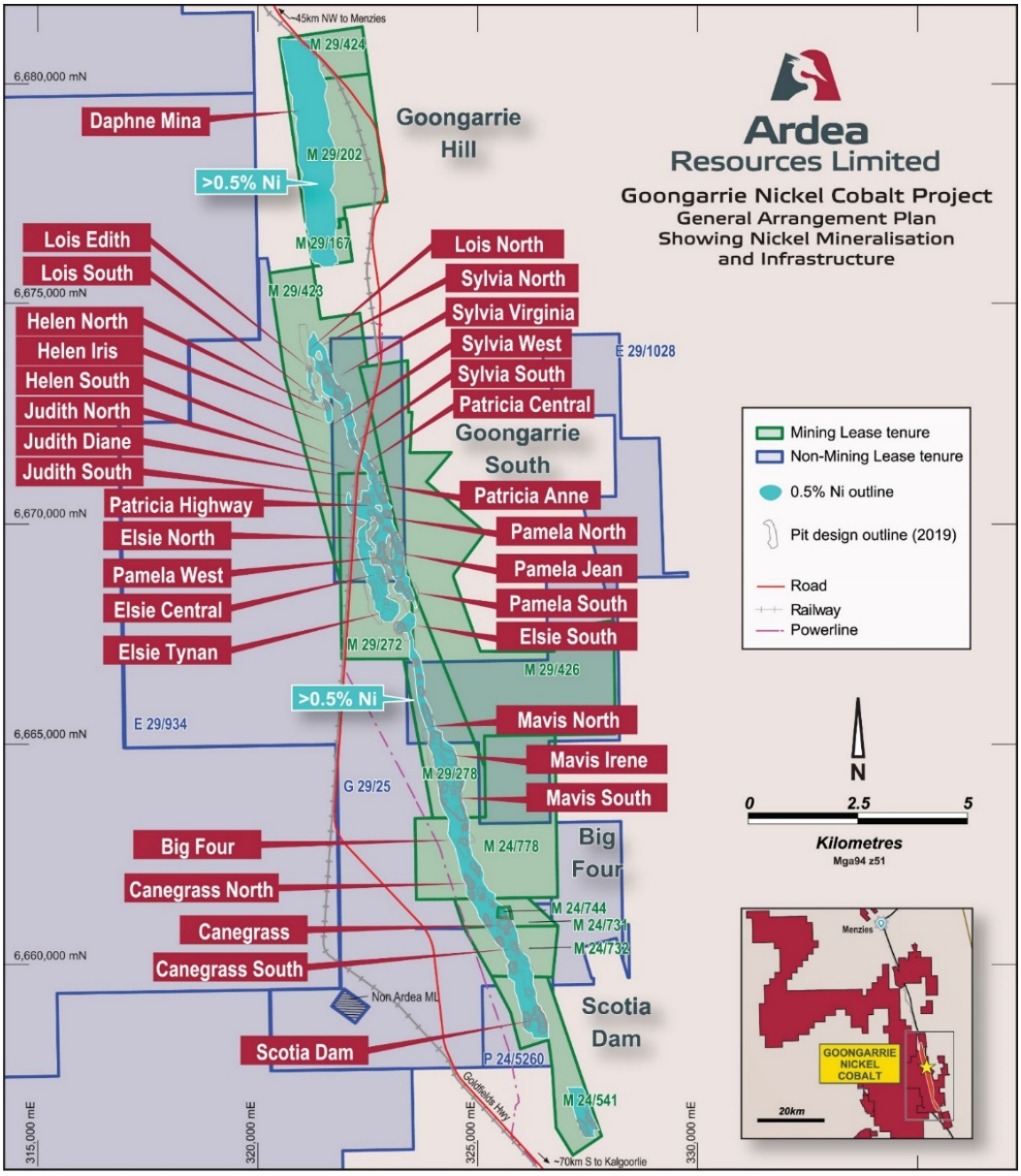

Figure 1: GNCP general arrangement plan highlighting the extensive zones of nickel mineralisation and current open pit mine designs at Goongarrie South, Big Four and Scotia Dam. Projection GDA94 MGA94 Zone 51.

Figure 2: Aerial image of Ardea's GNCP looking south, showing road and rail infrastructure within the project and the semi-arid environment, ideal for project development.

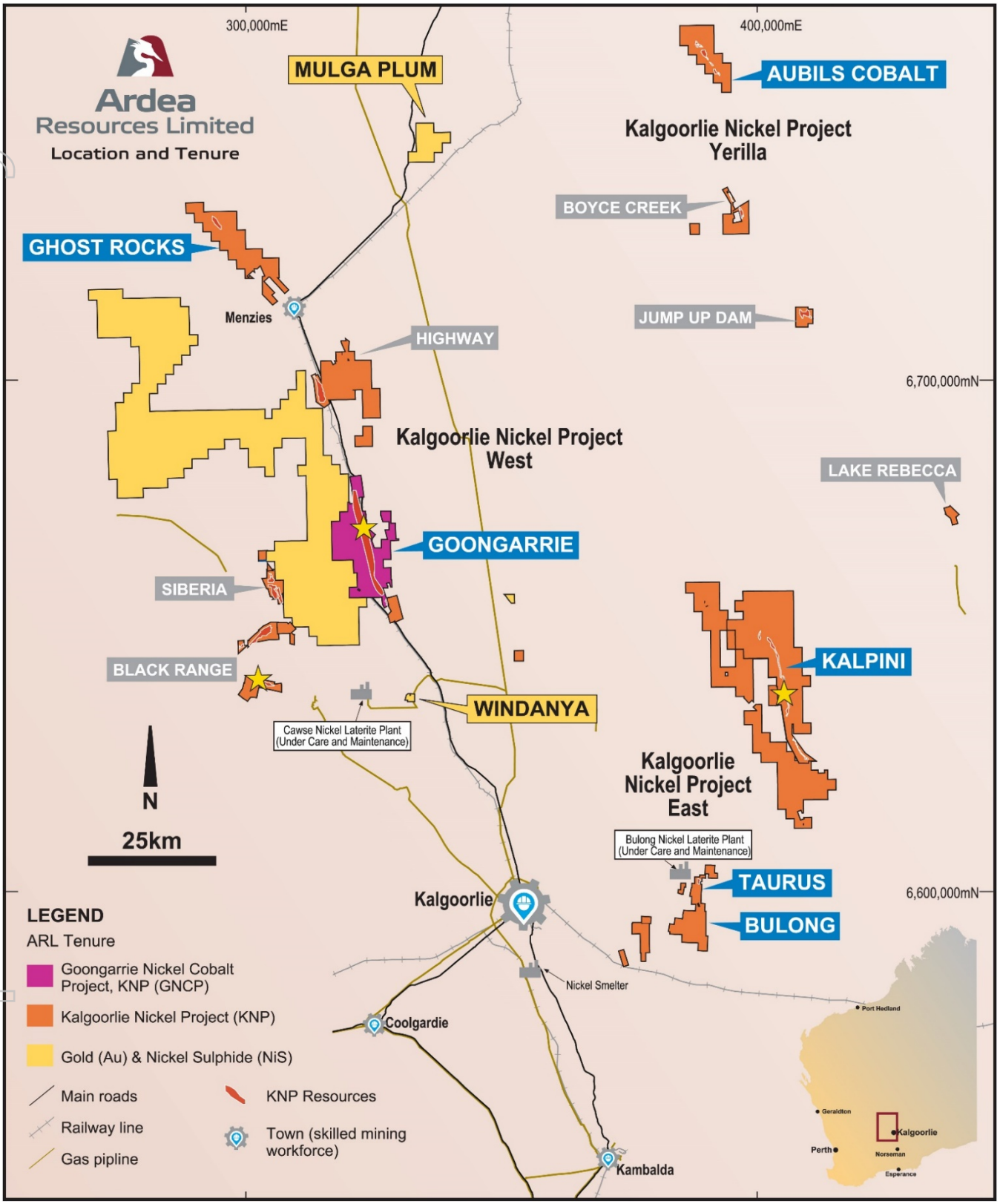

Figure 3: KNP location and infrastructure plan. Projection GDA94 MGA94 Zone 51.

Water Studies

During the Quarter, 76 water samples were collected and submitted for detailed analysis from 12 different GNCP tenements. This data is being used to refine process water sources for future project development.

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Processing Research and Development

The Research and Development (R&D) focus continues on Critical Minerals essential for new age technologies used in limiting carbon emissions, such as the Electric Vehicle (EV), Static Storage Battery (SSB) and wind-turbine sectors.

Highly-sought Critical Minerals potentially within the KNP lateritic enrichment profile include:

- Nickel-manganese-cobalt (NMC) content in LIB cathodes;
- EV electric motor REE magnet metals notably Nd-Pr, KNP has common Ce, and potential for Dy, La, Tb.
- Scandium for scandium-aluminium lightweight-high strength EV chassis;
- High Purity Alumina (HPA) for sapphire glass in EVs and mobile devices such as phones and computers;
- Vanadium for SSBs;
- Critical Minerals targets identified within the KNP include:
  - Ba, Cr, Ga, In, Mo, Te, Ti, W, Y, Zr; and
  - Extra PGEs - Ru, Rh, Os (due to excessive assay cost, using Pt-Pd as a pathfinder in pulp re-assay).

Critical Minerals

Ardea continues to engage with the Commonwealth Critical Minerals Facilitation Office with the GNCP featured in the recently released Australian Critical Minerals Prospectus 2020. Research continued on the Ardea drill hole data base, defining multiple Critical Minerals REE settings. The REE enrichment mirrors nickel-cobalt enrichment at the Magnesia Discontinuity within the regolith profile. The R&D programs have focussed on REE recovery (notably cerium, neodymium and praseodymium) in parallel circuit with scandium (using Ion Exchange).

Drill assay pulps continue to be systematically re-assayed throughout the KNP on an approximate 80mx80m to 160mx80m collar spacing. During the Quarter, another 768 KNP pulps were sourced from Ardea's Kalgoorlie storage facility and submitted for assay. Pulp assay results continue to be reviewed and interpreted.

2. WA GOLD AND NICKEL SULPHIDE PROJECTS

Ardea's WA mineral exploration tenure represents a strategic land holding in the Eastern Goldfields of WA, Australia's premier gold and nickel sulphide province. In addition to the laterite-hosted nickel-cobalt opportunities, Ardea's tenure also hosts significant "greenfields" gold and/or nickel sulphide mineralisation (Figure 3, 4, 8 and 12).

The following summary updates Ardea's main WA projects detailing work undertaken during the September 2020 Quarter.

Ardea gold strategy

Ardea's GNCP nickel laterite deposits are unusually localised upon crustal-scale Tectonic Zones (TZ), which structures control geological events from initial olivine komatiite rift volcanism, epiclastic sedimentation, Layered Mafic Complex dolerite emplacement, late stage diorite intrusion and finally through to the late stage crustal convective cells responsible for orogenic gold deposition.

The TZs are exceptional greenfields gold targets. The Bardoc Tectonic Zone (BTZ) is the northern strike continuation of the Boulder Lefroy TZ, which hosts major gold camps at Kalgoorlie-Boulder (>80Moz gold), New Celebration (3.2Moz) and the St Ives (6.5Moz).

Despite the obvious gold pedigree of Ardea's tenure, during the last 23 years it has been solely developed as a nickel-cobalt laterite project, with ownership and control successively by Heron Resources and then Vale Inco (PFS 2009). Until recently, there had been no systematic modern gold exploration.

With Ardea's acquisition of the project in 2017, for the first time in two decades, systematic gold evaluation commenced, through Ardea's gold and multi-element pathfinder assay suite and detailed geophysical data interpretation to help "see" through the cover lake sediments and blanket laterite.

In terms of developing a gold exploration model, Ardea's approach has highlighted the presence of intense deformation, iron-rich dolerite and late stage diorite intrusives within the GNCP, all the key elements for significant gold mineralisation within Kalgoorlie-Boulder's Eastern Goldfields gold province.

Ardea will continue to advance its gold strategy and has already defined over 100 targets, which have been ranked and are being systematically explored. The immediate priority is on the top ranked gold targets at the GNCP, where all drilling information helps provide critical information to assist with siting future project development infrastructure.

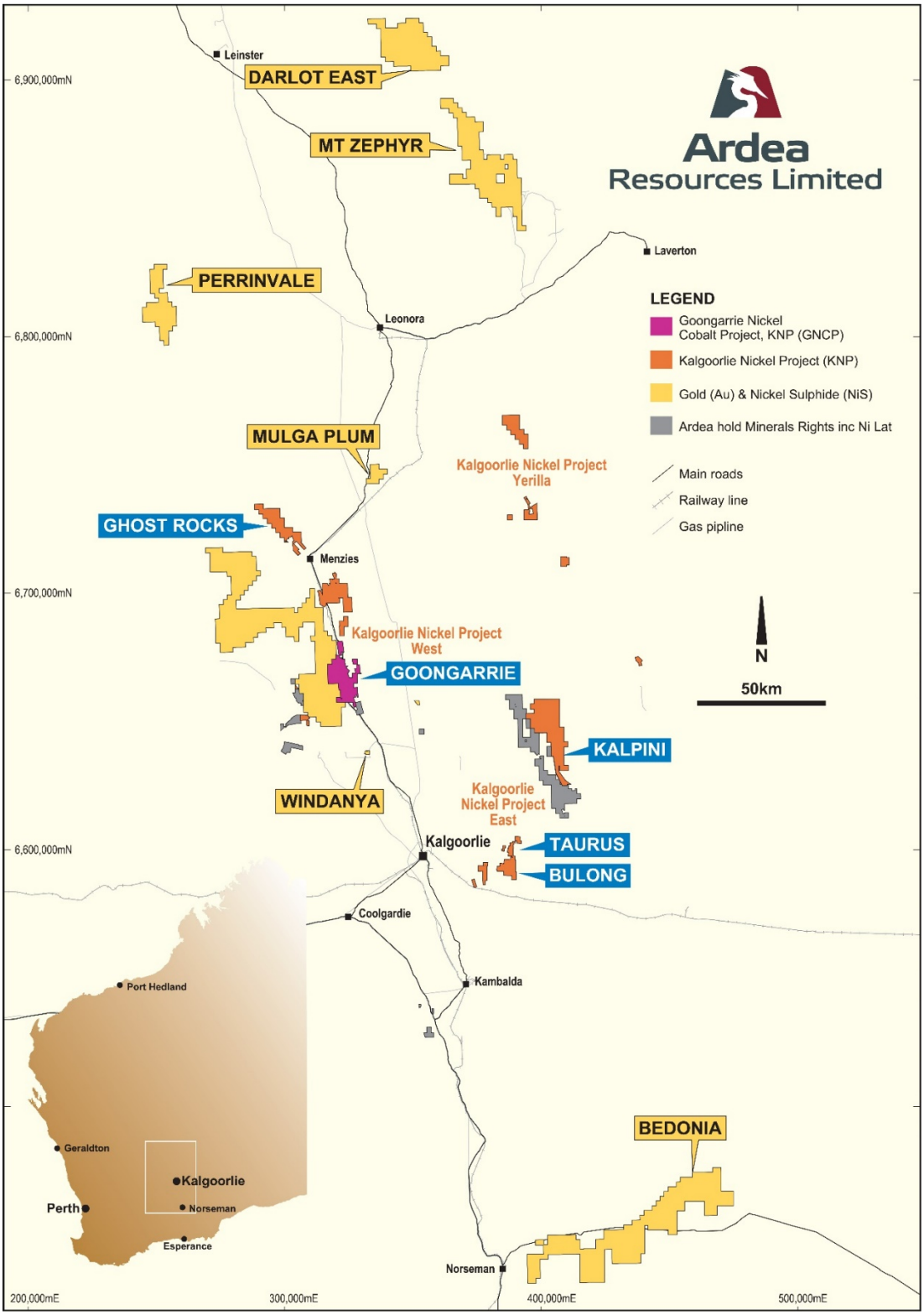

Figure 4: Ardea's Western Australian projects. Projection GDA94 MGA94 Zone 51.

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Bardoc Tectonic Zone Gold

The BTZ is a major, gold-fertile, crustal-scale structure that transects the Kalgoorlie Terrane of the Eastern Goldfields. The regional shear/fault system strikes from Paddington in the south to northwest of Ghost Rocks in the north and extends over an approximate 125km total strike length. Approximately 65km of this regionally significant structural zone occurs within Ardea tenure (Figure 5). Ardea's GNCP is unique among the world's lateritic nickel-cobalt deposits in that it has developed upon ultramafic rocks that are within and are a part of a major, crustal-scale gold-mineralised structure.

The BTZ typically dips moderately to steeply westward, hosting from south to north the historic gold mining centres at Paddington, Goongarrie, Comet Vale, Yunndaga, Menzies, Lady Irene and Lady Isobel within the Ghost Rocks project. To the south of Paddington, the BTZ is contiguous with the Boulder-Lefroy Fault (BLF) or Tectonic Zone, the host to the Kalgoorlie Golden Mile, New Celebration and St Ives gold mining centres and is considered to be part of a single gold-fertile crustal structural system stretching from St Ives in the south to Ghost Rocks in the north.

Gold exploration throughout the GNCP is using a systematic multi-disciplinary camp-scale approach to assess the obscured greenstone sequence. For reference, the modelled GNCP gold camp is around the strike-length of the St Ives gold camp and more than twice the strike-length of the Kundana gold camp (Figure 6).

In contrast to all of these established gold camps, there is almost no outcrop along the GNCP. Exploration methodology is comparable to the largely concealed Yamarna greenstone belt in the far east of the Eastern Goldfields (though there is far more outcrop at Yamarna). In its favour, however, exploration of the GNCP gold camp has the advantage of leveraging off the extensive but largely ineffective (for gold) GNCP historic drill programs and infrastructure rich location.

Gold exploration at Goongarrie is more challenging relative to more "traditional" outcropping areas due to the deep development of the laterite profile across the GNCP. The most effective exploration method at Goongarrie is a combined structural-geochemical target model, where the structural data is derived from interpretation of the Ardea magnetic datasets, and the geochemical data is derived from KNP drill hole assay suites (which currently is only very sparse for bottom-of-hole fresh rock samples).

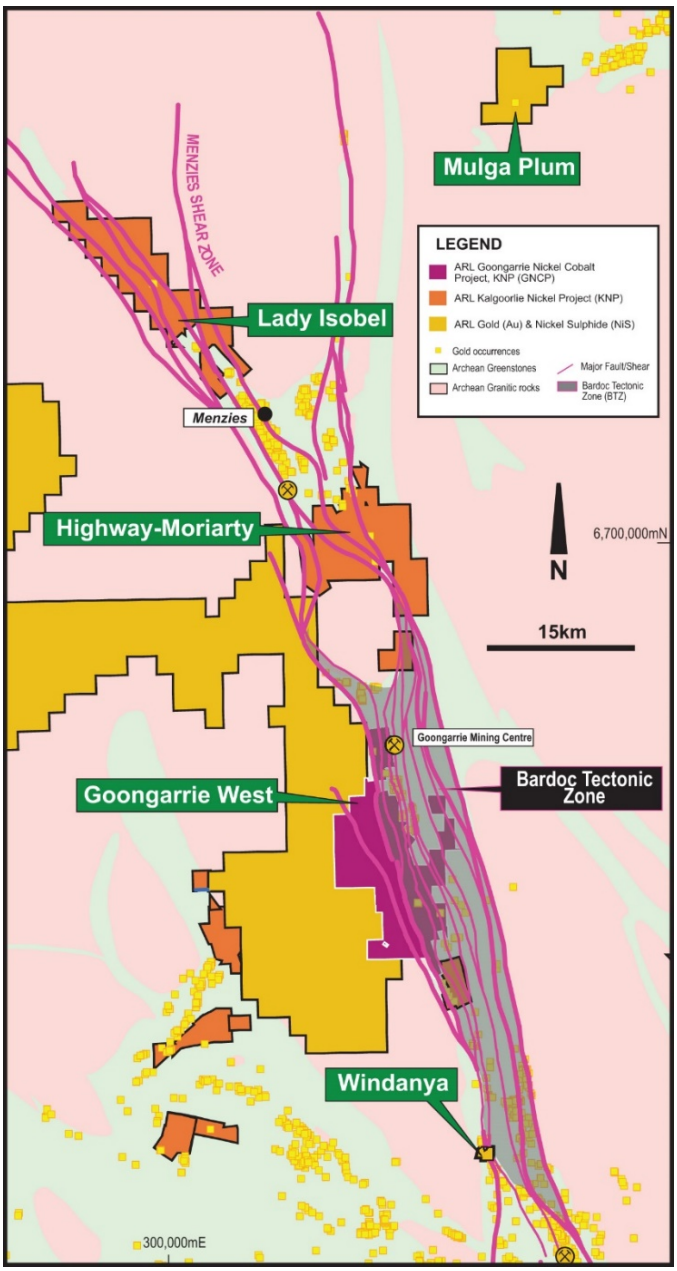

Figure 5: Ardea's BTZ tenure. Projection GDA94 MGA94 Zone 51.

Gold mineralisation in the Goongarrie South area can be best resolved primarily by geochemical dispersion and secondarily by structural trap identification. It was estimated that only minimal mineralisation may be identified through structural trap identification alone, chiefly because most controlling structures either do not contrast magnetically disparate units (therefore are locally invisible) or they are not resolvable even with Ardea's high-resolution aeromagnetic data. Hence gold re-assay of available historic drill-pulps is an important tool in furthering gold exploration, where historic nickel-cobalt laterite exploration and resource definition drilling has been completed, but did not assay for gold and critical gold pathfinder elements.

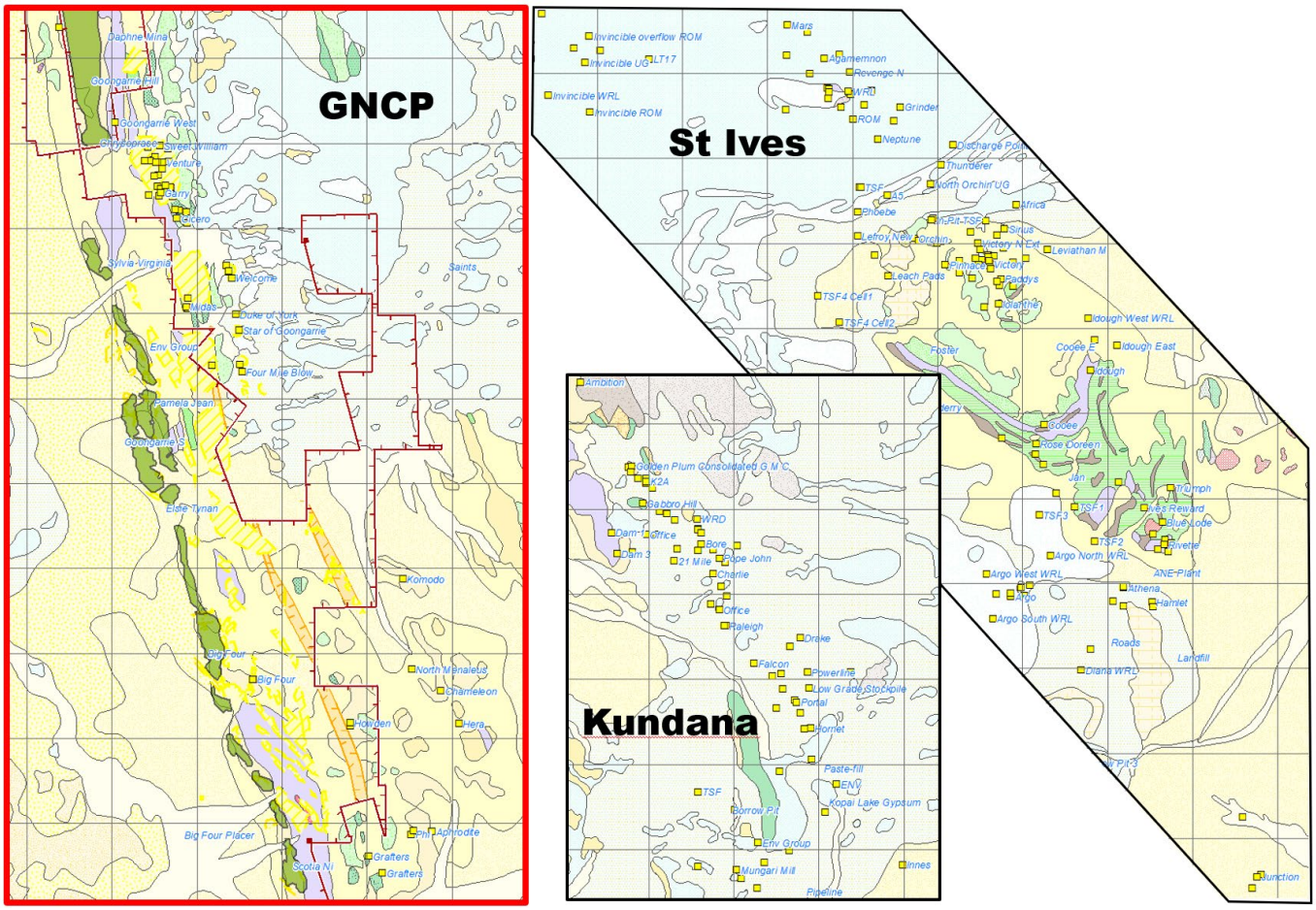

Figure 6: Comparison of various gold camps shown at the same scale as the GNCP. 2km grid. Olive green on the GNCP map are the nickel-cobalt deposits. Yellow squares show known gold occurrences.

Big Four gold prospect

The Big Four gold prospect is located 70km north northwest of the City of Kalgoorlie Boulder, within the footprint of the GNCP (Figure 8). Infill and extensional drilling completed by Ardea in January 2020 (ASX release 26 February 2020) and historic data collated by the Company enabled estimation of an Inferred Mineral Resource (ASX release 14 May 2020): 178kt at 2.7g/t gold, (0.5g/t Au cut off) for 15,300 oz gold. The deposit remains open down plunge to the north.

Definition of a gold resource at Big Four provides proof of concept of the gold mineralisation potential of the BTZ within Ardea's GNCP, which elsewhere is concealed by Quaternary sediments and the overprinting laterite profile.

During the Quarter the first ever metallurgical testwork was undertaken on four composite metallurgical samples collected from Ardea's 2020 RC drilling samples. Laboratory testwork employing industry standard (gravity-leach) procedures attained very high gold recoveries of 97.7% under conditions and reagent consumptions matching industry norms. No refractory issues or deleterious contaminants were identified. The results are highly encouraging,

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and indicate that the resource has potential to achieve reasonable prospects for eventual economic extraction of gold (ASX release 12 October 2020).

Elsie North gold prospect

Elsie North is located within the GNCP, just east of the Goldfields Highway. A review of earlier drilling defined a gap in the data where a subvertical mineralised gold lode structure may exist beneath a zone of supergene gold mineralisation. One, 154m RC hole was completed on 20 October 2020, with assay results awaited.

Grafter gold prospect

The Grafter gold prospect is an underexplored area, covering 3.7 x 1.5km at the south-eastern end of the GNCP (Figure 8). Around 80% of the area is covered by transported and laterite cover and has been interpreted from a combination of field work and desk top studies as a deformed mafic sequence highly prone to gold mineralisation. As the area was previously held by prospectors, there has been no modern systematic exploration. The Ardea exploration team have identified similar gross structural relationships to BTZ-BLF kinks as documented at the Paddington, Kalgoorlie and New Celebration gold camps.

Two first-pass RC exploration drill holes were completed at the northern most target, Lady Charlotte (Figure 7 and 8), in July 2020, before the rig was mobilised to the Aphrodite North area. The northernmost drill hole, ABFR0286 intersected, **8m at 6.57g/t Au** from 24m, with gold mineralisation defined in a completely oxidised supergene zone and open in every direction (ASX release 24 August 2020).

This was only the first of multiple targets to be drilled at Grafter, aiming to acquire geological data in an area of transported cover and limited outcrop. To follow-up on this encouraging start to drilling at Lady Charlotte, additional RC drilling was planned and resumed at Lady Charlotte on 29 September. Nine holes for 1,032m have been completed with assay results awaited.

Seven RC holes have also been completed for 876m at Target B and Target C (Figure 8), with assay results awaited.

Figure 7: RC drilling in progress at the Grafter, Lady Charlotte target.

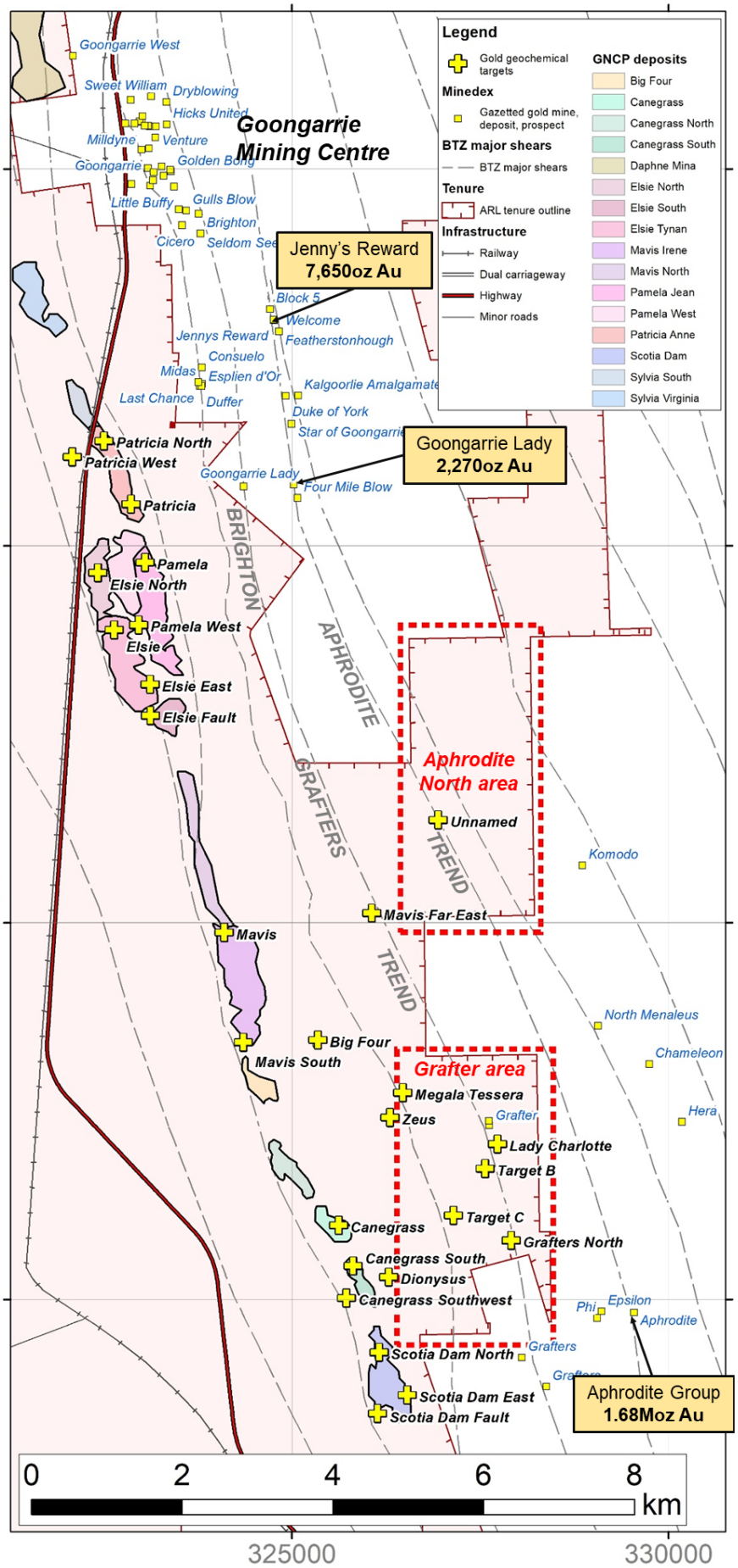

Figure 8: GNCP location plan, showing Ardea tenements in red and highlighting the location of the Grafter and Aphrodite North prospects (red dashed boxes).

The location of the three initial target areas at Grafter is also shown, A (Lady Charlotte), B and C.

The main interpreted gold trends are also shown (dashed grey lines), along with Ardea defined gold targets (yellow crosses) and GNCP nickel-cobalt resource outlines.

Ardea believes this entire area highly prospective for hosting gold mineralisation concealed by surface cover. Projection GDA94 MGA94 Zone 51.

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Aphrodite North gold prospect

The Aphrodite North area is located approximately 80km north of the City of Kalgoorlie-Boulder and 6km north along strike of the 1.7Moz Aphrodite gold deposit (BDC, ASX release 25 June 2020) (Figure 8). The area is entirely covered by transported material and thus exhibits no surface anomalism. The target structure extends in a north-northwest orientation throughout Ardea's Mining Lease, M29/426. Aircore drill anomalism was strongest on section 6666440mN (Ardea ASX releases 25 June and 10 July 2020) (Figure 9) with this section the priority for follow-up RC drilling.

The target is located 3km east of the nearest of the nickel-cobalt deposits that constitute the GNCP. The Aphrodite North area had previously been delineated in the 2018 GNCP Pre-Feasibility Study as an infrastructure site which is now not tenable. New infrastructure sites are now being considered in the Grafters North area between Big Four and Aphrodite North (Figure 8), but also have potential issues with gold-endowed structures being present. However, with Ardea's large GNCP land package, multiple backup sites are available.

The RC drilling consisted of 1,686 metres in seven holes. Unexpectedly high groundwater inflow provided some challenges for the initial drill holes. These challenges were quickly met by excavating additional sump capacity for later holes, increased air pressure through an additional booster, and increased familiarity with the ground conditions was gained with each hole drilled. Unfortunately, AANR0001 and 2 required termination before reaching target depth, with both holes ending in a zone of strong alteration and gold mineralisation.

Following on from the highly encouraging regional aircore drilling results reported in the June 2020 Quarterly Report, Ardea completed seven priority follow-up RC exploration drill holes with depths from 180m to 264m on four sections nominally 320m apart, for a total of 1,686m, between 9 and 27 July 2020. Once assay results had been received, confirmation of an emerging gold discovery, hidden beneath lake sediments, was reported to the ASX on 13 August 2020.

Maiden RC drilling at Aphrodite North intercepted significant gold mineralisation in newly-defined mineralised lodes (ASX release 13 August 2020), including:

- AANR0001: **6m at 3.60g/t Au** from 44m
  including **2m at 9.99g/t Au** from 44m
  and **8m at 4.94g/t Au** from 172m to 180m EOH
  including **4m at 9.42g/t Au** from 172m

- AANR0002: **10m at 1.52g/t Au** from 76m
  and **2m at 0.63g/t Au** from 226m to 228m EOH

- AANR0004: **12m at 0.73g/t Au** from 160m
  including **2m at 2.39g/t Au** from 162m

- AANR0006: **4m at 1.01g/t Au** from 140m

To follow-up on this encouraging start to exploration over the Aphrodite North area, a second RC drilling program commenced on 8 September 2020 and was completed on 24 September, with eight holes drilled for 2,001m. Assay results are awaited.

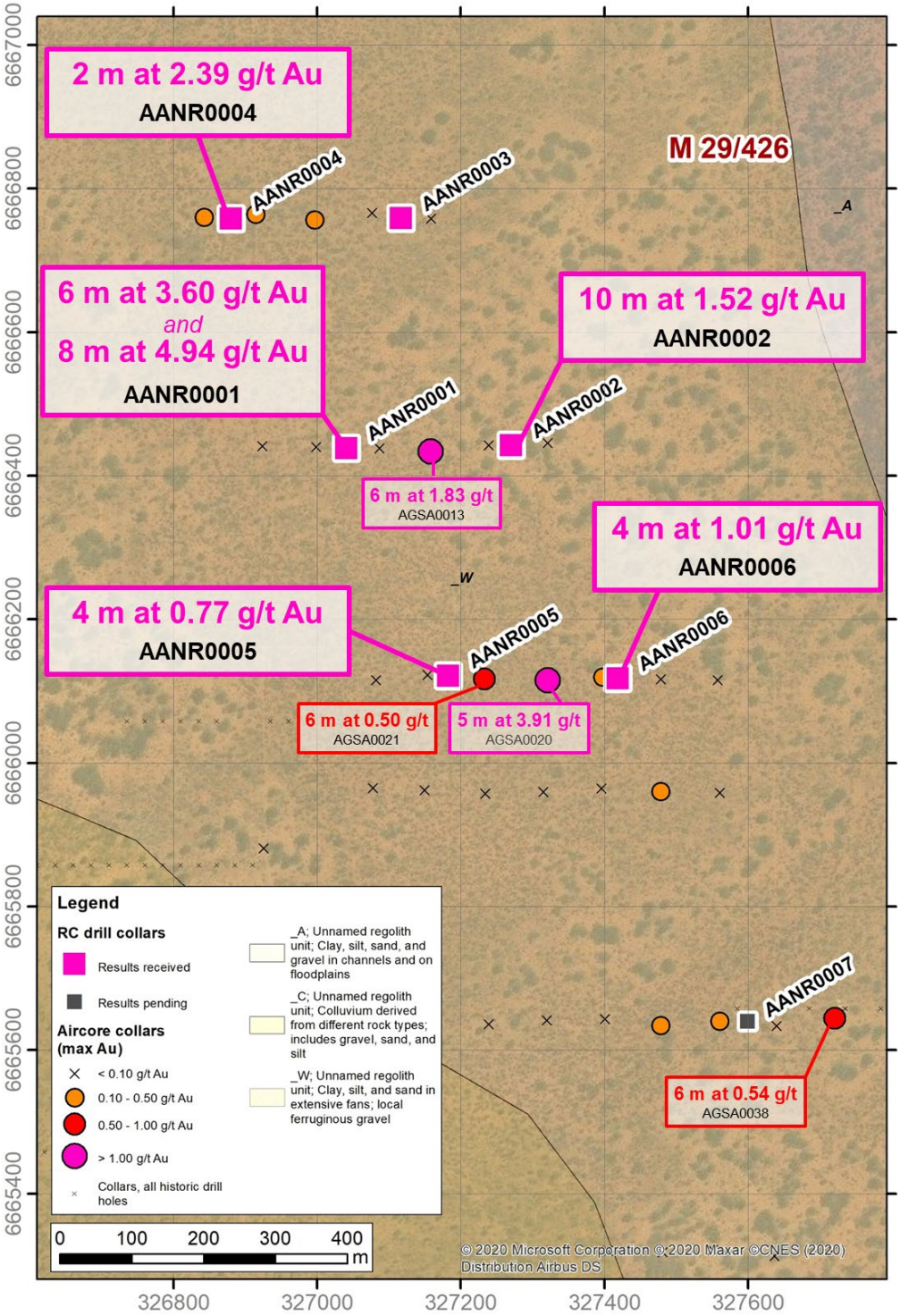

Figure 9: Drill hole location plan showing RC drill-hole collar locations that have followed up gold anomalism from the first-pass aircore program at Aphrodite North. The entire target area is covered by transported material, and no historic anomalism has been recorded. Projection: GDA94 MGA Zone 51.

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Windanya gold prospect

Ardea's Windanya project is located 50km northwest of the City of Kalgoorlie-Boulder and is a historical gold mining centre that was operational in the earliest 1900s (see Figure 3, 4 and 5). Significant historic gold workings are evident on the tenement and extend as a corridor to other workings to the north and south of Ardea's Windanya tenements. The strike trend of the mineralised zone is northwest to southeast with a moderate to steep dip to the northeast. Half Mile Reef was a major underground gold mine at its peak in the early 1900s, and was the location of the regional State gold production battery. Historic records sourced for the Half Mile Reef indicate that between 1897 and 1906, 23,480 tonnes of ore were mined from an underground operation, producing 12,993 ounces of gold. This indicates a recovered gold grade of 17.2 g/t, with head grade likely to be considerably higher.

Compilation of historical data, including old mine plans and a long section, has been completed, with Ardea the first Company to compile such a comprehensive project dataset to help guide exploration. Detailed geological interpretation has been completed with a focus on the Half Mile Reef gold mine and subparallel lode structures located near the centre of Ardea's tenure. It seems that the majority of historic drilling around the old mine workings was either too shallow or missed the down plunge projection of the high grade lodes mined historically.

As a first test of Ardea's geological model, 11 RC holes have been completed for 1,196m to try and determine the orientation and controls on gold mineralisation around Half Mile Reef (Figure 10). Encouraging zones of shearing and alteration have been logged and interpreted to correlate with the Half Mile Reef lode and a subparallel footwall structure. Assay results are awaited.

Figure 10: RC drilling in progress at Windanya, October 2020.

Bulong and Taurus gold prospect

Ardea's Bulong tenements are located approximately 30km east of the City of Kalgoorlie Boulder. The regionally significant crustal scale gold-controlling structure, the Goddard Fault, trends north-south and passes through Ardea's Bulong tenure (Figure 11). This structure represents a northern splay of the regionally significant Mount Monger Fault, which hosts gold mineralisation to the south, with the best-known operating mine in the area at Daisy Milano.

Historically, the focus on the Bulong tenements has been on laterite hosted nickel-cobalt mineralisation (54.1Mt at 0.88% nickel and 0.05% cobalt, for 476.1kt nickel and 28.8kt cobalt – Ardea 2019 Annual Report), with limited historical gold exploration completed by Ardea.

A detailed mapping and sampling program around the historic Taurus underlay shaft and multiple workings in the area has helped further refine the controls on gold mineralisation in this region.

In addition to the significant nickel-cobalt resources hosted at Bulong, **36 exploration targets** have been defined. These include gold, PGE and base metals (nickel, copper, lead and zinc), and additional gold-focussed targeting is underway.

Some historic nickel-cobalt laterite drill holes have been located over some of the gold targets and 768 historic pulps have been sourced from Ardea's Kalgoorlie sample storage facilities and assayed using Ardea's 65 multi-element assay suite, including gold, for the first time. This is a low impact and much cheaper form of exploration, as it removes the need to redrill holes. Twenty five surface rock chip samples were also taken. Results will be reviewed and follow-up work planned.

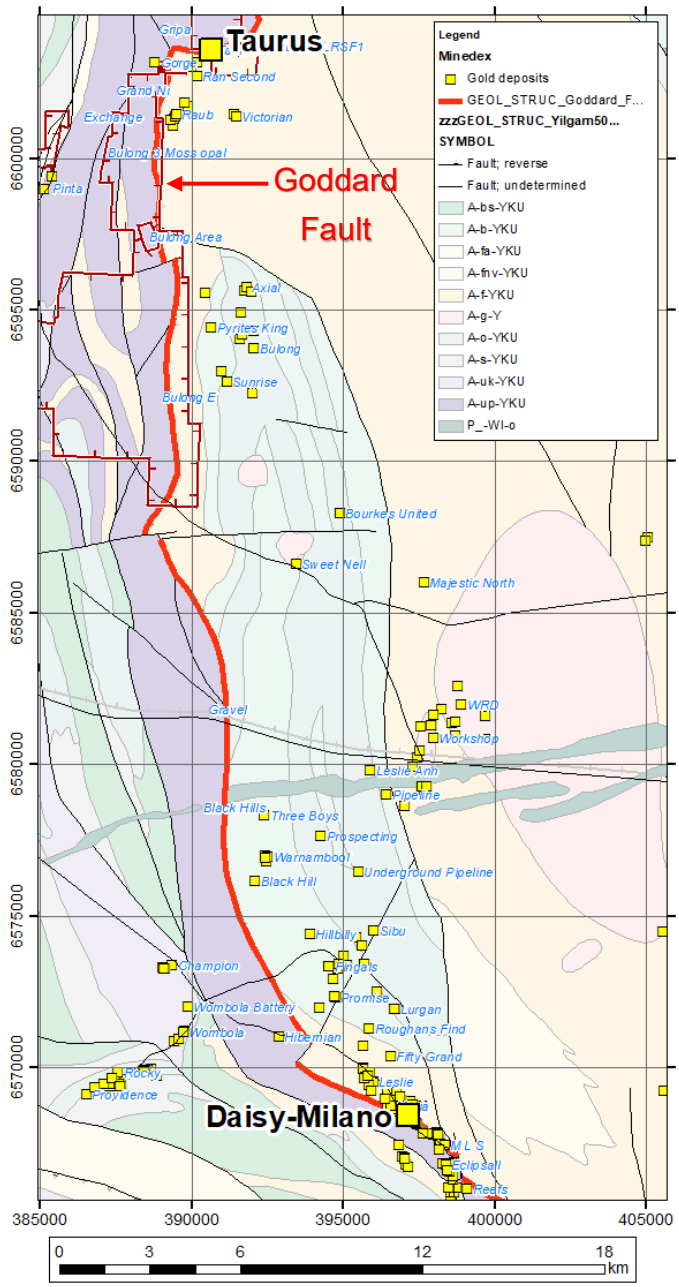

Figure 11: Bulong Project location plan showing Ardea's tenements in red and the regionally significant Goddard Fault.

Moriaty gold and nickel sulphide prospects

The Moriaty tenements, at the eastern margin of the Highway nickel laterite project are located immediately north of the GNCP tenements (Figure 4 and 5) within the BTZ. Detailed compilation of over 50 years of historic exploration has been completed, including assessment of old reports, plans and drill logs, the open file drill hole database, nickel sulphide petrology and legacy EM survey information. All historic data has been digitised and compiled into a GIS platform with detailed geological interpretation continuing. A number of nickel sulphide and gold exploration targets are being defined, several in historical unexplored portions of the tenure, and will be ranked against targets already defined at other Ardea projects. Follow-up exploration programs will be planned for priority targets.

Ardea nickel sulphide strategy

Ardea's main focus continues to be the development of the Goongarrie Nickel Cobalt Project (GNCP), the 25km long series of nickel-cobalt laterite deposits on the Goldfields Highway north of Kalgoorlie. Ardea's strategic tenure in the heart of the Eastern Goldfields of Western Australia is also highly prospective for both nickel sulphide and gold, which are mined extensively throughout the region. Ardea's gold and nickel sulphide strategies complement the development of the GNCP (and indeed the entire KNP) and aim to maximise return for shareholders.

It is important to note that any nickel sulphide discovery has the potential to be processed supplementary to laterite mineralisation through the High Pressure Acid Leach (HPAL) autoclave planned for Ardea's GNCP. Although

sulphides would only be processed in limited quantities relative to the lateritic throughput, they have the added benefit of helping control autoclave oxidising potential and typically improving recoveries. An additional bonus is that metal concentrations considered deleterious to regular nickel sulphide flotation processing (and that have historically curtailed development of several Eastern Goldfields deposits) do not appear to affect the HPAL process, opening the possibility of mineral extraction from deposits that may otherwise be overlooked.

During the Quarter, Ardea's nickel sulphide strategy was significantly advanced with the completion of a detailed project review. This study has reiterated that the Company controls an extensive holding of ultramafic stratigraphy in the Eastern Goldfields of Western Australia which host the Kalgoorlie Nickel Project laterite resources (Figure 12). The Company is leveraging off this strategic position by opening up a new nickel sulphide search space. With modern EM geophysical technology, the Company is generating exciting drill targets at several known nickel sulphide prospects. (ASX release 30 September 2020).

Emu Lake nickel sulphide and gold prospect

The Emu Lake Project, located 70km north-east of Kalgoorlie, has been the subject of a recent detailed review by Newexco Exploration Consultants (Newexco) who have identified several compelling targets. In particular, the area directly south of Binti gossan is considered a high priority with a number of down hole electromagnetic (DHEM) anomalies warranting drill testing. Previous drilling in the Binti gossan area has demonstrated nickel sulphide prospectivity and returned several high grade intercepts including[§]:

- ELD015: **2.0m @ 6.2% Ni and 1.78% Cu** from 336.0m; and
- ELD036: **1.6m @ 3.7% Ni and 1.33% Cu** from 320.6m.

The large number of nickel-copper intercepts come mostly from an area of drilling below and immediately along strike form the Binti Gossan covering only a 1.3km strike length. These results demonstrate the fertility of the ultramafic horizon whilst highlighting that only a small portion of the host unit has been effectively explored. Field work is underway and further work planned along the 20km strike length of this fertile and underexplored ultramafic horizon.

Several compelling targets are identified that will utilise stronger, more effective DHEM techniques at the Binti North, Binti South, and Heron prospects (4.5km south of Binti) (Figures 13 and 14). Historic drilling at each of these sites intersected strong mineralisation indicators so are considered "near-miss" cases, and application of modern DHEM techniques is expected to enable in-depth assessment of the rock sequence further from the drill hole than was historically possible. Further afield, several new targets have also been defined.

Other project work being undertaken at the Kalpini Project includes detailed assessment of drill hole geochemical data to determine where zones of anomalism are located and if additional assay data is required. Where the original drill hole pulps are still available at Ardea's West Kalgoorlie Operations Office, these are being sourced and sent for assay. Following the receipt of assay results, detailed data review will be undertaken with additional targets for nickel sulphides, Critical Minerals, REE and gold are expected to be defined.

[§] Source – DMIRS, WAMEX Open File reports.

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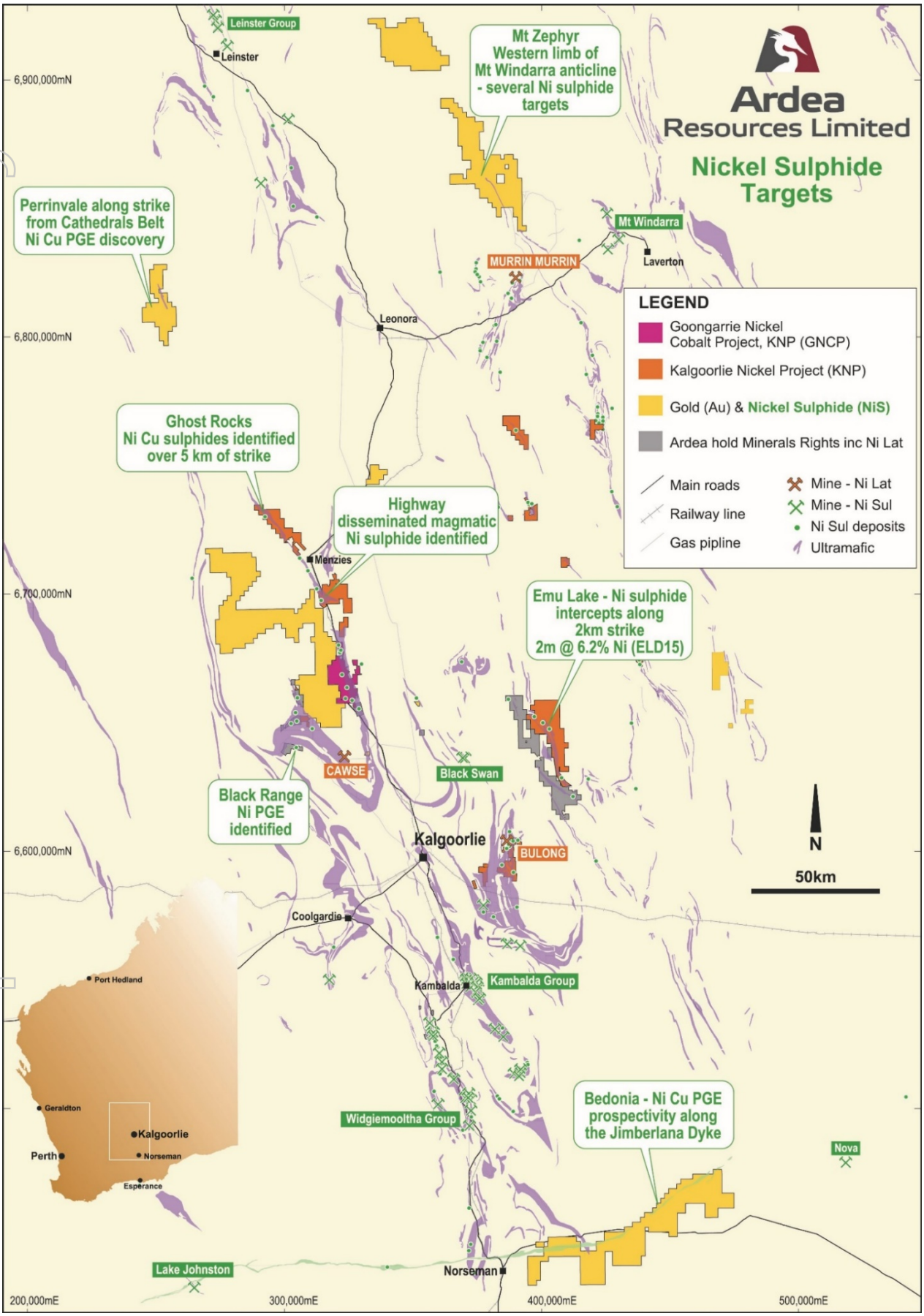

Figure 12: Ardea's tenure, key nickel sulphide and PGE targets, Eastern Goldfields, WA. Projection: GDA94 MGA Zone 51.

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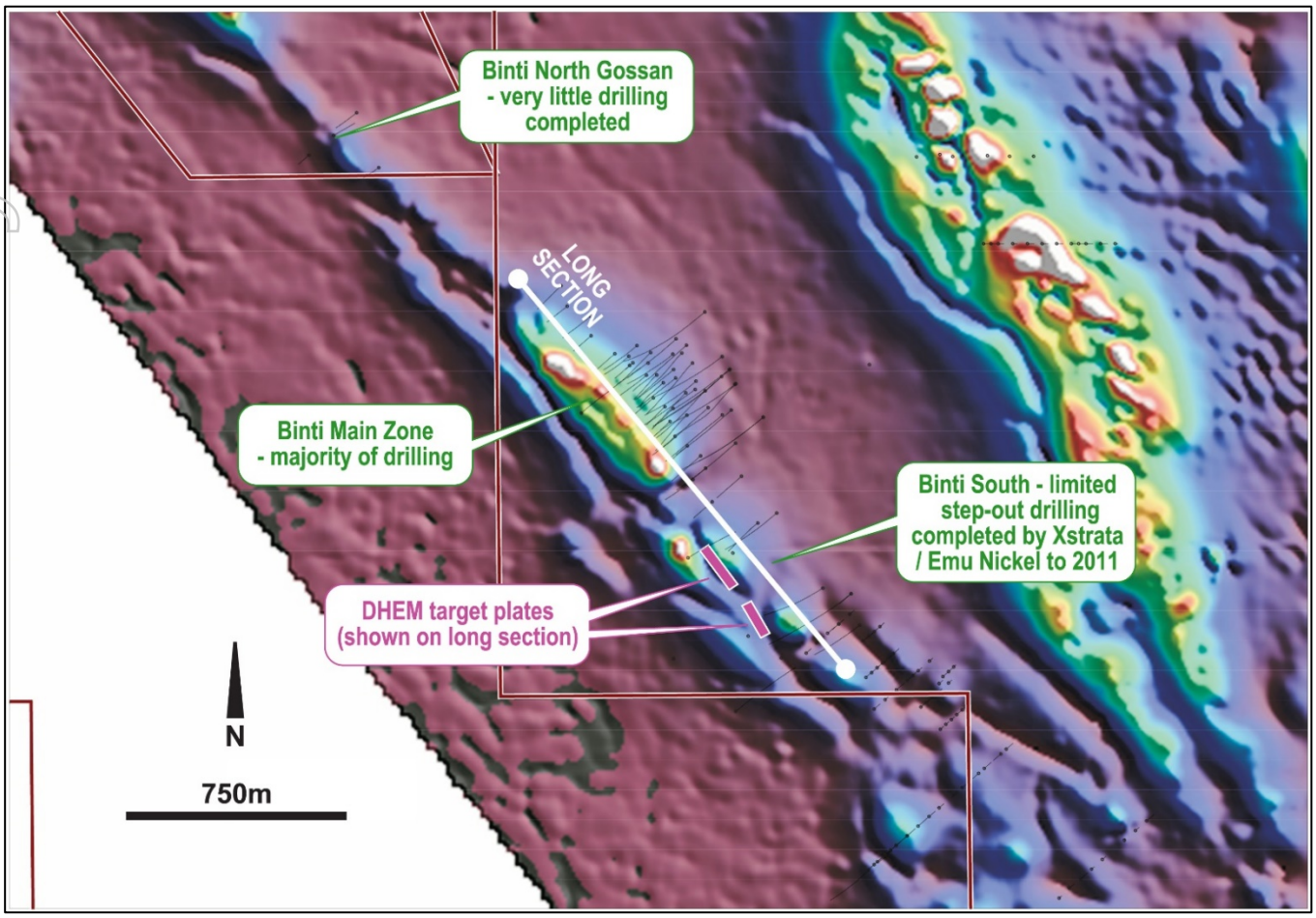

Figure 13: Emu Lake - Binti Gossan Prospect on aeromagnetic image showing drill hole traces and target EM plates.

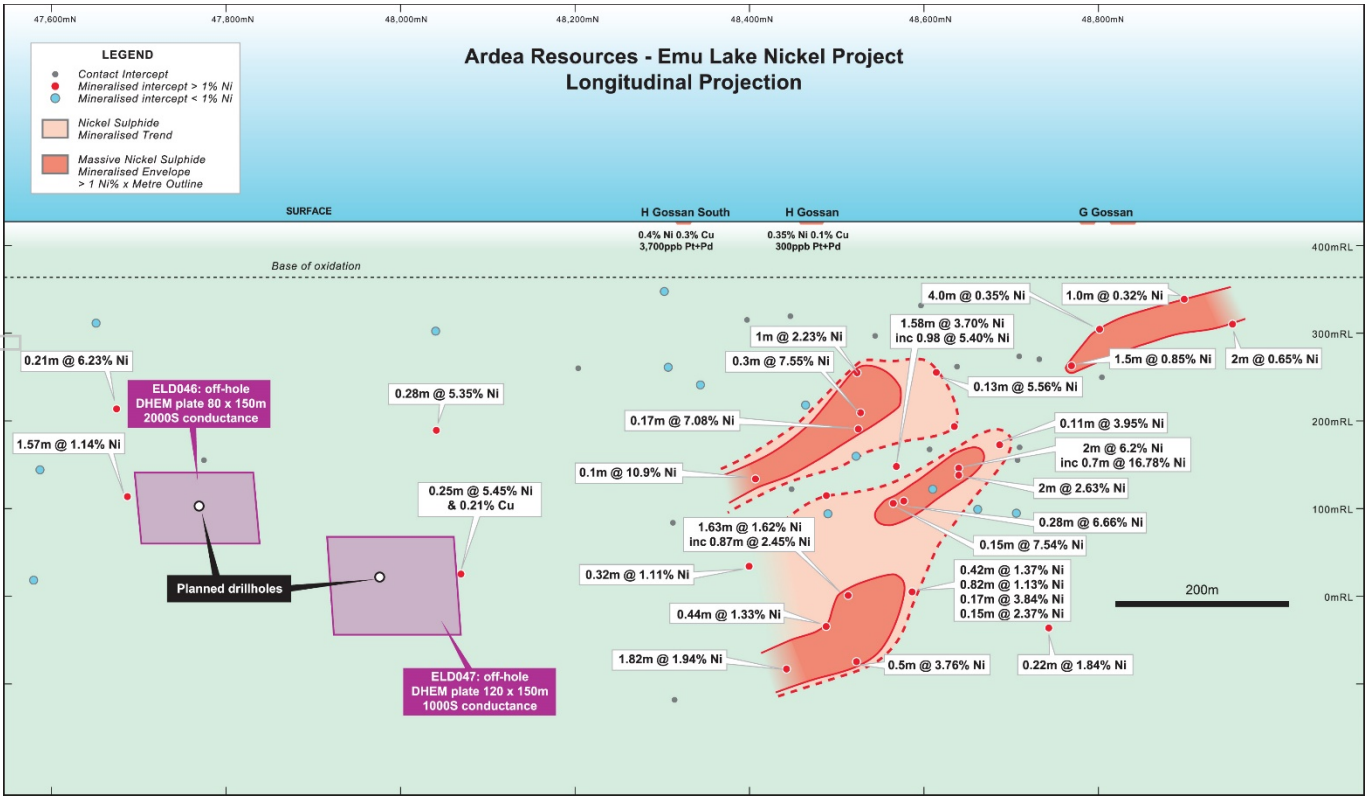

Figure 14: Binti Gossan Long Section, looking west – showing existing drilling pierce points and modelled DHEM plates south of the main gossan zone.

Perrinvale nickel sulphide and gold prospect

The Perrinvale Project, located 235km north east of Kalgoorlie covers 175km² along the eastern strike continuation of the "Cathedrals" Proterozoic Dyke complex (Figure 15). The Ardea exploration model is based on recent nickel sulphide discoveries immediately west of Perrinvale made by St George Mining. Regional magnetic data highlights that the feature which hosts the St George Mining nickel sulphide discoveries within the Cathedrals Belt, has an east-northeast strike and extends into Perrinvale.

A MLEM survey was completed over three separate zones at Perrinvale in late 2019. Proposed follow-up exploration includes shallow aircore drilling beneath transported cover to determine basement geology and whether there is a geochemical signature associated with the three EM anomalies defined.

The Zuleika-Ballard Shear is a major gold controlling structure south of Perrinvale where it crops out at surface. This structure is concealed by surface cover at Perrinvale and is a prime gold exploration target. During the Quarter, a surface auger and RAB drilling program was designed over zones interpreted as greenstones from a detailed study of the aeromagnetic data. The planned exploration is being ranked against other targets and will be completed in the coming months.

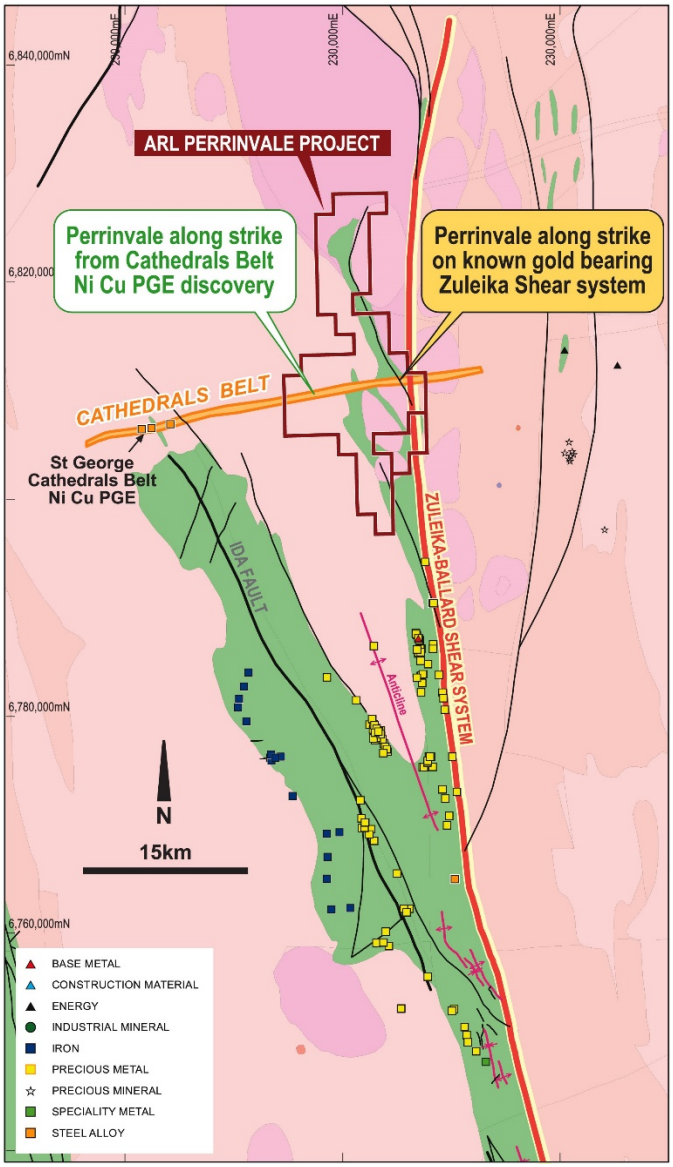

Figure 15: Perrinvale Project – Ardea tenure over interpreted Archaean geology. Projection GDA94 MGA94 Zone 51.

Bedonia Project

The Bedonia Project, covers 900km² extending from 15km to 80km east north-east from Norseman and covers a large portion of the Proterozoic Jimberlana Dyke, prospective for differentiated mafic/ultramafic nickel/copper/PGE sulphide deposits (Figure 16). The tenements lie over the southern margin of the Archaean Yilgarn Craton with the Cundeelee Fault separating the geological provinces. To the south of this fault the Northern Foreland comprises highly deformed, greenschist to granulite facies Archean granite and greenstones with multiple intrusion events including Gnowangerup Fraser dyke suite and Paleoproterozoic granites. The Jimberlana Dyke has, in part, been emplaced along this major crustal suture zone and is believed to be a highly prospective structure for base and precious metals.

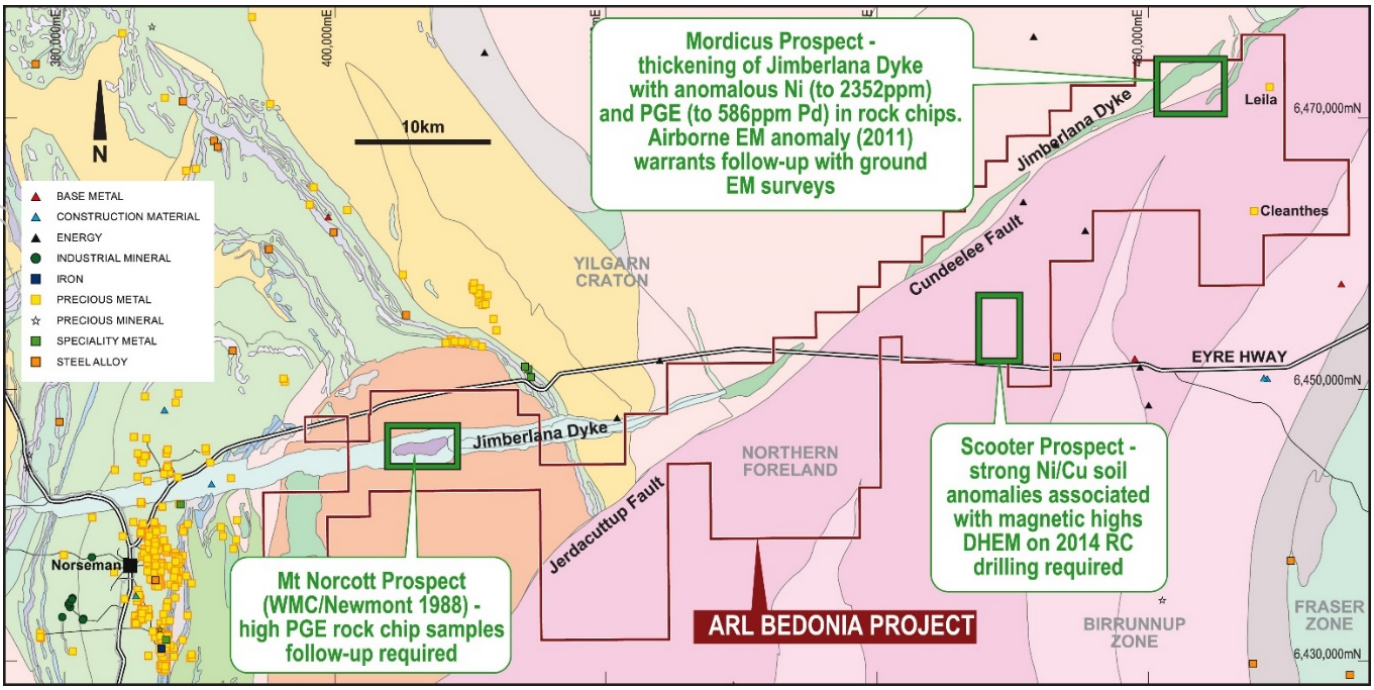

Figure 16: Bedonia project tenements on interpreted bedrock geology, showing main prospects and mineral occurrences with nickel sulphide targets highlighted. A number of gold targets have also been defined, including Leila and Cleanthes.

The geology of the eastern part of the Northern Foreland has been significantly upgraded by the Ardea exploration team to illustrate the extent of supracrustal sequences throughout the area. Outcrop is very poor throughout the tenure package. But, despite this, a number of compelling geochemical targets have been identified, including gold, PGE and base metals.

Mordicus Prospect

The Mordicus prospect in the far north east of the Bedonia project occurs where the Jimberlana Dyke has thickened to approximately 1km across and the intrusive package has differentiated to dunite, norite, pyroxenite and dolerite/gabbro units (Figure 17). Reconnaissance surface rock chip samples returned up to 0.59g/t Pd, 0.12g/t Pt and 2352ppm Ni with anomalous Ni, Cu and PGEs being recorded in soil sampling programs. An airborne EM (Sampson) survey flown by AngloGold in 2011 returned a subtle near surface anomaly that may be related to disseminated sulphides or weathering effects rather than massive sulphides, however, given the shallow penetration of the airborne EM systems, Ardea is looking to follow this up with a ground based EM survey.

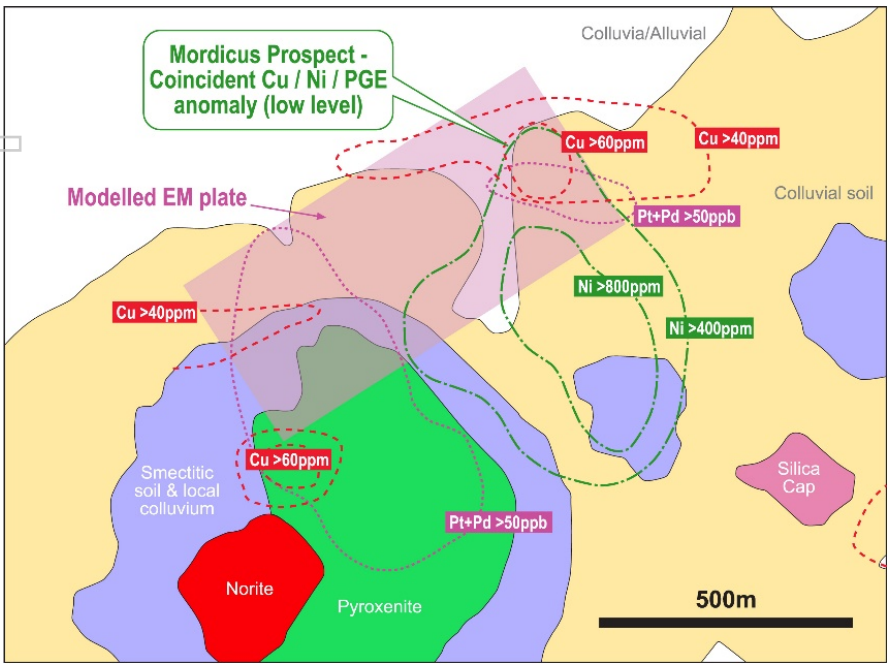

Figure 17: Mordicus Prospect with surface geology mapping, geochemistry contours and modelled airborne EM plate.

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Bardoc Tectonic Zone Nickel Sulphide

Exploration to unlock the nickel sulphide potential throughout Ardea's ground holding in the Bardoc Tectonic Zone (BTZ) has been accelerated with the appointment of a dedicated nickel sulphide expert. Several defined occurrences and anomalies have been identified at Big Four East, Highway and Moriaty. Ardea is also continuing to work with the CSIRO to further assess the ultramafic sequences of the GNCP, where nickel sulphide mineralisation, if it exists, would be located in fresh rock beneath the lateritic deposits. Using various geochemical markers, vectors and re-evaluating historical geophysical data, targets are being developed for geophysical surveys to refine them for drill testing.

Highway nickel prospect

The Highway prospect, located 110km north of Kalgoorlie, is within a wholly owned and granted mining lease which hosts the Company's Highway nickel laterite resource (87.0Mt at 0.65% nickel and 0.04% cobalt, for 567.2kt nickel and 35.1kt cobalt)**.

Magmatic nickel sulphide has been identified in RC drilling near the basal contact of the Walter Williams Formation (Figures 18 and 19). A Moving Loop EM (MLEM) survey in 2009 identified two subtle conductors along strike from the disseminated sulphide occurrence, however, drilling did not intersect massive sulphides. The fact that this portion of the Walter Williams Formation is fertile for nickel sulphides is significant with little or no focus on such occurrences over the last 20 years. It also raises the possibility of nickel sulphide occurrences beneath the GNCP to the south.

With modern geophysical techniques, such as induced polarisation (IP), it is possible to map disseminated sulphides to extensive depths (>800m) and this approach is proposed at Highway. Using IP to firstly map the broader disseminated sulphides and use this as a vector to massive sulphide zones. Shallow IP-style data (100m depth limit) collected in 2007 and used to map the nickel laterite is being re-assessed with at least one conductive zone of interest, associated with an EM conductor, being prioritised. The prize of finding economic nickel sulphides in the Walter Williams Formation is significant as it immediately opens up a large new search space, of which Ardea is the major ground holder, controlling 40km of strike.

In addition, at Moriaty immediately east of the Highway project, historical drilling has reportedly intersected fine disseminated pyrrhotite, chalcopyrite and violarite (nickel sulphide) in a talc-carbonate komatiite unit. This area is also being reviewed for IP and MLEM follow up.

** Ardea Annual Report 2019 (24 October 2019)

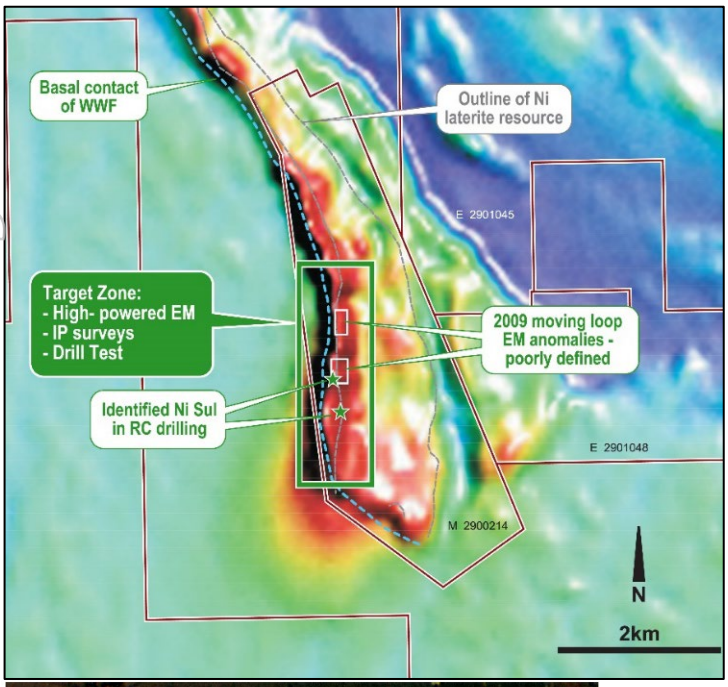
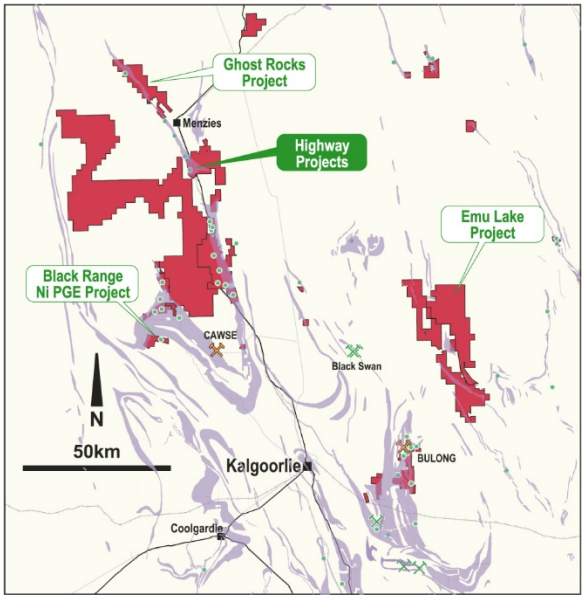
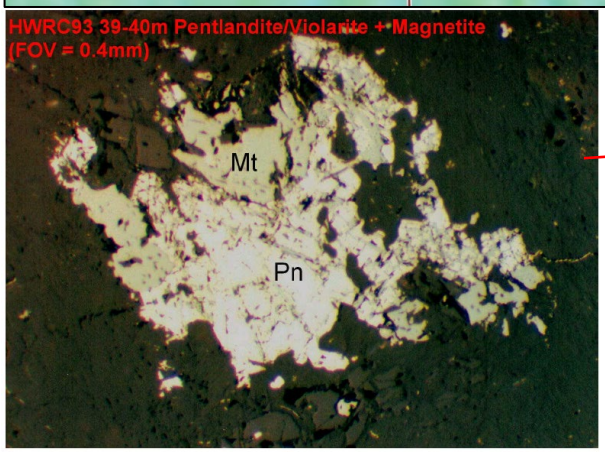


Figure 18: Highway Project – aeromagnetic image showing location of magmatic nickel sulphide and EM anomalies.





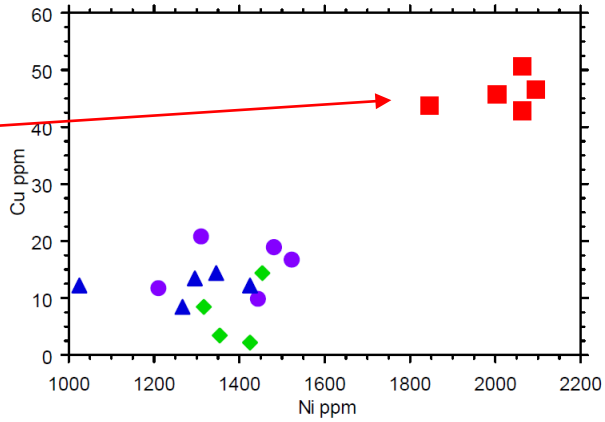


Figure 19: Photomicrograph of nickel sulphides in RC chips at the Highway project, with nickel-copper geochemistry of the sulphide bearing sample in comparison to non-sulphide samples from the same area. Mt = Magnetite and Pn = Pentlandite, which is the most common nickel bearing mineral.

Ghost Rocks Project

The Ghost Rocks Project, located 140km north of Kalgoorlie contains a mixed package of mafic and ultramafic stratigraphy not part of the Walter Williams Formation (Figure 20) and hosts Ardea's Ghost Rocks laterite resource (47.3Mt at 0.66% nickel and 0.04% cobalt, for 312.9kt nickel and 19.9kt cobalt)[††]. It was extensively prospected for nickel and copper sulphide deposits in the late 1960s and early 1970s where copper gossan zones were mapped in the mafic/ultramafic package. Drilling of these gossan zones by Newmont in the early 1970s returned a best result in the oxide zone of 3.3m (10 foot) grading 2.14% copper to end of hole from 12m depth.

Work by Heron Resources in 2008/09 identified a number of MLEM anomalies that were drilled and intersected broad zones of "cloud nickel sulphides" in ultramafic rocks and copper assays up to 0.53% over 2m in a differentiated mafic unit. No follow-up was completed at the time.

Re-assessing the MLEM anomalies and effectiveness of the drilling is a priority at Ghost Rocks. There is potential to complete DHEM on the existing drilling to vector towards massive sulphides. The broad zone of copper

[††] Ardea Annual Report 2019 (24 October 2019)

mineralisation is also of significant interest and an IP survey is being considered to map out this sulphide zone which extends for some 4km along strike.

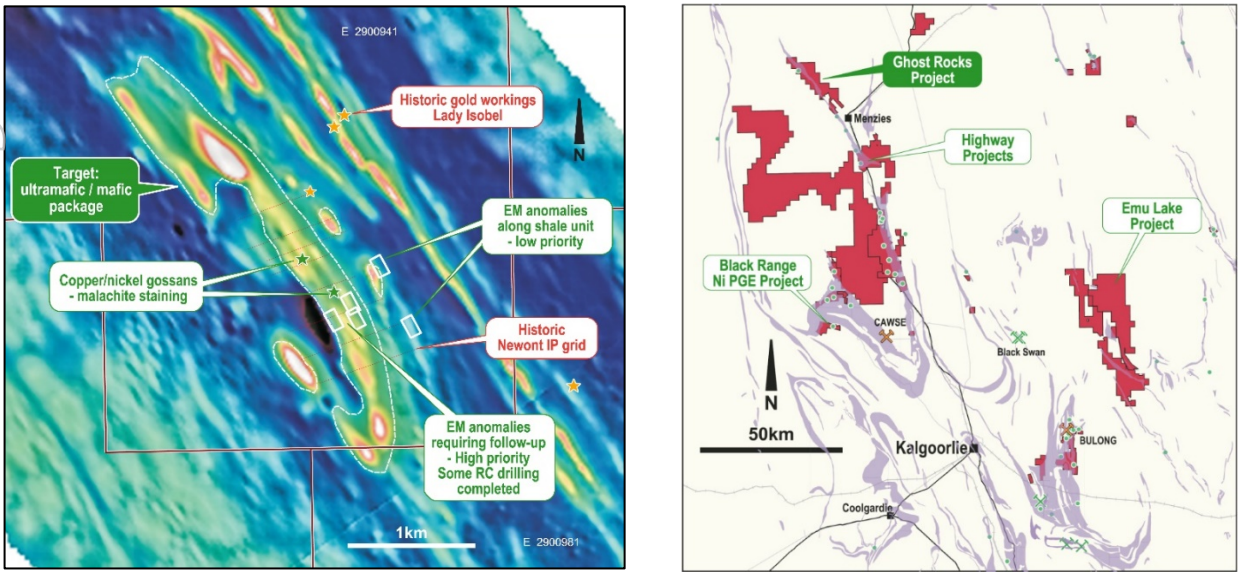


Figure 20: Ghost Rocks Project – aeromagnetic image showing target package of mafic and ultramafic rocks and key EM targets.

Black Range Project

The Black Range Project is located 65km north-west of Kalgoorlie and contains a 5km zone of the Ora Banda mafic/ultramafic sill enriched in nickel, cobalt, copper, scandium and PGE metals (Figures 21). The Black Range resource comprises 19.2Mt at 0.68% nickel and 0.09% cobalt, for 130.7kt nickel and 17.8kt cobalt, as well as 8.70Mt at 65.6g/t Scandium for 570,000kg scandium, and 6.55Mt at 0.33g/t Pt and 0.21g/t Pd for 70,300oz Pt and 44,000oz Pd[‡‡],

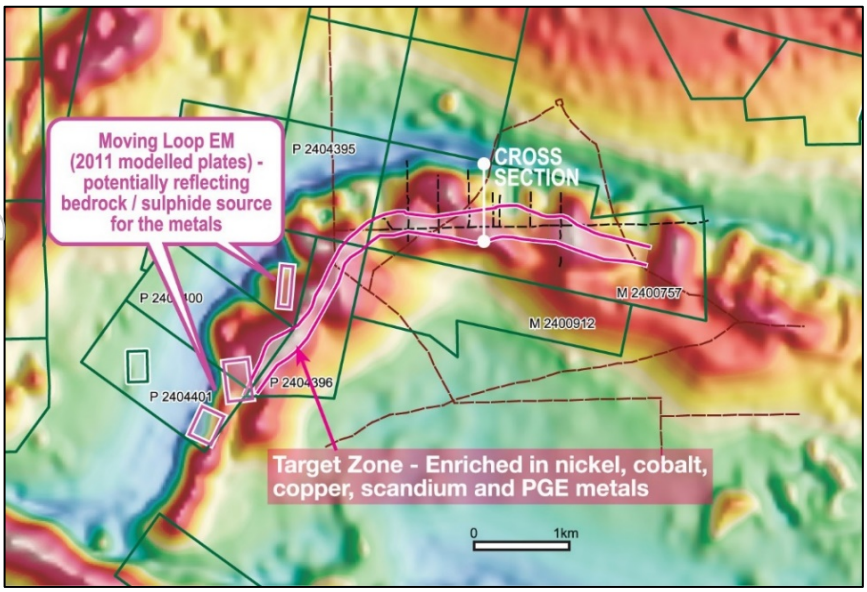
Past drilling programs have delineated a zoned lateritic distribution of nickel, cobalt, copper, scandium and PGE metals, as shown in the cross section below (Figure 22). Highly anomalous copper-PGE zones include:

- ABR0001/4-20m 16m at 0.24% Ni, 0.11% Cu, 0.29g/t Pd, 0.38g/t Pt
- ABR0016/2-18m 16m at 0.45% Ni, 0.17% Cu, 0.15g/t Pd, 0.26g/t Pt
- ABR0021/4-24m 20m at 0.18% Ni, 0.09% Cu, 0.29g/t Pd, 0.36g/t Pt

This geochemical signature, is consistent with a sulphidic nickel metal source and is different to the usual KNP nickel laterite geochemistry. The target zone is located at a specific rock unit contact within the layered mafic complex.

A moving loop EM survey from 2011 identified a number of conductors on the western side of the package and these are being reviewed and possibly re-surveyed with modern higher-powered EM systems. Concentration of PGEs and related metals is clearly happening in the lateritic regolith and is an economic target in its own right, however, finding the bedrock sulphide source of the nickel-copper PGE metals is the current focus.

[‡‡] Ardea ASX announcement "Black Range cobalt, nickel, scandium and platinum/palladium resources" (31 October 2017).



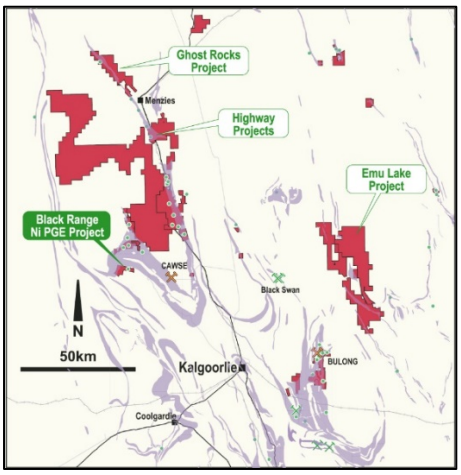


Figure 21: Black Range project, Ardea tenements over TMI aeromagnetic image showing the outline of the zone enriched in nickel, cobalt, copper, scandium and PGE metals, Ardea ASX announcements 13 June 2017, 28 August 2017, 31 October 2017.

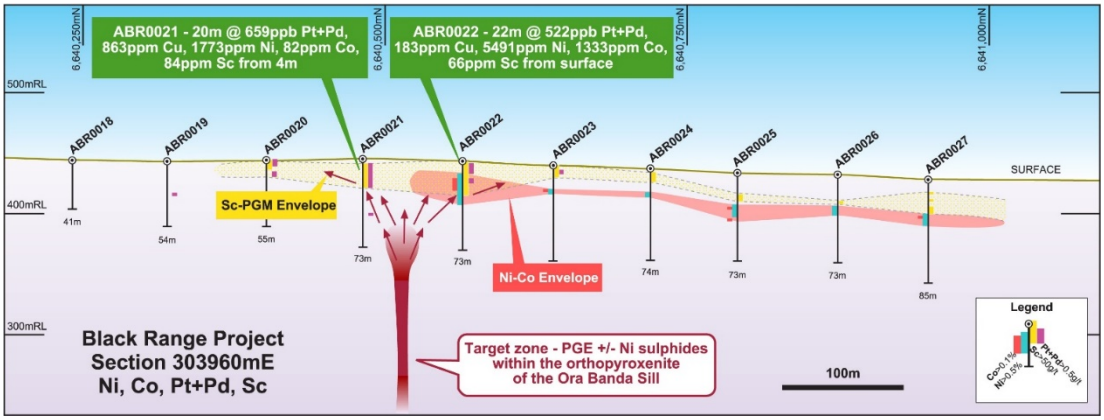


Figure 22: Black Range Cross Section looking west. Zone of enriched PGE metals and Sc in the laterite regolith are potentially derived from a narrow source within the Ora Banda Sill, Ardea ASX announcements 13 June 2017, 28 August 2017, 31 October 2017.

3. CORPORATE

Strategy

Ardea is well funded to continue multiple work streams with a priority on the GNCP "**WINNER**" enhancements focused on resource updates as part of the high-grade nickel strategy. The GNCP Strategic Partner process will continue as will accelerated gold and nickel sulphide exploration. With multiple gold and nickel sulphide exploration targets defined within the nickel laterite tenure footprint, Ardea believes it has the project portfolio, targets and personnel to make a significant mineral discovery that will further compliment the globally significant KNP nickel-cobalt resource.

Finance

The Company's cash position was **$11.3M** at Quarter end, with a further $1.3M raised post Quarter end via the SPP.

Issued capital at 30 September 2020 was 124,747,246 shares. Additional SPP shares issued post Quarter end have taken the current shares on issue to 127,670,583.

Summary of Expenditures for the Quarter

During the quarter the Company incurred a total net expenditure from operating activities of $1,698k. This was made up of $980k expended on exploration and evaluation activities, $471k on development activities, $151k on staff costs and $123k on administrative and corporate costs with the balance on minor items.

Included in these costs were payments made to Directors of the entity and their associates. These payments were Directors Salaries and Superannuation payments and Consulting fees of $218k, rental on the Company Kalgoorlie office of $25k and payment for HR services of $2k for the Quarter. All payments were made on an arm's length basis.

Cash flows from financing activities included funds of $3.5M received from the Placement made to Sophisticated and Professional Investors at a price of $0.47 per share.

Further details on Quarterly expenditures are included in the Appendix 5B – Quarterly Cashflow Report attached to this Quarterly Report.

4. LOOKING FORWARD

During the December 2020 Quarter, Ardea will focus upon the following programs.

Kalgoorlie Nickel Project

Ongoing review of KNP geological settings favourable for gold, nickel sulphide and Critical Minerals. This work can be cost effectively undertaken using Ardea's extensive database, sample pulps available for re-assay at the Kalgoorlie office and detailed geophysical datasets.

Goongarrie Nickel Cobalt Project

Strategic Partner Process

Continue active discussions and following completion of the Goongarrie Line and Highway resource updates the Strategic Partner search will be accelerated.

Engagement with groups such as the Australian Government-backed Critical Minerals Facilitation Office will continue.

Resource Upgrades

Complete the Goongarrie Line and Highway resource updates, continue the Kalpini data review and resource update and then commence Siberia North and other nickel-cobalt prospects proximal to the GNCP to define the optimum mine plan and maximise HPAL nickel feed grades as part of the WINNER initiative.

GNCP Flowsheet Research and Development

The SysCAD model will continue to be refined based on expected water sources, quality and in-pit sourced neutraliser with outputs used to optimise the flow sheet. The core focus is minimising the project development footprint and adhering to Western Australia's world-class safety, health, environmental and operating standards.

WA Gold and Nickel Sulphide Projects

Review and interpret the results from the 44 RC gold exploration holes drilled on six different gold targets for 5,819m, within the BTZ. The program was strategically designed to test "type" targets that are representative of the numerous defined and being defined targets throughout the area. Learnings from this drilling will be used to further refine existing targets and advance priority targets towards resource definition.

Gold exploration target definition will continue over all of Ardea's projects.

Nickel sulphide exploration will continue to accelerate with an immediate priority on ground and DHEM surveys at Emu Lake, to be followed by diamond drilling of at least one compelling DHEM off hole conductor during the December 2020 Quarter. Additional nickel sulphide targets continue to be refined by geophysical surveys and drilling will be planned on compelling targets.

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Gold Spin-out

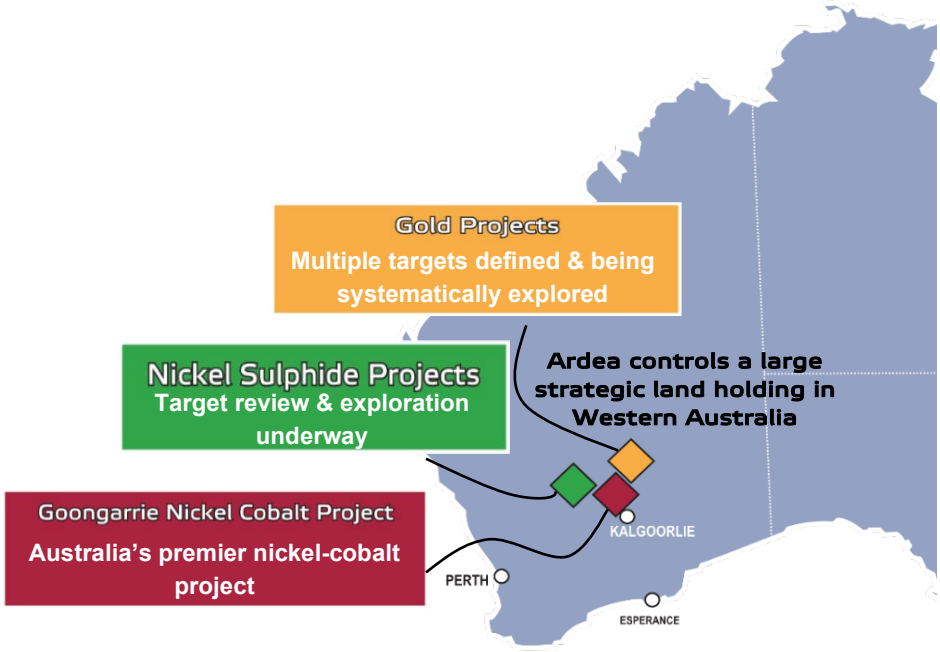
Ardea is continuing to move forward with its planned Kalgoorlie focussed gold spin-out and will provide more information on this Corporate initiative as projects and personnel are selected.

This announcement is authorised for release by the Board of Ardea Resources Limited.

About Ardea Resources

Ardea Resources (ASX Code: **ARL**) is an ASX-listed resources company, with a large portfolio of 100%-controlled West Australian-based projects, focussed on:

- Development of the Goongarrie Nickel Cobalt Project, which is part of the Kalgoorlie Nickel Project, a globally significant series of nickel-cobalt deposits which host the largest nickel-cobalt resource in the developed world, coincidentally located as a cover sequence overlying fertile orogenic gold targets; and
- Advanced-stage exploration at WA nickel sulphide, gold and Critical Minerals targets within the Eastern Goldfields world-class nickel-gold province.



For further information regarding Ardea, please visit www.ardearesources.com.au or contact:

Ardea Resources
Andrew Penkethman
Managing Director and Chief Executive Officer
Tel +61 8 6244 5136

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COMPLIANCE STATEMENT (JORC 2012)

A competent person's statement for the purposes of Listing Rule 5.22 has previously been announced by the Company for:

1. *Kalgoorlie Nickel Project on 21 October 2013 and 31 July 2014, October 2016, 2016 Heron Resources Annual Report and 6 January 2017;*
2. *KNP Cobalt Zone Study on 7 August 2017, PFS 28 March 2018 and Expansion Study 24 July 2018;*
3. *Goongarrie Nickel Cobalt Project, Supplementary Prospectuses 10 February 2017, Ardea Annual Report Nov 2017, ASX announcements 28 June 2017, 4 July 2017, 28 August 2017, 14 March 2018, 24 July 2018, 8 October 2018;*
4. *Ardea Resources Prospectus November 2016, Ardea Supplementary Prospectuses 6 January 2017, ASX announcements 9 March 2017, 16 March 2017, 26 April 2017.*
5. *Ardea Annual Report 2019, ASX announcement 24 October 2019.*
6. *Maiden Resource for Big Four Gold Project, WA, ASX announcement 14 May 2020.*
7. *Significant gold exploration results from new target at Goongarrie, ASX announcement 26 June 2020.*
8. *CSIRO research project commences to define gold behaviour within the critical mineral deposits of the Goongarrie Nickel Cobalt Project ASX announcement, 12 August 2020.*
9. *Significant gold in first RC drilling at Aphrodite North, ASX announcement 13 August 2020.*
10. *Ardea BTZ gold exploration success at Lady Charlotte, ASX announcement 24 August 2020.*
11. *Ardea Annual Report 2020, ASX announcement 29 September 2019.*
12. *Nickel Sulphide Targets within the Ardea Tenement Portfolio including KNP, ASX announcement 30 September 2020.*

The Company confirms that it is not aware of any new information or data that materially affects information included in previous announcements, and all material assumptions and technical parameters underpinning the estimates continue to apply and have not materially changed. All projects are subject to new work programs, notably drilling, metallurgy and JORC Code 2012 resource estimation as applicable.

The information in this report that relates to Exploration Results and Resource Estimates for the Goongarrie Nickel Cobalt Project is based on information originally compiled by previous and current full-time employees of Heron Resources Limited and current full-time employees of Ardea Resources Limited. The Exploration Results, Resource Estimates and data collection processes have been reviewed, verified and re-interpreted by Mr Ian Buchhorn who is a Member of the Australasian Institute of Mining and Metallurgy and currently a director of Ardea Resources Limited. Mr Buchhorn has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the exploration activities undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Buchhorn consents to the inclusion in this report of the matters based on his information in the form and context that it appears.

The exploration and industry benchmarking summaries are based on information reviewed by Dr Matthew Painter, who is a Member of the Australian Institute of Geoscientists. Dr Painter is a full-time employee of Ardea Resources Limited and has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Dr Painter has reviewed this press release and consents to the inclusion in this report of the information in the form and context in which it appears.

ASX CHAPTER 5 COMPLIANCE AND PFS CAUTIONARY STATEMENT

The Company has concluded that it has a reasonable basis for providing the forward-looking statements and forecast financial information included in this announcement. The detailed reasons for that conclusion are outlined throughout this announcement and all material assumptions, including the JORC modifying factors, upon which the forecast financial information is based are disclosed in this announcement. This announcement has been prepared in accordance with the JORC Code (2012) and the ASX Listing Rules.

The actual results could differ materially from a conclusion, forecast or projection in the forward-looking information. Certain material factors were applied in drawing a conclusion or making a forecast or projection as reflected in the forward-looking information.

The Goongarrie Nickel Cobalt Project is at the PFS phase and although reasonable care has been taken to ensure that the facts are accurate and/or that the opinions expressed are fair and reasonable, no reliance can be placed for any purpose whatsoever on the information contained in this document or on its completeness. Actual results and developments of projects and the scandium market development may differ materially from those expressed or implied by these forward-looking statements depending on a variety of factors.

A key conclusion of the PFS and Expansion Study, which are based on forward looking statements, is that the Goongarrie Nickel Cobalt Project is considered to have positive economic potential.

The Mineral Resource used for the PFS was classified under JORC 2012 Guidelines and announced by the Company on 14 March 2018. The cut-off grades adapted for the PFS and reported in Table 3.1 are the basis of the production target assumed for the PFS.

The Company believes it has a reasonable basis to expect to be able to fund and further develop the Goongarrie Nickel Cobalt Project. However, there is no certainty that the Company can raise funding when required.

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CAUTIONARY NOTE REGARDING FORWARD-LOOKING INFORMATION

This news release contains forward-looking statements and forward-looking information within the meaning of applicable Australian securities laws, which are based on expectations, estimates and projections as of the date of this news release.

This forward-looking information includes, or may be based upon, without limitation, estimates, forecasts and statements as to management's expectations with respect to, among other things, the timing and amount of funding required to execute the Company's programs, development and business plans, capital and exploration expenditures, the effect on the Company of any changes to existing legislation or policy, government regulation of mining operations, the length of time required to obtain permits, certifications and approvals, the success of exploration, development and mining activities, the geology of the Company's properties, environmental risks, the availability of labour, the focus of the Company in the future, demand and market outlook for precious metals and the prices thereof, progress in development of mineral properties, the Company's ability to raise funding privately or on a public market in the future, the Company's future growth, results of operations, performance, and business prospects and opportunities. Wherever possible, words such as "anticipate", "believe", "expect", "intend", "may" and similar expressions have been used to identify such forward-looking information. Forward-looking information is based on the opinions and estimates of management at the date the information is given, and on information available to management at such time. Forward-looking information involves significant risks, uncertainties, assumptions and other factors that could cause actual results, performance or achievements to differ materially from the results discussed or implied in the forward-looking information. These factors, including, but not limited to, fluctuations in currency markets, fluctuations in commodity prices, the ability of the Company to access sufficient capital on favourable terms or at all, changes in national and local government legislation, taxation, controls, regulations, political or economic developments in Australia or other countries in which the Company does business or may carry on business in the future, operational or technical difficulties in connection with exploration or development activities, employee relations, the speculative nature of mineral exploration and development, obtaining necessary licenses and permits, diminishing quantities and grades of mineral reserves, contests over title to properties, especially title to undeveloped properties, the inherent risks involved in the exploration and development of mineral properties, the uncertainties involved in interpreting drill results and other geological data, environmental hazards, industrial accidents, unusual or unexpected formations, pressures, cave-ins and flooding, limitations of insurance coverage and the possibility of project cost overruns or unanticipated costs and expenses, and should be considered carefully. Many of these uncertainties and contingencies can affect the Company's actual results and could cause actual results to differ materially from those expressed or implied in any forward-looking statements made by, or on behalf of, the Company. Prospective investors should not place undue reliance on any forward-looking information.

Although the forward-looking information contained in this news release is based upon what management believes, or believed at the time, to be reasonable assumptions, the Company cannot assure prospective purchasers that actual results will be consistent with such forward-looking information, as there may be other factors that cause results not to be as anticipated, estimated or intended, and neither the Company nor any other person assumes responsibility for the accuracy and completeness of any such forward-looking information. The Company does not undertake, and assumes no obligation, to update or revise any such forward-looking statements or forward-looking information contained herein to reflect new events or circumstances, except as may be required by law.

No stock exchange, regulation services provider, securities commission or other regulatory authority has approved or disapproved the information contained in this news release.

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APPENDIX 1 – Mineral Resource Estimate

Kalgoorlie Nickel Project nickel-cobalt mineral resource (JORC 2012) (Ardea Annual Report 2019, 24 October 2019)

Resource Category	Quantity (Mt)	Nickel (%)	Cobalt (%)	Contained nickel (t)	Contained cobalt (t)
Measured	9.6	1.02	0.10	98,800	9,700
Indicated	232.9	0.75	0.06	1,759,700	141,200
Inferred	530.5	0.68	0.05	3,600,000	254,400
KNP Total Resources	**773.0**	**0.70**	**0.05**	**5,458,400**	**405,400**

Note: 0.5% nickel cut-off grade used to report resources. Note figures are rounded to reflect degree of certainty and may not tally.

In accordance with the Australian Securities Exchange Limited Listing Rules Appendix 5A:

The information in this report that relates to Resource Estimates for the Kalgoorlie Nickel Project is based on information originally compiled by previous and current full-time employees of Heron Resources Limited and current full-time employees of Ardea Resources Limited. The Resource Estimates and data collection processes have been reviewed, verified and re-interpreted by Mr Ian Buchhorn who is a Member of the Australasian Institute of Mining and Metallurgy and currently a director of Ardea Resources Limited. Mr Buchhorn has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the exploration activities undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Buchhorn consents to the inclusion in this report of the matters based on his information in the form and context that it appears.

There has been no Material Change or Re-estimation of the Mineral Resource since the last formal announcement by Ardea Resources in the Ardea Annual Report 2019, ASX Release 24 October 2019.

Appendix 5B

Mining exploration entity or oil and gas exploration entity quarterly cash flow report

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Name of entity

Ardea Resources Limited

ABN	Quarter ended ("current quarter")
30 614 289 342	30 September 2020

Consolidated statement of cash flows		Current quarter $A'000	Year to date (3 months) $A'000
1.	**Cash flows from operating activities**		
1.1	Receipts from customers	-	-
1.2	Payments for		
	(a) exploration & evaluation	(980)	(980)
	(b) development	(471)	(471)
	(c) production	-	-
	(d) staff costs	(151)	(151)
	(e) administration and corporate costs	(123)	(123)
1.3	Dividends received (see note 3)	-	-
1.4	Interest received	27	27
1.5	Interest and other costs of finance paid	-	-
1.6	Income taxes paid	-	-
1.7	Government grants and tax incentives	-	-
1.8	Other (provide details if material)	-	-
1.9	**Net cash from / (used in) operating activities**	**(1,698)**	**(1,698)**

2.	**Cash flows from investing activities**		
2.1	Payments to acquire or for:		
	(a) entities	-	-
	(b) tenements	-	-
	(c) property, plant and equipment	(8)	(8)
	(d) exploration & evaluation	-	-
	(e) investments	-	-
	(f) other non-current assets	-	-

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Consolidated statement of cash flows		Current quarter $A'000	Year to date (3 months) $A'000
2.2	Proceeds from the disposal of:		
	(a) entities	-	-
	(b) tenements	-	-
	(c) property, plant and equipment	-	-
	(d) investments	-	-
	(e) other non-current assets	-	-
2.3	Cash flows from loans to other entities	-	-
2.4	Dividends received (see note 3)	-	-
2.5	Other (provide details if material)	-	-
2.6	**Net cash from / (used in) investing activities**	**(8)**	**(8)**

3.	**Cash flows from financing activities**		
3.1	Proceeds from issues of equity securities (excluding convertible debt securities)	3,500	3,500
3.2	Proceeds from issue of convertible debt securities	-	-
3.3	Proceeds from exercise of options	-	-
3.4	Transaction costs related to issues of equity securities or convertible debt securities	(212)	(212)
3.5	Proceeds from borrowings	-	-
3.6	Repayment of borrowings	-	-
3.7	Transaction costs related to loans and borrowings	-	-
3.8	Dividends paid	-	-
3.9	Other (provide details if material)	-	-
3.10	**Net cash from / (used in) financing activities**	**3,288**	**3,288**

4.	**Net increase / (decrease) in cash and cash equivalents for the period**	1,582	1,582
4.1	Cash and cash equivalents at beginning of period	10,005	10,005
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(1,698)	(1,698)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	(8)	(8)
4.4	Net cash from / (used in) financing activities (item 3.10 above)	3,288	3,288

Consolidated statement of cash flows		Current quarter $A'000	Year to date (3 months) $A'000
4.5	Effect of movement in exchange rates on cash held	-	
4.6	**Cash and cash equivalents at end of period**	**11,587**	**11,587**

5.	**Reconciliation of cash and cash equivalents** at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts	**Current quarter $A'000**	**Previous quarter $A'000**
5.1	Bank balances	5,184	255
5.2	Call deposits	6,403	9,750
5.3	Bank overdrafts	-	-
5.4	Other (provide details)	-	-
5.5	**Cash and cash equivalents at end of quarter (should equal item 4.6 above)**	**11,587**	**10,005**

6.	**Payments to related parties of the entity and their associates**	**Current quarter $A'000**
6.1	Aggregate amount of payments to related parties and their associates included in item 1	245
6.2	Aggregate amount of payments to related parties and their associates included in item 2	-

Note: if any amounts are shown in items 6.1 or 6.2, your quarterly activity report must include a description of, and an explanation for, such payments.

Salaries, Directors fees and Consulting fees paid to Directors - $217,906
Payments for Kalgoorlie Office to a Director related entity for the quarter - $25,105
Payments for HR Services paid to a Director related entity for the quarter - $2,240

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7.	**Financing facilities** *Note: the term "facility' includes all forms of financing arrangements available to the entity.* *Add notes as necessary for an understanding of the sources of finance available to the entity.*	**Total facility amount at quarter end $A'000**	**Amount drawn at quarter end $A'000**
7.1	Loan facilities	-	-
7.2	Credit standby arrangements	-	-
7.3	Other (please specify)	-	-
7.4	**Total financing facilities**	-	-
7.5	**Unused financing facilities available at quarter end**		-
7.6	Include in the box below a description of each facility above, including the lender, interest rate, maturity date and whether it is secured or unsecured. If any additional financing facilities have been entered into or are proposed to be entered into after quarter end, include a note providing details of those facilities as well.		

8.	**Estimated cash available for future operating activities**	**$A'000**
8.1	Net cash from / (used in) operating activities (item 1.9)	(1,698)
8.2	(Payments for exploration & evaluation classified as investing activities) (item 2.1(d))	-
8.3	Total relevant outgoings (item 8.1 + item 8.2)	(1,698)
8.4	Cash and cash equivalents at quarter end (item 4.6)	11,587
8.5	Unused finance facilities available at quarter end (item 7.5)	-
8.6	Total available funding (item 8.4 + item 8.5)	11,587
8.7	**Estimated quarters of funding available (item 8.6 divided by item 8.3)**	6.8

Note: if the entity has reported positive relevant outgoings (ie a net cash inflow) in item 8.3, answer item 8.7 as "N/A". Otherwise, a figure for the estimated quarters of funding available must be included in item 8.7.

8.8 If item 8.7 is less than 2 quarters, please provide answers to the following questions:

8.8.1 Does the entity expect that it will continue to have the current level of net operating cash flows for the time being and, if not, why not?

Answer: N/A

8.8.2 Has the entity taken any steps, or does it propose to take any steps, to raise further cash to fund its operations and, if so, what are those steps and how likely does it believe that they will be successful?

Answer: N/A

8.8.3 Does the entity expect to be able to continue its operations and to meet its business objectives and, if so, on what basis?

Answer: N/A

Note: where item 8.7 is less than 2 quarters, all of questions 8.8.1, 8.8.2 and 8.8.3 above must be answered.

Compliance statement

1 This statement has been prepared in accordance with accounting standards and policies which comply with Listing Rule 19.11A.

2 This statement gives a true and fair view of the matters disclosed.

Date: 26 October 2020

Authorised by: Ardea Board of Directors

Notes

1. This quarterly cash flow report and the accompanying activity report provide a basis for informing the market about the entity's activities for the past quarter, how they have been financed and the effect this has had on its cash position. An entity that wishes to disclose additional information over and above the minimum required under the Listing Rules is encouraged to do so.
2. If this quarterly cash flow report has been prepared in accordance with Australian Accounting Standards, the definitions in, and provisions of, *AASB 6: Exploration for and Evaluation of Mineral Resources* and *AASB 107: Statement of Cash Flows* apply to this report. If this quarterly cash flow report has been prepared in accordance with other accounting standards agreed by ASX pursuant to Listing Rule 19.11A, the corresponding equivalent standards apply to this report.
3. Dividends received may be classified either as cash flows from operating activities or cash flows from investing activities, depending on the accounting policy of the entity.
4. If this report has been authorised for release to the market by your board of directors, you can insert here: "By the board". If it has been authorised for release to the market by a committee of your board of directors, you can insert here: "By the [*name of board committee – eg Audit and Risk Committee*]". If it has been authorised for release to the market by a disclosure committee, you can insert here: "By the Disclosure Committee".
5. If this report has been authorised for release to the market by your board of directors and you wish to hold yourself out as complying with recommendation 4.2 of the ASX Corporate Governance Council's *Corporate Governance Principles and Recommendations*, the board should have received a declaration from its CEO and CFO that, in their opinion, the financial records of the entity have been properly maintained, that this report complies with the appropriate accounting standards and gives a true and fair view of the cash flows of the entity, and that their opinion has been formed on the basis of a sound system of risk management and internal control which is operating effectively.

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Interests in Mining Tenements and Petroleum Tenements Lapsed, Relinquished or Reduced

Ardea WA Tenements

Tenure	Location	Nature of Interest	Ardea Interest beginning Quarter (%)	Ardea Interest end Quarter (%)
E70/4804	Donnelly River	Application Withdrawn	100	0
E29/1060	Goongarrie	Application Withdrawn	100	0

Ardea NSW Tenements

Tenure	Location	Nature of Interest	Ardea Interest beginning Quarter (%)	Ardea Interest end Quarter (%)

Interests in Mining Tenements and Petroleum Tenements Acquired or Increased

Ardea WA Tenements

Tenure	Location	Nature of Interest	Ardea Interest beginning Quarter (%)	Ardea Interest end Quarter (%)
E31/1261	Pinjin	Application	0	100
E28/3036	Pinjin South	Application	0	100
E28/3040	Pinjin South	Application	0	100
P24/5480	Windanya West	Application	0	100

Ardea NSW Tenements

Tenure	Location	Nature of Interest	Ardea Interest beginning Quarter (%)	Ardea Interest end Quarter (%)

Ardea Resources Limited Tenement Schedule (WA) as at 30 September 2020

Goongarrie Nickel Cobalt Project

Tenure	Location	Ardea Interest (%)	Status	Note	Tenure	Location	Ardea Interest (%)	Status	Note
E24/196	Goongarrie	100	Live		**M24/731**	Goongarrie	100	Live	3
E24/209	Goongarrie	100	Live		**M24/732**	Goongarrie	100	Live	3
E24/211	Goongarrie	100	Pending		**M24/744**	Goongarrie	100	Live	
E29/934	Goongarrie	100	Live		**M24/778**	Goongarrie	100	Live	3
E29/1028	Goongarrie	100	Live		**M29/167**	Goongarrie	100	Live	
E29/1038	Goongarrie	100	Live		**M29/202**	Goongarrie	100	Live	
E29/1039	Goongarrie	100	Pending		**M29/272**	Goongarrie	100	Live	
E29/1045	Goongarrie	100	Live		**M29/278**	Goongarrie	100	Live	
E29/1048	Goongarrie	100	Live		**M29/423**	Goongarrie	100	Live	
E29/1060	Goongarrie	100	Pending		**M29/424**	Goongarrie	100	Live	
E30/500	Goongarrie	100	Live		**M29/426**	Goongarrie	100	Live	
E30/501	Goongarrie	100	Live		**P24/5260**	Goongarrie	100	Live	
E30/502	Goongarrie	100	Live		**P24/5328**	Goongarrie	100	Live	
G29/25	Goongarrie	100	Pending		**P24/5329**	Goongarrie	100	Live	
L24/239	Goongarrie	100	Live		**P24/5265**	Goongarrie-Car Boyd	100	Live	
L29/134	Goongarrie	100	Live		**P24/5169**	Goongarrie-Windanya	100	Live	
L29/135	Goongarrie	100	Live		**P24/5480**	Goongarrie-Windanya	100	Pending	
L30/67	Goongarrie	100	Live		**M24/919**	Goongarrie-Scotia	100 Ni rights	Live	6
L30/68	Goongarrie	100	Live		**M24/959**	Goongarrie-Scotia	100 Ni rights	Live	6
M24/541	Goongarrie	100	Live						

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GNCP Expansion
Siberia

Tenure	Location	Ardea Interest (%)	Status	Note
E24/203	Siberia	100 non Au-Ag rights	Live	4
E29/889	Siberia	100 non Au-Ag rights	Live	4
M24/634	Siberia	100 non Au-Ag rights	Live	1,4
M24/660	Siberia	100 non Au-Ag rights	Live	4
M24/663	Siberia	100 non Au-Ag rights	Live	4
M24/664	Siberia	100 non Au-Ag rights	Live	4
M24/665	Siberia	90 non Au-Ag rights	Live	2,4
M24/683	Siberia	100 non Au-Ag rights	Live	4
M24/686	Siberia	100 non Au-Ag rights	Live	4
M24/772	Siberia	100 non Au-Ag rights	Live	4
M24/797	Siberia	100 non Au-Ag rights	Live	4
M24/915	Siberia	100 non Au-Ag rights	Live	4
M24/916	Siberia	100 non Au-Ag rights	Live	4
P24/5235	Siberia	100	Live	
P24/5236	Siberia	100	Live	
P29/2484	Siberia	100	Live	
P29/2485	Siberia	100	Live	
P24/5416	Siberia	100	Pending	
P24/5417	Siberia	100	Pending	
P24/5418	Siberia	100	Pending	

GNCP Expansion
Black Range

Tenure	Location	Ardea Interest (%)	Status	Note
M24/757	Black Range	100 non Au-Ag rights	Live	4
M24/973	Black Range	100 non Au-Ag rights	Pending	4
P24/4395	Black Range	100 non Au-Ag rights	Live	4
P24/4396	Black Range	100 non Au-Ag rights	Live	4
P24/4400	Black Range	100 non Au-Ag rights	Live	4
P24/4401	Black Range	100 non Au-Ag rights	Live	4
P24/4402	Black Range	100 non Au-Ag rights	Live	4
P24/4403	Black Range	100 non Au-Ag rights	Live	4

GNCP Expansion
Highway

Tenure	Location	Ardea Interest (%)	Status	Note
E29/1082	Highway	100	Pending	
E29/1083	Highway	100	Pending	
E29/1089	Highway	100	Pending	
M29/214	Highway	100	Live	
P29/2501	Highway	100	Live	
P29/2559	Highway	100	Pending	
P29/2560	Highway	100	Pending	
P29/2561	Highway	100	Pending	
P29/2562	Highway	100	Pending	

GNCP Expansion
Ghost Rocks

Tenure	Location	Ardea Interest (%)	Status	Note
E29/941	Ghost Rocks	100	Live	
E29/981	Ghost Rocks	100	Live	
P29/2511	Ghost Rocks	100	Live	
P29/2512	Ghost Rocks	100	Live	
P29/2513	Ghost Rocks	100	Live	
P29/2514	Ghost Rocks	100	Live	
P29/2515	Ghost Rocks	100	Live	
P29/2538	Ghost Rocks	100	Live	
P29/2539	Ghost Rocks	100	Live	

Kalpini Hub
GNCP Expansion

Tenure	Location	Ardea Interest (%)	Status	Note	Tenure	Location	Ardea Interest (%)	Status	Note
E27/524	Kalpini	100 non-Au rights	Live	9	**P25/2454**	Kalpini-Bulong	100	Live	
E27/606	Kalpini	100	Live		**P25/2455**	Kalpini-Bulong	100	Live	
E27/607	Kalpini	100	Live		**P25/2456**	Kalpini-Bulong	100	Live	
E28/1224	Kalpini	100	Live		**P25/2457**	Kalpini-Bulong	100	Live	
E28/2978	Kalpini	100	Pending		**P25/2458**	Kalpini-Bulong	100	Live	
M27/395	Kalpini	100	Live		**P25/2459**	Kalpini-Bulong	100	Live	
M27/506	Kalpini	100	Live		**P25/2460**	Kalpini-Bulong	100	Live	
M27/512	Kalpini	100	Pending		**P25/2461**	Kalpini-Bulong	100	Live	
M28/199	Kalpini	100	Live		**P25/2482**	Kalpini-Bulong	100	Live	
M28/201	Kalpini	100	Live		**P25/2483**	Kalpini-Bulong	100	Live	
M28/205	Kalpini	100	Live		**P25/2484**	Kalpini-Bulong	100	Live	
E27/278	Kalpini-Pioneer	100 Ni Lat Ore	Live	5	**P25/2559**	Kalpini-Bulong	100	Live	
E27/438	Kalpini-Pioneer	100 Ni Lat Ore	Live	5	**P25/2560**	Kalpini-Bulong	100	Live	
E27/520	Kalpini-Pioneer	100 Ni Lat Ore	Live	5	**P25/2561**	Kalpini-Bulong	100	Live	
E27/579	Kalpini-Pioneer	100 Ni Lat Ore	Live	5	**P25/2609**	Kalpini-Bulong	100	Live	
E28/1746	Kalpini-Pioneer	100 Ni Lat Ore	Live	5	**P25/2613**	Kalpini-Bulong	100	Live	
E28/2483	Kalpini-Pioneer	100 Ni Lat Ore	Live	5	**P25/2614**	Kalpini-Bulong	100	Live	
E25/578	Kalpini-Bulong	100	Live		**P25/2615**	Kalpini-Bulong	100	Live	
M25/59	Kalpini-Bulong	100	Live		**P25/2650**	Kalpini-Bulong	100	Live	
M25/134	Kalpini-Bulong	100	Live		**P26/4542**	Kalpini-Bulong	100	Pending	

Tenure	Location	Ardea Interest (%)	Status	Note	Tenure	Location	Ardea Interest (%)	Status	Note
M25/145	Kalpini-Bulong	100	Live		**P26/4543**	Kalpini-Bulong	100	Pending	
M25/151	Kalpini-Bulong	100	Live		**M31/488**	Kalpini-Lake Rebecca	100	Pending	
M25/161	Kalpini-Bulong	100	Live		**P31/2038**	Kalpini-Lake Rebecca	100	Live	
M25/171	Kalpini-Bulong	100	Live		**P31/2039**	Kalpini-Lake Rebecca	100	Live	
M25/187	Kalpini-Bulong	100	Live		**P31/2040**	Kalpini-Lake Rebecca	100	Live	
M25/209	Kalpini-Bulong	100	Live						

Yerilla Hub
GNCP Expansion

Tenure	Location	Ardea Interest (%)	Status	Note
E39/1954	Yeriall-Aubils	100	Live	
E31/1092	Yerilla-Boyce Creek	100	Live	
E31/1169	Yerilla-Boyce Creek	100	Live	
E31/1208	Yerilla-Boyce Creek	100	Pending	
E31/1213	Yerilla-Boyce Creek	100	Live	
M31/483	Yerilla-Boyce Creek	100	Live	
M31/475	Yerilla-Jump Up Dam	100	Live	
M31/477	Yerilla-Jump Up Dam	100	Live	
M31/479	Yerilla-Jump Up Dam	100	Live	

WA Regional

Tenure	Location	Ardea Interest (%)	Status	Note
E39/2188	Yundamindra	100	Pending	
M15/1101	WA Regional	Pre-emp Ni-Co Lat	Live	7
M15/1263	WA Regional	Pre-emp Ni-Co Lat	Live	7
M15/1264	WA Regional	Pre-emp Ni-Co Lat	Live	7
M15/1323	WA Regional	Pre-emp Ni-Co Lat	Live	7
M15/1338	WA Regional	Pre-emp Ni-Co Lat	Live	7
M27/510	WA Regional	100 Ni Lat Ore	Live	8
M27/272	Kanowna East	Non-Au Rights	Live	10
E31/1261	Pinjin	100	Pending	
E28/3036	Pinjin South	100	Pending	
E28/3040	Pinjin South	100	Pending	

Kookynie Gold-Nickel

Tenure	Location	Ardea Interest (%)	Status	Note
E40/350	Kookynie	Option for 100	Live	
E40/357	Kookynie	Option for 100	Live	

Perrinvale Nickel-Gold

Tenure	Location	Ardea Interest (%)	Status	Note
E29/1006	Perrinvale	100	Live	
E29/1078	Perrinvale	100	Live	

Mt Zephyr Gold-Nickel

Tenure	Location	Ardea Interest (%)	Status	Note	Tenure	Location	Ardea Interest (%)	Status	Note
E37/1271	Mt Zephyr	100	Live		**E39/1706**	Mt Zephyr	100	Live	
E37/1272	Darlot East	100	Live		**E39/1854**	Mt Zephyr	100	Live	
E37/1273	Darlot East	100	Live		**E39/1985**	Mt Zephyr	100	Live	
E37/1274	Mt Zephyr	100	Live						

Bedonia Gold-Nickel

Tenure	Location	Ardea Interest (%)	Status	Note	Tenure	Location	Ardea Interest (%)	Status	Note
E63/1827	Bedonia	100	Live		**E63/1929**	Bedonia	100	Live	
E63/1828	Bedonia	100	Live		**E63/1974**	Bedonia	100	Live	
E63/1856	Bedonia	100	Live		**E63/1976**	Bedonia	100	Live	
E63/1857	Bedonia	100	Live		**E63/1995**	Bedonia	100	Pending	
E63/1928	Bedonia	100	Live		**E63/2008**	Bedonia	100	Pending	

Ardea Resources Limited Tenement Schedule (NSW) as at 30 September 2020

Lachlan Fold Belt – Ardea

Tenure	Location	Ardea Interest (%)	Status	Note
EL 8557	Restdown Lithium	100	Live	

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Notes:	
1.	Britannia Gold Ltd retains precious metal rights.
2.	Impress Ventures Ltd has a 10% equity free-carried interest to a decision to mine.
3.	Barrick (PD) Australia Limited retains certain Au claw-back rights and royalty receivable.
4.	Ora Banda Mining Ltd holds Au-Ag rights while Ardea retains all non Au-Ag rights.
5.	Acra JV – Northern Star Resources Ltd earn-in with Pioneer Resources Ltd. Former holds gold rights while latter retains nickel sulphide rights. Ardea retains rights to Ni laterite ore.
6.	Black Mountain Gold Limited all rights with exception of Ardea retaining Ni rights.
7.	Ramelius Resources Limited assignee (Maximus Resources Ltd) all rights, Ardea pre-emptive right to Ni-Co laterite.
8.	Pioneer Resources Limited assignee (Paddington Gold Pty Ltd) owns all mineral rights (except nickel sulphide) while Ardea retains rights to nickel laterite ore.
9.	Kalnorth Gold Ltd owns Au rights while Ardea retains non-Au rights.
10.	Northern Star (Kanowna) Limited holds Au rights. Ardea retains non-Au rights.

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