

ASX announcement

17 September 2020

Higginsville Drilling Program

Argonaut Resources NL (ASX: ARE) (*Argonaut* or the *Company*) is pleased to announce results from drilling recently completed near Higginsville, Western Australia.

Highlights

- Argonaut completed 37 drill holes across three targets for a total 3,426m.

Amorphous Gold Deposit

Results from the 2020 drilling program include:

- AMRC024: **5m at 2.04g/t gold** from 37m
- AMRC023: 7m at 0.38g/t gold from 57m
- AMRC022: 6m at 0.33g/t gold from 22m
- AMRC025: 2m at 0.92g/t gold from 71m

Drilling results previously generated by Argonaut at the Amorphous Gold Deposit included:

- AMRC005: 4m at 1.53g/t gold from 69m
- and **11m at 2.76g/t gold** from 77m
 - including **6m at 4.62g/t gold** from 81m
 - including **3m at 7.47g/t gold** from 82m
- AMRC006: **6m at 2.37g/t gold** from 44m
 - including **3m at 4.38g/t gold** from 45m
- AMRC008: 3m at 1.66g/t gold from 56m
- AMRC009: 2m at 1.28g/t gold from 22m
- AMRC015: 4m at 2.36g/t gold from 64m

Island Gold Target

Argonaut has elected to resample percussion drilling chip from drilling completed at the Island target and resubmit to the laboratory for further analysis.

Four planned drill holes across two gold geochemistry anomalies at the Island target were not drilled due to adverse access conditions. These targets are prospective and warrant drill testing.



Amorphous Gold Deposit

Argonaut completed 10 RC drill holes at Amorphous for a total of 1,012m. Highlights of this program include:

Drilling from the 2020 drilling program included:

- AMRC024: **5m at 2.04g/t gold** from 37m
- AMRC023: 7m at 0.38g/t gold from 57m
- AMRC022: 6m at 0.33g/t gold from 22m
- AMRC025: 2m at 0.92g/t gold from 71m

Argonaut first drilled the Amorphous gold deposit in 2017. This drilling program significantly increased the potential for a commercial gold deposit at Amorphous by demonstrating improved continuity of gold grades along a strike length of 800m (Figure 3).

Drilling results previously generated by Argonaut at the Amorphous Gold Deposit included:

- AMRC005: 4m at 1.53g/t gold from 69m
- and **11m at 2.76g/t gold** from 77m
 - including **6m at 4.62g/t gold** from 81m
 - including **3m at 7.47g/t gold** from 82m
- AMRC006: **6m at 2.37g/t gold** from 44m
 - including **3m at 4.38g/t gold** from 45m
- AMRC008: 3m at 1.66g/t gold from 56m
- AMRC009: 2m at 1.28g/t gold from 22m
- AMRC015: 4m at 2.36g/t gold from 64m

Gold mineralisation at Amorphous is typically hosted in an altered shear-zone within an easterly dipping gabbroic unit. Gold grades within the mineralised shear-zone are variable.

A lower than expected dip on the mineralised shear-zone improved conceptual open-pit geometry. The gold mineralisation envelope dips to the east at approximately 60 degrees, rather than 80 degrees as previously interpreted, thus lowering the theoretical stripping ratio.

Previous exploration results were originally announced to the ASX on 21 November 2017 in an announcement titled "Higginsville Gold Drilling Significantly Increases Potential for Commercial Gold Deposit".

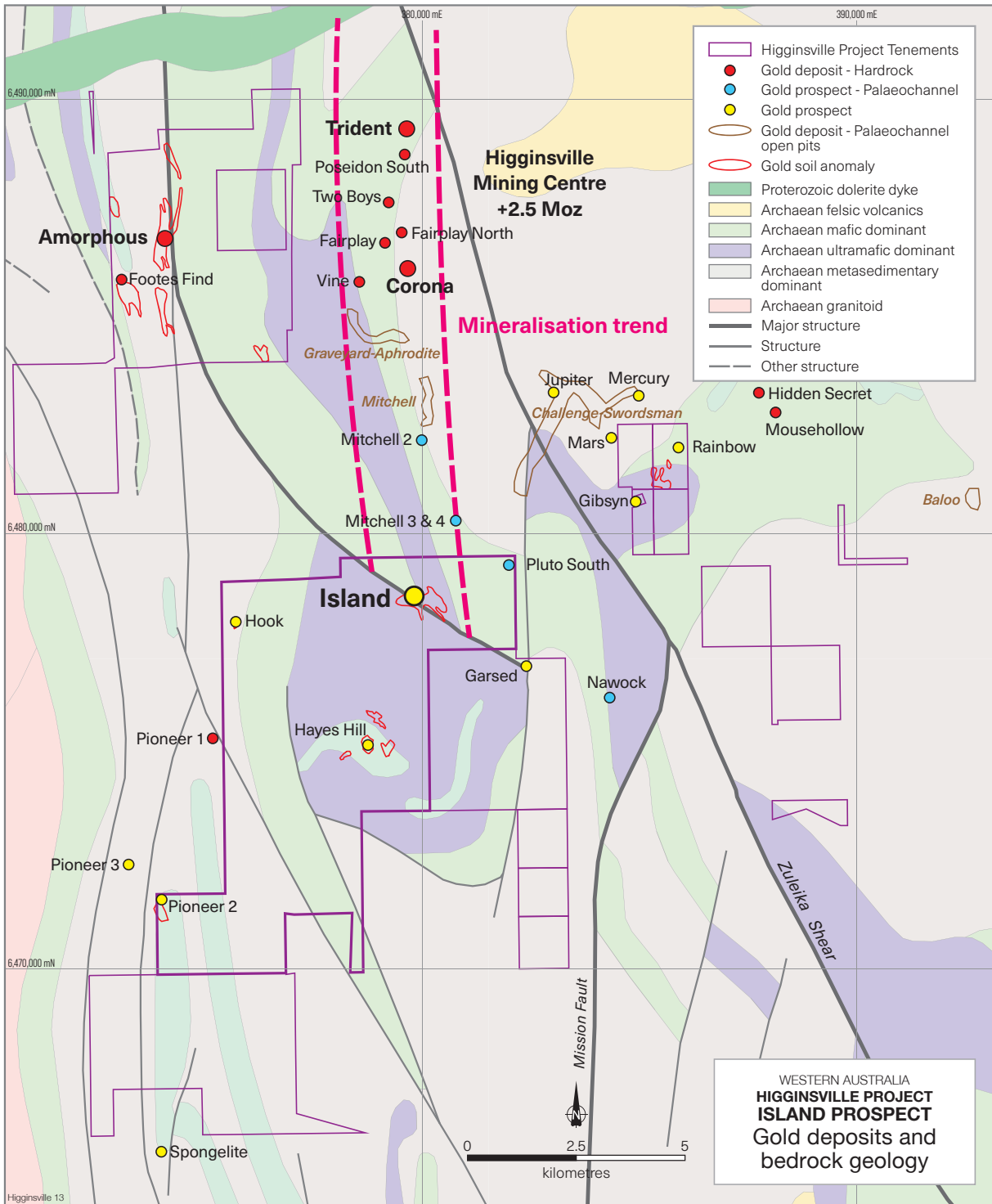


Figure 2 Island Gold Prospect – gold deposits and bedrock geology.

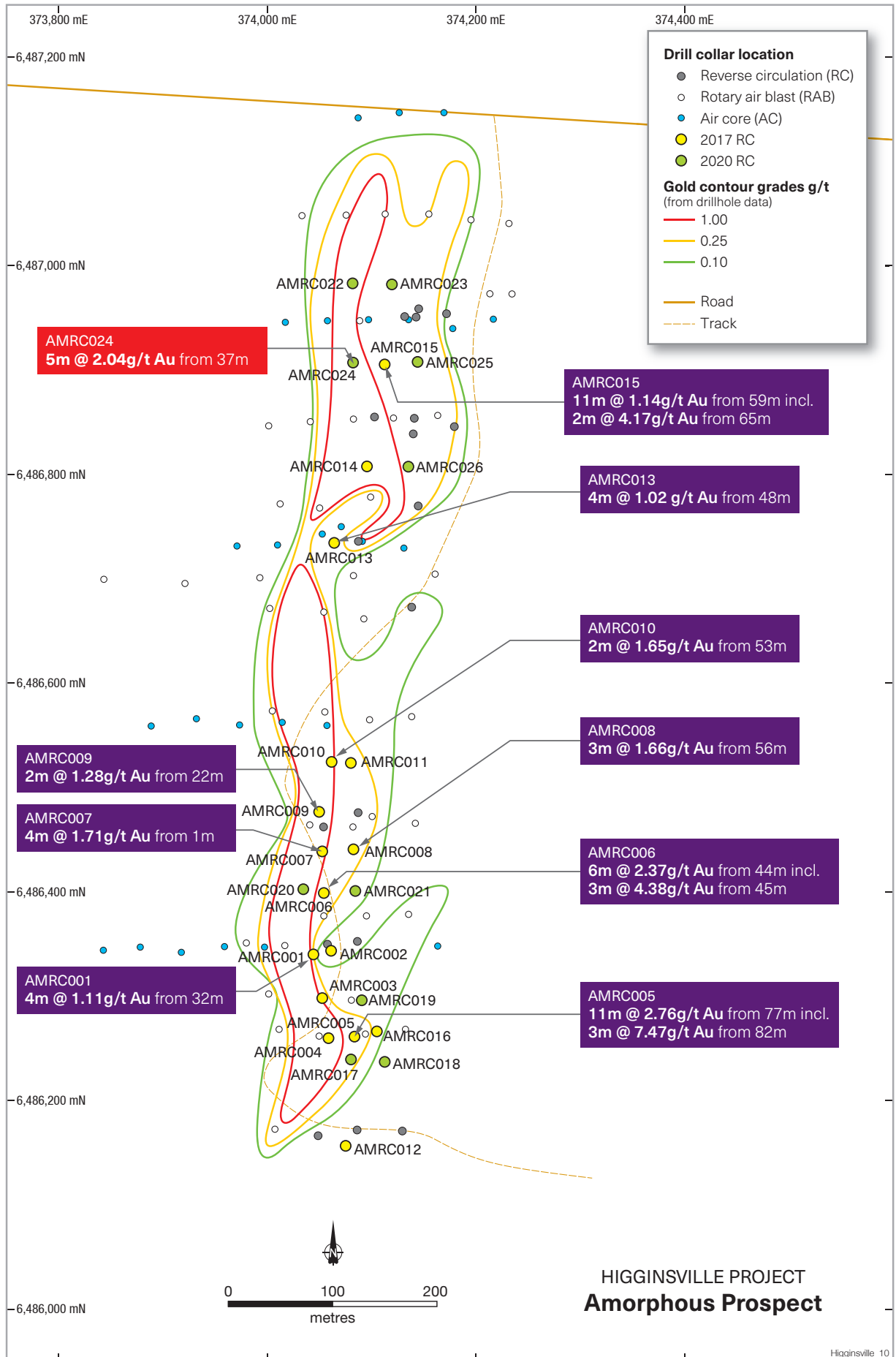


Figure 2 Amorphous Gold Deposit showing drill collars, intercepts and gold contour grades.

Birties Gold Target

Argonaut completed 14 RC drill holes at the Birties Gold Target for a total of 1,162m. Highlights of this drilling include BIRC010: 2m at 0.25g/t gold from 23m.

The Birties prospect features a gold geochemistry anomaly that was generated in the early 2010s. The target is defined by a broad geochemical anomaly which is over 1km long and 1km wide.

Island Gold Target

The Island gold prospect is located 9km south of the Higginsville Mining Camp (+2.5MOz) (Figure 2). The Island gold prospect is defined by a 1,200m by 400m gold geochemical anomaly and surface rock-chip samples (Figure 2). The anomaly sits over a major structural intersection that may have been a conduit for gold mineralising fluids.

Drilling Results

Argonaut completed 13 RC drill holes at the Island target for a total of 1,352m.

Preliminary assay results from drilling at the Island target are not sufficiently reliable for release to the ASX. Argonaut has elected to resample percussion drilling chips on site and resubmit for further analysis.

Drilling Incomplete

Four planned drill holes across two gold geochemistry anomalies at the Island target were not drilled during the 2020 RC drilling program due to the surface conditions of Lake Cowen impeding rig access to the planned collars.

These two targets are prospective and warrant drill testing.

Earn-In Terms

Argonaut and Loded Dog Prospecting Pty Ltd executed the Eastern Goldfields Earn-In Joint Venture and Royalty Agreement on 7 February 2017. Under the agreement, Argonaut has the right to earn an 80% interest in the tenement package according to the following terms:

- Argonaut earned a 51% interest in the tenement package by completing \$500,000 in exploration expenditure within two years of commencement; and
- Argonaut may earn a further 29% interest, for a total of 80%, for completing an additional \$1,500,000 in exploration expenditure within a further three years.
- Reimbursement of tenement acquisition expenses totalling \$250,000 was paid by Argonaut progressively under the agreement.
 - Reimbursement of \$100,000 was paid on execution of the definitive earn-in agreement;
 - Reimbursement of \$75,000 was paid on the first anniversary; and
 - Reimbursement of \$75,000 was paid on election to proceed to the second phase of the earn-in.
- An issue of ordinary fully paid Argonaut shares valued at \$50,000 was issued on execution of the definitive earn-in agreement.

The earn-in agreement is currently in the second earn-in phase.

This announcement was authorised for release by

Lindsay Owler

Director and CEO

Argonaut Resources NL

Sections of information contained in this report that relate to Exploration Results were compiled or supervised by Mr Lindsay Owler BSc, MAusIMM who is a Member of the Australasian Institute of Mining and Metallurgy and is a full-time employee of Argonaut Resources NL. Mr Owler holds shares and options in Argonaut Resources NL, details of which are disclosed in the Company's 2019 Annual Report. Mr Owler has sufficient experience which is relevant to the style of mineral deposits 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 Mineral Resources and Ore Reserves". Mr Owler consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

Higginsville 2020 RC Drilling Program – Summary of Drilling Intercepts

Hole	Easting	Northing	Azimuth	Inclination	Interval (m)	Grade (g/t Au)	From (depth m)
AMRC018	374110	6486240	270	-60	3	0.33	102
AMRC019	374088	6486298	270	-60	2	0.49	72
AMRC020	374032	6486405	270	-60	2	0.36	40
AMRC020	374032	6486405	270	-60	2	0.37	48
AMRC021	374082	6486403	270	-60	3	0.30	97
AMRC022	374079	6486985	270	-60	6	0.33	22
AMRC022	374079	6486985	270	-60	2	0.64	24
AMRC023	374117	6486984	270	-60	2	0.55	39
AMRC023	374117	6486984	270	-60	7	0.38	57
AMRC024	374080	6486909	270	-60	2	0.43	6
AMRC024	374080	6486909	270	-60	3	0.19	32
AMRC024	374080	6486909	270	-60	5	2.04	37
AMRC024	374080	6486909	270	-60	2	0.79	50
AMRC025	374142	6486910	270	-60	5	0.32	55
AMRC025	374142	6486910	270	-60	2	0.92	71
AMRC025	374142	6486910	270	-60	2	0.38	75
BIRC010	379123	6503333	270	-60	2	0.25	23

JORC Code, 2012 Edition – Table 1

Section 1 Sampling Techniques and Data – Higginsville Project

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> The Birties, Amorphous and Island prospects were sampled using reverse circulation (RC) drill holes completed during June and July 2020. Rock chip sampling was conducted at various old workings and outcrops. Drill chips were logged for lithology, weathering, alteration and mineralisation. All samples were chip trayed. QA/QC procedures included CRMs and blanks inserted at a rate of 1 each per 20 sample respectively for 1m split sampling. 4m RC drill chip composite samples using a spear were conducted throughout. Where 4m composite samples have returned Au values in greater than or equal to 0.05 g/t, 1 metre rotary cone split will be collected for these intervals and analysed. RC drill chips 1m bulk samples were collected during drilling with smaller split samples (3kg) for assay being collected using a rotary cone splitter directly off the rig. RC composite samples were dried, crushed, split, pulverised and pulp taken for 30g Fire Assay digest followed by analysis by AAS for Au. Multi-element analysis by Aqua Regia digest and analysis by ICP- MS techniques. All sample preparation conducted by ALS Kalgoorlie, Au analysis by ALS Kalgoorlie and multi-element analysis by ALS Perth.
Drilling techniques	<ul style="list-style-type: none"> 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). 	<ul style="list-style-type: none"> Reverse circulation drilling. A total 37 RC drill holes (BIRC001-014, AMRC017-026, ISRC001-013) for 3426 metres completed.
Drill sample recovery	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Drill chip recoveries were recorded. Rare undersize/oversize samples were noted in the drill hole logging and sample records. Drill chip quality and condition were recorded. Wet samples were noted in the drill hole logging and sample records. RC drilling generally has good recoveries and few contamination issues. No relationship noted.
Logging	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Drill chips have been logged for geological (lithology, weathering, mineralisation, veining and alteration) information. Drill chip logging is qualitative. All drilling samples logged and all rock chip samples described.
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> RC drill chips were sampled as 4m composite spear samples. Samples were prepared at and crushed with a subsample split for pulverising. Sizing checks were undertaken. Sample sizes are appropriate to the grain size of the material being sampled.

Criteria	JORC Code explanation	Commentary
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> • <i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i> • <i>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.</i> • <i>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.</i> 	<ul style="list-style-type: none"> • RC samples were dried, crushed, split, pulverised and pulp taken for 30g Fire Assay digest followed by analysis by AAS for Au. Multi-element analysis by Aqua Regia digest and analysis by ICP- MS techniques. All sample preparation conducted by ALS Kalgoorlie, Au analysis by ALS Kalgoorlie and multi-element analysis by ALS Perth. • QAQC procedures were employed for this RC drilling. Commercially available CRMs and blanks were inserted at a frequency of 1 in 20 respectively.
Verification of sampling and assaying	<ul style="list-style-type: none"> • <i>The verification of significant intersections by either independent or alternative company personnel.</i> • <i>The use of twinned holes.</i> • <i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i> • <i>Discuss any adjustment to assay data.</i> 	<ul style="list-style-type: none"> • Significant intersections are reported by ARE personnel. • No twinned drill holes. • Data derived from primary data sources. All data was entered into spreadsheets, collated, verified and stored on multiple platforms. • No statistical adjustments to data have been applied.
Location of data points	<ul style="list-style-type: none"> • <i>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.</i> • <i>Specification of the grid system used.</i> • <i>Quality and adequacy of topographic control.</i> 	<ul style="list-style-type: none"> • Drillhole locations +/-5 metres with averaged handheld GPS. Gyroscopic down hole surveys were recorded approximately every 30 metres. • The grid system for the Higginsville Project is GDA94 (MGA) Zone 51. • Elevation data +/-10 metres with averaged handheld GPS.
Data spacing and distribution	<ul style="list-style-type: none"> • <i>Data spacing for reporting of Exploration Results.</i> • <i>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.</i> • <i>Whether sample compositing has been applied.</i> 	<ul style="list-style-type: none"> • Wide spaced exploration drilling. Rock chip sampling from pit walls, old working and outcrop where available. • No resources or reserves reported. • Composite sampling reported for several drillholes for which resampling will be undertaken.
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> • <i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i> • <i>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.</i> 	<ul style="list-style-type: none"> • Mapping undertaken on prospect scale to refine regional structural fabric and thus to drill perpendicular to the interpreted structural orientation. • No orientation based bias had been identified in the data to this point.
Sample security	<ul style="list-style-type: none"> • <i>The measures taken to ensure sample security.</i> 	<ul style="list-style-type: none"> • The chain of custody for sample dispatch was samples collected at drill site in polywoven bags and sealed with cable ties. Samples submitted by personnel on site directly to ALS Kalgoorlie. Submission forms supplied to lab and sample receipt advice received.
Audits or reviews	<ul style="list-style-type: none"> • <i>The results of any audits or reviews of sampling techniques and data.</i> 	<ul style="list-style-type: none"> • Anomalous samples or sample intervals checked with logging and descriptions.

Section 2 Reporting of Exploration Results – Higginsville Project

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> The Birties prospect is located within Exploration License E15/1523. The Amorphous prospect is located within Exploration License E15/1489. The Island prospect is located within Exploration License E15/1588. All exploration licences are located within the Higginsville Project owned by Loded Dog Prospecting Pty Ltd. Argonaut Resources have an earn in joint venture agreement on the project. The Higginsville project is situated within the Ngadju Native Title Claim (WC99/002). No other known impediments.
Exploration done by other parties	<ul style="list-style-type: none"> Acknowledgment and appraisal of exploration by other parties. 	<ul style="list-style-type: none"> Resolute Samantha (early to mid 1990's) – Soils sampling, mapping, rock chip sampling. Shallow, blade refusal AC drilling in early 1990s over Island and Amorphous Au in soil anomaly. RAB and RC Drilling in 1994 at Amorphous. Great Southern Mines (early to mid 1990's) – Soils sampling, very shallow RAB drilling (<10 metres) in early 1990s in vicinity of Birties Au and As in soil anomaly. Acacia Resources (late 1990's) – Broad spaced auger geochemical sampling over Birties prospect. WMC/Gold Fields (late 1990's – early 2000's) – Review data, Vertical blade refusal AC drilling in vicinity of Island prospect. Australian Gold Resources Pty Ltd (mid 2000's) – Soil sampling, RAB drilling on selected traverses over Au in soil anomalies. Follow up RC drilling at Amorphous. Gascoyne Resources Ltd. (2012 –2014) – Broad spaced auger geochemical sampling over Birties prospect.
Geology	<ul style="list-style-type: none"> Deposit type, geological setting and style of mineralisation. 	<ul style="list-style-type: none"> Birties, Amorphous and Island prospects are situated with the Archaean Norseman - Wiluna Belt which locally includes basalts, komatiites, metasediments, and felsic volcanoclastics. The primary gold mineralisation orogenic style and is related to hydrothermal activity during multiple deformation events. Indications are that gold mineralisation at the prospects is focused on or near to the sheared contact between the gabbro and metasedimentary units. Within the Higginsville region, economic gold mineralisation (Trident, Poseidon South) is hosted primarily within gabbro with subordinate mafic and ultramafic lithologies and comprises a series of north-northeast trending, shallowly north-plunging mineralised zones. These deposits comprise of two main mineralisation styles; large wallrock-hosted ore-zones comprising sigmoidal quartz tensional vein arrays and associated metasomatic wall rock alteration hosted exclusively within the gabbro; and thin, lode-style, nuggetty laminated quartz veins that formed primarily at sheared lithological contacts between the various mafic and ultramafic lithologies.

Criteria	JORC Code explanation	Commentary
Drill hole Information	<ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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 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. 	<ul style="list-style-type: none"> See Table – Higginsville Project Drillholes
Data aggregation methods	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Length-weighted average grades reported. No upper limit has been applied to gold grades in these exploration results. A cut-off grade of 0.1 g/t Au and a maximum internal dilution of 4m (downhole width) are used as a guideline when delineating the drilled thickness intervals of mineralisation. All metal grades reported are single element.
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> 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'). 	<ul style="list-style-type: none"> Down hole length, true width not known.
Diagrams	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Refer to figures within report.
Balanced reporting	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Results for this drilling derived 2020 RC drilling program.
Other substantive exploration data	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> There is no other exploration data which is considered material to the results reported.
Further work	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> Follow up drill target testing contingent on interpretation and exploration ranking. All future exploration work is commercially sensitive and will not be released to the market until results are available.

Higginsville Project Drill Collars

Hole	Easting	Northing	RL	TD	Azimuth	Inclination
BIRC001	379321	6503490	319	60	270	-60
BIRC002	379360	6503477	319	72	270	-60
BIRC003	379400	6503470	319	78	270	-60
BIRC004	379437	6503462	319	88	270	-60
BIRC005	379117	6503399	319	60	270	-60
BIRC006	379171	6503394	319	78	270	-60
BIRC007	379207	6503403	319	84	270	-60
BIRC008	379242	6503390	319	96	270	-60
BIRC009	379283	6503391	319	120	270	-60
BIRC010	379123	6503333	319	60	270	-60
BIRC011	379161	6503321	319	78	270	-60
BIRC012	379197	6503319	319	90	270	-60
BIRC013	379236	6503328	319	96	270	-60
BIRC014	379278	6503328	319	102	270	-60
AMRC017	374078	6486242	340	102	270	-60
AMRC018	374110	6486240	340	120	270	-60
AMRC019	374088	6486298	340	108	270	-60
AMRC020	374032	6486405	340	66	270	-60
AMRC021	374082	6486403	340	102	270	-60
AMRC022	374079	6486985	340	78	270	-60
AMRC023	374117	6486984	340	106	270	-60
AMRC024	374080	6486909	340	76	270	-60
AMRC025	374142	6486910	340	118	270	-60
AMRC026	374133	6486810	340	136	270	-60
ISRC001	379634	6478523	270	82	10	-60
ISRC002	379635	6478489	270	100	10	-60
ISRC003	379625	6478449	270	100	10	-60
ISRC004	379619	6478411	270	100	10	-60
ISRC005	379614	6478373	270	100	10	-60
ISRC006	379715	6478499	270	88	10	-60
ISRC007	379700	6478460	270	82	10	-60
ISRC008	379693	6478419	270	100	10	-60
ISRC009	379687	6478381	270	100	10	-60
ISRC010	379560	6478569	270	100	10	-60
ISRC011	379555	6478532	270	100	10	-60
ISRC012	379549	6478493	270	100	10	-60
ISRC013	379632	6487525	270	100	190	-60