12 May 2021

MAGNETIC DRILL TARGETS IDENTIFIED AT PILBARA GOLD PROJECTS

Sayona Mining Limited (ASX:SYA) advises that it released the announcement titled above without relevant JORC Table, section 1 & 2.

Attached is an amended announcement. The only change is the inclusion of the JORC Table.

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About Sayona Mining

Sayona Mining Limited is an emerging lithium miner (ASX:SYA; OTC:DMNXF), with projects in Québec, Canada and Western Australia. In Québec, Sayona is progressing a bid for the North American Lithium mine with the backing of a world-class team, while advancing its flagship Authier Lithium Project and its emerging Tansim Lithium Project, supported by a strategic partnership with **Piedmont Lithium Limited (ASX:PLL; Nasdaq:PLL)**.

In Western Australia, the Company holds a large tenement portfolio in the Pilbara region prospective for gold and lithium.

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SAYONA MINING LIMITED

ASX ANNOUNCEMENT

ASX: SYA

12 May 2021

MAGNETIC DRILL TARGETS IDENTIFIED AT PILBARA GOLD PROJECTS

Highlights

- **Processing and interpretation of recently completed 3,900 line km airborne geophysical survey data identifies 16 anomalies for drill testing at Mt Dove and Deep Well gold projects, WA**
- **Identification of discrete magnetic anomalies under cover, advancing exploration for Hemi-style intrusion-related gold mineralisation**
- **Newly pegged Mac Well tenement, E45/5904, increases gold holdings in Hemi district to 911 sq km.**

Sayona Mining Limited (ASX:SYA; OTC:DMNXF) is advancing its Western Australian gold exploration, amid high Australian dollar prices for the precious metal. Exploration within the Company's newly expanded 911 sq km of gold tenements in the Pilbara is targeting intrusion-related gold mineralisation, similar to De Grey Mining's nearby Hemi discovery.

Preliminary processing and interpretation of the high resolution 3,900 line km airborne magnetics survey data has identified magnetic anomalies at the Mt Dove and Deep Well Projects. At Mt Dove, five features and a number of prospective structural zones have been identified, with 11 anomalies determined at Deep Well. A number of secondary targets and features for additional testing have also been identified.

All of the anomalies are obscured by recent cover and their source remains unresolved. Planning is underway to progress towards drill testing of the features. Depending on approvals, drilling could commence early in the third quarter 2021.

Sayona's Pilbara gold holdings have recently been increased with the pegging of the Mac Well tenement application, located to the northeast of the Hemi area. The Mac Well application complements nearby Sayona tenements in consolidating tenure along the regional scale Tabba Tabba shear zone and its associated prospective intrusives.

Sayona's Managing Director, Brett Lynch commented: "*The identification of drill targets within our 100% owned Pilbara gold portfolio is an encouraging start to the 2021 exploration season. The acquisition of geophysical data is part of a series of planned steps to unlock the prospectivity of the large tenement holding that Sayona has in close proximity to De Grey's expanding Hemi discovery.*

"Planning is now underway to allow drill testing of targets, once statutory and heritage requirements have been completed. We look forward to unlocking value from these prospective tenements, which add to our lithium holdings in the world-class Pilgangoora lithium district and our flagship lithium projects in Canada."

Background

The Pilbara leases comprise gold rights to 10 tenements covering 911 sq km which are prospective for intrusion-related gold mineralisation, similar to the Hemi discovery. This style of mineralisation is hosted within altered late stage hi-Mg diorites of the Indee Suite. Sayona is using its knowledge of late stage intrusions, built up in the search for lithium pegmatite mineralisation, to fast track identification of Hemi-style targets. Gold tenure is displayed in Figure 1 below.

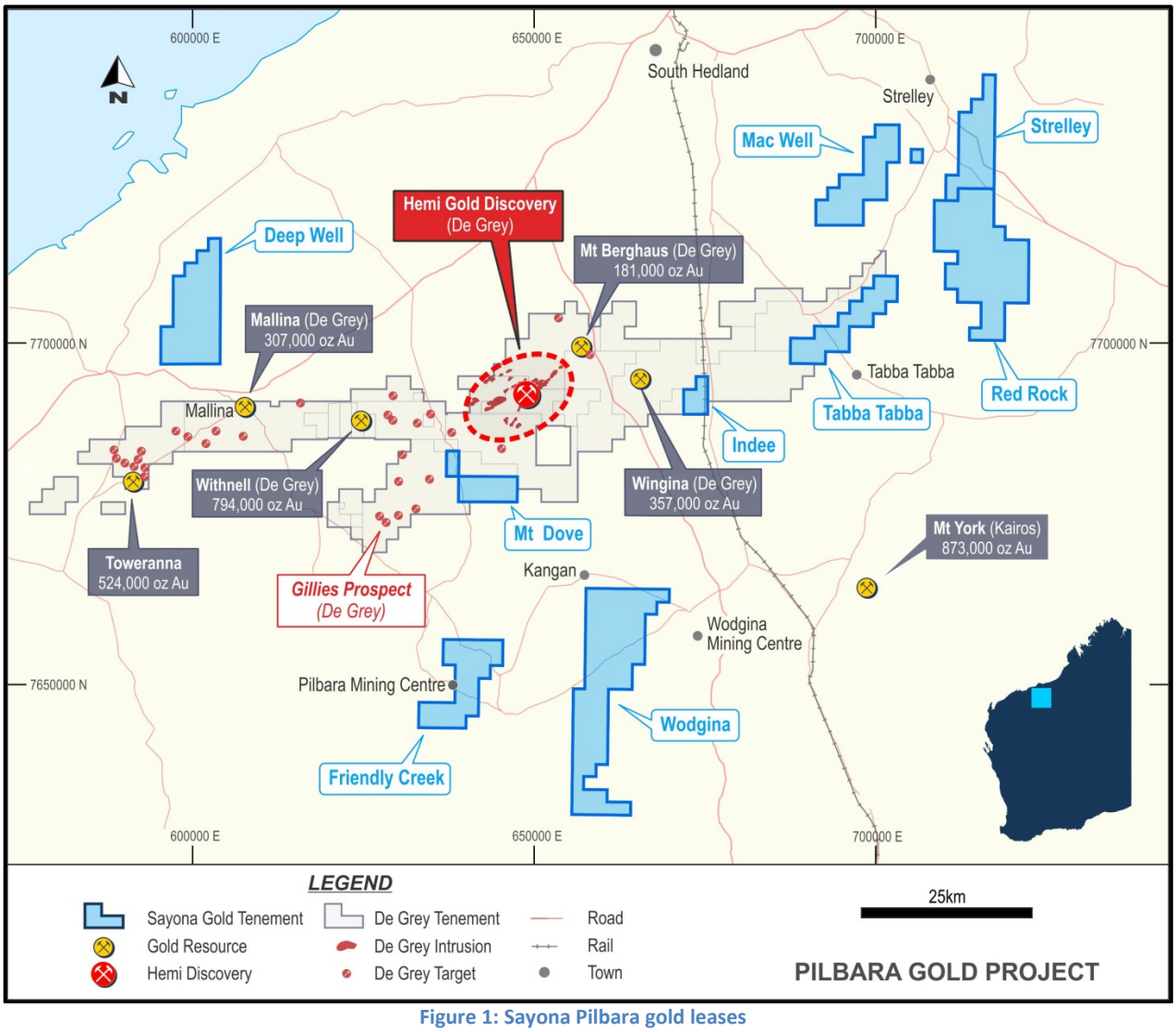

Figure 1: Sayona Pilbara gold leases

Mt Dove Project

The Mt Dove Project is located 10km to the southwest of the Hemi gold discovery.

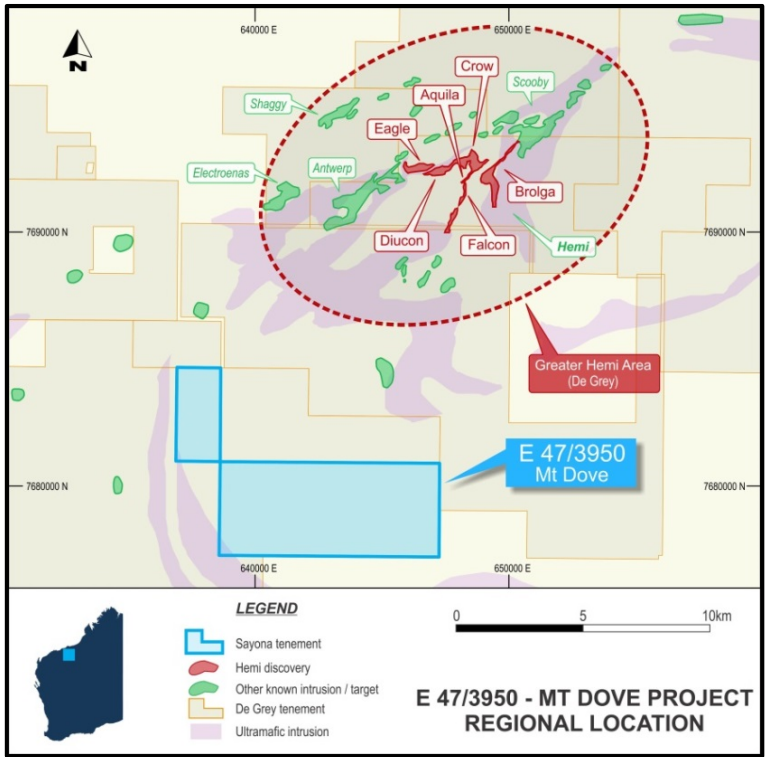

Figure 2: Mt Dove Project and surrounding De Grey targets and Hemi discovery

Processing and interpretation of the Mt Dove magnetics data has been undertaken by Graham Jenke, a senior consulting geophysicist with Southern Geoscience Consultants. The Mt Dove tenement displays a range of magnetic features, the majority of which are interpreted to relate to localised accumulations of magnetite within sand dune systems and in fossil river terraces along the margins of the Yule River.

Preliminary interpretation of data has identified five magnetic features and a number of north-east trending structures and dykes that may have acted as pathways for intrusions within the tenement area (see Figure 3 below).

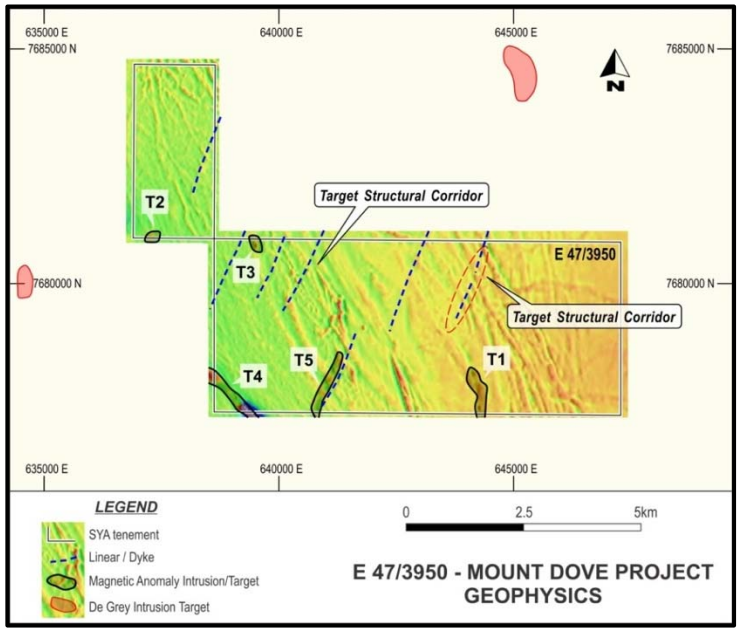

Figure 3: Mt Dove Project with RTP AGC magnetics and targets

Target T4 is the strongest response within the tenement and extends for some 1km of strike extent. Outside of Mt Dove, GSWA mapping has identified quartz veining along strike to the south-east, but within the project area the anomaly remains unresolved.

Anomaly T1 centres on a single line feature at 644290E 7677360N (MGA z50 GDA94) and weak features to its north which may be surficial in nature. The T3 and T5 targets are weaker and may reflect regolith sources. Further geophysical processing is being undertaken to further define these features.

The western 9.4 sq km of the Mt Dove tenement lies within the Yandeyarra Aboriginal Reserve. An access agreement is required before exploration can be undertaken over this area, which covers approximately 25% of the total lease area of 38.4 sq km.

Deep Well Project

At Deep Well, preliminary interpretation of the geophysical data has identified 11 discrete magnetic anomalies, as shown in Figure 4 below.

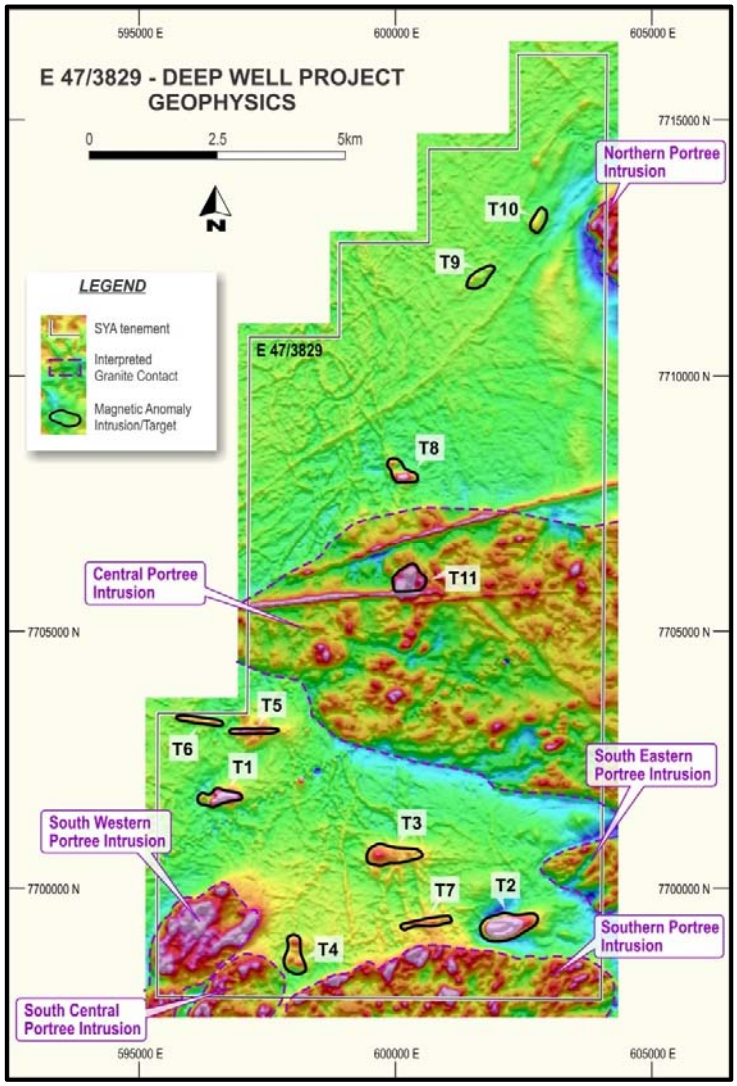

Figure 4: Deep Well Project with RTP magnetics and targets

Further evaluation and modelling of the features is underway.

Imagery has also helped resolve bedrock geology of the tenement area which is obscured by surficial cover. A large area of the western tenement area is interpreted to be underlain by Mallina Basin sediments, which have been intruded by six main intrusions of the Portree Suite.

The Portree intrusions are the same age as the target Indee Suite intrusives. The magnetic signature of each of the Portree intrusions is variable and includes intrusions with magnetic margins and variable magnetic intensity, indicating a potential range in intrusive rock types.

The large area of Mallina Basin sediments between the Portree intrusions provides encouragement to identify further subtle features and alteration contact zones with continued processing of geophysical data and as new information from drilling comes to hand.

Mac Well Application

The recent application for the Mac Well tenement, E45/5904 covering an area of 87 sq km consolidates Sayona's existing ground holding in the area. Recent exploration by De Grey Mining has identified the Eagle and Diucon prospects on the western margin of the Hemi discovery as well as the Gillies prospect, located south-west of the Mt Dove project.

The expanding footprint to mineralisation in the region enhances the exploration potential within the Sayona project area.

Next Steps

The identification of drill targets at Mt Dove and Deep Well is an encouraging step in the systematic exploration of Sayona's Pilbara gold tenure.

Work has commenced in designing potential drilling to test the identified targets. Once completed, this will allow heritage surveying and completion of statutory approvals that are required prior to drill commencement. Depending on approvals, drilling is anticipated to commence in early Q3.

Work is also progressing to expand exploration over the remaining project area which remains effectively untested for its gold potential. In the near term, additional geophysical surveying and geochemical sampling over the target area may help rank areas for further detailed work.

This announcement is authorised by Sayona's Board of Directors.

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Competent Person Statement

The information in this report is based on information compiled by Simon Attwell, a Competent Person, and who is a Member of The Australasian Institute of Mining and Metallurgy. Mr Attwell is an employee of Attgold Pty Ltd ("Attgold") which provides geological services to Sayona.

Mr Attwell has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being 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 Attwell consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Reference to Previous ASX Releases

This report refers to the following previous ASX releases:

- 29 April 2021 - March 2021 Quarterly Activities Report
- 6 April 2021 - Sayona advances exploration activity in Canada and Australia
- 3 February 2021 – Sayona invests in WA exploration assets
- 7 December 2020 - Gold exploration to commence over Pilbara projects for Hemi-style targets.

The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and all material assumptions and technical parameters continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcements.

JORC Code, 2012 edition – Table 1 (section 1; Sampling Techniques and Data)

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	• Survey data were collected by MagSpec Airborne Surveys using a fixed wing Cessna 210 aircraft. Post flight corrections used a GEM GSM-19 base station magnetometer with sampling at 1 second intervals to calibrate magnetic drift. The survey was designed to identify magnetic features that may represent magnetic minerals associated with intrusion related gold mineralisation at depth. The survey specifications and data sampling parameters are considered industry standard for high resolution airborne magnetic surveying.
Drilling techniques	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• Not applicable, no drilling has been carried out
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• Not applicable, no drilling has been carried out
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	• Not applicable, no drilling has been carried out. This information is of insufficient detail to support any Mineral Resource Estimation.

Criteria	JORC Code explanation	Commentary
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• Not applicable, no sub-sampling has been carried out
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	• No assay data is reported The airborne survey utilized a G-823A caesium vapour magnetometer with 20Hz (approximately 3.5m) sample rate, 0.001 nT resolution and 0.01 nT sensitivity. All calibration and parameters of survey equipment are considered industry standard for the type of work undertaken. Review by an independent geophysicist has identified survey data has been carried out with acceptable levels of accuracy for this type of survey.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• Geophysical survey data has been independently assessed and re-processed to provide standard imagery of survey results. • No adjustments to assay data has been undertaken
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• Data location was by on-board Novatel OEM DGPS receiver providing positional information. A Bendix/king KRA405 radar altimeter and Renishaw ILM-500R lasar altimeter were used for survey height information • The level of topographic control provided by DGPS is considered sufficient for the work undertaken
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	• Survey data was collected on traverse lines spaced 50m apart within the survey area. At Deep Well lines were aligned north-south and at Mt Dove lines were aligned east- west. • Sensor height was maintained where possible at a 30m height.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• Survey flight direction was designed to best cover the general features of the tenement area flown. • The very close 50m line spacing in data collection reduces potential for a sampling bias to the data.

Criteria	JORC Code explanation	Commentary
Sample security	• *The measures taken to ensure sample security.*	• Not applicable
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• The data has been independently verified by Mr Graham Jenke, Senior Geophysical Consultant at SGC. Anomalies have been identified using a range of analysis of the geophysical data and reviewed by Mr Jenke and Mr Simon Attwell, consulting geologist to Sayona and Competent Person for this release.

JORC Code, 2012 edition – Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• The tenements of the Pilbara gold Project are held 100% by Sayona Mining. • The western part of Mt Dove is within the Yandeyarra Aboriginal Reserve. An Access agreement is required before exploration can commence in this areas and it is uncertain when or if this may be negotiated. • There are no impediments that have been identified for operating in the project areas
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Little past work has been carried out within the Companies gold tenure. • Use of government data provided by GSWA has allowed recognition of the projects potential, complemented by the Sayona's past pegmatite exploration activities and geological knowledge of the region.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• Gold is being targeted associated with the intrusion related style of gold mineralisation, associated with late stage Archaean hi-Mg diorites of the Indee Suite. These intrusions are of sanukitoid type and host gold in parts of the Pilbara region, including the Toweranna deposit. It is anticipated the Hemi discovery of De Grey Mining will also be of the same type. • Indee Suite intrusions may be magnetic and gold mineralisation associated with them may also display as discrete magnetic features. The magnetic features identified from survey data have been selected to best fit the target style being sought.
Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* o *easting and northing of the drill hole collar* o *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* o *dip and azimuth of the hole* o *down hole length and interception depth*	• Drilling has not been carried out.

Criteria	JORC Code explanation	Commentary
	○ *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.*	
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• Not applicable
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	• Exploration is at an early stage and information contains insufficient data points to allow these relationships to be identified or reported
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• Diagrams are displayed within the main body of this report. These visually display the magnetics data in industry standard formats including reduced to pole (RTP) imagery (used to reduce the effect of latitude and place magnetic features within their correct spatial location), automatic gain control (AGC) (used to give a more even response to all magnetic sources).
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• All relevant results are reported herein.
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• The identified magnetic features are discrete anomalies but do not crop out so their magnetic source is not known. The anomalies are consistent with the general geological model and magnetic nature of the target mineralisation, but further testing is required to determine their prospectivity.
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• The magnetic anomalies do not crop out at surface and the nature of their source is not known. Drilling will be required to gain further geological information and assess the anomalies gold prospectivity.