

ASX ANNOUNCEMENT

28 August 2019

## **4km LONG GOLD-IN-SOIL ANOMALY DISCOVERED WITHIN HARDEY FORMATION SEDIMENTS IN THE PILBARA**

*Delineation of coherent, high-tenor gold-in-soil anomaly represents a significant exploration breakthrough at the Croydon Project*

### **Highlights**

- **4.1km long by 150m wide gold anomaly defined by soil sampling results above 30ppb Au.**
- **Includes a 1.1km long core of over 100ppb Au (0.1g/t) and up to a peak of 648ppb (0.64g/t).**
- **Soil anomalism associated with outcropping sandstone and conglomerate units of the Hardey Formation.**
- **Given the tenor, scale and coherent nature of the anomaly, this presents as an important new exploration focus for Kairos.**
- **High-grade gold (4.27g/t Au) and copper (16.8% Cu) mineralisation in Archaean basement discovered through rock chip sampling and mapping.**
- **New nugget patch now has produced over 1 Kg of gold nuggets.**
- **Next steps include detailed mapping and rock chip sampling (in progress), followed by trenching and drilling.**

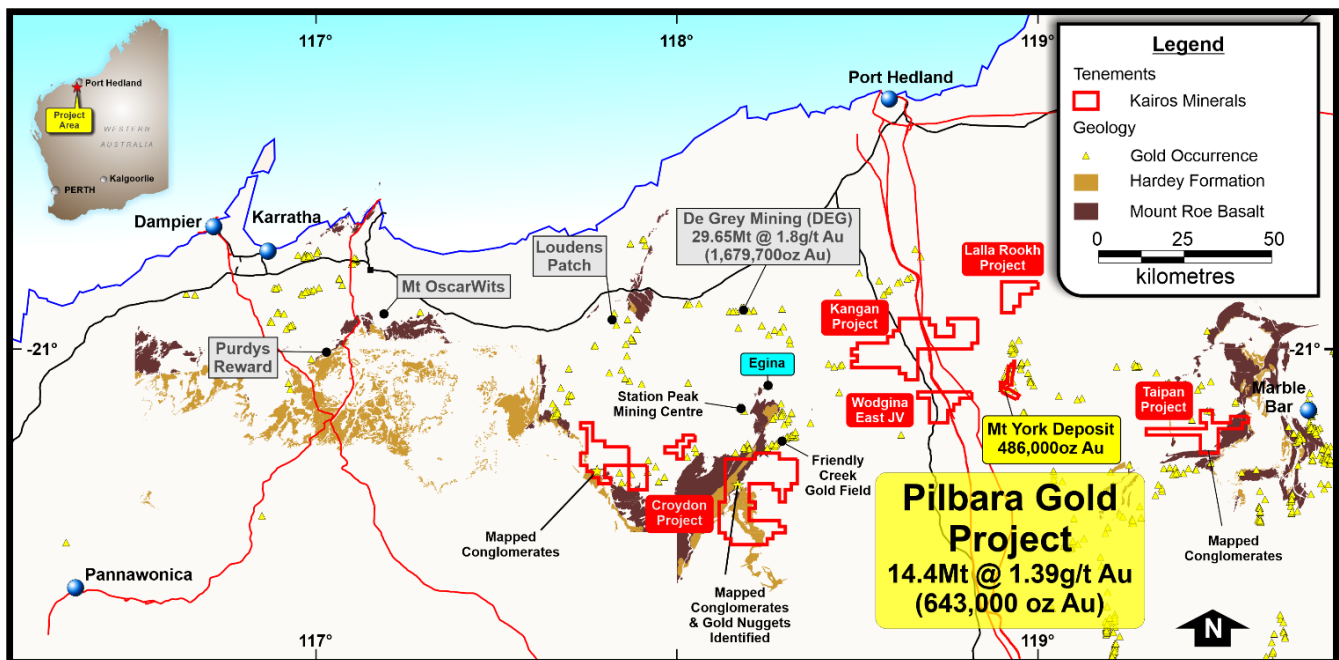
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Kairos' Executive Chairman, Terry Topping, said: *"Our systematic approach to exploration at the Croydon Project is continuing to pay dividends, with recent exploration programs resulting in a number of significant developments which have substantially enhanced the prospectivity of the Project.*

*"Firstly, a systematic program of soil sampling immediately to the north of one of the nugget patches we discovered last year has resulted in the definition of a very large, coherent and high-tenor gold-in-soil anomaly. At a 30ppb Au cut-off, the anomaly extends for over 4km and is up to 150m wide, with a central core that extends for over 1km at over 100ppb Au with peak values of up to 648ppb Au. The anomaly is hosted within outcropping sandstone and conglomerate units within the Hardey Formation.*

*"We have also continued to recover significant quantities of gold nuggets at a new area located some 2km south of some of the original nugget patches we announced last year (see ASX announcement 30 July 2019), increasing the total amount recovered to 416 nuggets for 1.03Kg or 33.1 oz. This, together with some outstanding high-grade results from rock chip sampling, highlights the significant gold endowment of the area.*

*"Croydon is now easily accessible after the establishment of a new access track to allow future sampling, trial mining and drilling. We already have approvals in place to undertake stratigraphic drilling within a portion of the anomaly as part of our EIS co-funded exploration program this year, and we will progress these approvals to explore the rest of the anomaly over the coming weeks."*



**Figure 1: Croydon Project With Regional Geology.**

Kairos Minerals Ltd (ASX: KAI; “Kairos” or “the Company”) is pleased to advise that it has discovered an extensive gold-in-soil anomaly within its 100%-owned **Pilbara Gold Project in WA** during ground-based exploration activities at the Croydon Project, located within the central part of Kairos’ Pilbara Gold Project (Figure 1) ~100km to the west of the Mt York Gold-Project.

The 150m to 200m wide anomaly extends over a strike length of 4.1km above a 30ppb Au cut-off and includes a high-grade 1.1km long core above a 100ppb Au cut-off which has returned peak values of up to **648ppb gold**.

The new discovery represents a significant step forward in Kairos’ ongoing gold exploration program in the Pilbara. Given its scale, coherent nature and high tenor, the anomaly has the potential to represent a significant conventional gold exploration target alongside the well-established conglomerate-hosted gold potential of the area.

There is typically minimal dispersion effect associated with gold-in-soil anomalism across the Pilbara, which means that a large and coherent anomaly such as has strong potential to be associated with bedrock gold mineralisation.

### **New Soil Anomaly Discovery**

Field exploration commenced at the Croydon Project in May to follow up the outstanding results generated by recent stream sediment programs and the six nugget patches discovered last year.

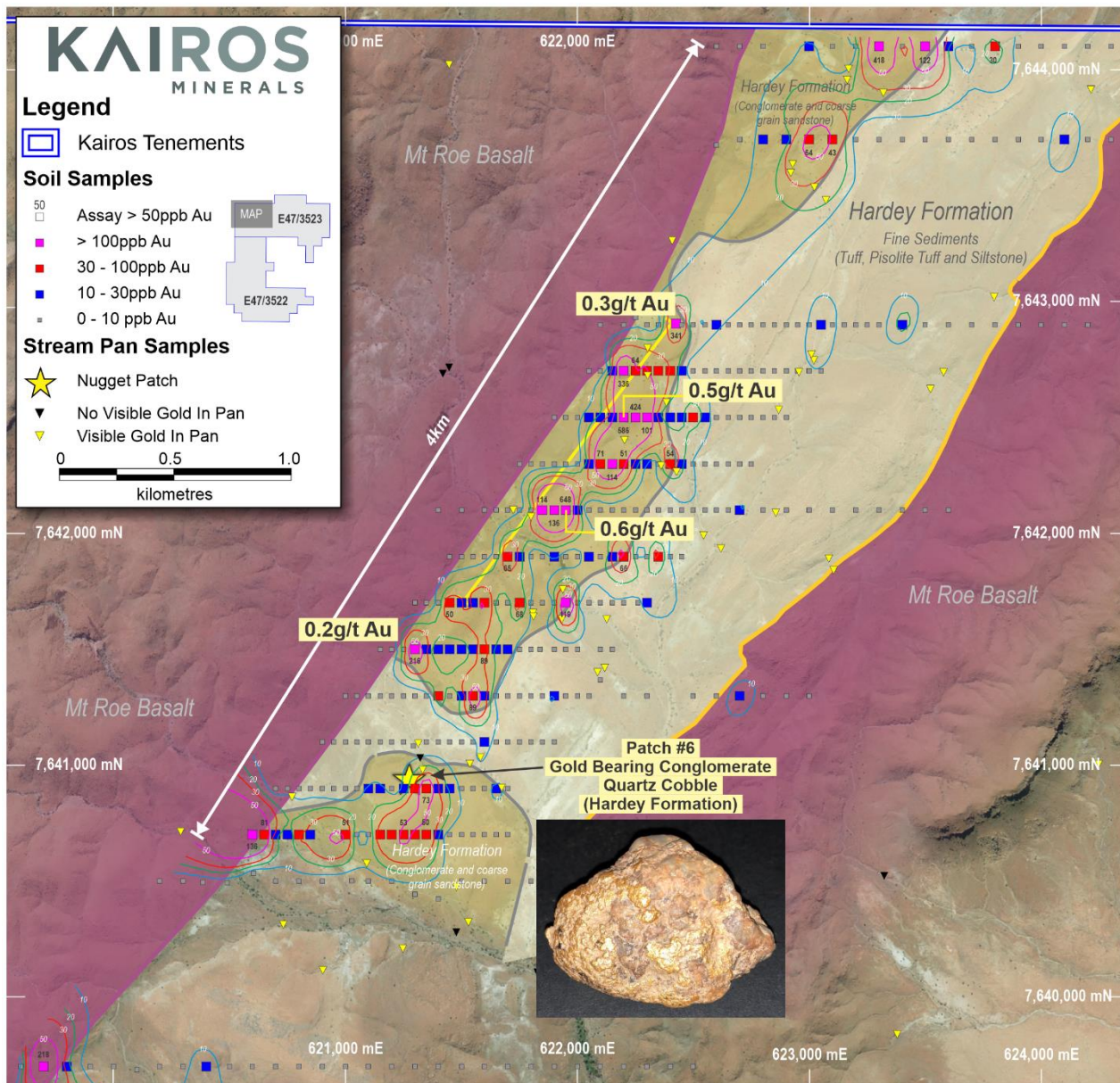
During recent ground-based soil sampling, metal detecting and mapping, the Company’s exploration team has identified an extensive area of anomalous gold-in-soil related to sandstone and conglomerate units within the Hardey Formation.

During the mapping and sampling program, Kairos geologists have described sandstone and conglomerate units intermittently outcropping over 4.1km in the north-western part of the Croydon Project area.

Soil sampling conducted on 200m, 400m and 800m line spacing by 50m sample intervals has defined a 150m to 200m wide gold anomaly above 30 ppb gold extending over a strike length of 4.1km (Figure 2). A high-grade core extending over a strike length of 1.1km, greater than 100ppb gold, has been identified in the central part of the anomaly.

Seven samples from the anomaly returned elevated gold results above 200ppb gold (0.2 g/t gold) up to a peak of **648ppb gold (0.64 g/t gold)** including:

<b>CSY0123F</b>	<b>418 ppb gold</b>
<b>CSY0224F</b>	<b>341 ppb gold</b>
<b>CSY0705</b>	<b>216 ppb gold</b>
<b>CSY0769</b>	<b>648 ppb gold</b>
<b>CSY0806</b>	<b>586 ppb gold</b>
<b>CSY0807</b>	<b>424 ppb gold</b>
<b>CSY0825</b>	<b>336 ppb gold</b>



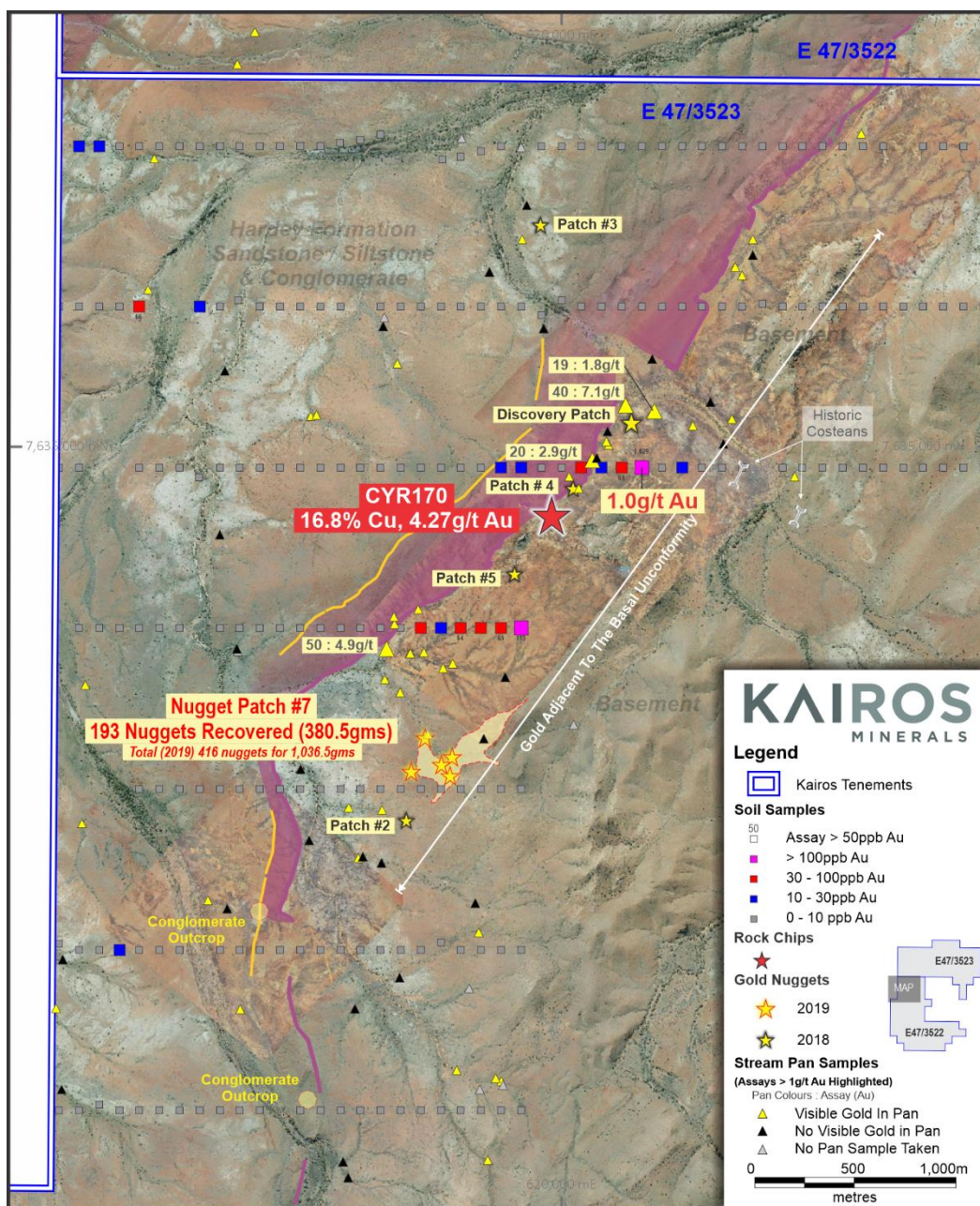
**Figure 2: Gold-in-Soil Anomaly associated with Hardey Formation Sediments**

## Gold and Copper Discovery in Archaean Basement

Mineral analysis of the panned gold from streams samples indicated a high percentage of silver (12% - 21%). This result encouraged Kairos' geologists to investigate prospective lithologies of the Archaean basement. During this mapping a high grade copper 16.8% and gold 4.27 g/t rock chip sample was collected, see Figure 3.

Three lines of soils sampling were conducted over these geological units where the rock-chips were collected. This first-pass geochemical program was designed in a 800m x 100m sampling spacing and one sample returned a peak value of 1,029ppb Au.

The rock-chip sample was located on the contact of Quartzite and Quartz-Muscovite-Schist next to a ultramafic-schist unit of the Archaean basement. These anomalies are currently being investigated and further detailed mapping, rock-chips and in-fill soils programmes are being completed.



**Figure 3: Gold and Copper in Basement Rocks and Nugget Patches**

## **New Nugget Patch Discovery**

Recent mapping and metal detecting by Kairos geologists has defined an outcropping conglomerate unit approximately 700m long and 200m wide in the central part of the Croydon Project area (Figure 3). Three stream samples collected downstream from this conglomerate outcrop returned anomalous gold results, with sample 18WCST0123 returning a best result of 838ppb gold. It is estimated that this conglomerate unit is up to 5m thick.

There is a granulometric variation of the clasts and matrix of the conglomerate. Coarse sandstone with rare angular clasts was also mapped at some parts of the unit. Polymictic conglomerate with sub-angular to sub-rounded clasts of mafic rock and quartzite, up to 20cm in diameter, is the dominant lithology of this unit.

To date, a total of 416 nuggets have been recovered for 1,036g (33.1 oz) the base of the conglomerate outcrop near the contact with the granitic rocks of the Archean basement. In addition, the metal detector is also indicating that there is gold in five different locations in-situ.

A more detailed mapping program, including detailed drone photography, is being conducted to define the conglomerate unit.

The new discovery represents a significant advance in Kairos' conglomerate exploration program in the Pilbara. It is the first time the Company has encountered intact gold nuggets hosted directly in a conglomerate unit and is considered to be directly analogous to the Purdy's Reward discovery near Karratha which first sparked interest in conglomerate-hosted gold in the Pilbara.

## **Next Steps**

- Additional mapping, stream sediment sampling and metal detecting (ongoing).
- Compile and evaluate assay results from major soil sampling programs.
- Evaluate optimum forward exploration pathways including trenching and drilling.

## **About Kairos Minerals**

Kairos Minerals (ASX: KAI) is a diversified West Australian-based exploration company which is focused on the exploration and development of two key project hubs located in WA's premier mining districts.

The Company's 100%-owned Pilbara Gold-Project has its central "hub" located ~100km south of Port Hedland in the world-class Pilgangoora district immediately adjacent to the major lithium-tantalum projects owned by Pilbara Minerals and Altura Mining which are both currently in production.

Since acquiring the project in early 2016, Kairos has rapidly established a JORC Indicated 6.84Mt at 1.3 g/t for 285,000oz and Inferred 7.53Mt at 1.47 g/t for 358,000oz for a Total Mineral Resource of 14.4Mt @ 1.39g/t Au for 643,000oz (ASX announcement, 23 April 2018) by re-evaluating the previously known resources from the historical Lynas Find gold project, which produced over 125,000oz of gold between 1994 and 1998 and by executing highly focussed, cost effective exploration in its own right.

Kairos's 100%-owned Roe Hills Project, located 120km east of Kalgoorlie in WA's Eastern Goldfields, comprises an extensive tenement portfolio where the Company's recent exploration work has confirmed the potential for significant discoveries of high-grade gold, nickel and cobalt mineralisation. Kairos' tenure adjoins the emerging Lake Roe gold discovery, owned by Breaker Resources (ASX: BRB).

In the Pilbara, Kairos also holds 1,158 square kilometres of tenure which is highly prospective for conglomerate-hosted gold discoveries. The Company's portfolio includes ~100 strike kilometres of prospective lower Fortescue Group rocks including both the base of the Hardey Formation and the basal sequence of the Mount Roe Basalt. Major exploration programs are underway targeting these highly prospective stratigraphic horizons, which have been associated with a number of recent high-profile gold discoveries in the Pilbara.

Kairos has been well recognised for its industry leading technical team that includes its Chairman Terry Topping (Taipan Resources NL, Cauldron Energy Ltd), Technical Director Neil Hutchison (Poseidon Nickel, Jubilee Mines) and consulting specialists.

### **For further information, please contact:**

#### **Investors:**

Mr Terry Topping  
Executive Chairman  
Kairos Minerals Limited

#### **Media:**

Nicholas Read/Paul Armstrong  
Read Corporate  
Ph: 08 9388 1474

### **COMPETENT PERSON STATEMENT:**

*Competent Person: The information in this report that relates to Exploration Results or Mineral Resources is based on information compiled and reviewed by Mr Terry Topping, who is a Director of Kairos Minerals Ltd and who is also a Member of AusIMM. Mr Topping has sufficient experience that is relevant to the style of mineralisation and type of deposits under consideration and to the activity which they are undertaking to qualify as Competent Persons as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves.' (the JORC Code 2012). Mr Topping has consented to the inclusion in the report of the matters based on their information in the form and context in which it appears.*

*The Australian Securities Exchange has not reviewed and does not accept responsibility for the accuracy or adequacy of this release.*

**Appendix 1 – Kairos Minerals – Croyden Project**  
**JORC Code, 2012 Edition – Table 1**  
**Section 1 Sampling Techniques and Data**

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <li>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.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Gold nuggets collected via metal detecting.</li> <li>The gold nugget samples remain to be tested for purity.</li> <li>Individual soil samples are collected as ~200gram, -2mm sieved samples, from insitu soil horizons at between 20-30cm depth. Sample points are selected to avoid areas of transported alluvium and colluvium.</li> <li>Rock chip samples are collected as &gt;1kg samples from outcrop, float and areas of interest</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <li>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).</li> </ul>	<ul style="list-style-type: none"> <li>No drilling has been undertaken.</li> </ul>
Drill sample recovery	<ul style="list-style-type: none"> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>No drilling has been undertaken.</li> </ul>
Logging	<ul style="list-style-type: none"> <li>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.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul style="list-style-type: none"> <li>The gold found as nuggets is only qualitative and must be interpreted in combination with geological mapping of the target area based on a prospective geological unit being mapped in the vicinity.</li> <li>The information collected about soil and rock samples includes general geological observations, location and rock type.</li> </ul>
Sub-sampling techniques and	<ul style="list-style-type: none"> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> </ul>	<ul style="list-style-type: none"> <li>The gold found ans nuggets, is not considered to be representative as it was</li> </ul>

Criteria	JORC Code explanation	Commentary
sample preparation	<ul style="list-style-type: none"> <li>• <i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i></li> <li>• <i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i></li> <li>• <i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i></li> <li>• <i>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.</i></li> <li>• <i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i></li> </ul>	<p>found in loose soil and colluvium near the prospective geological units. The geological units remain to be sampled in detail.</p> <ul style="list-style-type: none"> <li>• The proximity of the gold near the prospective geological units is a positive indication the prospective units is the source of the gold.</li> <li>• Soil and rock chip samples are prepared and analysed by independent certified laboratory, Intertek Genalysis laboratories in Perth. Soils samples are dried and milled to 95% passing 75um, prior to gold and multi-element analysis by AR25/MS and CN2000/MS methods. Rock chip samples are dried, crushed and pulverised to 95% passing 75um prior to gold and multi-element analysis by AR25/MS, LW400/MS and LW1000/MS methods.</li> </ul>
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> <li>• <i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i></li> <li>• <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></li> <li>• <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></li> </ul>	<ul style="list-style-type: none"> <li>• The soil and rock chip samples are submitted to independent certified laboratory, Intertek Genalysis in Perth for sample preparation and analysis for gold and multi-element analysis by AR25/MS and CN2000/MS methods for the soils and AR25/MS, LW400/MS and LW1000/MS methods for the rock chip samples.</li> <li>• Au_CN2000_MS: Twenty four hour Bulk Cyanide Leach (2kg sample). Analysed by Inductively Coupled Plasma Mass Spectrometry.</li> <li>• AR_25: Aqua-Regia digest. Analysed by Inductively Coupled Plasma Mass Spectrometry.</li> <li>• Repeats - LW400/MS and LW1000/MS: LeachWell for rockchips, 400g and 1000g.</li> <li>• Repeats - Au_CN2000_MS: Twenty four hour Bulk Cyanide Leach (2kg sample). Analysed by Inductively Coupled Plasma Mass Spectrometry.</li> <li>• Due to the early stage of exploration and type of work completed to date, no external, additional standards, blanks or duplicates have been used. QAQC relies on the supplied laboratory report</li> </ul>
Verification of sampling and assaying	<ul style="list-style-type: none"> <li>• <i>The verification of significant intersections by either independent or alternative company personnel.</i></li> <li>• <i>The use of twinned holes.</i></li> <li>• <i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i></li> <li>• <i>Discuss any adjustment to assay data.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Due to the early stage of exploration and type of work completed to date, no independent verification has been undertaken to date.</li> <li>• Sampling data is collected and collated by Kairos Geologists and entered into an electronic database</li> </ul>
Location of data points	<ul style="list-style-type: none"> <li>• <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></li> </ul>	<ul style="list-style-type: none"> <li>• Sample collected were surveyed by GPS with an accuracy of +/- 5m.</li> <li>• All samples are in MGA94 Zone 50 (GDA94).</li> <li>• There are no historic workings or drill hole in the area.</li> </ul>



Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>• <i>Specification of the grid system used.</i></li> <li>• <i>Quality and adequacy of topographic control.</i></li> </ul>	
<i>Data spacing and distribution</i>	<ul style="list-style-type: none"> <li>• <i>Data spacing for reporting of Exploration Results.</i></li> <li>• <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></li> <li>• <i>Whether sample compositing has been applied.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Due to the early stage of exploration and type of work completed to date, the gold nugget sampling is non-systematic nor representative for any future resource estimate.</li> <li>• Soil sampling is conducted on east – west oriented lines at 800m line spacings. Samples are collected at 50m spacings along lines. Infill sampling is conducted on 200m spaced lines over areas of interest.</li> </ul>
<i>Orientation of data in relation to geological structure</i>	<ul style="list-style-type: none"> <li>• <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></li> <li>• <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></li> </ul>	<ul style="list-style-type: none"> <li>• The soil sampling is undertaken across the strike of the known geology and structures within the project area..</li> </ul>
<i>Sample security</i>	<ul style="list-style-type: none"> <li>• <i>The measures taken to ensure sample security.</i></li> </ul>	<ul style="list-style-type: none"> <li>• All samples were collected in the field at the project site by Kairos personnel.</li> </ul>
<i>Audits or reviews</i>	<ul style="list-style-type: none"> <li>• <i>The results of any audits or reviews of sampling techniques and data.</i></li> </ul>	<ul style="list-style-type: none"> <li>• No audits have been completed</li> </ul>

## Section 2 Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
<b>Mineral tenement and land tenure status</b>	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Kairos Minerals owns the Tenements 100%</li> <li>The Croyden Project has 5 Exploration Licences 47/3519 to 47/3523</li> <li>The Tenements have been granted</li> </ul>
<b>Exploration done by other parties</b>	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>No significant past work has been carried out by other parties.</li> </ul>
<b>Geology</b>	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul style="list-style-type: none"> <li>The target is conglomerate and sediment hosted gold mineralisation.</li> </ul>
<b>Drill hole Information</b>	<ul style="list-style-type: none"> <li>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"> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>No drilling was completed.</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>Data aggregation methods</b>	<ul style="list-style-type: none"> <li><i>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.</i></li> <li><i>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.</i></li> <li><i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i></li> </ul>	<ul style="list-style-type: none"> <li>Due to the early stage of exploration and type of work completed to date, no data aggregation has been undertaken.</li> </ul>
<b>Relationship between mineralisation widths and intercept lengths</b>	<ul style="list-style-type: none"> <li><i>These relationships are particularly important in the reporting of Exploration Results.</i></li> <li><i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i></li> <li><i>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').</i></li> </ul>	<ul style="list-style-type: none"> <li>No drilling was completed.</li> </ul>
<b>Diagrams</b>	<ul style="list-style-type: none"> <li><i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>Suitable summary plans have been included in the body of the report.</li> </ul>
<b>Balanced reporting</b>	<ul style="list-style-type: none"> <li><i>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</i></li> </ul>	<ul style="list-style-type: none"> <li>All relevant results have been reported</li> </ul>
<b>Other substantive</b>	<ul style="list-style-type: none"> <li><i>Other exploration data, if meaningful and material, should be reported including</i></li> </ul>	<ul style="list-style-type: none"> <li>All relevant and meaningful data has been reported.</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>exploration data</b>	<i>(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.</i>	
<b>Further work</b>	<ul style="list-style-type: none"> <li><i>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></li> <li><i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i></li> </ul>	<ul style="list-style-type: none"> <li>Further mapping, panning, metal detecting, geochemistry and rock chip sampling is planned</li> <li>Refer to diagrams in the body of the release</li> </ul>