

# Queen Lapage 3D seismic survey reveals multiple shear zones coincident with magnetic and geochemical anomalies

### **HIGHLIGHTS**

- Processing of the trial 3D seismic survey confirms capturing of very high-quality data
- Depth penetration exceeded expectations (~300m) with clean signal imaging down to ~1000m
- First order deep seated shear zones identified close to geochemical and magnetic anomalies
- More importantly, west dipping second and third order splays identified with associated geochemistry pointing to potential mineralisation traps
- Trial success warrants rolling out the method along 12km long Queen Lapage trend
- This survey represents one of the first times low-impact low-cost 3D seismic is being used by a junior company to target gold mineralisation in the Eastern Goldfields of Kalgoorlie
- Seismic interpretation is guiding forthcoming diamond drilling program planned this quarter

Riversgold Limited (ASX:RGL, "**Riversgold**" or the "**Company**") is pleased to report preliminary interpretation results from its trial 3D seismic survey at Queen Lapage. Riversgold commissioned a-cost effective, light-weight, low impact 4km x 500m (2km<sup>2</sup>) seismic survey in an attempt to constrain the structural framework of the project prior to more expensive diamond drilling.

Located 60km east of Kalgoorlie, Queen Lapage is a 12km long coincident geochemical and magnetic anomaly lying under Lake Yindarlgooda with aircore drill results up to 1.49g/t Au in a potentially depleted regolith environment due to the saline conditions.

The seismic survey returned high quality results at a price affordable to a junior company with limited budget.



Figure 1: 3D bloc view of Queen Lapage with 2019 aircore drilling, magnetics and interpreted seismic section.



Queen Lapage is a prospect characterized by 12km of strike length of major faults including the productive Randall Shear underlined by geochemical and magnetic anomalies.

In November 2020, Riversgold commissioned a cost effective, light-weight, low impact 4km x 500m (2km<sup>2</sup>) seismic survey in an attempt to constrain the structural framework of the geological system below Lake Yindarlgooda, a large salt-lake, typical of the goldfields landscape, 60km east of Kalgoorlie.

An aircore drilling campaign conducted in February 2019 on Lake Yindarlgooda returned many anomalous results with values up to 1.49g/t Au. Those values are even more significant in a salt-lake environment as gold is soluble through the formation of gold chloride complexes meaning that saline environments usually display very low surface anomalism, typically under 10ppb.

The 2019 aircore campaign was widespaced (200m x 800m limited to the flat lake surface areas) and covered a large 12km strike length of the magnetic anomaly.

Riversgold's strategy is to apply low-cost / high-impact innovative technology whenever possible to reduce early exploration costs and better constrain targets before and during drilling. The 3D seismic trial is exactly in line with that approach.

Traditionally, 3D seismic has been used by producers to identify potential resource extensions, usually at depth in areas of know mineralisation. Typical case studies include Lundin Mining at Neves Corvo, Northern Star Resources at Jundee and Goldfields Ltd at Darlot. The surveys commissioned by those companies would not be financially feasible to junior companies; they also produce depth penetration and resolution which are not necessarily needed by junior greenfields explorers.

The survey commissioned by Riversgold involved the use of lightweight highly mobile equipment and low energy sources reducing mobilization and personnel costs. The early expectation was to be able to, at least, image the bottom of the salt-lake and identify first order structures in the first 200-300m below surface.

The results exceeded expectation with high quality data and clear signal allowing imaging of the subsurface to depths of ~1000m.

Preliminary interpretation of the central 2D seismic section identified a complex structural framework with major deeply seated structures and a multitude of second and third order splays indicating a potentially highly fertile environment.

The low noise / high quality data also allowed for the identification of attenuation zones, potentially related to alteration zones.

The seismic section perfectly shows both major fault/shear zones and a network of second and lower order fault zones. Blue lines on figure 2 represent all the interpreted and undifferentiated structures from analysis of reflectors.





Figure 3: Schematic highlight of first order structures underlining major deep-seated faults (fluid conduits)



Figure 4: Schematic highlight of second and third order structures underlining the great number of faults (fluid traps)



The seismic data shows multiple second order splays from the main fault zones. Usually, those second or lower order splays represent preferential pathways and traps for ascending fluids and are some of the best hosts for economic mineralisation.

In addition to the main structures, the seismic data clearly shows zones of signal attenuation. Those zones are of prime importance as they can indicate the presence of alteration which is often synonymous with mineralisation (Figure 5).



Figure 5: Seismic section with interpreted faults and potential alteration zones

The ability to visualize the geological structure and zones of potential alteration will aid and influence the design of diamond drillholes for the upcoming Queen Lapage drill program anticipated to commence this quarter. The 3D seismic results provide the earliest indication of geological dips, fault positions and thus very early guidance as to required drill orientation, targets and directions to chase mineralisation in the follow-up to the existing, and any future significant, drill intercepts.

The survey resulted in considerably better than expected depth penetration. Despite the low energy source used, the signal was of high quality and the seismic profile shows clear reflectors to at least 1,000m below surface. Importantly for future drill targeting, the top 200-300m of the section is particularly clear and high quality delivering clear on-screen visualization of faults and potential hydrothermal alteration zones. The thick of the lake sediments is clear and this will assist with drill rig selection and probable depth of overburden.





Figure 6: Top 300m of seismic profile showing structures, alteration and bottom of sedimentary cover

Executive Director, Xavier Braud, commented:

"The quality of the data is exceptional for the lightweight portable system we used in this survey. We are "seeing" much deeper than anticipated and we have been able to clearly identify multiple structural features under our Queen Lapage prospect. This low-cost, high impact survey is in line with our strategy of using innovative technology at hand in a cost-effective manner to build a solid understanding of our projects' geology. To our knowledge, it is the first time that a junior explorer is in a position to use 3D seismic on a small budget as part of its exploration strategy. This would not have been possible without the help of the amazing team of consultants that Riversgold has assembled around a highly prospective tenement package. We are now looking forward to drilling Queen Lapage to try and confirm our interpretations."

This announcement has been approved by the Board of Riversgold Ltd.

For further information, please contact:

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#### About Riversgold:

Riversgold is a gold explorer focused on its 1,150km<sup>2</sup> Western Australian Gold project. The Kurnalpi Project is located 50km east of Kalgoorlie in the Eastern Goldfields of Western Australia and the combined tenure represents one of the largest single landholdings in the region.

The Company is advancing its Queen Lapage prospect, a large geophysical anomaly near the Randall Shear, a major gold bearing shear zone, located under Lake Yindarlgooda in the heart of the Goldfields of Western Australia (refer to ASX release 12 November 2020).

Riversgold's tenement package is surrounded by gold producers such as Northern Star Limited directly along strike to the north and Silver Lake Resources directly along strike to the south.

The large tenement package is 100% underlain by Archean Greenstones from the Norseman to Wiluna Greenstone belt, one of the largest gold-producing belts in the world.



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Since June 2020, the Company has been generating multiple new targets within the Kurnalpi Project with the help of Quarterback Geological Services, a group of highly successful gold explorers, remunerated on an innovative "equity for success" basis (see ASX release 24 June 2020).

#### **Competent Person's Statement**

The information in this document that relates to Exploration Results is based on information compiled by Mr Xavier Braud, a Competent Person who is a Member of The Australian Institute of Geoscientists (AIG). Mr Braud is Executive Director of Riversgold Ltd. and a consultant to the Company. Mr Braud holds shares and options in the Company. Mr Braud 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'. Mr Braud consents to the inclusion in this announcement of the matters based on this information in the form and context in which it appears. The Company confirms that there is no new information that would materially effect prior results from original reporting.



## Appendix 1

# Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <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.</li> </ul>	No assays reported in this release
Drilling techniques	<ul> <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>	This release does not include drilling results
Drill sample recovery	<ul> <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>	This release does not include drilling results
Logging	<ul> <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)</li> </ul>	<ul> <li>No sampling results in this release</li> </ul>



Criteria	JORC Code explanation	Commentary
	<ul><li>photography.</li><li>The total length and percentage of the relevant intersections logged.</li></ul>	
Sub- sampling techniques and sample preparation	<ul> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>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.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	This release does not include drilling results
Quality of assay data and laboratory tests	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>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.</li> <li>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.</li> </ul>	No assays reported in this release
Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul> <li>No assays reported in this release</li> </ul>
Location of data points	<ul> <li>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.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul> <li>Seismic stations were located using a differential GPS unit with a typical accuracy of +/-4cm</li> <li>Seismic station locations used the MGA zone 51 reference grid based on geodetical datum GDA94</li> </ul>
Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and distribution is</li> </ul>	No mineral resource reported in this release





Criteria	JORC Code explanation	Commentary
	<ul> <li>sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> <li>Whether sample compositing has been applied.</li> </ul>	
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>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.</li> </ul>	The seismic line was designed to provide a section across and perpendicular to the main inferred geological trends.
Sample security	The measures taken to ensure sample security.	<ul> <li>No sampling results reported in this release</li> </ul>
Audits or reviews	<ul> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul> <li>No external audits or reviews of the sampling techniques and data has been conducted.</li> </ul>

# **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	<ul> <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> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul> <li>Previous exploration was completed by multiple companies including Mt Martin, work included soil sampling, RAB drilling and limited RC drilling. Integra Mining completed soil surveys and drilling over some of the prospects before being taken over by Silverlake Resources. Aurion Gold Ltd conducted some aircoe drilling on the lake near paradise patch.</li> </ul>
Geology	<ul> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	Greenstone hosted Archean Lode



Criteria	JORC Code explanation	Commentary
		Gold
Drill hole Information	<ul> <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> <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>	This release does not include drilling results
Data aggregation methods	<ul> <li>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.</li> <li>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.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	No data aggregation.
Relationship between mineralisation widths and intercept lengths	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>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').</li> </ul>	No mineralisation reported in this release
Diagrams	<ul> <li>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.</li> </ul>	<ul> <li>Diagrams have been incorporated in the body of this release.</li> </ul>
Balanced reporting	<ul> <li>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.</li> </ul>	<ul> <li>All exploration results to date have been reported.</li> </ul>

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Criteria	JORC Code explanation	Commentary
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.	<ul> <li>No other substantive exploration data to be reported.</li> </ul>
Further work	<ul> <li>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	Further work will include drilling and potentially further seismic surveying

