**ASX Release**
8 June 2021

**DATELINE RESOURCES LIMITED**

(ACN 149 105 653)
**ASX Code: DTR**

**CAPITAL STRUCTURE**

| | |
|---|---|
| Share Price (7/6/21) | $0.085 |
| Shares on issue | 381 million |
| Market Cap | $32.4 million |

MAJOR SHAREHOLDERS

| | |
|---|---|
| Southern Cross Exploration NL | 25.2% |
| Mr. Mark Johnson AO | 19.9% |
| National Nominees Ltd | 13.8% |
| Stephen Baghdadi | 6.2% |

DIRECTORS & MANAGEMENT

Mark Johnson AO
Chairman

Stephen Baghdadi
Managing Director

Greg Hall
Non-Executive Director

Tony Ferguson
Non-Executive Director

Bill Lannen
Non-Executive Director

John Smith
Company Secretary

CONTACT
John Smith
Phone: +61 2 9375 2353
Postal Address: P.O. Box 553
South Hurstville NSW 2221
Email: info@datelineresources.com.au

DATELINE RESOURCES

# ORE SORTING RESULTS MATERIALY INCREASE HEAD GRADES AT GOLD LINKS GOLD MINE

## Highlights

- **Gold grade per tonne increased by 41.6% from 15.34 to 21.71g/t Au;**
- **49% of the sorted material reported as waste and contained less than 0.7g/t Au per mined tonne;**
- **Potential to enhance project dynamics by enabling mechanised mining;**
- **Ore sorting compounds the benefits of reduced milling costs and increased gold grade.**

**Dateline Resources Limited** (ASX: DTR) (**Dateline** or the **Company**) is pleased to report the second phase of ore sorting results for the Gold Links Gold Mine (**Gold Links**) in Colorado, USA.

The Company completed an ore sorting program with TOMRA to assess the potential of upgrading the ore prior to further processing through the Lucky Strike mill.

A total of 849kg of material was transported to the TOMRA ore sorting facilities in Sydney. Two tests were conducted using both laser and XRT sorting technology with the XRT technology proving to be a better fit for the Gold Links project.

Table 1 below is a summary of the optimal test results received from the XRT sorter:

| Process* | Run # | Rock size (mm) | Total mass (kg) | Mass in ore stream (kg) | Mass in waste stream (kg) | Grade in ore stream (g/t Au) |
|---|---|---|---|---|---|---|
| XRT-CON | Run 1 | 16-48 | 316 | 101 | 215 | 26.7 |
| XRT-DE | Run 2 | 16-48 | 215 | 59 | 156 | 15.7 |
| Unsorted (rock size less than 16mm) | | <16 | 269 | 269 | | 20.7 |
| Total (kg)/Average g/t Au | | | 585 | 429 | 156 | 21.7 |

**Table 1: Summary of optimal sort option using XRT method only**

Commenting on the results, Managing Director, Stephen Baghdadi, said *"The ore sorting results are in line with our expectations and have confirmed that the Gold Links ore is perfectly suited for this technology.*

*The sample head grade was increased by 41.6% to 21.7g/t Au. Approximately a third of the material was sorted to waste. The amount of gold that was left in the waste was 2.2g/t, which equates to less than 0.7g/t per mined tonne.*

*By upgrading high-grade material from the veins to an even higher grade significantly enhances the potential of Gold Links by reducing processing costs and increasing the returns per tonne.*

*The company intends to conduct an additional test to determine if the results can be further improved by using an ore sorter that is capable of both XRT and Laser in a single run"*

## Ore Sorting Test-work

The ore sorting test-work was completed to determine the suitability of the Gold Links mineralised material to be upgraded using advanced ore sorting technology provided by TOMRA Sorting Australia (Appendix A).

These results are considered to be “proof-of-concept” tests by TOMRA and were conducted on a representative sample of mineralised material collected from Gold Links.

A total of 849kg of mineralised material was collected from Gold Links, with an aggregate grade of 15.34g/t Au. Further details of the sample preparation are provided below and in Table 2.

The ore sorting procedure requires an initial set-up of the ore sorter and calibration against proprietary image processing software. To achieve this, images were taken of the samples by subjecting them to “static” tests to determine their response to the TOMRA X-Ray Transmission (**XRT**) system. The X-ray sensor signal is a function of the sample atomic density and provides information on its composition. By combining two energy levels simultaneously, it is possible to differentiate particles by their relative atomic densities. Further details of the ore sorting technology and methodology are provided in Appendix A.

Assays were completed and provided by Bureau Veritas Adelaide.

For the purposes of the test-work, the sample was screened to 16-48mm and separated into a high-grade fines stream (not sorted) and two TOMRA Feed streams (Sample 1 – 316kg At 12.5g/t Au, Sample 2 – 264kg @ 13.2g/t Au). The TOMRA Feed was then sorted into concentrate (targeting galena) and waste streams, with the waste stream reprocessed again through the XRT targeting all sulphides. The upgrade factor, which includes the TOMRA concentrate stream as well as the high-grade bypass material, resulted in a gold upgrade of **41.6%**, a decrease in sample mass of **33.7%**, and **a 2.6%** loss in contained gold.

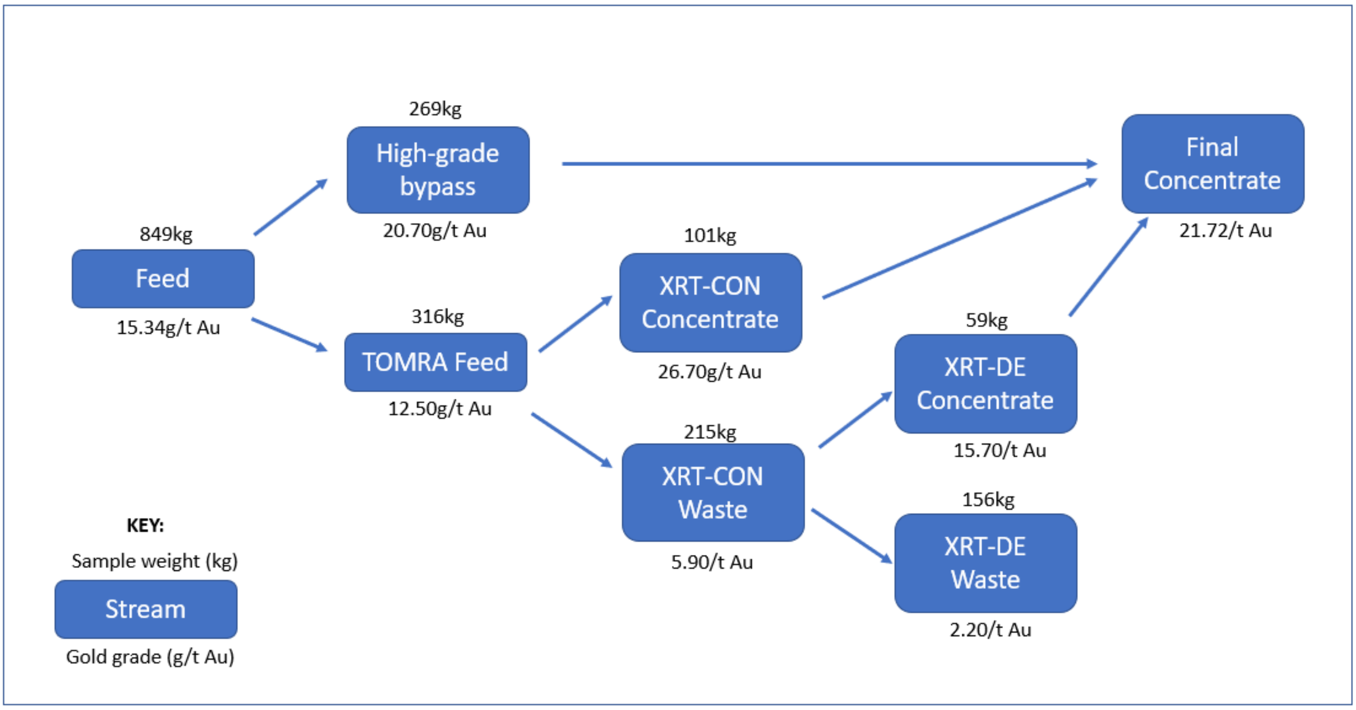


**Figure 1: TOMRA Testwork flow chart with sample weight (upper) and gold grade (lower), rounding has been applied**

The analytical results of the 2021 Gold Links ore sorting trial (optimal route) are presented below (Table 2):

**Table 2: 2021 Gold Links Ore Sorting Trial Results – Optimal Path**

| | Mass (kg) | Grade (g/t Au) | Gold (grams) |
|---|---|---|---|
| Feed from site sample | 849 | 15.34 | 13.03 |
| High-grade unsorted | 269 | 20.70 | 5.57 |
| TOMRA XRT-CON Feed – Sample 1 | 316 | 12.50 | 3.95 |
| Sample 2 Feed (used in other runs) | 264 | 13.20 | 3.48 |
| XRT-CON Concentrate | 101 | 26.70 | 2.70 |
| XRT-CON Waste | 215 | 5.90 | 1.27 |
| TOMRA XRT-DE Feed | 215 | 5.90 | 1.27 |
| XRT-DE Concentrate | 59 | 15.70 | 0.92 |
| XRT-DE Waste | 156 | 2.20 | 0.34 |
| XRT-CON + XRT-DE Concentrate | 160 | 22.65 | 3.62 |
| **TOMRA Upgrade** | **-49%** | **+81%** | **-8%** |
| TOMRA Waste | 156 | 2.20 | 0.34 |
| **Final Results – Optimal Path** | | | |
| | **Mass (kg)** | **Grade (g/t Au)** | **Gold (grams)** |
| **Sample 1 Concentrate + High Grade Unsorted** | **-33.7%** | **+41.6%** | **-2.6%** |

**Notes**

- XRT-CON = X-ray process targeting galena
- XRT-DE = X-ray process targeting all sulphides
- Rounding has been applied

In addition to the optimal path presented in Table 2 above, additional testing was undertaken whereby the XRT-DE waste stream was subjected to ore sorting using the Laser technology. Sample 2 was analysed with Laser first before the XRT-CON and XRT-DE analyses. Details of all the various runs is included as Appendix B.

## Implications

The Company's 100%-owned Lucky Strike processing facility is located 50km via road from the Gold Links Gold Mine. Lucky Strike was recommissioned in 2019 with a throughput capacity of 33,000tpa. The plant includes a primary circuit for the extraction of nuggety or free gold from the veins. A secondary flotation circuit allows for the production of a gold-silver-lead concentrate.

By implementing x-ray ore sorting technology after primary crushing, the tonnage going into the primary and secondary circuits may be materially increased by ~33%. For Dateline, this translates into the ability to mine and transport up to 45,000tpa to Lucky Strike for processing through the 33,000tpa plant.

Subject to further analysis and modelling, there is the potential to increase future gold production by 40% compared to not installing ore sorting technology.

## Next Steps

Following the test program, the Company has commenced discussions with various suppliers of ore sorting equipment with regards to purchase/lease options. Further test work will also be undertaken with alternative units that includes XRT and Laser in a single unit to improve recovery.

Authorised by the Board of Dateline Resources Limited.

## Competent Person Statement

Sample preparation and any exploration information in this announcement is based upon work supervised by Mr David Heyl a qualified geologist who was an employee of CRG Mining LLC which is a 100% owned subsidiary of Dateline Resources Limited. This information was reviewed by Mr Greg Hall who is a Chartered Professional of the Australasian Institute of Mining and Metallurgy (CP-IMM). Mr Hall has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to quality as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves" (JORC Code). Mr Hall is a Non-Executive Director of Dateline Resources Limited and consents to the inclusion in the report of the matters based on this information in the form and context in which it appears.

**For more information, please contact:**

**Stephen Baghdadi**
**Managing Director**
**+61 2 9375 2353**
www.datelineresources.com.au

**Follow Dateline on Twitter:** https://twitter.com/Dateline_DTR

## About Dateline Resources Limited

Dateline Resources Limited (ASX: DTR) is an Australian publicly listed company focused on gold mining and exploration in North America. The Company owns 100% of the Gold Links and Green Mountain Projects in Colorado, USA and has an agreement to acquire 100% of the Colosseum Gold Mine in California.

The Gold Links Gold Mine is a historic high-grade gold mining project where over 150,000 ounces of gold was mined from high-grade veins. Mineralisation can be traced on surface and underground for almost 6km from the Northern to the Southern sections of the project. The Company aims to delineate sufficient Mineral Resources to commence a small high-grade, low-cost operation by the end of 2021.

The Company owns the Lucky Strike gold mill, located 50km within the Green Mountain Project. It is proposed that ore from Gold Links would be transported to Lucky Strike for processing.

The Colosseum Gold Mine is located in the Walker Lane Trend in East San Bernardino County, California and produced approximately 344,000 ounces of gold (see ASX release 15 March 2021). Significant potential remains for extension to mineralization at depth.

## APPENDIX A

**TOMRA XRT Technology**

A proportion of material mined (Run-of-Mine or ROM) is typically worthless (waste), and must be transported, crushed, milled, classified before reporting to the hydrometallurgical portion of a mining project process flow sheet. Removing that waste component after primary crushing can result in material savings.

Bulk ore sorting is a proven pre-concentration technology in which barren gangue is separated from mineralised material based on grade measured or inferred from a sensor measurement.

TOMRA is specialised in sensor-based sorting techniques, an umbrella term for all applications where particles are individually detected by a sensor and rejected by an amplified mechanical, hydraulic or pneumatic process.

TOMRA has over 20 years' experience in ore sorting and is familiar with many ore types and sorting applications and is the world market leader in this area. The sensor(s) used to support the sorting process can rely on the detection of sample colour, transparency, near-infrared, radiometric or electromagnetic signature, X-Ray fluorescence, X-Ray transmission, with the option to combined multiple sensors to achieve optimal results.

The key benefits of an upfront bulk ore sorting circuit in operation include lower process throughputs, lower reagent costs associated with higher feed grade, lower consumption of water, power and environmental benefits such as lower tailings generation. Those benefits combined usually result in lower operating and capital costs.

The technology is based on industry proven, high capacity industrial sorting machines commercially available, and works much faster than traditional sorting technologies.

**Test equipment**

**XRT**

Data for the trial reported was collected using TOMRA's COM X-Ray transmission (XRT) system, which uses a broad-band electrical X-ray source. The COM series sorting equipment covers the range of applications which require a belt feeding system. This allows the presentation of a non-uniform feed, with particles stabilising on the belt before scanning by the sensor(s).

The X-ray sensor system below the material produces a digital image of the material, using two different energy bands. The X-ray attenuation through the material is different within the two bands and depends on both, the material thickness and atomic density. Special transformation of the attenuation images of the two bands classifies each pixel per the measured atomic density. Because the X-rays pass through the particles and are a measure of the attenuation through the entire rock, XRT separation is independent of surface quality of the material or its moisture. Surface properties such as colour and texture and/or contaminations such as dirt, dust, paint, etc. are irrelevant to the detection.

**Laser**

Various analyses were also undertaken utilising Laser technology, also by TOMRA.

The LASER identification technology consists of a multi-channel LASER scanning system with high resolution and cutting-edge color and structure selectivity. Multiple material characteristics such as brightness, color, size, shape and surface structure are processed at the simultaneously. The machine can be quickly optimized for the required sorting tasks by the selection of sorting programs and sensitivity adjustments.


**Figure 2: Typical TOMRA ore sorting equipment**

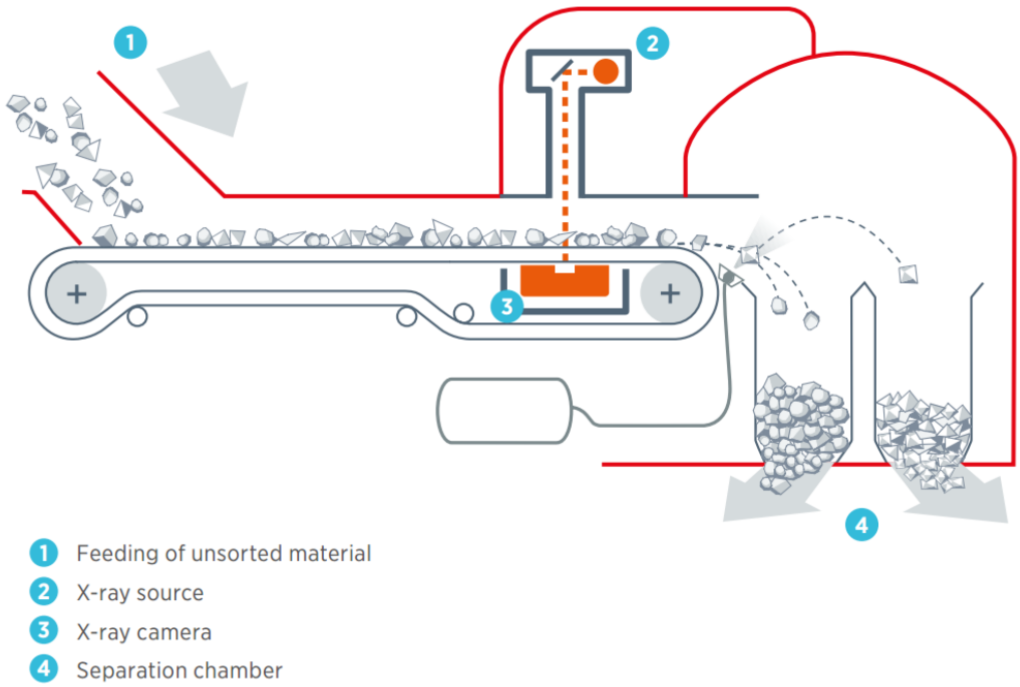


***Figure 3: Tomra™ ore sorting schematic***

## APPENDIX B

### Testwork Program

The Gold Links test work program involved the collection and assessment by Bureau Veritas of 849kg of mineralised sample from the Gold Links Gold Mine in Colorado. The material was crushed and screened (to 16-48mm), with 316kg grading 12.5g/t Au was assessed in the first sample, with 264kg grading 13.2g/t Au in the second one. A further 269kg grading 20.7g/t Au represented the fines material below 16mm that would not be sorted and instead fed directly into the mill. For the analysis, the fines material was proportionally associated with Sample 1 and Sample 2.

***Analysis 1***

For sample 1 (316kg grading 12.5g/t Au), the sample was initially run through the Tomra™ x-ray sorter to separate galena (run 1) and the waste stream was subsequently run through again to separate all sulphides (run 2).

| Run # | Process* | Total mass (kg) | Mass in ore stream (kg) | Mass in waste stream (kg) | Grade in ore stream (g/t Au) | Grade in waste stream (g/t Au) |
|---|---|---|---|---|---|---|
| Run 1 | XRT-CON | 316 | 101 | 215 | 26.7 | 5.9 |
| Run 2 | XRT-DE | 215 | 59 | 156 | 15.7 | 2.2 |

* XRT-CON (x-ray process targeting galena), XRT-DE (x-ray process targeting all sulphides)

This test showed that when included with the separated fines material, the integration of a Tomra™ x-ray sorter into the flow sheet would result in a 32% feed grade improvement and a 28% reduction in the feed tonnage to the mill.

***Analysis 2***

For Analysis 2, the waste material produced from Analysis 1 was then passed through the laser separator (run 3) to separate out all material containing quartz. This test was designed to determine how much additional product could be recovered by integrating a laser sorter unit to the process in Analysis 1.

| Run # | Process* | Total mass (kg) | Mass in ore stream (kg) | Mass in waste stream (kg) | Grade in ore stream (g/t Au) | Grade in waste stream (g/t Au) |
|---|---|---|---|---|---|---|
| Run 1 | XRT-CON | 316 | 101 | 215 | 26.7 | 5.9 |
| Run 2 | XRT-DE | 215 | 59 | 156 | 15.7 | 2.2 |
| Run 3 | LASER | 156 | 72 | 84 | 4.0 | 0.6 |

* XRT-CON (x-ray process targeting galena), XRT-DE (x-ray process targeting all sulphides), LASER (laser process targeting quartz)

This test indicated that there while the laser did extract additional gold and the eventual waste stream only contained low gold levels (0.6g/t Au), the additional tonnes that would need to be processed through the plant made it less efficient than Analysis 1.

***Analysis 3***

In Analysis 3, the second crushed and screened sample (264kg grading 13.2g/t Au) was processed through the laser analysis first and then the two x-ray sorter runs (i.e. reverse order) to assess the impact of the laser if run before the x-ray sorter runs.

| Run # | Process* | Total mass (kg) | Mass in ore stream (kg) | Mass in waste stream (kg) | Grade in ore stream (g/t Au) | Grade in waste stream (g/t Au) |
|---|---|---|---|---|---|---|
| Run 4 | LASER | 264 | 127 | 137 | 21.4 | 5.6 |
| Run 5 | XRT-CON | 137 | 30 | 107 | 15.7 | 2.8 |
| Run 6 | XRT-DE | 107 | 32 | 75 | 6.5 | 1.3 |

* XRT-CON (x-ray process targeting galena), XRT-DE (x-ray process targeting all sulphides), LASER (laser process targeting quartz)

This test showed the laser at the start of the process was less efficient than Analyses 1 and 2. Analysis 3 resulted in a 17% increase in feed grade, however the feed tonnes were only reduced by 13%.

**Results Summary**

The x-ray ore sorting and laser sorting techniques are two separate processes that require individual pieces of equipment. The laser process requires the sample to be washed prior to analysis, whereas the x-ray sorter does not.

The results indicate that there is a benefit to running the samples through the two processes, however the first analysis shows that ~96% of the gold can be recovered using the Tomra™ x-ray ore sorter alone. Whilst the laser process increases the recovery up to ~99%, it results in an additional 10% of sample mass needing to be processed through the Lucky Strike processing plant compared to x-ray alone. Additionally, as the laser process requires washing of the ore, this may be problematic in practice given the very low (below freezing) temperatures in winter in Colorado.

# JORC Code, 2012 Edition – Table 1 report template

## Section 1 Sampling Techniques and Data

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

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| *Sampling techniques* | • *Nature and quality of sampling (e.g. 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.*<br>• *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.*<br>• *Aspects of the determination of mineralisation that are Material to the Public Report.*<br>• *In cases where 'industry standard' work has been done this would be relatively simple (e.g. '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 (e.g. submarine nodules) may warrant disclosure of detailed information.* | • A total of 849kg was sampled by mining a five foot section of the vein that is located underground at the Gold Links at 9900rl. The sample included 100% of the vein material plus an equal amount either side of the vein so that it represented a mechanized mining width of 5 feet. |
| *Drilling techniques* | • *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. 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.).* | |
| | | |
| *Drill sample recovery* | • *Method of recording and assessing core and chip sample recoveries and results assessed.*<br>• *Measures taken to maximise sample recovery and ensure representative nature of the samples.*<br>• *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.* | |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| *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.*<br>• *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.*<br>• *The total length and percentage of the relevant intersections logged.* | |
| *Sub-sampling techniques and sample preparation* | • *If core, whether cut or sawn and whether quarter, half or all core taken.*<br>• *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.*<br>• *For all sample types, the nature, quality and appropriateness of the sample preparation technique.*<br>• *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.*<br>• *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.*<br>• *Whether sample sizes are appropriate to the grain size of the material being sampled.* | |
| *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.*<br>• *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.*<br>• *Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.* | |
| *Verification of sampling and assaying* | • *The verification of significant intersections by either independent or alternative company personnel.*<br>• *The use of twinned holes.*<br>• *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.*<br>• *Discuss any adjustment to assay data.* | |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| *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.*<br>• *Specification of the grid system used.*<br>• *Quality and adequacy of topographic control.* | |
| *Data spacing and distribution* | • *Data spacing for reporting of Exploration Results.*<br>• *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.*<br>• *Whether sample compositing has been applied.* | |
| *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.*<br>• *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.* | |
| *Sample security* | • *The measures taken to ensure sample security.* | A full chain of custody was maintained during sampling and dispatch. Packing of the sample was in 4 x 200ltres sealed drums and delivered directly to the Tomra ore sorting facility in Sydney. Once the sorting was concluded the samples were sent directly to Bureau Veritas labs in Adelaide for assaying. |
| *Audits or reviews* | • *The results of any audits or reviews of sampling techniques and data.* | |