

Sorpresa Resource Update

Highlights

- ✓ H&S Consultants complete an update of the Sorpresa Mineral Resource Estimate (JORC 2012) of 0.92Mt @ 2.3g/t Au and 30g/t Ag for 67koz gold (Au) and 0.9Moz silver (Ag) at 1.0g/t Au cut-off grade.
- ✓ The Mineral Resource within the oxidation zone of mineralisation (50m below ground surface on average) is 0.47Mt @ 2.4g/t Au and 22g/t Ag for 35.5koz gold and 0.3Moz silver at 1.0g/t Au cut-off grade.
- ✓ At 1.0 g/t Au cut-off grade, the new model has slightly higher tonnage and higher grades than the 2014 version.
- ✓ The Mineral Resource Estimate also indicates significant potential upside in zones of silver rich mineralisation which have modelled grades of below 1g/t gold.
- ✓ An open pit optimisation process will be undertaken on basis of new geological model with results expected by end of November 2019.

Rimfire Pacific Mining NL ("Rimfire", "Company"; ASX Code "RIM") advises that the updated Resource Estimate JORC (2012) for Sorpresa is complete and the average resource grade for gold at 1.0g/t Au cut-off has increased for the oxide and sulphide zones from 1.96g/t Au to 2.27g/t Au (<u>ASX Announcement: Maiden Sorpresa Resource 23Dec2014</u>). These results support the Dual Strategy to assess options for a higher grade lower tonnage development option for Sorpresa. The updated resource model done by H&S Consultants will be provided to Australian Mine Design & Development (AMDAD) for a pit optimisation analysis with results expected in November 2019.

Resource growth potential remains at Sorpresa and various prospects within approximately 3km of the Sorpresa Resource. The evaluation of these opportunities is continuing with current focus at Northern Gold, Casuarina Valley and Fortuna with mineralisation considered part of a broader Intrusion Related Gold System (IRGS).

Resource Estimation Details

H&S Consultants Pty Limited was engaged by Rimfire Pacific Mining NL to provide an update of their earlier 2014 maiden Sorpresa Au / Ag Mineral Resource Estimate. The update to the resource estimate was requested by Rimfire to allow inclusion of further drilling data and better quantify higher grade gold mineralisation.

Resources for Sorpresa are reported at separate cut-off grades for gold and silver (1.0 g/t Au and 85 g/t Ag) with material above both cut-off grades included in the gold resources. The silver / gold factor of 85g/t is based on a gold price of US\$1,494.10 per ounce and a silver price of US\$17.58 per ounce using the Comex spot prices on 21/10/2019. This shows that there is a significant quantity of silver-rich mineralisation outside of the greater than 1.0 g/t Au material above a similar value-equivalent silver cut-off grade ie 85 grams of silver has equivalence of 1 gram gold.

The Mineral Resource Estimate for silver indicates significant potential upside in zones of silver rich mineralisation which have modelled gold grades of below 1g/t and are not included in the gold only cut-off grade tonnages.



Basauraa	Cut off	Cotogony	Mt	Gra	ade	Contain	ed Metal
Resource		Category	IVIL	g/t Au	g/t Ag	Koz Au	Moz Ag
		Measured	0.162	2.88	53	15.0	0.28
Gold	1.0 g/t Au	Indicated	0.532	2.08	25	35.7	0.44
Gold	1.0 g/t Au	Inferred	0.228	2.25	22	16.5	0.16
		Total	0.922	2.27	30	67.1	0.88
		Measured	0.027	0.50	171	0.4	0.15
Silver	85 g/t Ag	Indicated	0.509	0.37	133	6.0	2.18
Silver	65 g/t Ag	Inferred	0.062	0.33	116	0.6	0.23
		Total	0.598	0.37	133	7.1	2.56
		Measured	0.189	2.54	70	15.4	0.43
O a makin a d	1.0g/t Au &	Indicated	1.041	1.25	78	41.7	2.62
Combined	85 g/t Ag	Inferred	0.289	1.84	42	17.1	0.39
		Total	1.519	1.52	70	74.3	3.44

Note: The figures in this table are rounded to include rounding errors and reflect precision of the estimates.

At 1.0 g/t Au cut-off grade, the new model (oxide and sulphide) has slightly higher tonnage and higher grades than the 2014 version, for a significant increase in contained ounces of gold.

Model	Mt	g/t Au	g/t Ag	Koz Au
2014	0.90	1.96	26.1	57
2018	0.92	2.27	28.4	67
18/14	102%	116%	109%	118%

A breakdown of the final estimate by class and oxidation is presented in Table below at 1.0 g/t Au cut-off grade. Measured resources comprise around 20% of the total resource with oxide and sulphide mineralisation occur in roughly equal quantities, with oxide having slightly higher average gold grades.

Category	Mt	g/t Au	g/t Ag	Bulk Density	Koz Au	Moz Ag
Measured	0.162	2.88	54	2.58	15.0	0.28
Indicated	0.532	2.08	26	2.63	35.7	0.44
Inferred	0.228	2.25	22	2.75	16.5	0.16
Oxide	0.468	2.36	22	2.55	35.5	0.34
Sulphide	0.454	2.17	37	2.76	31.6	0.54
Total	0.922	2.27	30	2.65	67.1	0.88

Resources by Resource Category and Rock Oxidation Type at 1.0 g.t Au cut-off grade

Note: The figures in this table are rounded to include rounding errors and reflect precision of the estimates.



Geological Interpretation

The Sorpresa Mineral Resource has a curved strike length of approximately 1,600m and almost (<1m) outcrops at surface and extend to approximately 230m below surface. Depth of oxidation averages around 50m but can vary from 15 to 75m. The Sorpresa mineralization is spatially associated with rhyolitic sills and is structurally hosted in a carbonaceous shale stratigraphic unit which dips variably (generally range 30 to 60 degrees) to the east. The geological interpretation of the main mineral deposit is based on identifying the host carbonaceous shale unit, which can be reliably traced over a distance of 1.6km (Figure 1). The primary mineralization is overprinted near surface by weathering and oxidation.

Sampling and Assaying Methodology

Sorpresa has been sampled via a mix of Reverse Circulation (RC) drilling (78%), Open Hole Hammer (OHH) drilling (19%) techniques and a limited number of diamond drill holes (3%), for a total of 42,670 metres. Nominal hole spacing in shallower oxide zone is typically 10m x10m although at Roadside is often closer at 5mE x10mN and extends up to 100m x 60m in peripheral areas and / or at depth.

For most drill holes a 1 metre samples was riffle split and a 2 kg sample submitted and for expected lower grade material surrounding mineralization, the riffle split sample was composited by weight to produce a 2 kg composite over a 2 metre sample length for submission. For earlier drill holes, the 1 metre samples were mat rolled and 1kg measured off by weight with 2 metre composites via mixing the two 1kg sub-samples. Diamond core was either cut in half or crushed prior to being homogenized by the rolling method and subsampled. Full JORC Reporting Criteria are provided for reference (Table 1)

Samples were analysed for gold by fire assay using a 50 gram charge; selected intervals have been submitted for Screen fire assay. Silver analysis has been by ICP using either an Aqua Regia or four acid digest methods. Over limit silver results were re-analysed by an appropriate ore grade method.

Sorpresa Resource Model Estimation

In the mineralised domains, gold was estimated by Multiple Indicator Kriging (MIK) and silver by Ordinary Kriging (OK) with no estimation of the un-mineralised zones. Ordinary Kriging estimates were also generated for gold in the mineralised domains as a check on the Multiple Indicator Kriging (MIK) estimates. Full JORC Reporting Criteria are provided for reference (Table 1)

The model extent is smaller than the 2014 model because the mineralisation wireframes for 2018 do not extend as deep or as far east as previously. The same block size was used for both the MIK and OK models. The estimates used a three pass search strategy, as in 2014. Examination of the oxide boundary did not indicate a sharp break in grade across this interface, so this was treated as a soft boundary during estimation, as in 2014.



Resource Classification

The total mineralisation inventory was initially classified into Measured, Indicated or Inferred Resource using three estimation search passes. The octant search constraints ensure that at least 2 drill holes are required to estimate blocks in the first two passes and ensure large continuous areas of the same class.

The class 1 material was then examined and restricted to blocks where:

- The minimum distance to samples was less than or equal to half the search distance, i.e. \leq 12.5m,
- The maximum number of samples was used in the OK estimate, i.e. 32 samples,
- The depth below surface was less than 100m,
- The blocks form contiguous areas, i.e. isolated blocks removed.

This procedure effectively restricted the class 1 blocks to areas within the recent close-spaced drilling. The mineral resources are classified as Measured, Indicated and Inferred based on the modified estimation search passes.

Resource Parameters and Modifying Factors

Density was assigned to the grade model using weathering, based on the oxidation surface provided by Rimfire. Density values of 2.77 and 2.55 t/m3 were assigned to the fresh (sulphide) and weathered (oxidised) lodes respectively.

Appropriate account has been taken of all relevant factors, including relative confidence in tonnage/grade estimates, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data. The cut-off grades were chosen on the basis of providing reasonable prospects for eventual economic extraction given a number of factors including metallurgical testing, long term market prices, and conceptual mining and processing costs. The mining method is currently assumed to be open pit extraction.

A series of preliminary metallurgical tests have been conducted on Sorpresa samples by a NATA registered laboratory (ALS Metallurgy) in Sydney. These results support a viable pathway to economic recovery of gold mineralisation (<u>ASX</u> <u>Announcement: Metallurgical Testwork 6Dec2013</u>)</u>

Rimfire Managing Director Craig Riley states:

The updated resource estimate results are very encouraging as they support the companys' Dual Strategy of monetising Sorpresa by evaluating the Sorpresa mineralisation as a low tonnage and higher grade gold project. The open pit optimisation studies to be undertaken in November will provide information for an optimal open pit design utilising realistic mining and metallurgical data inputs to generate maximum cashflow.

Craig Riley Managing Director



Figure 1: General Location Plan of Sorpresa

Note: Sorpresa outline is footprint of resource model domain and Mineral Resource is within this domains

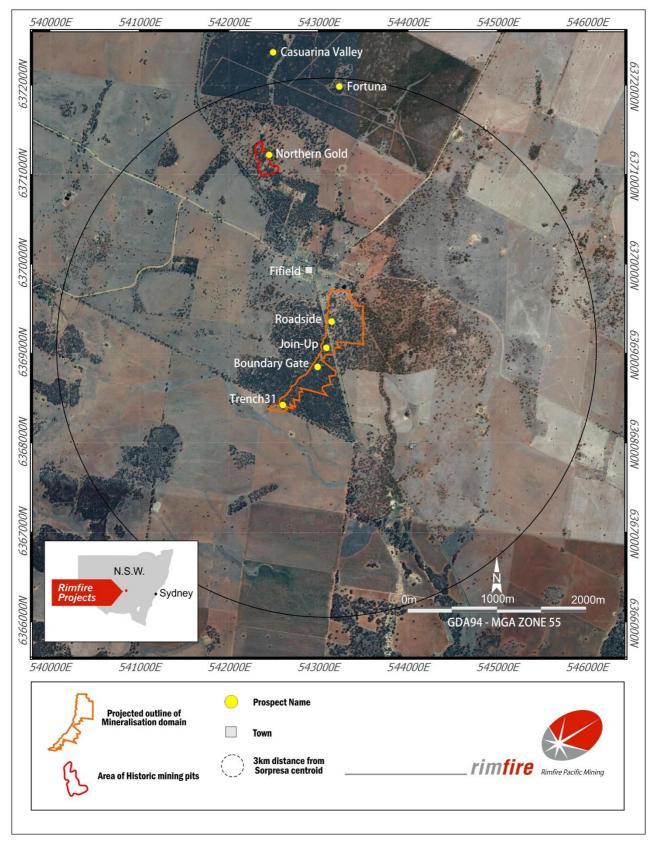




Table 1: JORC Code Reporting CriteriaSection 1 Sampling Techniques and Data

Criteria	JORC Code Explanation	Commentary
	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.	Sorpresa has been sampled via a mix of Reverse Circulation (RC) drilling (78%), Open Hole Hammer (OHH) drilling (19%) techniques and a limited number of diamond drill holes (3%), for a total of 31,653 metres which includes 2% of RC Twin holes. Samples from percussion holes are collected at 1m intervals from the OHH and RC cyclone in plastic bags. A handheld X-Ray Fluorescence (XRF) unit was used to identify areas of potential gold/silver anomalism.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Utilised OHH drilling methods during the initial Sorpresa discovery, with a policy to immediately stop the hole if water was encountered and only dry samples submitted for analysis. Recovery information of sample from cyclone has been recorded. Sample weights have been recorded and were consistent. Rigorous subsample methods have been employed.
Sampling Techniques	Aspects of the determination of mineralization that are Material to the Public Report. 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 mineralization types (e.g. submarine nodules) may warrant disclosure of detailed information.	For drill holes Fi0364 to Fi800 the 1 metre samples were riffle split and 2 kg sample submitted and for expected lower grade material surrounding mineralization, the riffle split sample was composited by weight to produce a 2 kg composite over a 2 m sample length. For drill holes prior to Fi0364 the 1 metre samples were homogenized by being rolled on a plastic sheet and 1kg measured off by weight. The rolling process involved folding the sample onto itself from one corner of square tarp then from the next corner continuing around the tarp three times so that the sample gets folded 12 times in total. This large sample was then subsampled using a square mouth scoop by taking 10 small scoops to make up 1 kg by weight. 2 m composites were then assembled via mixing the two 1kg sub-samples Diamond core was either cut in half or crushed prior to being homogenized by the rolling method and subsampled by square mouth scoop in same manner as above.
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).	All RC was conducted using face sampling hammer over multiple programs by different external drilling contractors (All Search Drilling, AMWD, Chief Drilling and Drillit Consulting) and a Rimfire owned RC Rig (converted from original OHH method). OHH holes were done with company drill rig (prior to conversion to RC) and this method of drilling was not used below the water table. Diamond drilling by Pinnacle Drilling for core of PQ and HQ triple tube diameter was utilized. Due to shallow drilling depths, the Company encountered some diamond core of poorer quality due to the fractured nature of the rocks, therefore inhibiting complete orientation and depth reconciliation. Over shorter distances it was possible to orientate locally with reference to core blocks for depth and frequent reflex core orientation marks.
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Criteria	JORC Code Explanation	Commentary
Drill Sample Recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	Chip sample recovery for RC and OHH drilling methods were via a cyclone straight into a large plastic bag. The bag was numbered with Hole No. and depth interval. Poor sample recoveries are noted during logging with percentage estimates. These were compared to assay results. Core recoveries were recorded against core blocks however some areas were difficult due to poor core condition. Sample recoveries are consistently high and very few intervals have recovery problems.
Drill Sample Recovery	Measures taken to maximise sample recovery and ensure representative nature of the samples.	As a standard procedure each RC drill hole is blown out at the beginning of each rod to remove excess water, regardless of water noted or not, plus auto-blow downs, to maintain dry samples. The presence of water was occasionally noted in RC drilling, with RC and OHH samples visually checked for recovery, moisture and contamination. A cyclone and riffle splitter (for RC) are used to provide a uniform sample and these are routinely cleaned. Rigorous splitting methods have been used to subsample. Triple tube diamond drilling method was used to assist core recovery.
	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.	A statistically insignificant number of wet samples in RC drilling was recorded and after close examination and comparison, no identifiable bias was noted. OHH was never used below water table or through loose alluvium. Hole twinning of OHH using RC indicated that there was no notable grade bias by preferential loss/gain of fine/coarse material.
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.	Geological logging of drill chips records colour, grain size, lithology, alteration, mineralization, oxidation and veining including percentage estimates along with moisture content. RC and OHH hole do not allow geotechnical logging. A very small sample of drill samples are sieved, logged and placed into chip trays. The coverage and detail of holes geologically logged is sufficient to support mineral resource estimation, mining studies and metallurgical studies.
	Whether logging is qualitative or quantitative in nature. Core (costean, channel etc) photography.	Geological logging of drill chips and core was qualitative by nature, drill chip trays, core trays and core photos are retained for future reference.
	The total length and percentage of the relevant intersections logged.	All metres within a hole are logged unless no recovery or collection of sample eg drilling precollar (start of hole).
	If core, whether cut or sawn and whether quarter, half or all core taken.	The Company aims to retain half core as a rule, if heavily fractured core is encountered, the entire metre was crushed with a subsample taken of the rolled (homogenized) sample as per method described under "Sampling Techniques".
Sub- Sampling Techniques and Sample Preparation	If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	For drill holes prior to Fi0800 (excluding Fi0220 to Fi0224 & Fi0238 to Fi0244), the samples were rolled which is described under "Sampling Techniques" in this table. All other holes including Fi0220 to Fi0224 & Fi0238 to Fi0244 have had samples riffle split. Lower priority RC intervals were initially spear sampled on 4 metre composites and if found to be anomalous were subsequently riffle split and reassayed. Wet samples were not put through riffle splitter but homogenized and subsampled using small spear. A small percentage of samples were taken to fill gaps and resample 4m mineralized samples, these were taken as 2m spear sample composites of equal weight.



Criteria	JORC Code Explanation	Commentary
Sub- Sampling Techniques and Sample Preparation	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Assessment of QAQC data that covered riffle splitting and rolling methods for percussion drill samples indicate that there was no significant statistical difference between the sample preparation techniques. The QAQC data supports that the methods used are appropriate to the style of mineralization. Duplicate samples were not submitted from the core. Core sampling is appropriate with half core cut and crushed followed by homogenization and splitting when core is highly broken.
Sub- Sampling Techniques and Sample Preparation	Quality control procedures adopted for all sub- sampling stages to maximise representivity of samples.	For Fi0364 onwards, industry standard QAQC protocols were employed with insertion of certified reference samples, blank samples and field duplicates were included every 50 th , 51 st and 52 nd sample respectively. Certified reference samples from ORE Research & Exploration Pty Ltd and were provided with expected grade and Standard Deviation (SD). Criteria of assessment of the certified standard was to fall within +/- 2 SD of the expected result. Criteria for blanks were within 2 x limit of detection and for field duplicate samples +/- 20%. Certified results and duplicates results had to exceed 20 x the limit of detection to fall into the laboratory QAQC target range of +/- 10% before further investigation. Exceedance of these criteria instigated a process by which lab was queried, results checked and samples re-assayed. Initial exploration techniques incorporated the following 1. Sample rolling technique that had a number of QC procedures including task training, work conducted very close to field office (for frequent supervision), visual inspection for obvious contamination, changing tarps if a damp clay rich sample was processed, square mouth scoop used to avoid vertical bias, portable scales used for weighing 1 kg to ensure constant and equal weights in subsample for composites. 4 x 1 metre samples were selected over very high grade interval returned from 2m composites in Fi0072. The repeatability indicated that the gold size allows separate sub samples and still get a similar result. The weight limit of 2kg was to ensure the samples did not get pulverised in an LM5 machine to avoid potential problems with cleaning out the bowl. 2. Riffle splitting had a number of quality control procedures including specific task training, visual inspection of sample for obvious contamination with no wet samples put through the riffle splitter, even spread of material across top of splitter, visual inspection of splitter for contamination and cleaning splitter if required between samples, equal weights (estimated from equ



Criteria	JORC Code Explanation	Commentary
Sub- Sampling Techniques	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.	5% of samples from within the mineralized envelope have had field duplicates taken. Field duplicate samples underwent the same QA/QC process. The analysis identify that the methods used are appropriate to the style of mineralization.
and Sample Preparation	Whether sample sizes are appropriate to the grain size of the material being sampled.	The Company believes the laboratory sample size is appropriate for the fine gold grain size, as identified from basic field petrology tests. The QAQC results of field duplicate analysis also supported the methods used as appropriate to the style of mineralization.
Quality of Assay Data	The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.	Relevant RC samples were dispatched to ALS Laboratories Gold analysis was either by Au_AA22 to 0.002 ppm Au or by Au_AA26 to 0.01 ppm Au with both methods using a 50 gram fire assay charge. 50 gram charge fire assay analysis for gold is considered as total technique in the absence of coarse metal. Upper limits are 1 and 100 ppm Au for AA22 and AA26 respectively. Selected intervals have been submitted for screen fire assay method Au_SCR22AA. Screen Fire Assay for gold is considered as total technique when coarse gold is present Silver analysis has been by either ME-ICP41 which is an Aqua Regia method or ME-ICP61 or ME-MS61 which is a four acid digest method. Over limit silver analysis >100ppm Ag is by Ag-OG46 for Aqua Regia or Ag-OG62 for four acid digests. Studies in the oxide zone showed no significant difference between Aqua Regia and Four acid digest for silver, indicating that they are both total techniques for silver analysis in the oxide. No study has been conducted to look at the difference in the primary material however it is suspected that Aqua Regia may under report in the primary zone compared to Four Acid digest due to difficulties in breaking down sulphides in the sample.
and Laboratory Tests	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.	All significant results reported from a NATA (National Association of Testing Authorities) accredited laboratory. The Company's handheld XRF (Olympus Delta50) has been used to determine sample length and type i.e. 1m sample or 2m or 4m composite and subsequent lithogeochemistry interpretation. XRF data has not been used in resource estimation. All data is collected using a 30 second reading time for each of the 3 beams in soil mode, which is calibrated daily.
	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.	For drill holes Fi0364 to Fi0800 (403 holes), industry standard QAQC protocols with insertion of certified reference samples, blank samples and field duplicates are included every 50 th , 51 st and 52 nd sample respectively. For drilling prior to Fi0364 (264 holes), a retrospective QAQC program was conducted, which sampled 5% of intervals within the mineralized envelope as field duplicates. In addition to the retrospective QA/QC program, approximately 5% of all pulps from within the mineralized envelope were submitted to a secondary umpire laboratory. Reviews of internal QAQC results has demonstrated that the field sampling, riffle splitting compositing methods used are appropriate to the mineralization being tested. External laboratory analysis of "umpire" samples has been conducted at SGS Laboratory Services, demonstrating there is no significant bias in the results.
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Criteria	JORC Code Explanation	Commentary
The Verification of Significant	The verification of significant intersections by either independent or alternative company personnel.	All reported intersections are reviewed by 2 independent senior technical company personnel. 77 drill holes had all drilled metres panned in the field and inspected under the microscope. This work confirms presence of gold and areas of higher grades.
Intersections by either Independent or Alternative Company Personnel	The use of twinned holes.	A total of ten (10) twinned holes have been completed. The program twinned seven (7) OHH hammer holes, utilizing the RC method on the same rig, cyclone and driller across the project area. The program also twinned three (3) RC holes drilled by a contractor rig. The program has verified the OHH as an effective drilling technique in the oxide zone and confirmed presence of all intersections.
The Verification of Significant Intersections by either Independent or Alternative Company Personnel	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Initially, primary geological field data was captured via pen and paper logs which were digitized. This evolved into capture of data electronically using templates. Sample data was initially created in hard copy in the field however this evolved into digitally created sample data with the hard copy then checked off in the field. Digital assay data from the laboratory is merged and then loaded into a Microsoft Access database after passing QAQC checks, to ensure merging is correct and the QC samples pass criteria. In 2014, a selection of 5 % of drill holes (17 holes) spread across the project in time, location and drilling method have been checked by H&S Consultants to verify the data quality. The database is backed up on a regular basis and ODBC links provide direct export of data to the Company purchased Micromine 3D software. The company maintains all geological, survey and assay data in Datalogger database software (MaxWell Geoservices).
	Discuss any adjustment to assay data.	Where "<" values are received in assays, they are converted into "-" values. Where multiple gold assays have been received, the first gold assay is given priority except in the case where screen fire assays exist and then these are given priority.
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.	For drill holes Fi0364 to Fi478, RC Hole collars are surveyed using either a Garmin GPS, or Trimble DGPS, and the post drilling collar position is picked up by a Trimble centimetre accurate Differential GPS (DGPS). For drill holes prior to Fi0364 the collars were surveyed to local grid via optical square and tape. The local grid baselines were picked up by DGPS. 249 holes have multi-shot, and single shot down hole surveys. The remaining 328 holes are short and/or vertical holes and are without downhole survey. Assessment of holes with downhole survey indicates that potential movement of the un-surveyed downhole locations are not likely to materially impact resource calculations due to the size of parent and subblocks used in the block modelling, drill density and also the depth mineralization as intercepted down the hole. This is supported by twinned hole data.
	Specification of the grid system used.	Prior to Fi0364, exploration was conducted on local grids which approximated AGD66 zone 55, these were picked up and transformed to AGD66 zone 55. In August 2013 the entire grid system and all data were transformed into GDA94 zone 55.
	Quality and adequacy of topographic control.	Collar elevation data is from digital terrain model that utilises DGPS ground gravity survey data. The low topographic relief supports this approach provides control to an estimated +/- 0.5m.
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Criteria	JORC Code Explanation	Commentary
	Data spacing for reporting of Exploration Results	The drill hole spacing varied and is not on specific grid spacing's however near surface oxide material was drilled on approximately 10m x 10m or in some cases slightly closer spacing and primary material (from approximately 60m below land surface) drilled on approximately 40 x 40m spacing's to 100 x 60m spacing. There are various breaks along the strike of mineralised zone where drill testing for continuity is incomplete.
Data Spacing and Distribution	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.	The drill spacing's were individually designed to establish continuity of various intersected mineralised zones (referred to as Trench 31, Boundary Gate, Join-Up, Roadside and Roadside North) and have largely formed the basis of allocation of resource classification across the project.
	Whether sample compositing has been applied.	Samples are taken from the cyclone (RC and OHH drilling) at 1m intervals. 2m composites are included in the resource estimate. Equal weights are used from each 1m interval to ensure the composite is adequately representative. Equal weights are estimated from equal volume measure when subsampling or from actual weights.
Orientation of Data in	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	Current observations do not suggest a bias in sampling from the drilling orientation; multiple orientations have been tested and there is no observable trend. All drilling has attempted to achieve as close to "true width" intersection with the targeted mineralization.
Relation to Geological Structure	If the relationship between the drilling orientation and the orientation of key mineralized structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	The drilling orientation is designed to intercept the mineralization orthogonally where known; the relationship between the drilling orientation and the orientation of key mineralized structures is not considered to have introduced a sampling bias.
Sample Security	The measures taken to ensure sample security.	During each drilling program, all samples were collected by experienced Company samplers under experienced technical supervision, stored in a secure on-site location, alarmed security, and transported to ALS Orange NSW via Rimfire personnel or licensed couriers.
Audits or Reviews	The results of any audits or reviews of sampling techniques and data.	Internal and external reviews of QAQC data has shown that the field sampling, rolling method (initial method), riffle splitting, and compositing methods used are appropriate to the mineralization being tested. The Company utilises standard industry techniques during the execution of its field exploration programs.



Table 1: JORC Code Reporting Criteria (continued)Section 2 Sampling Techniques and Data

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.	Reported results all come from EL5534 which is a 100% Rimfire Pacific Mining NL Exploration Licence at Fifield NSW. All samples were taken on Private Freehold and/or Common Land (prescribed for mining). No native title exists. The land is used primarily for grazing and cropping. The Common land is host to Inland Grassy Grey Box Woodlands which have been classified as an Endangered Ecological Community.
	The security of the tenure held at the time of reporting along with any known impediments to obtaining a license to operate in the area.	The Exploration Licence is in good standing, and all work is conducted under specific approvals from NSW Department of Planning, Industry and Environment – Resources and Geoscience.
Exploration Done by Other Parties	Acknowledgment and appraisal of exploration by other parties.	There is no record of previous exploration of the Sorpresa mineralization apart from minor surface workings in various locations. Platina Developments conducted exploration of the Platina Lead in circa 1970's using Caldwell drilling which traversed across Sorpresa trend but do not identify the mineralization. Rock chip sampling of George Green's Prospect workings (Original Sorpresa area) by Platina Developments identified anomalous Au and Ag in the rock chips. Various other companies had explored for various metals in the area but with no reference to gold and silver mineralization on the Sorpresa Trend.
Geology	Deposit type, geological setting and style of mineralization.	The Sorpresa gold-silver deposit is hosted by a thin silicified carbonaceous shale unit (typically 10-20m thick) and underlain by a barren grey chert unit. The mineralisation appears stratabound. The overall deposit is around 1.6 km in length and is divided into a number of different prospects. Dips are generally moderate to shallow towards the east. There appear to be a number of possible structural disruptions – faults or shears – affecting the mineralised horizon, although their orientation and impact are not entirely clear at this stage.
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: Easting and northing of the drill hole collar Elevation or RL (Reduced Level – elevation above sea level in m) of the drill hole collar Dip and azimuth of the hole Down hole length and interception depth Hole length 	As no exploration results are being reported, this section is considered inapplicable.
	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.	As no exploration results are being reported, this section is considered inapplicable.
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Criteria	JORC Code Explanation	Commentary
	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.	As no exploration results are being reported, this section is considered inapplicable.
Data Aggregation Methods	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.	As no exploration results are being reported, this section is considered inapplicable.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	Resources for Sorpresa are reported at separate cut- off grades for gold and silver (1.0 g/t Au and 85 g/t Ag) with material above both cut-off grades included in the gold resources. The silver / gold factor of 85 is based on a gold price of \$1,494.10 per ounce and a silver price of \$17.58 per ounce using the Comex spot prices on 21/10/2019.
	These relationships are particularly important in the reporting of Exploration Results.	As no exploration results are being reported, this section is considered inapplicable.
Relationship Between Mineralization Widths and	If the geometry of the mineralization with respect to the drill hole angle is known, its nature should be reported.	As no exploration results are being reported, this section is considered inapplicable.
Intercept Lengths	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").	As no exploration results are being reported, this section is considered inapplicable.
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	Resource update with key information to support changes
Balanced Reporting	sectional views. 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.	As no exploration results are being reported, this section is considered inapplicable.
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.	Establishment of the bulk density to enable resource calculations was via a purpose dug trench at Boundary Gate. The trench enabled access for removal of a 2317 kg sample of mineralized weathered rock. The excavated space was accurately measured and sample was accurately weighed with subsample taken for moisture determination. Preliminary metallurgical test work has been conducted under the supervision of an external metallurgist, on various bulked and individual samples across Sorpresa. The early stage results only completed in the oxide zone achieved gold recoveries of 93% and silver recoveries of 74%.
	The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).	No further work on testing extensions is immediately planned.
Further Work	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	As no exploration results are being reported, this section is considered inapplicable



Table 1: JORC Code Reporting Criteria (continued)Section 3 Estimation and Reporting of Mineral Resources

Criteria	JORC Code Explanation	Commentary
Database integrity	 Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes. Data validation procedures used. 	 The Sorpresa database was independently validated in 2014 by checking the digital database entries against original paper records, including original laboratory assay certificates, for accuracy and completeness. Validation procedures in 2014 included detailed checking of all data for 17 holes (~5% of holes in database) covering all drill programs for collar location, down hole surveys, assays and geological logging. The conversion of coordinates from local to GDA was checked, as well as checking screen fire assays for gold. Down hole surveys were checked for potentially excessive deviation. Only basic checks were performed on data integrity.
Site visits	 Comment on any site visits undertaken by the Competent Person and the outcome of those visits. If no site visits have been undertaken indicate why this is the case. 	• The Competent Person visited site over a period of 3 days – September 17-19, 2014. General site geology and layout were inspected, core and chip samples were examined and sample splitting procedures and equipment were observed. No drilling was in progress at the time. Field procedures were being performed in a professional manner and no material issues were identified.
Geological interpretation	 Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit. Nature of the data used and of any assumptions made. The effect, if any, of alternative interpretations on Mineral Resource estimation. The use of geology in guiding and controlling Mineral Resource estimation. The factors affecting continuity both of grade and geology. 	 The geological interpretation of the main mineral deposit is based on identifying the host unit, which can be reliably traced over a distance of 1.5km, so confidence is high. The confidence in the Boundary Gate East area is lower, because mineralisation is not entirely confined to the host unit, suggesting structural complications in this area. The geological interpretation is based on lithology and geochemical data in 577 drill holes, which includes both chemical assays and hand held XRF measurements for a wide range of elements. It was assumed that the database is accurate and complete. There appears to be limited scope for alternative interpretations because the main mineralised zone is clearly defined by lithology and geochemistry. It is considered unlikely that alternative interpretations would have a substantial impact on the Mineral Resource estimates due to the generally close spacing of the data points. The geological model was used as the framework for resource estimation, and mineralised domains were defined using gold and silver grades within the host unit. The mineralised zones were treated having as hard boundaries during grade estimation, while the oxidation was treated as a soft boundary due to its gradational nature.



		• The primary factor controlling geological continuity is stratigraphy, while grade continuity is considered to be controlled by a combination of favourable stratigraphy and structural disruption within the host unit. The primary mineralisation is overprinted near surface by weathering and oxidation.
Dimensions	• The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	 The Sorpresa Mineral Resource has a curved strike length of 1,600m and projected plan width varies from 60 to 400m, averaging around 150m. Resources outcrop at surface and extend to approximately 190m below surface. Horizontal lode width varies from 10 to 70m, averaging around 30m. Depth of oxidation averages around 50m, but can vary from 15 to 75m. Details for the different prospects are: Roadside North: dominantly silver-rich mineralisation; strike length 270m, projected plan width of 270m, and extends from 2.5m to 190m below surface. Roadside: gold and silver rich mineralisation; strike length 160m, projected plan width of 450m, and extends from surface to 180m below surface. Join-Up: gold-rich and silver-poor mineralisation; strike length 170m, projected plan width of 100m, and extends from 2.5m to 75m below surface. Boundary Gate: discontinuous lenses of gold-rich and silver-poor mineralisation over strike length of 540m; projected plan width of lenses ~60m, and extending from surface to 150m below surface. Trench 31: gold-rich and low silver mineralisation; strike length 270m, projected plan width of 80m, and extends from surface to 85m
Estimation and modelling techniques	 The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used. The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data. The assumptions made regarding recovery of by-products. Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation). In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed. Any assumptions about correlation between 	 below surface. Gold was estimated using a recoverable multiple indicator kriging (MIK) technique in GS3 software. Nominal 1.0m sample composites were used. Domains were defined using a nominal grade threshold of 0.10 g/t Au (only) within the host unit; domains vary in the strike and dip of mineralisation. MIK was considered an appropriate method given the strongly skewed grade distributions in some domains. A three pass search strategy was used, with initial radii of 25x25x6m, which were doubled for the second pass and doubled again in X and Y for the third pass. The search ellipsoid orientation varied for each domain and the maximum extrapolation distance was 100m. A minimum of 16 and maximum of 48 samples was used to estimate each block, apart from the final pass where a minimum of 8 samples was used. Octant constraints were used to ensure a minimum of two holes in the first 2 search passes. Silver was estimated using the ordinary kriging (OK) technique in Datamine software. The same domains were used for both silver and gold. OK was considered an appropriate method given the low to moderate skewness of grade distributions in all domains. Silver used the same search strategy



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	 variables. Description of how the geological interpretation was used to control the resource estimates. Discussion of basis for using or not using grade cutting or capping. The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available. 	 as gold, except the maximum number of samples was set to 32. Target models were generated by RPM personnel and the new MIK/OK estimates compare favourably with these and the previous H&SC model. Only gold and silver production is anticipated so no by-products are expected. No deleterious elements or other non-grade variables of economic significance were estimated. The parent block size for both MIK and OK estimates was 10x10x5m in X, Y and Z respectively. Nominal hole spacing is typically 15x15m to 20x20m in the better drilled areas, so the block size corresponds to about half the data spacing in the horizontal plane. Some areas have more recently been drilled to nominal spacings of 20x5 or 10x10m. The recoverable MIK estimates for gold assumed an SMU of 1.7x1.7x1.5m, while 5x5x2.5m is the minimum sub-block size for the OK silver estimates. Correlation between gold and silver is poor, both globally and within each domain, so no correlation between gold and silver was assumed in the estimates. The geological interpretation was used as the framework for resource estimation, and mineralised domains were defined using gold and silver grades within the host unit. The mineralised zones were treated having as hard boundaries during grade estimation, while the oxidation was treated as a soft boundary due to its gradational nature. Grade trimming was applied in some domains for the gold MIK estimates, where the average of the mean and median grades rather than mean grade was used in the top indicator class – this was only applied in cases where the difference between the mean and median grades in the top indicator class was extreme. Silver composites were top-cut to 1,000ppm for estimation, which only affected one composite. The estimates were validated in a number of ways – visual comparison of block and drill hole grades, statistical analysis, examination of grade-tonnage data, comparison with target models generated by RPM pers
Moisture	• Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	 remains unmined. Tonnages were estimated on a dry weight basis; moisture content was only determined for a single bulk density sample.
Cut-off parameters	• The basis of the adopted cut-off grade(s) or quality parameters applied.	• The cut-off grades were chosen on the basis of providing reasonable prospects for eventual economic extraction given a number of factors including metallurgical testing, long term market



		prices, and conceptual mining and processing costs.
Mining factors or assumptions	• Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	 The mining method is currently assumed to be open pit extraction. The estimates include some allowance for internal mining dilution, in that the SMU is assumed to be 1.7x1.7x1.5m and minimum sub-block size is 5 x 5 x 2.5 metres. The resource estimates do not include potential external mining dilution arising from factors such as blast movement, mixing of materials during blasting and digging, or misallocation of ore and waste. Assumptions regarding mining are conceptual at this stage of the project.
Metallurgical factors or assumptions	• The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	 Preliminary metallurgical testwork on three composite oxide samples showed that gold recoveries of 93% and silver recoveries of 74% could be achieved. Further metallurgy at Sorpresa in the oxide and primary zones provided promising gravity, floatation and leaching recoveries. Conceptual plant and process options have been reviewed.
Environmental factors or assumptions	• Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	 At this stage of the project, limited environmental investigations have been conducted and no environmental assumptions have been made beyond that a conventional open-pit mine and processing facilities should be possible. It is assumed that all necessary environmental approvals will be in place when mining commences. All waste and process residues will be disposed of in a responsible manner and in accordance with the mining license conditions.
Bulk density	 Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples. The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit. Discuss assumptions for bulk density estimates used in the evaluation process of the different materials. 	 A small number of density measurements were determined on site by RPM personnel using an unsealed water immersion method – 11 PQ core samples were tested. A two tonne bulk sample was also taken from a trench, weighed, moisture determined and volume measured. Unsealed immersion was considered adequate for fresh (sulphide) samples as there is negligible void space and moisture content in this material. The bulk sample did account for void space and moisture content and compared reasonably well with other oxide zone measurements. Average density values were assigned to fresh (sulphide) and oxidised lode material based on the available samples; different weighting schemes were tested using the core and bulk samples for the oxide zone material and gave similar results. A density of 2.76 t/m3 was applied to fresh lode and



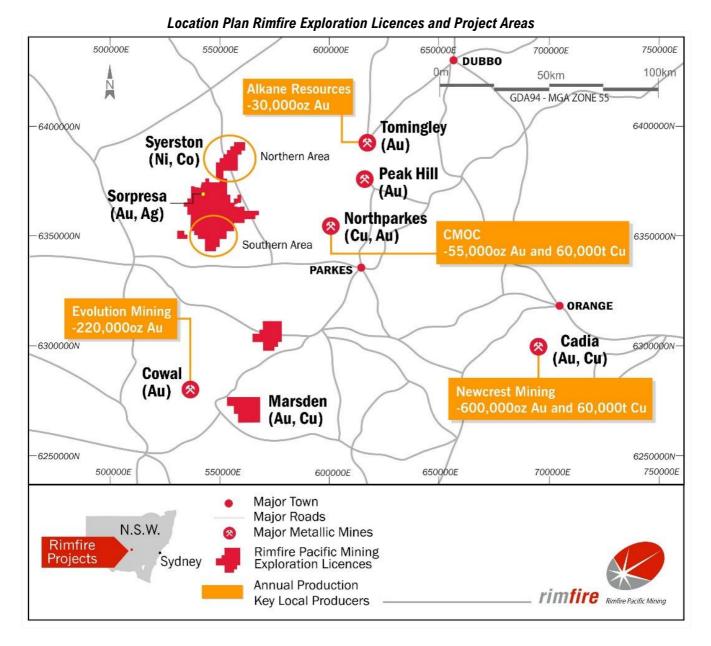
ASX Announcement 6 November 2019 Page 18

		2.55 t/m3 to oxide in the resource model.
Classification	 The basis for the classification of the Mineral Resources into varying confidence categories. Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data). Whether the result appropriately reflects the Competent Person's view of the deposit. 	 The Mineral Resources were classified on the basis of estimation search pass, with pass 1 classified as Measured, pass 2 as Indicated and pass 3 as Inferred. A depth restriction of 200m has been imposed and the majority of resources (~75%) occur within 100m of surface. Appropriate account has been taken of all relevant factors, including relative confidence in tonnage/grade estimates, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data. The reported Mineral Resources appropriately reflect the Competent Person's view of the deposit.
Audits or reviews	• The results of any audits or reviews of Mineral Resource estimates.	• No independent audits or reviews have been undertaken to date.
Discussion of relative accuracy/ confidence	 Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate. The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available. 	 The relative accuracy and confidence level in the Mineral Resource estimates are considered to be in line with the generally accepted accuracy and confidence of the nominated JORC Mineral Resource categories. This has been determined on a qualitative, rather than quantitative, basis, and is based on the Competent Person's experience with similar deposits. Factors that could affect the relative accuracy and confidence of the estimate include: The interpretation of the mineralised domains, The continuity of very high grade samples. The estimates are local, in the sense that they are localised to model blocks of a size considered appropriate for local grade estimation. The tonnages relevant to technical and economic analysis are those classified as Indicated Mineral Resources. No production data is available as the deposit remains unmined.



ABOUT RIMFIRE

Rimfire Pacific Mining (RIM) is an ASX listed resources exploration company with its major focus at Fifield in central NSW, located within the Lachlan Transverse Zone (LTZ). In 2011 the Company made a greenfields discovery, named "Sorpresa", announcing a JORC Inferred and Indicated Maiden resource in 2014. The information provided in "About Rimfire" is available to view on the company's website: <u>ASX Announcements</u>.



Rimfire is exploring for a major copper / gold or gold mineralised system such as at Northparkes (Cu/Au) or Cowal (Au) on 915km² of Exploration Licences 100km west of Parkes in central NSW. Multiple prospects with potential for further gold discoveries exist in the area around Sorpresa which are part of Rimfire's 681km² contiguous tenements. Rimfire also holds two exploration licences covering 234km²; located 40 to 60kms south of the Fifield Project, in a prospective area now part of a moratorium associated with the MinEx Cooperative Research Centre program (minexcrc.com.au)



Competent Persons Declarations - Mineral Resources - Sorpresa

The information in this Report that relates to Mineral Resources for the Sorpresa deposit is based on information compiled by Mr Arnold van der Heyden, who is a Member and Chartered Professional (Geology) of the Australian Institute of Mining and Metallurgy and Managing Director of H&S Consultants Pty Ltd.

Mr van der Heyden has sufficient experience relevant to the style of mineralization 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' (JORC Code). Mr van der Heyden consents to the inclusion in this report of the matters based on the information in the form and context in which it appears.

Competent Persons Declarations – Exploration Results

The information in the report to which this statement is attached that relates to Exploration and Resource Results is based on information reviewed and/or compiled by Todd Axford who is deemed to be a Competent Person and is a Member of The Australasian Institute of Mining and Metallurgy.

Mr Axford has over 24 years' experience in the mineral and mining industry. *Mr* Axford is employed by Geko-Co Pty Ltd and is a consulting geologist to the Company. Todd Axford has sufficient experience that is relevant to the style of mineralisation and type of deposits 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'. Todd Axford consents to the inclusion of the matters based on the information in the form and context in which it appears.

Forward looking statements Disclaimer:

This document contains "forward looking statements" as defined or implied in common law and within the meaning of the Corporations Law. Such forward looking statements may include, without limitation, (1) estimates of future capital expenditure; (2) estimates of future cash costs; (3) statements regarding future exploration results and goals. Where the Company or any of its officers or Directors or representatives expresses an expectation or belief as to future events or results, such expectation or belief is expressed in good faith and the Company or its officers or Directors or representatives as the case may be, believe to have a reasonable basis for implying such an expectation or belief. However, forward looking statements are subject to risks, uncertainties and other factors, which could cause actual results to differ materially from future results expressed, projected or implied by such forward looking statements. Such risks include, but are not limited to, commodity price fluctuation, currency fluctuation, political and operational risks, governmental regulations and judicial outcomes, financial markets and availability of key personnel. The Company does not undertake any obligation to publicly release revisions to any "forward looking statement", or to reflect the occurrence of unanticipated events, except as may be required under applicable securities laws.