March 14, 2017

Mr. Carl Hehnke
Resolution Copper Mining
102 Magma Heights
Superior, AZ 85173

Dear Mr. Hehnke:

RE: 2016 Geological and Mineral Resource Model – Suitability for Declaration of Mineral Resources and Support for Mine Plans to develop a Block or Panel Cave Mine

IMPORTANT NOTICE

This letter was prepared exclusively for Resolution Copper Mining (RCM) by Amec Foster Wheeler E&C Services Inc. (Amec Foster Wheeler). The quality of information, conclusions and estimates contained herein is consistent with the level of effort involved in Amec Foster Wheeler's services and based on: i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions and qualifications set forth in this memo. This letter is intended to be used by RCM only, subject to the terms and conditions of its contract with Amec Foster Wheeler. Any other use of, or reliance on, this project by any third party is at that party's sole risk.

1.0 INTRODUCTION

In 2016 Resolution Copper Mining (RCM) completed an update to the Geological and Mineral Resource model for the Resolution deposit, located near Superior, Arizona. RCM requested Amec Foster Wheeler to perform a technical review of the geological and Mineral Resource model, and this was accomplished by Harry Parker at Superior during October 19-21, 2016; additional validation checks were performed from February 20-25, 2017.

The scope of the review and validation checks involved the following topics that were covered in discussions with RCM staff:

- 2016 Geological interpretation, including faults, rock types
- 2016 Geological model on screen including drill holes with summary rock types and rock types assigned via wireframes to blocks
- Grade shells used, treatment of "outlier samples"; validation of grade shell volumes
- Exploratory data analysis, variography, kriging plans (passes), estimation variances
- Density data and estimation of density applied to blocks; consideration of relationship between density and grade
- Any nearest neighbor models

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- Comparison of block grade estimates for copper (Cu) and molybdenum (Mo) with drill hole composites on screen
- Validation swath plots, statistics comparing capped and uncapped nearest neighbor (NN) versus kriged block estimates of Cu, Mo grades
- Drill spacings, future drilling plans
- Risks and opportunities
- Mineral Resource classification and tabulation
- Review of reasonable prospects for eventual economic extraction of the Mineral Resources
- Potential benefits of use of conditional simulation to evaluate opportunities for increasing grade with tightening drill spacing in the high-grade breccias

2.0 SUMMARY AND CONCLUSIONS

General

The 2016 Geological and Mineral Resource model has been constructed with considerable attention being paid to geometric, lithological and sulphide mineralogical controls on copper (Cu), molybdenum (Mo) and silver (Ag) mineralization. The model is sufficient to report Mineral Resources under the 2012 JORC Code[1] and to support mine plans to develop a block or panel cave mine.

The model was constructed by Mimi Hart (assays), Connie Shultz (database), Hamish Martin (lithology, alteration, and mineralogy), Bill Hart (structure) and Rob Isaacson (grade interpolation). The database and resource model were audited by Jeff Sullivan and Silvia Satchwell (Consultores de Recursos Minerales, CRM). A process audit was conducted by Justin Watson of Xtract Mining Consultants. All of these persons except Justin Watson have been associated with the Resolution Project for many years and have been involved in model updates. Harry Parker of Amec Foster Wheeler has made periodic site visits and has undertaken reviews since 2002.

The remarks made below apply to copper. Very little work was done auditing molybdenum and silver, but what was done has shown reasonable domaining and modeling.

The CRM audit found that *"The overall finding of the resource audit is that the "geological model and estimation of grades were developed with great care and attention to detail. Although there are some areas where improvement might be possible, the model quality is high and meets with all international standards for resource model development and there are no issues which would prevent releasing resource statements based on the grades defined by this model."*

Xtract Mining Consultants assigned a rating of *"good, meaning all elements of the internal control environment in relation to the areas/processes reviewed as part of the audit scope are designed and/or operating effectively providing reasonable support, on an overall basis, for the achievement of business objectives. The process and control environment is operating at an optimum level. No Moderate, High or Very High audit issues have been noted."*

[1] Joint Ore Reserve Committee, 2012, The Australasian code for reporting exploration results, mineral resources, and ore reserves, Joint Ore Reserve Committee of Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists, and the Minerals Council of Australia (JORC), 44pp.

Amec Foster Wheeler concludes the 2016 Resource Model has been constructed with considerable attention being paid to geometric, lithological and sulphide mineralogical controls on copper, molybdenum and silver mineralization. The model is sufficient to report Indicated and Inferred Mineral Resources under the 2012 JORC Code and to support planning to develop a block or panel cave mine.

The remarks made below are based on all three of the audits.

Database

The database meets industry standards, but the auditors, and Amec Foster Wheeler notes that the effect of core loss on grade has not been assessed. This is a minor item, as core recovery is essentially 100%. There are local fractured or gouge zones. Density has not been downgraded in these zones, as density determinations are made on intact core. Site staff feel that such zones are limited, and the effect on density would be small. Amec Foster Wheeler concurs; at an analogue deposit downgrading was on the order of 0 to 5% depending on the amount of fracturing and disaggregation.

Some of the round robins for certified reference materials show more variability than would normally be expected, although Amec Foster Wheeler peer reviewer Ted Eggleston has seen this amount of variability elsewhere.

Geological Model

The logging of lithologies and mineralogy has been done to a high standard. This has permitted enough stratigraphic and intrusive sill units to be identified so as to establish sequences within fault blocks and likely displacements. Bedding dips have been used in the interpretations. Interpretation of the breccia unit has been more problematic because its contacts and drill hole intercepts are often subparallel. With infill drilling the volume of breccia has increased, indicating earlier intrepretations were conservative.

The fault interpretation is based on dips of shears in oriented core or acoustic borehole imaging. Often multiple shears with the same orientation are seen, and the shears that allow an internally consistent correlation of lithological units are chosen to model fault planes. As more drill holes have been added, the number and orientation of fault planes has changed. The basic structural framework is set, but it is likely that further changes will be made as more infill drilling is completed. There is risk in the brecciated areas, where the stratigraphy is uncertain; however brecciation and mineralization likely postdated much of the faulting.

Amec Foster Wheeler examined plots of 11 holes drilled since the model was built in early 2016. These holes largely confirmed the interpretation contained in the 2016 Geological model.

Sullivan and Satchwell found the bornite-chalcocite/chalcopyrite (BN-CC/CP) surface to be irregular and in one case subject to movement of 250 ft subvertically when infill hole RES-037F was considered.

Exploratory Data Analysis

Exploratory Data Analysis (EDA) was conducted on both 10 and 30 ft composites. The data were grouped into a combination of lithological and mineralogical domains that show strong contrasts in grade between domains and low variability (coefficients of variation = standard deviation/mean of 0.5 or less for most domains). Trend analysis showed little spatial trend to grade within domains.

RCM made a contact plot analysis that characterized domain boundaries as hard, firm or soft. For resource estimation only hard or soft boundaries were used. Sullivan and Satchwell tested other possible controls such as distance to grade shell boundaries, distance to lithological boundaries, and distance to the BN-CC/CP surface and concluded that the RCM domains were generally robust as they are, and further subdomaining was not required. Sullivan and Satchwell did identify two quartzites in Domain 11 with distinctly different mean grades. In the outer estimation passes (likely Inferred) there is undesirable sharing of composites from the two quartzite units.

A great deal of work was done on outliers (local abnormally high grades). Except in the case of silver, outliers do not represent much of the metal. RCM examined outlier grades in drill holes and found them to be related to veins in local structures. Hence they employed an outlier-restriction method using a tight search ellipse. Beyond the ellipse an outlier sample is discarded. Sullivan and Satchwell used a local method to compare the average capped and uncapped grades at various thresholds. The cap grade determined using the local method thus varies throughout the deposit, and importantly there is no elimination of outlier composites. Overall the two capping methods result in about 2% copper metal loss for the RCM approach and 1% copper metal loss for the Sullivan and Satchwell approach.

Variography was performed using the Snowden Visor software. Normal Scores variogram models were used. These models must be backtransformed for use in grade estimation. Sullivan and Satchwell prefer use of correlograms or relative variograms. Amec Foster Wheeler notes that during its recent review of the 2016 Oyu Tolgoi model, the back transformation step could not be reproduced.

Estimation Plans

The parent block size was a 75 ft cube. The parent blocks were subcelled as small as 15 ft cubes. These are reasonable sizes.

The estimation plans employ five passes with search ellipsoids paralleling the variogram axes of anisotropy and search distances related to percentage of the sill (40, 60, 80, 90, 100%). There is also a final fill-in pass at 5-6x the range of Pass 5. Most blocks are estimated within the first four passes. Maximum composites per hole are two to three depending on passes. Minimum composites range from four to seven, and maximum composites range from 12 to 20. These are generally reasonable criteria. The number of passes is larger than the three or four more typically used, but RCM was cognizant of trying to avoid unreasonable projection of high grades.

Model Verification and Validation

The grade models were visually validated; plans show minor unsupported high-grade (>2% Cu) blocks that will likely be classified as Inferred, or on further analysis shown to be defended by composites on lower or higher levels.

The grade models were validated by means of nearest neighbor (NN) models using boxplots and swath plots. The effect of outlier restriction was found to be particularly severe for breccia above the BN-CC/CP surface, with 7% metal loss compared to an uncapped NN model. Two of the quartzite domains (5, 6) also had severe metal losses. Overall the kriged resource model average copper grade is about 3% less than an uncapped NN model.

Sullivan and Satchwell used a method to compare average NN and kriged model grades within 225 x 225 x 225 ft superblocks. In general the comparisons are good. There are some areas with NN average grades lower than kriged average grades, which confirms likely local smearing of higher grades outboard into less densely drilled low-grade areas.

Documentation

RCM (2017) has addressed the assessment criteria contained in Table 1 of the 2012 JORC Code. It is Amec Foster Wheeler's opinion that RCM's discussion meets the requirements of the Code.

Watson recommended procedural documentation be developed and archived. This could be expected for an operating mine. In that Resolution is in development stage, its procedures will change with time. The documentation should include verification and validation of all steps.

There is evidence in the reports provided that backup memoranda and supporting documentation exist, but these were not provided for Amec Foster Wheeler's review.

Classification and Mineral Resource Tabulation

RCM has developed a reasonable classification scheme. Most of the resources are classed as Inferred (820 ft spacing with closest hole within 600 ft for Inferred Interpolated, extension beyond to 1% Cu shell boundary allowed for Inferred Extrapolated); to be classed as Indicated a block had to be interpolated in Passes 1 to 3, have a nominal spacing of 300 ft (three holes used) or 150 ft (two holes used), and a kriging variance of ≤ 0.4 using a unit sill variogram model. This classification scheme is reasonable compared to other porphyry-style deposits. RCM stated the Indicated blocks are contiguous, and this was subsequently verified by Amec Foster Wheeler. Examination of cross sections and plans shows that there are scattered areas that with further analysis could potentially be converted from Inferred to Indicated.

Sullivan and Satchwell, Watson and Amec Foster Wheeler have advised that classification should consider:

- Data quality and accuracy of all inputs
- Uncertainty of the BN-CC/CP surface
- Uncertainty of fault planes
- Uncertainty of bedding strikes and dips

- Uncertainty of the breccia contacts
- Grade smearing outboard of high grade holes
- Cut-off grade
- Reasonable prospects for eventual economic extraction

In February 2017, Amec Foster Wheeler found the following:

- The Mineral Resources are reasonably constrained to take into account property boundary, geotechnical and mine design considerations

- Mineral Resources are declared within the 1% Cu Shell implying a cut-off grade of 1% Cu is relevant. There is a small amount of included "must take" lower grade material in the Core zone above the -2540 elevation

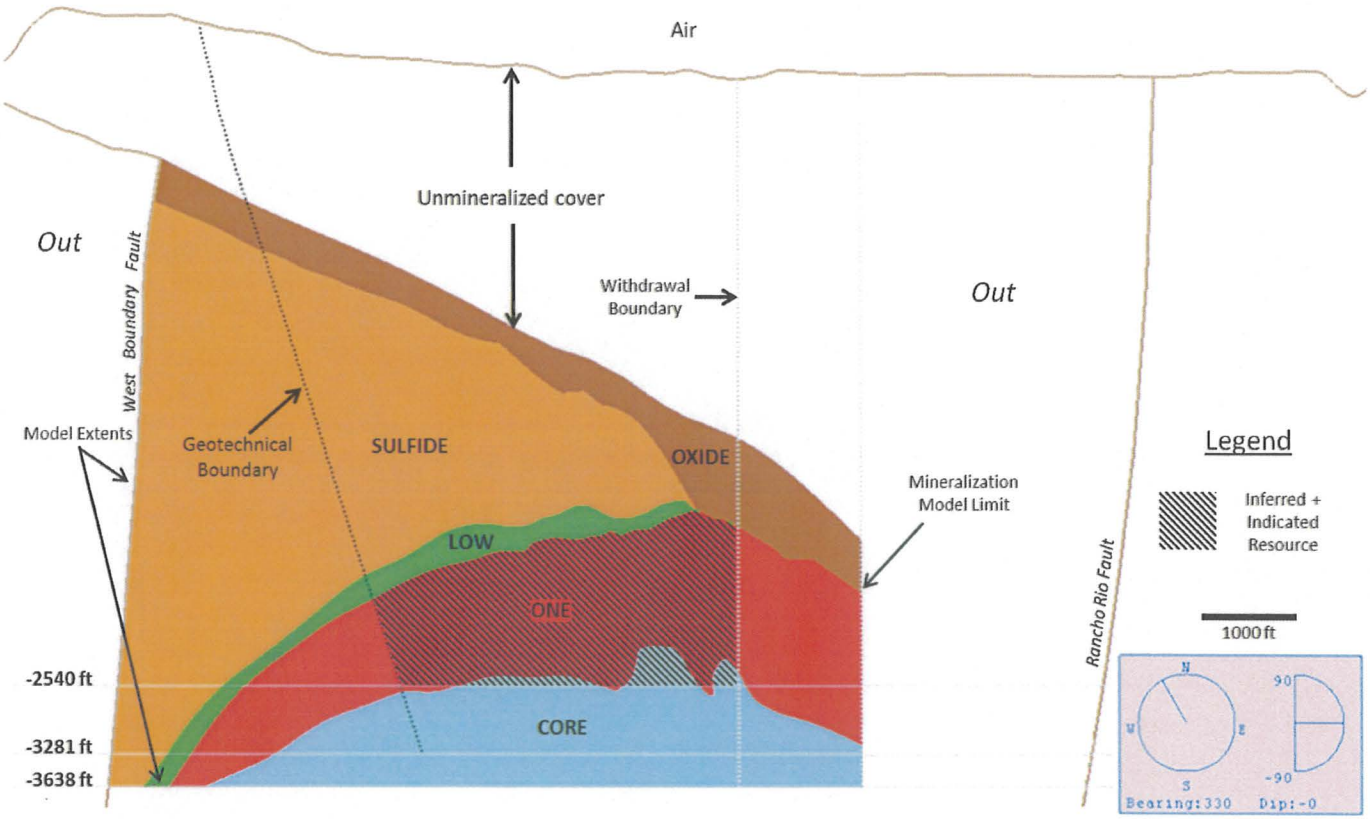
- RCM's tabulations of Mineral Resources were checked and matched

- The assignment of density to blocks was validated

- RCM's conceptual analysis was reviewed for reasonable prospects for eventual economic extraction, and the assumptions made are reasonable. Amec Foster Wheeler concurs with RCM's analysis and conclusion that the Mineral Resources are supported by reasonable prospects for eventual economic extraction.

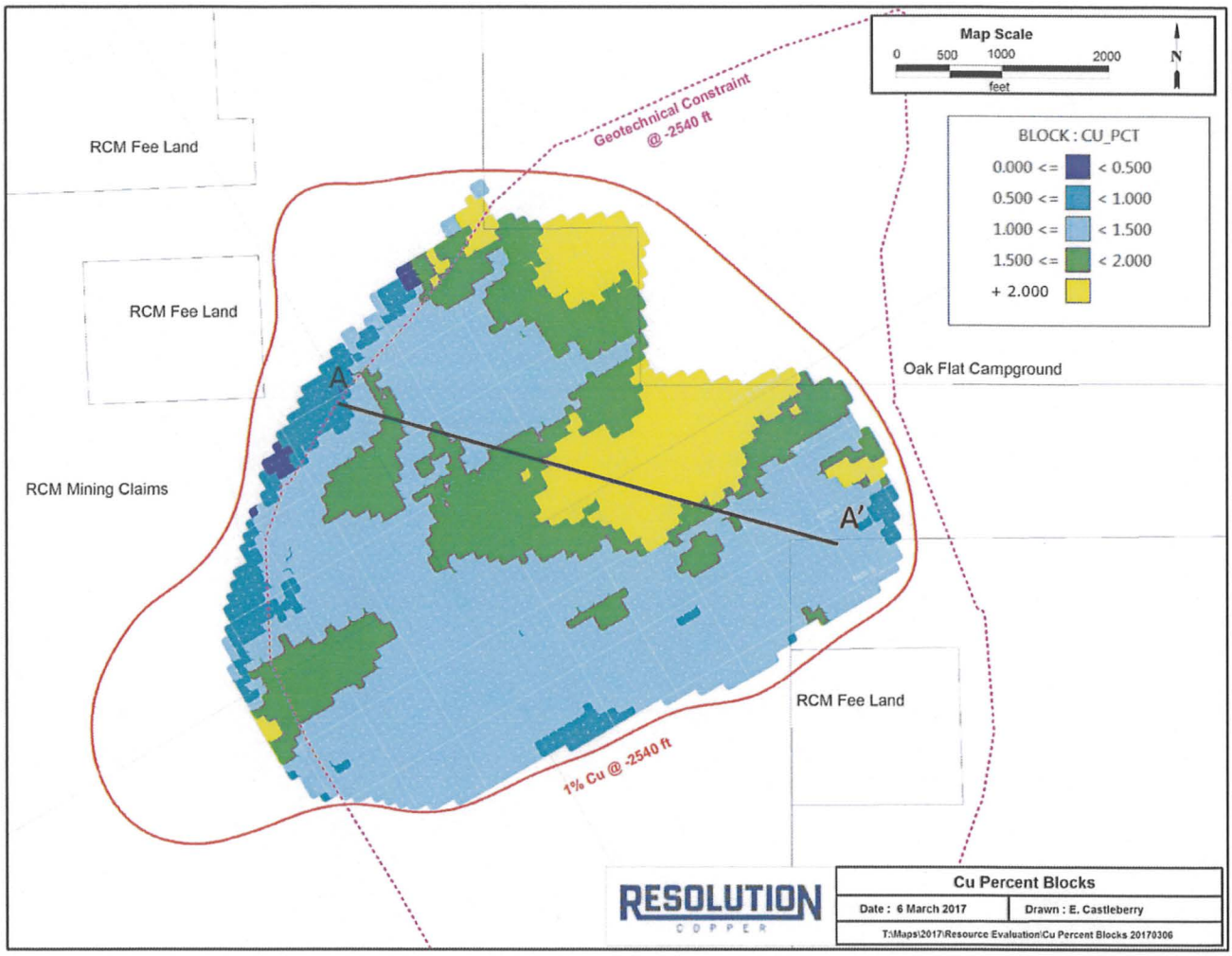
Figure 1 shows a cross section through the Mineral Resource with property, geotechnical and mining constraints. Figure 2 shows a plan demonstrating Mineral Resources within the 1% Copper shell (called "One") are continuous. Figure 3 shows the Mineral Resource classification, and the potential for upgrading some of the Inferred Mineral Resources to Indicated.

Figure 1: Mineral Resources Constraints



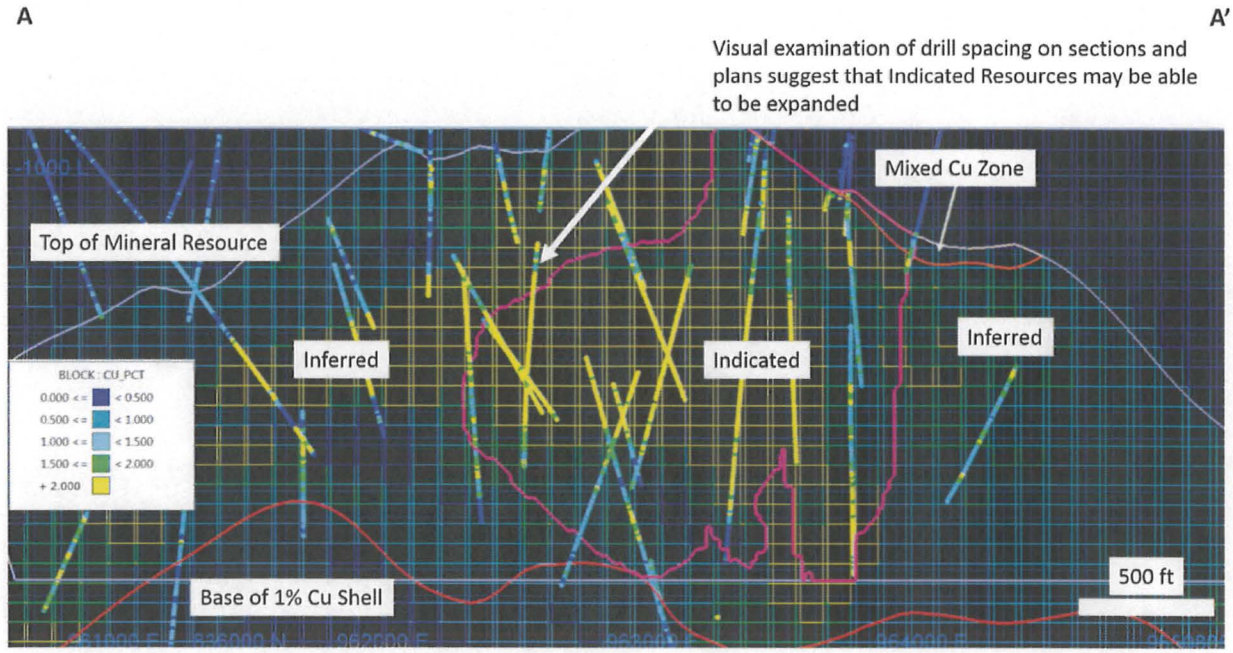
Source: RCM

Figure 2: Grades for Vertical Stacks of Blocks within the Mineral Resource Declaration Area



Source: RCM

Figure 3: Cross Section Showing Mineral Resource Classification



Source: Amec Foster Wheeler, blocks are 75 ft wide and tall.

Table 1 provides a tabulation of Mineral Resources:

Table 1: RCM Mineral Resource Tabulation for 2016 Mineral Resource Model

Mineral Resource Category	Short Tons (Millions)	% Cu	% Mo
Indicated	154	2.63	0.041
Inferred			
Interpolated	1582	1.46	0.035
Extrapolated	234	1.38	0.030
Total Inferred	1815	1.45	0.034
Total Indicated + Inferred	1969	1.54	0.035

Totals may be slightly affected by rounding

Amec Foster Wheeler reviewed RCM's conceptual analysis for reasonable prospects for eventual economic extraction and found the assumptions made to be reasonable. Amec Foster Wheeler conducted additional analysis and concurs with RCM's conclusion that the mineral resources are supported by reasonable prospects for eventual economic extraction, as required by the 2012 JORC Code.

3.0 COMMENTS

RCM's staff have a large amount of longevity on the Resolution Project, and there has been continuous improvement in methodology used for all aspects of Geological and Mineral Resource modelling. Resolution is a challenging deposit because of the lithological, mineralogical and structural controls on the distribution of Cu, Mo and Ag grades. Because the deposit lies 4000 to 6000 ft below topography, the cost of exploration and development has been high. The RCM staff have been very consciencous to maximize the knowledge gained from their data gathering and interpretation efforts. Considerable effort has been expended in developing robust Geological and Mineral Resource modelling methods. The results are an accumulation of in-depth mineral deposit knowledge and development of high-quality Mineral Resource models that can be used to support subsequent mine planning.

Yours truly,

SME
Society for Mining, Metallurgy & Exploration
Dr. Harry M. Parker
SME Registered Member No. 2460460
Signature Harry M Parker
Date Signed 3/14/17
Expiration date 12/31/17

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Amec Foster Wheeler

Brief Biography of the Author

Harry M. Parker holds BSc and PhD degrees in Geology from Stanford University, an AM Degree in Geology from Harvard University and an MSc degree in Statistics from Stanford University. He is a Registered Member of the Society for Mining, Metallurgy and Exploration, a Fellow and Chartered Professional of the Australasian Institution of Mining and Metallurgy and a Registered Geologist in California, Arizona, and Minnesota. He has 50 years' experience in exploration and mining geology, with the past 42 years involvement as a consultant in geological interpretation and Mineral Resource estimation. His porphyry-hosted deposit experience includes Resolution, Arizona; Bingham Canyon, Utah; Antamina and LaGranja, Peru; Collhuasi, Escondida Norte, Andina, and Los Sulfatos, Chile; Grasberg and Batu Hijau, Indonesia; Dexing, China; and Oyu Tolgoi, Mongolia.

Victoria Boyne

From: ResolutionProjectRecord
Subject: FW: Model Validation Report
Attachments: Resolution_Block_Cave.pdf

From: Peacey, Victoria (RC) [mailto:Victoria.Peacey@riotinto.com]
Sent: Monday, March 27, 2017 11:48 AM
To: Donna Morey <dmorey@swca.com>; Chris Garrett <cgarrett@swca.com>; Mary Rasmussen (mcrasmussen@fs.fed.us) <mcrasmussen@fs.fed.us>
Subject: FW: Model Validation Report

All – FYI – for your files.

This report was also submitted to Mary in an e-mail dated 3/24/2017 as part of a bigger package of information in response to the USFS baseline request 1B.

Vicky

From: Peacey, Victoria (RC)
Sent: Friday, March 24, 2017 10:02 AM
To: 'Charles.Kliche@sdsmt.edu'
Cc: Hart, William (RC)
Subject: Model Validation Report

Hello Dr. Kliche,

Here is the report by Harry Parker (AMEC) regarding our geologic model. I will send a formal submittal to the USFS, but in the interest of time, I thought it would be helpful to see this sooner than later.

Best,

Vicky Peacey
Senior Manager – Permitting and Approvals

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