SECURITIES AND EXCHANGE COMMISSION

17 CFR Parts 229, 230, 239, and 249

[Release Nos. 33–10570; 34–84509; File No. S7–10–16]

RIN 3235–AL81

Modernization of Property Disclosures for Mining Registrants

AGENCY: Securities and Exchange Commission.

ACTION: Final rule.

SUMMARY: We are adopting amendments to modernize the property disclosure requirements for mining registrants, and related guidance, currently set forth in Item 102 of Regulation S–K under the Securities Act of 1933 and the Securities Exchange Act of 1934 and in Industry Guide 7. The amendments are intended to provide investors with a more comprehensive understanding of a registrant's mining properties, which should help them make more informed investment decisions. The amendments also will more closely align the Commission's disclosure requirements and policies for mining properties with current industry and global regulatory practices and standards. In addition, we are rescinding Industry Guide 7 and relocating the Commission's mining property disclosure requirements to a new subpart of Regulation S–K.

DATES: *Effective date:* The final rule amendments are effective February 25, 2019, except for the amendments to 17 CFR 229.801(g) and 229.802(g), which will be effective on January 1, 2021.

Compliance date: Registrants engaged in mining operations must comply with the final rule amendments for the first fiscal year beginning on or after January 1, 2021. Industry Guide 7 will remain effective until all registrants are required to comply with the final rules, at which time Industry Guide 7 will be rescinded.

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SUPPLEMENTARY INFORMATION: We are amending 17 CFR 229.102 (''Item 102 of Regulation S–K'') under the Securities Act of 1933 (''Securities Act'') [1] and the Securities Exchange Act of 1934 (''Exchange Act''),[2] adding new exhibit (96) to 17 CFR 229.601(b) (''Item 601 of Regulation S–K''), adding new 17 CFR part 229, subpart 229.1300 (''subpart 1300 of Regulation S–K''), amending 17 CFR 230.436 under the Securities Act, amending Form 1–A,[3] amending Form 20–F,[4] and rescinding 17 CFR 229.801(g) and 229.802(g) under the Securities Act and Exchange Act.

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I. Introduction

On June 16, 2016, the Commission proposed revisions to its disclosure requirements and related guidance under the Securities Act and Exchange Act for properties owned or operated by mining companies to provide investors with a more comprehensive understanding of a registrant's mining properties to help them make more informed investment decisions.[5] The Commission also proposed to modernize its disclosure requirements and policies for mining properties by more closely aligning them with current industry and global regulatory practices and standards.[6] The Commission's disclosure requirements are currently

[1] 15 U.S.C. 77a *et seq.*

[2] 15 U.S.C. 78a *et seq.*

[3] 17 CFR 239.90.

[4] 17 CFR 249.220f.

[5] *See* Modernization of Property Disclosures for Mining Registrants, Securities Act Release No. 33–10098 (June 16, 2016) [81 FR 41651] (''Proposing Release'').

[6] We proposed to modernize our disclosure requirements for mining properties following a request by some industry participants to revise Guide 7. *See* Petition for Rulemaking from Society for Mining, Metallurgy and Exploration, Inc. to Elizabeth M. Murphy, Secretary, U.S. Securities & Exchange Commission (Oct. 1, 2012), (''SME Petition for Rulemaking''), *http://www.sec.gov/rules/petitions/2012/petn4-654.pdf.* In accordance with 17 CFR 201.192 (Rule 192 of the Commission's Rules of Practice), the Secretary of the Commission will notify the petitioners of the action taken by the Commission following the publication of this release in the **Federal Register**.

found in Item 102 of Regulation S–K, and the related guidance appears in Industry Guide 7.[7]

We received over 60 comment letters on the proposed revisions [8] primarily from participants in, or representatives of, the mining industry, including mining companies,[9] mining standards groups,[10] mining consulting groups,[11] professional and trade associations,[12] law firms,[13] mining royalty companies,[14] and individual geologists and mining engineers.[15] We also received comments from several groups expressing various environmental or sustainability concerns in connection with the mining industry.[16]

Most commenters supported modernizing the Commission's property disclosure requirements for mining registrants by more closely aligning them with current industry and global regulatory practices and standards,[17] as embodied by the Committee for Reserves International Reporting Standards (''CRIRSCO'').[18] Numerous industry commenters,[19] however, expressed concern that the proposed rules deviated, in certain respects, from the CRIRSCO standards [20] or the various international, CRIRSCO-based disclosure codes.

As explained below, in a number of instances, we have revised the proposed requirements in line with commenters' suggestions to be more consistent with the CRIRSCO standards and improve the comparability of mining property disclosures, which should help decrease, relative to the proposed rules, the expected compliance costs and burden of the final rules and enhance investor understanding of registrants' mining operations. In other instances, we have not changed the proposed requirements because we believe that those requirements are necessary to protect investors. Overall, we believe that the final rules reflect an appropriate consideration of the extent to which the final rules promote efficiency, competition, and capital formation in addition to the protection of investors.[21] The final rules will modernize the Commission's mining property disclosure regime by amending or removing requirements that may have placed U.S. mining registrants at a competitive disadvantage [22] and by adding other requirements that will help investors make more informed investment decisions about those registrants.

A. Summary of, and Commenters' Principal Concerns Regarding, the Commission's Proposed Revisions to the Current Mining Property Disclosure Regime

In light of global developments in the mining industry's disclosure standards and industry participants' concerns, we proposed to align the Commission's disclosure rules for properties owned or operated by mining companies with the CRIRSCO-based codes in several respects. For example, we proposed to require a registrant with material mining operations to disclose, in addition to its mineral reserves, mineral resources that

[7] *See* U.S. Sec. & Exch. Comm'n. Industry Guide 7: Description of Property By Issuers Engaged or to Be Engaged in Significant Mining Operations (''Guide 7'').

[8] *See* Comments on Proposed Rule: Modernization of Property Disclosures for Mining Registrants, U.S. Sec. & Exch. Comm'n, *https://www.sec.gov/comments/s7-10-16/s71016.htm.*

[9] *See, e.g.,* letters from Alliance Resource Partners, L.P. (Sept. 23, 2016) (''Alliance''); AngloGold Ashanti Limited (Aug. 22, 2016) (''AngloGold''); BHP Billiton (Sept. 23, 2016) (''BHP''); Cloud Peak Energy Inc. (Sept. 22, 2016) (''Cloud Peak''); Coeur Mining, Inc. (Aug. 19, 2016) (''Coeur''); Energy Fuels Inc. (Sept. 29, 2016) (''Energy Fuels''); Freeport-McMoRan Inc. (Sept. 23, 2016) (''FCX''); Gold Resource Corporation (Aug. 26, 2016) (''Gold Resource''); Newmont Mining Corporation (Sept. 26, 2016) (''Newmont''); Northern Dynasty Minerals Ltd. (Aug. 15, 2016) (''Northern Dynasty''); Randgold Resources Ltd. (Sept. 26, 2016) (''Randgold''); Rio Tinto plc (Sept. 26, 2016) (''Rio Tinto''); Ur-Energy Inc. (Sept. 26, 2016) (''Ur-Energy''); and Vale S.A. (Aug. 26, 2016) (''Vale'').

[10] *See, e.g.,* letters from Australasian Institute of Mining and Metallurgy (Sept. 26, 2016) (''AusIMM''); Canadian Institute of Mining, Metallurgy and Petroleum (Aug. 26, 2016) (''CIM''); Comissao Brasileira de Recursos e Reservas (Sept. 5, 2016) (''CBRR''); Committee for Mineral Reserves International Reporting Standards (Sept. 23, 2016) (''CRIRSCO''); Joint Ore Reserves Committee of Australasia (Sept. 26, 2016) (''JORC''); SAMCODES Standards Committee (Sept. 22, 2016) (''SAMCODES 1'') and (Sept. 26, 2016) (''SAMCODES 2''); and Society for Mining, Metallurgy and Exploration, Inc. (Aug. 4, 2016) (''SME 1'') and Aug. 25, 2016) (''SME 2'').

[11] *See, e.g.,* letters from Amec Foster Wheeler (Sept. 26, 2016) (''Amec''); CPM Group (Aug. 24, 2016) (''CPM''); Golder Associates, Inc. (Sept. 26, 2016) (''Golder''); and SRK Consulting (U.S.), Inc. (Aug. 19, 2016) (''SRK 1'') and Sept. 26, 2016 (''SRK 2'').

[12] *See, e.g.,* letters from American Institute of Professional Geologists (Aug. 22, 2016) (''AIPG''); Mining and Metallurgical Society of America (Sept. 26, 2016) (''MMSA''); and National Mining Association (Sept. 23, 2016) (''NMA 1'') and Sept. 29, 2017 (''NMA 2 and SME 3''). The latter letter from NMA was co-signed by SME and was submitted at the meeting between representatives of the National Mining Association and Ur-Energy and staff of the Commission's Division of Corporation Finance on October 10, 2017. That letter is available at: *https://www.sec.gov/comments/s7-10-16/s71016-2633677-161226.pdf. See also* letters from National Society of Professional Engineers (Aug. 16, 2016) (''NSPE''); National Stone, Sand & Gravel Association (Sept. 26, 2016) (''NSSGA 1'') and (Apr. 28, 2017) (''NSSGA 2''); Prospectors & Developers Association of Canada (Oct. 12, 2016) (''PDAC''); and U.S. Chamber of Commerce (Sept. 26, 2016) (''Chamber'').

[13] *See, e.g.,* letters from Andrews Kurth Kenyon LLP (Sept. 26, 2016) (''Andrews Kurth''); Cleary Gottlieb Steen & Hamilton LLP (Sept. 30, 2016) (''Cleary Gottlieb''); Crowell & Moring LLP (Sept. 16, 2016) (''Crowell and Moring''); Davis Polk & Wardwell LLP (Sept. 26, 2016) (''Davis Polk''); Dorsey & Whitney LLP (Sept. 26, 2016) (''Dorsey & Whitney''); Shearman & Sterling LLP (Sept. 26, 2016) (''Shearman & Sterling''); Sullivan & Cromwell LLP (Aug. 15, 2016) (''Sullivan & Cromwell''); Troutman Sanders LLP (Sept. 26, 2016) (''Troutman Sanders''); and Vinson & Elkins LLP (Sept. 26, 2016) (''Vinson & Elkins'').

[14] *See, e.g.,* letters from Natural Resource Partners L.P. (Sept. 26, 2016) (''NRP''); and Royal Gold, Inc. (Sept. 26, 2016) (''Royal Gold'').

[15] *See, e.g.,* letters from Ted Eggleston, Ph.D. (Aug. 19, 2016) (''Eggleston''); Douglas H. Graves, P.E. (Sept. 21, 2016) (''Graves''); Keith Laskowski (Aug. 26, 2016) (''Laskowski''); Michael Moats (Aug. 31, 2016) (''Moats''); Dr. Pierre Mousset-Jones (June 20, 2016) (''Mousset-Jones''); and Dana Willis, P.G. (Aug. 4, 2016) (''Willis'').

[16] *See, e.g.,* letters from Carbon Tracker Initiative (Aug. 26, 2016) (''Carbon Tracker''); Center for Science in Public Participation (Sept. 22, 2016) (''CSP^2''); Columbia Water Center (Sept. 26, 2016) (''Columbia Water''); Earthworks (and 21 other environmental advocates) (Sept. 26, 2016) (''Earthworks *et al.*''); Montana Trout Unlimited (Sept. 25, 2016) (''Montana Trout''); and Sustainability Accounting Standards Board (Aug. 26, 2016) (''SASB'').

[17] *See, e.g.,* letters from Andrews Kurth, AngloGold, AusIMM, CIM, CSP^2, Cleary Gottlieb, Coeur, Columbia Water, CBRR, CRIRSCO, Davis Polk, Dorsey & Whitney, Earthworks *et al.,* Golder, Graves, JORC, MMSA, Montana Trout, Newmont, PDAC, Randgold, Rio Tinto, SME 1, Chamber, Ur-Energy, Vale, and Willis.

[18] CRIRSCO is an international initiative to standardize definitions for mineral resources, mineral reserves, and related terms for public disclosure. CRIRSCO has representatives from professional societies involved in developing mineral reporting guidelines in Australasia (Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC)), Brazil (Brazilian Commission for Mineral Resources and Reserves (CBRR)), Canada (Canadian Institute of Mining Metallurgy and Petroleum (CIM)), Chile (Minera Comision), Europe (Pan-European Reserves and Resources Reporting Committee (PERC)), Indonesia (the KCMI Joint Committee (KOMPERS)), Kazakhstan (Kazakhstan Association for Public Reporting on Exploration Results, Mineral Resources and Mineral Reserves (KAZRC)), Mongolia (Mongolian Professional Institute of Geosciences and Mining (MPIGM)), Russia (National Association for Subsoil Examination (NAEN)), South Africa (South African Code for Reporting of Exploration Results, Mineral Resources and Mineral Reserves (SAMREC)), and the USA (Society for Mining, Metallurgy and Exploration, Inc. (SME)). CRIRSCO's website is located at: *http://www.crirsco.com.*

[19] *See, e.g.,* letters from Amec, AIPG, Andrews Kurth, AngloGold, AusIMM, BHP, Chamber , CIM, Cleary & Gottlieb, Coeur, CRIRSCO, Davis Polk, Dorsey & Whitney, Eggleston, Energy Fuels, FCX, Gold Resource, Golder, Graves, JORC, Newmont, NMA 1, NMA 2 and SME 3, Northern Dynasty, NSSGA 1 and 2, PDAC, Randgold, Rio Tinto, SAMCODES 1 and 2, Shearman & Sterling, SME 1, SRK 1, Ur-Energy, Vale, and Willis.

[20] The CRIRSCO standards are found in its International Reporting Template. *See, e.g.,* Committee for Mineral Reserves International Reporting Standards, CRIRSCO International Reporting Template, cl. 18 (2013), *http://www.crirsco.com/templates/international_reporting_template_november_2013.pdf.*

[21] *See* Section 2(b) of the Securities Act [15 U.S.C. 77b(b)] and Section 3(f) of the Exchange Act [15 U.S.C. 78c(f)]. *See also infra* Section IV.

[22] *See, e.g., infra* Section II.E.1.iii (discussing the treatment of mineral resources).

have been determined based upon information and supporting documentation by one or more qualified persons. We proposed to use the CRIRSCO standards' classification scheme regarding mineral resources and reserves, and proposed substantially similar definitions of many of the technical terms used under the CRIRSCO-based codes, such as the definition of the various categories of mineral resources and mineral reserves, qualified person, pre-feasibility study, and feasibility study. We also proposed to permit the qualified person to use the results of either a pre-feasibility study or a final feasibility study to support a determination of reserves in most situations.

Further, we proposed to establish a single set of rules for mining property disclosure by rescinding Guide 7, replacing it with a new subpart of Regulation S–K, and amending Item 102 of Regulation S–K to refer to the new subpart. The proposed mining property disclosure rules would require a registrant with material mining operations to provide both summary disclosure concerning its properties in the aggregate as well as more detailed disclosure about individually material properties.

While most commenters supported the Commission's goal of modernizing its mining property disclosure requirements in light of global standards, numerous commenters expressed concern that the proposed rules deviated from the CRIRSCO standards in several respects. Their principal concerns included that:

- Requiring both mineral resource and reserve estimates to be based on a price, which may not exceed the average price for the preceding 24 months, except when a contract has defined the price, would diverge from global industry practice, which permits the qualified person to use any reasonable and justifiable price, and which is typically a price based on forward-looking pricing forecasts;
- The proposed summary and individual property disclosure requirements are overly prescriptive, burdensome to meet, and do not account for the diversity of operations within the mining industry;
- Prohibiting the use of inferred resources in a quantitative assessment of resources would be inconsistent with the CRIRSCO standards, and in particular Canadian mining disclosure requirements, which permit the inclusion of inferred resources to demonstrate the potential economic viability of a deposit;
- Requiring the use of a feasibility study, rather than a pre-feasibility study, to support a determination of reserves in high risk situations would run counter to the CRIRSCO-based codes, which leave the decision of what type of technical report is required to support the determination of reserves, including in high risk situations, to the discretion and judgment of the competent or qualified person;
- The proposed prohibition against disclaimers would be contrary to the CRIRSCO-based codes, and in particular the Canadian requirements, which permit disclaimers in certain circumstances;
- Prohibiting the use of historical estimates would be contrary to the Canadian and Australian approaches, which allow such use, and might preclude the consummation of some mergers, acquisitions or business combinations because there would not be enough time to verify an estimate provided by the target company;
- Requiring all applicable mining property disclosure from a royalty, streaming, or other similar company would be burdensome for such companies because they generally have no rights beyond receiving royalties and lack access to the technical data and other information available to the owner or operator, and which is necessary to comply with the mining property disclosure requirements; and
- The proposed rules could compel a registrant to disclose its exploration results before they become material to investors, which would run counter to the CRIRSCO-based codes.

Many commenters maintained that, unless the Commission revised the proposed rules, their adoption would result in mining registrants incurring an unnecessarily heavy compliance burden, increase the costs of compliance for mining registrants that also report in CRIRSCO-based jurisdictions, and result in inconsistent disclosure that could cause investor confusion and diminish comparability. Some commenters also maintained that, if adopted, the proposed rules would continue to place U.S. registrants at a significant competitive disadvantage and leave in place significant barriers to entry for foreign mining companies that would otherwise list or raise capital in the United States.

We have carefully considered all of the comments received on the proposed rules. As discussed below, the final rules reflect changes from the rule proposal that were made in response to many of these comments.

B. Summary of Principal Changes to the Final Rules

The final rules include several revisions to more closely align the Commission's mining property disclosure requirements with the CRIRSCO standards and thereby help decrease, relative to the proposed rules, the compliance burden and costs for the many registrants that are subject to one or more of the CRIRSCO-based codes while still providing important investor protections. For example, the final rules:

- Require a qualified person to use a price for each commodity that provides a reasonable basis for establishing the prospects of economic extraction when assessing mineral resources, and that provides a reasonable basis for establishing that the project is economically viable when determining mineral reserves, which may be a historical or forward-looking price, as long as the qualified person discloses and explains, with particularity, his or her reasons for using the selected price, including the material assumptions underlying the selection;
- Eliminate the proposed quantitative presumptions regarding when a registrant's mining operations, and when a change in previously reported estimates of mineral resources or mineral reserves, are deemed to be material;
- Eliminate the proposed summary disclosure provision requiring specific items of information in tabular format about a registrant's top 20 properties and, instead, adopt a more principles-based approach by requiring the registrant to provide investors with an overview of its properties and mining operations;
- Reduce the number of summary and individual property disclosure provisions requiring tables from seven, as proposed, to two, and permit other required disclosure to be in either narrative or tabular format;
- Permit, but not require, a registrant to file a technical report summary to support its disclosure of exploration results;
- Provide that a qualified person will not be subject to expert liability under Section 11 of the Securities Act for findings and conclusions regarding certain aspects of specified modifying factors discussed in the technical report summary or other parts of the registration statement that the qualified person has indicated are based on information provided by the registrant;
- Permit a qualified person to determine mineral resources and reserves at any specific point of reference, which must be disclosed in the technical report summary, rather than at three points of reference;
- Exclude geothermal energy from the definition of mineral resource;
- Require a qualified person to apply relevant technical and economic factors likely to influence the prospect of economic extraction, rather than all modifying factors, when determining mineral resources;
- Permit a qualified person in the technical report summary to disclose mineral resources as including mineral reserves as long as he or she also discloses mineral resources as excluding mineral reserves; [23]
- Permit a qualified person to include inferred resources in an economic analysis that the qualified person opts to include in an initial assessment as long as certain conditions are met;
- Define mineral reserve to include diluting materials and allowances for losses that may occur when the material is mined or extracted;

[23] However, as proposed, the final rules prohibit a registrant from including mineral reserves when disclosing mineral resource estimates in a prospectus or other Commission filing.

• Permit a qualified person to conduct either a pre-feasibility or final feasibility study to support a determination of mineral reserves even in high risk situations;
• Permit the use of historical estimates of mineral resources or reserves in Commission filings pertaining to mergers, acquisitions, or business combinations if the registrant is unable to update the estimate prior to the completion of the relevant transaction, provided that the registrant discloses the source and date of the estimate, and does not treat the estimate as a current estimate; and
• Permit a registrant holding a royalty or similar interest to omit any information required under the summary and individual property disclosure provisions to which it lacks access and which it cannot obtain without incurring an unreasonable burden or expense.

We also are clarifying our position on a few issues raised by commenters that were not fully addressed in the Proposing Release. For example:
• Multiple qualified persons may prepare a technical report summary if certain conditions are met;
• If a qualified person is employed by a third-party firm, that firm may sign the technical report summary and provide the written consent required for an expert under the Securities Act;
• A registrant's disclosure of information regarding its exploration activity and exploration results is voluntary until such information becomes material to investors; and
• A registrant and its qualified person may disclose exploration targets in Commission filings if accompanied by certain specified cautionary and explanatory statements.

In addition, we are adopting a two-year transition period so that a registrant will not have to comply with the new rules until its first fiscal year beginning on or after January 1, 2021, although a registrant may voluntarily comply with the new rules prior to the compliance date, subject to the Commission's completion of necessary EDGAR reprogramming changes.

II. Final Mining Property Disclosure Rules

A. Consolidation of the Mining Disclosure Requirements

1. Rule Proposal

The combination of the overlapping structure of the current disclosure regime for mining registrants (in Item 102 of Regulation S–K and Industry Guide 7) and the brevity of Guide 7, which has led to a significant amount of staff interpretive guidance through the comment process, may have created some regulatory uncertainty among mining registrants, particularly new registrants.[24] To help address this uncertainty, we proposed to rescind Guide 7 and create new subpart 1300 of Regulation S–K that would govern disclosure for registrants with mining operations. In addition, we proposed to amend Item 102 of Regulation S–K to replace the instruction that directed issuers to the information called for in Guide 7 with a new instruction requiring all mining registrants to refer to and, if required, provide the disclosure under new subpart 1300 of Regulation S–K. We also proposed to provide the same instruction on Form 20–F[25] and Form 1–A.[26]

2. Comments on the Rule Proposal

Many commenters stated that they supported the Commission's proposal to rescind Guide 7 and replace it with a single set of disclosure standards as long as those standards are consistent with the CRIRSCO standards.[27] Several commenters also reiterated that the Commission's current disclosure regime for mining properties has caused uncertainty for mining registrants.[28] Two commenters, however, urged the Commission to withdraw its proposal and, instead, make more modest revisions to Guide 7 out of concern that the proposed rules were overly prescriptive and deviated from the CRIRSCO standards in several key respects.[29]

Regarding the content of the new mining property disclosure rules, some commenters recommended that the Commission specifically incorporate the CRIRSCO template by reference.[30] Other commenters requested that the Commission adopt Canada's legal instrument, NI–43–101, establishing mining property disclosure requirements, or recognize the use of Canada's Form 43–101F as the basis for a mining registrant's technical reports.[31] A few commenters stated that the Commission's mining property disclosure rules should follow Australia's JORC or South Africa's SAMCODES on the grounds that Canada's NI 43–101 is too prescriptive.[32]

3. Final Rules

We are adopting final rules that will rescind Guide 7, as proposed, and codify the Commission's mining property disclosure requirements in new subpart 1300 of Regulation S–K.[33] We are also amending Item 102 of Regulation S–K, as proposed, to state that registrants engaged in mining operations must refer to and, if required, provide the disclosure under subpart 1300 of Regulation S–K[34] in addition to any non-mining property disclosure required by Item 102.[35] Having one source for mining disclosure obligations should facilitate mining registrants' compliance with their disclosure requirements by reducing the complexity resulting from the existing disclosure structure. Moreover, consolidating the mining property disclosure requirements into Regulation S–K should eliminate the uncertainty noted by several commenters concerning the Commission's current mining property disclosure regime.[36]

Many commenters supported our proposal to consolidate the Commission's mining property disclosure requirements under a single set of rules as long as the final rules align with the CRIRSCO standards.[37] As discussed throughout this release, the final rules include revisions that will substantially more closely align the Commission's mining property disclosure requirements with the CRIRSCO standards as compared to the proposed rules.[38] The final rules also

[24] *See* Proposing Release, *supra* note 5, at Section II.A.

[25] Foreign private issuers use Form 20–F to file their Exchange Act registration statements and annual reports, and also refer to Form 20–F when filing their Securities Act registration statements on Forms F–1 and F–4. *See* 17 CFR 249.220f.

[26] Form 1–A is the offering statement used by issuers that are eligible to engage in securities offerings under Regulation A. *See* 17 CFR 230.251–230.263.

[27] *See* letters from AIPG, Amec, AngloGold, BHP, CBRR, Coeur, Eggleston, Golder, MMSA, Midas Gold Corp. (June 23, 2016) (''Midas''), Randgold, Rio Tinto, SAMCODES 1 and 2, Ur-Energy, Vale and Willis.

[28] *See* letters from Amec, BHP, Crowell & Moring, Eggleston, Golder, Midas, Rio Tinto and SRK 1.

[29] *See* letter from NMA 2 and SME 3.

[30] *See, e.g.,* letters from AIPG and Rio Tinto.

[31] *See, e.g.,* letters from AIPG, Coeur, Gold Resource, Graves, SME 1, SRK 1, and Willis.

[32] *See, e.g.,* letters from JORC, Randgold, and SAMCODES 2.

[33] 17 CFR 229.1300 through 229.1305. Subpart 1300 will apply to registration statements under the Securities Act and the Exchange Act as well as to annual reports under the Exchange Act.

[34] Instruction 3 to Item 102 of Regulation S–K [17 CFR 229.102]. We are similarly amending Form 20–F and Form 1–A to provide the same instruction and reference to Regulation S–K subpart 1300. *See infra* Section II.H.

[35] Registrants that have material non-mining operations will continue to provide non-mining property disclosures under Item 102 of Regulation S–K.

[36] *See supra* note 28. For this reason, we continue to believe that codification of our mining property disclosure requirements is a better approach than revising Guide 7, as suggested by two commenters. *See* letter from NMA 2 and SME 3. Moreover, we note that the final rules are less prescriptive and conform more closely to CRIRSCO standards than the proposed rules.

[37] *See supra* note 27.

[38] Some commenters noted that, although the proposed rules differed from the CRIRSCO standards in certain respects, they did generally align with the CRIRSCO standards in several other respects. S*ee, e.g.,* letter from AusIMM (''Most of the CRIRSCO Standard definitions have been

Continued

emphasize transparency, materiality, and competence—the three governing principles of the CRIRSCO standards.[39] We therefore believe that the final rules are responsive to commenters' overarching concern that the Commission's mining property disclosure requirements be substantially more consistent with current industry standards.

We do not believe it would be appropriate, however, to incorporate by reference or otherwise adopt in its entirety on a going forward basis the CRIRSCO international template, Canada's NI 43–101, or another specific CRIRSCO-based code or guide, as requested by some commenters. Granting such a request would effectively bind the Commission's rules both to current and future iterations and interpretations of the CRIRSCO standards, codes or guides, over which the Commission would have little to no control or influence. It also would ignore the need to adopt mining property disclosure rules that are consistent with the unique purposes and characteristics of the U.S. federal securities laws.[40]

B. Overview of the Standard for Mining-Related Disclosure

1. The Threshold Materiality Standard

i. Rule Proposal

Item 102 of Regulation S–K currently requires registrants to disclose information about principal mines, other materially important physical properties, and significant mining operations. Guide 7 only applies to registrants engaged or to be engaged in significant mining operations. However, Guide 7 does not define ''significant'' mining operations while Item 102 does not specify the particular quantitative factors to be considered in determining the materiality of a mine.

For registrants that have one or more principal mines or other materially important properties but lack significant mining operations, Item 102 requires less detailed information. For registrants that have significant mining operations, Guide 7 calls for more extensive disclosures. However, although both Item 102 and Guide 7 refer to ''significant'' mining operations, the staff historically has advised registrants to apply a materiality standard in determining what disclosures to provide, and has used 10% of a registrant's total assets as the benchmark for determining the materiality of a registrant's mining operations.

In order to clarify the mining property disclosure standard, we proposed that a registrant would be required to provide the disclosure under new subpart 1300 of Regulation S–K if its mining operations are material to its business or financial condition.[41] The Commission also proposed specific steps a registrant would have to take when determining the materiality of its mining operations.[42]

The Commission further proposed that a registrant's mining operations are presumed to be material if its mining assets constitute 10% or more of its total assets. The proposed rules also instructed, however, that if a registrant's mining assets fall below the 10% total assets threshold, it would need to consider if there are other factors, quantitative or qualitative, which would render its mining operations material.[43]

ii. Comments on the Rule Proposal

Many commenters supported the Commission's proposal to require disclosure if a registrant determines that its mining operations are material to its business or financial condition.[44] Some commenters supported the proposed provision that a registrant's mining operations are presumed to be material if they consist of 10% or more of its total assets, but only if the provision is a presumption and not a bright line test, and not exclusive of other factors.[45]

Some commenters supported using a quantitative measure for determining the materiality of a registrant's mining operations for purposes of the proposed rules, but recommended that the Commission adopt the U.S. GAAP thresholds for segment reporting under Accounting Standards Codification (''ASC'') 280,[46] rather than the proposed 10% asset metric.[47] Those commenters preferred this particular U.S. GAAP approach because of their concern that large companies may not meet the proposed 10% asset test or because, in their view, the U.S. GAAP approach is more suitable and equitable.[48]

Other commenters recommended that the Commission avoid a specific materiality test and instead adopt the approach taken in Canada's Companion Policy 43–101CP.[49] That approach requires an issuer to ''determine materiality in the context of the issuer's overall business and financial condition taking into account qualitative and quantitative factors, assessed in respect of the issuer as a whole.'' [50] Another commenter [51] opposed ''special materiality tests (such as 10% of total assets)'' and advocated instead using the standards for materiality established by the U.S. Supreme Court in *TSC* v. *Northway* [52] and *Basic* v. *Levinson*.[53]

incorporated in the release as they were in the 2014 SME Guide'').

[39] *See* CRIRSCO International Reporting Template, *supra* note 20, at cl. 3 (''The main principles governing the operation and application of the Template are transparency, materiality and competence. Transparency requires that the reader of a Public Report is provided with sufficient information, the presentation of which is clear and unambiguous, so as to understand the report and not to be misled. Materiality requires that a Public Report contains all the relevant information which investors and their professional advisers would reasonably require, and reasonably expect to find in a Public Report, for the purpose of making a reasoned and balanced judgement regarding the Exploration Results, Mineral Resources or Mineral Reserves being reported. Competence requires that the Public Report be based on work that is the responsibility of suitably qualified and experienced persons who are subject to an enforceable professional code of ethics and rules of conduct'').

[40] *See, e.g.,* consideration of the qualified person as an expert under Section 11 of the Securities Act in Section II.C.1. below.

[41] As proposed, the term ''material'' would have the same meaning as under 17 CFR 230.405 [Securities Act Rule 405] and 17 CFR 240.12b–2 [Exchange Act Rule 12b–2].

[42] *See* Proposing Release, *supra* note 5, at Section II.B.1.

[43] *See id.*

[44] *See, e.g.,* letters from AngloGold, CBRR, CIM, Eggleston, Midas, Rio Tinto, SRK 1 and Vale.

[45] *See, e.g.,* letters from CBRR, Midas, and SRK 1.

[46] Accounting Standards Code (''ASC'') 280 requires an enterprise to report separately information concerning an operating segment if any of the following quantitative thresholds are met: (i) Its reported revenue, including both sales to external customers and intersegment sales or transfers, is 10% or more of the combined revenue, internal and external, of all operating segments; (ii) the absolute amount of its reported profit or loss is 10% or more of the greater, in absolute amount, of either the combined reported profit of all operating segments that did not report a loss, or the combined reported loss of all operating segments that did report a loss; or (iii) its assets are 10% or more of the combined assets of all operating segments. Under ASC 280, information about operating segments that do not meet any of the quantitative thresholds may also be considered reportable, and separately disclosed, if management believes that information about the segment would be useful to readers of the financial statements. *See* ASC 280–10–50–12.

[47] *See* letters from Alliance, SAMCODES 1 and SME 1; *see also* letter from JORC (stating that materiality should be determined under GAAP without specifying the particular GAAP provision) and letter from SRK 1 (stating that the actual and projected expenditures, revenues and income as well as the amount of capital raised or planned to be raised have a direct impact on materiality, and that if any of those amounts comprise 10% or more of a registrant's value, they should be considered material).

[48] *See* letters from JORC, SAMCODES 1, and SME 1.

[49] *See* letters from CIM, Eggleston, and Vale.

[50] National Instrument Companion Policy 43–101CP, pt. General Guidance (4), *https://www.bcsc.bc.ca/Securities_Law/Policies/Policy4/PDF/43-101CP__CP___February_25__2016/*. That document then lists several factors that are likely to support the conclusion that a property is material. *See id.* at (5).

[51] *See* letter from Chamber.

[52] 426 U.S. 438 (1976).

[53] 485 U.S. 224 (1988).

Several commenters specifically addressed the Commission's proposal to require the aggregation of all mining properties, regardless of size or type of commodity produced, when assessing the materiality of a registrant's mining operations.[54] A number of commenters generally supported this proposal, with one noting that aggregation of the mining properties represents the actual composition of the registrant's value,[55] and two others concurring so long as the aggregation correlated to the segment disclosure mandated under the accounting framework.[56] Two commenters supported the aggregation of assets based on shared infrastructure and product integration, but only if the assets are in the same geographic region,[57] with one also asserting that very different commodities, such as coal and metalliferous metals, should not be aggregated.[58] Another commenter, however, opposed the aggregation of assets because ''it does not allow investors to determine the significance of a property, or understand that asset.'' [59]

Several commenters addressed the Commission's proposal, as part of the materiality determination, to require a registrant to include for each property all related activities from exploration through extraction to the first point of material external sale, including processing, transportation and warehousing.[60] One commenter supported this proposal because it is required by Canada's NI43–101, is the benchmark for mineral project reporting, and provides investors with the information they need to understand the project.[61] Another commenter generally supported using the first point of material external sale as the appropriate cut-off because this is generally where a mining company loses control of the product.[62]

Another commenter, however, did not support the first point of material external sale as the appropriate cut-off because it believed that a registrant's materiality determination should account for costs associated with mine reclamation on the grounds that reclamation constitutes one of the greatest environmental and social liabilities mining registrants should disclose to investors.[63]

iii. Final Rules

We are adopting the proposed provision that a registrant must provide the disclosure specified in subpart 1300 of Regulation S–K if its mining operations are material to its business or financial condition.[64] We are also adopting the provision, as proposed, that for purposes of subpart 1300, the term *material* has the same meaning as under Securities Act Rule 405 or Exchange Act Rule 12b–2.[65] Commenters generally supported basing the Commission's mining property disclosure threshold on whether a registrant's mining operations are material to its business or financial condition.[66] Establishing materiality as the threshold for disclosure is consistent with the CRIRSCO standards, which lists materiality as one of the three governing principles underlying those standards.[67] Moreover, by providing that materiality is to be determined pursuant to Securities Act Rule 405 and Exchange Act Rule 12b–2, we are clarifying that, although, as described below, a registrant must consider certain factors when determining the materiality of its mining operations, the ultimate governing considerations in this regard are the general principles reflected in those rules.[68]

In a change from the proposed rules, and as suggested by one commenter,[69] we are not including an instruction to the materiality provision stating that a registrant's mining operations are presumed to be material if they consist of 10% or more of its total assets. Even as a presumption, we are concerned that such an instruction could become a *de facto* threshold. We also believe that an assessment that takes into consideration all relevant facts and circumstances will lead to better materiality determinations. For similar reasons, we are not adopting a quantitative measure of materiality based on the reportable segment disclosure thresholds in U.S. GAAP. Rather than referring to a specific U.S. GAAP provision, we believe it is appropriate to rely on a more principles-based approach to the materiality provision.

Consistent with comments received,[70] we are adopting the proposed provision that, when determining whether its mining operations are material, a registrant must:

- Consider both quantitative and qualitative factors, assessed in the context of the registrant's overall business and financial condition;
- Aggregate mining operations on all of its mining properties, regardless of the stage of the mining property, and size or type of commodity produced, including coal, metalliferous minerals, industrial materials, and mineral brines; [71] and
- Include, for each property, as applicable, all related activities from exploration through extraction to the first point of material external sale, including processing, transportation, and warehousing.[72]

[54] *See* letters from Alliance, Amec, AngloGold, CBRR, Eggleston, Midas, Rio Tinto, and SRK 1.

[55] *See* letter from SRK 1; *see also* letter from CBRR.

[56] *See* letters from Alliance and AngloGold. Another commenter stated that no commodity should be excluded, but suggested that only commodities from material properties should be included in technical reports although ''[n]on-material mines could be aggregated for annual disclosures.'' Letter from Eggleston.

[57] *See* letter from Rio Tinto; *see also* letter from Amec (opposing the aggregation of assets in different countries, and recommending that the Commission follow the guidance in the Canadian Companion Policy 43–101CP, which states that a property includes multiple claims that are contiguous or in such close proximity that any underlying mineral deposits would likely be developed using common infrastructure).

[58] *See* letter from Amec.

[59] Letter from Midas.

[60] *See, e.g.,* letters from Amec, CBRR, Earthworks, Eggleston, Midas and SRK.

[61] Letter from Midas.

[62] Letter from SRK 1. This commenter recommended that, ''for companies that have significant downstream processing, there should be a requirement to calculate the materiality based on the point in the supply chain where that raw material would be purchased if the company did not own the mining assets.'' *Id.* Another commenter stated that exploration through the first point of external sale is appropriate, but noted that not all properties will include all activities. *See* letter from Eggleston. *See also* letter from CBRR (stating that ''comprehensive, end-to-end reporting can assist the investors with the relevant information in order to understand mineral projects for exploration and development stage issuers'' but, for production stage registrants, ''the materiality criteria should be applied and exploration results are not necessarily relevant'').

[63] *See* letter from Earthworks. Two other commenters stressed the importance of considering environmental and sustainability factors in the materiality determination. *See* letters from CSP2 and Montana Trout.

[64] 17 CFR 229.1301(b) [Item 1301(b) of Regulation S–K].

[65] *Id; see also supra* note 41 and accompanying text. Pursuant to Securities Act Rule 405 and Exchange Act Rule 12b–2, a matter is material if there is a substantial likelihood that a reasonable investor would attach importance to it in determining whether to buy or sell the securities registered. This definition is consistent with the U.S. Supreme Court's holding in TSC Industries v. Northway, Inc., 426 U.S. 438, 449 (1976), that a fact is material if there is a substantial likelihood that the fact would have been viewed by a reasonable investor as having significantly altered the ''total mix'' of information made available.

[66] *See, e.g.,* letters from AngloGold, CBRR, SRK 1, and Rio Tinto.

[67] *See* CRIRSCO's International Reporting Template, *supra* note 20, at cl. 3.

[68] *See supra* note 65.

[69] *See* letter from Chamber.

[70] *See supra* note 44 and accompanying text.

[71] As explained in Section II.E.1., below, we are removing geothermal energy from the scope of these rules, and have therefore eliminated geothermal energy from the list of commodities required to be aggregated.

[72] *See* 17 CFR 229.1301(c) [Item 1301(c) of Regulation S–K].

Although some commenters sought to exclude certain commodities or properties in the aggregation process,[73] we continue to believe, and agree with those commenters who asserted, that the aggregation of all mining properties, regardless of the mined commodity, is necessary to gauge accurately the materiality of a registrant's mining operations.[74] For example, the exclusion from the aggregation process of properties that a registrant believes are not individually material [75] would overlook and improperly remove from the scope of the mining property disclosure rules a registrant that owns two or more properties, neither of which is individually material, but which, when considered in the aggregate and in the context of the registrant's overall business, constitute material mining operations. Therefore, the final rules require such a registrant to provide summary disclosure of its overall mining operations,[76] although it will not be subject to the more extensive disclosure requirements for individual material properties.

Most commenters who addressed the issue supported requiring, as part of the materiality determination, the inclusion for each property of all related activities from exploration through extraction to the first point of material external sale, including processing, transportation, and warehousing.[77] Such inclusion is consistent with the ''end-to-end reporting'' required under the CRIRSCO-based codes.[78] In this regard, we are not adopting the suggestion of one commenter to specify reclamation of the mine as the end point to be considered in the materiality provision. Mine reclamation and closure plans are important considerations that must be addressed by the qualified person, under the CRIRSCO-based codes. However, those plans are usually prepared as part of the assessment of technical and economic factors relevant to the reasonable prospects of economic extraction when determining mineral resources, or when applying all applicable modifying factors to resources for the purpose of assessing the economic viability of a project when determining mineral reserves. Also, mine reclamation costs are included in capital and operating costs during feasibility studies to estimate mineral reserves. The final rules follow this approach [79] and therefore do not specifically include reclamation as the end point in the materiality determination. However, we believe that mining properties that are at the reclamation stage are still considered mining properties and should be included in evaluations of the materiality of mining operations.

Similar to a proposed instruction to the materiality provision, we are adopting a provision stating that the term ''mining operations'' includes operations on all mining properties that a registrant:

- Owns or in which it has, or it is probable that it will have, a direct or indirect economic interest;
- Operates, or it is probable that it will operate, under a lease or other legal agreement that grants the registrant ownership or similar rights that authorize it, as principal, to sell or otherwise dispose of the mineral; or
- Has, or it is probable that it will have, an associated royalty or similar right.[80]

Commenters did not object to including within the definition operations on mining properties that a registrant owns or operates pursuant to a lease or other similar agreement. Moreover, although several commenters objected to the scope of the proposed disclosure required of royalty or other similar right holders, only a few commenters recommended their complete exclusion from the proposed rules.[81]

2. Treatment of Vertically-Integrated Companies

i. Rule Proposal

As noted in the Proposing Release, some companies have material mining operations that are secondary to or in support of their main non-mining business.[82] For example, a metal manufacturer may operate iron ore or coal mines to supply raw material for its primary business. Yet neither Guide 7 nor Item 102 addresses whether or when a vertically-integrated manufacturer [83] is required to provide mining disclosure.

In order to clarify the treatment of vertically-integrated manufacturers, the Commission explained that proposed new subpart 1300 of Regulation S–K would apply to all registrants with mining operations, including vertically-integrated manufacturers. Specifically, a mining operation owned by a registrant to support its primary business could be material and require disclosure. The fact that the registrant's primary business operation is something other than minerals extraction would not be determinative of whether disclosure would be required under the proposed subpart.[84]

ii. Comments on the Rule Proposal

Most commenters that addressed the issue supported the Commission's proposal to require vertically-integrated companies, such as manufacturers, to provide the disclosure under proposed subpart 1300 of Regulation S–K.[85] One commenter agreed that the proposed rules should apply to a vertically-integrated company if its mine is material, but disagreed that the mine's providing a competitive advantage should be a criterion for disclosure.[86]

iii. Final Rules

As proposed, and consistent with comments received,[87] new subpart 1300 of Regulation S–K will apply to all registrants with material mining operations, including vertically-integrated manufacturers. Like a company whose primary business is mining, such a vertically-integrated company will be required to assess relevant quantitative and qualitative factors to determine if its mining operations are material. For example, the bauxite mining operations of an aluminum manufacturer, whose primary business is manufacturing, not mining, could require disclosure if its bauxite mining operations are material, even though they are not the registrant's primary operations, or the primary source of the registrant's revenues. Factors to be considered in such a materiality determination could include if the manufacturer derives a

[73] *See, e.g.,* letters from Amec and Eggleston.

[74] *See, e.g.,* letters from CBRR and SRK 1.

[75] *See* letter from Eggleston.

[76] *See infra* Section II.G.1; *see also* 17 CFR 229.1301(d) [Item 1301(d) of Regulation S–K].

[77] *See supra* notes 61–62 and accompanying text.

[78] *See, e.g.,* letter from Midas.

[79] *See* 17 CFR 229.601(b)(96)(iii)(B)(*17*) [Item 601(b)(96)(iii)(B)(*17*) of Regulation S–K], which requires the qualified person to describe the factors pertaining to environmental compliance, permitting, and local individuals or groups, which are related to the project, including ''[m]ine closure plans, including remediation and reclamation plans, and the associated costs.'' 17 CFR 229.601(b)(96)(iii)(B)(*17*)(*v*).

[80] 17 CFR 229.1301(a) [Item 1301(a) of Regulation S–K].

[81] *See infra* Section II.B.4.

[82] *See* Proposing Release, *supra* note 5, at Section II.B.1.i.

[83] A vertically-integrated manufacturer is a company that owns part of its supply chain. In this context, it refers to a registrant that has mining operations to supply raw material to its manufacturing business.

[84] *See* Proposing Release, *supra* note 5, at Section II.B.1.i.

[85] *See* letters from Amec, AngloGold, CBRR, Midas, Rio Tinto, and SRK 1. AngloGold stated that ''[i]f the mining component of a vertically-integrated company is material to its operations, such as a secure source of supply, perceived cost advantage etc., then the same disclosures as mining companies should be required in order to provide a complete set of information to enable an investor to determine an investment decision.''

[86] *See* letter from Eggleston.

[87] *See supra* note 85 and accompanying text.

competitive advantage from, or substantially relies upon, its ability to source that particular mineral from its mining operations.

Requiring disclosure of mining operations by vertically-integrated manufacturers is consistent with the disclosure currently provided in Commission filings and should not significantly alter existing disclosure practices. In addition, this treatment of vertically-integrated companies is consistent with the CRIRSCO-based codes, which require disclosure for material mining properties and do not provide exemptions for vertically-integrated companies.

3. Treatment of Multiple Property Ownership

i. Rule Proposal

As noted in the Proposing Release, it is common for registrants to own multiple mining properties.[88] In some instances, a registrant will have multiple properties that all involve exploration, development, or extraction of the same mineral. In other situations, the registrant's operations will primarily involve exploration, development, or extraction of one mineral from several properties, but the registrant also will own one or more ancillary properties where it explores, develops, or extracts small amounts (relative to the predominant mineral) of a different mineral.

The primary focus of the current rules and guidance is on individually significant or material properties. Neither Item 102 nor Guide 7 provides guidance concerning when or what disclosure is required when a registrant owns multiple or ancillary mining properties. To clarify the disclosure that is required in these circumstances, we proposed that a registrant with multiple properties would be required to consider all of its mining properties in the aggregate, as noted above,[89] as well as individually, regardless of size or commodity produced, when assessing whether it must provide the mining disclosure required by new subpart 1300 of Regulation S–K.[90] We also proposed that a registrant with multiple properties, none of which is individually material, but which in the aggregate constitute material mining operations, would have to provide summary disclosure concerning its combined mining activities rather than provide disclosure for individual properties.[91] We further proposed that, to the extent that an individual property is material to its operations, a registrant would be required to provide detailed disclosure about that property. As proposed, such individual property disclosure would be in addition to the required summary disclosure if the registrant owns two or more individual properties.[92] Finally, we explained that, under the proposed rules, a registrant could be required to provide disclosure for a particular property, depending on the facts and circumstances, even if ancillary to the registrant's predominant commodity.[93]

ii. Comments on the Rule Proposal

As discussed above, commenters generally supported requiring a registrant to consider all of its mining properties in the aggregate as well as individually, regardless of size or commodity produced, when assessing whether its mining properties are material, although some of the commenters stated that there should be limits on such aggregation.[94] Commenters similarly generally supported the proposal to require summary disclosure of their properties in the aggregate,[95] although some commenters conditioned their support consistent with their conditional support of the proposed disclosure threshold based on materiality.[96] The commenters that opposed the proposed summary disclosure requirements did so largely because they viewed those requirements as being ''out of line with current industry standards.'' [97]

iii. Final Rules

We are adopting the proposed treatment of multiple property ownership.[98] In the event that none of a registrant's mining properties is individually material, it will need to provide only summary disclosure. If the registrant has individually material mining properties, it must provide more detailed disclosure concerning those properties in addition to summary disclosure.[99] If a registrant has only one mining property, following a determination that its mining operations are material, the registrant will be required to provide only the individual property disclosure.[100]

We also are adopting the proposed treatment of ancillary properties, which, depending on the facts and circumstances, could give rise to disclosure obligations. For example, a property on which a registrant explores, develops or extracts a relatively small amount of a particular mineral, compared to its predominant mineral, could be material based upon the amount of actual and projected expenditures on the property as compared to its expenditures on other properties.[101]

In response to the concern expressed by some commenters that the proposed summary disclosure requirements were too prescriptive,[102] and as discussed in greater detail below,[103] we have significantly revised the proposed summary disclosure requirements to make them less prescriptive. For example, instead of the proposed requirement to provide specific items of information concerning a registrant's top 20 properties (by asset value) in tabular format, the final rules take a more principles-based approach and require the registrant to provide an overview of its mining properties and operations in either narrative or tabular format.[104] When presenting the overview, the registrant should include the amount and type of disclosure concerning its mining properties that is material to an investor's understanding

[88] *See* Proposing Release, *supra* note 5, at Section II.B.1.ii.

[89] *See id.* at Section II.B.1.i.

[90] *See id.* at Section II.B.1.ii.

[91] *See id.* at Section II.G.1.

[92] *See id.* at Section II.G.2.

[93] *See id. at* Section II.B.1.ii.

[94] *See supra* notes 56–58 and accompanying text.

[95] *See, e.g.,* letter from CBRR; *see also* letter from Vale (stating that because under the CRIRSCO standards, a public report should contain ''all the relevant information which investors and their professional advisers would reasonably require, and reasonably expect to find in a public report . . . it is appropriate to require any registrant with economic interests in multiple mining properties, none of which may be individually material, to provide summary disclosure of its mining operations,'' but also stating that qualified persons should be allowed ''to use their judgment to determine the best presentation of summary disclosure, including whether to aggregate interrelated mining operations or to group mines and plants by geographic region or commodity'').

[96] *See, e.g.,* letters from Alliance and AngloGold (conditioning support of the proposed approach regarding multiple properties as long as that approach aligns with a materiality determination based on financial segment disclosure); *see also* letter from Rio Tinto (similarly conditioning support as long as aggregation of properties do not cross national or regional boundaries).

[97] *See, e.g.,* letter from SRK 1; *see also* letter from Midas (stating that ''[o]nly material properties should require disclosure, and then in a comprehensive technical report as in NI 43–101'').

[98] 17 CFR 229.1301(d), which references 17 CFR 229.1303 [Item 1303 of Regulation S–K]. The latter provision sets forth the specific requirements for summary disclosure.

[99] 17 CFR 229.1301(d), which references 17 CFR 229.1304 [Item 1304 of Regulation S–K]. The latter provision provides the specific disclosure requirements for individually material properties.

[100] 17 CFR 229.1303(a)(2) [Item 1303(a)(2) of Regulation S–K].

[101] Commenters did not oppose the proposed treatment of ancillary properties.

[102] *See, e.g.,* letter from Vale; *see also* letter from Amec.

[103] *See infra* Section II.G.1.

[104] 17 CFR 229.1303(b)(2) [Item 1303(b)(2) of Regulation S–K].

of the registrant's properties and mining operations in the aggregate.[105]

As discussed in greater detail below,[106] we also have made the disclosure requirements for individually material properties less prescriptive and aligned them more closely with the CRIRSCO standards. For example, among several other revisions, we have:

- reduced the number of required tables from five to two; [107]
- replaced the proposed requirement to present mineral resource and reserve disclosure at three separate points of reference with the requirement to present the disclosure at one specific point of reference selected by the qualified person; [108] and
- replaced the requirement to present mineral reserve disclosure as net of diluting materials and allowances for losses that may occur when the mineral resource is mined or extracted with the requirement to disclose reserves as including such diluting materials and allowances for losses.[109]

In light of these revisions, we believe the final rules concerning summary and individual property disclosure will provide clear and consistent standards for registrants to apply in determining the scope of their disclosure obligations without unduly burdening registrants. We also believe that the final rules will help ensure that investors receive all material information about registrants' mining operations and associated risks.

4. Treatment of Royalty Companies and Other Companies Holding Economic Interests in Mining Properties

i. Rule Proposal

As noted in the Proposing Release,[110] some registrants are royalty companies, which are companies that do not own or operate a property, but rather own the right to receive payments, called a royalty right, from the owner or operator of a property.[111] In addition, some registrants hold other economic interests, similar to royalty rights, also without owning or operating a property.[112] Because neither Item 102 nor Guide 7 addresses whether royalty or similar companies must provide disclosure about the mining operations and properties underlying their economic interest, the staff has provided comments in the filing review process to help guide registrants in determining whether and how such companies should provide mining disclosure.

Consistent with prior staff comments, we proposed to require a royalty company or other registrant holding a similar economic interest to provide all applicable mining disclosure if the underlying mining operations that generate the royalty or other payment are material to the royalty or similar company's operations as a whole. As proposed, and similar to a producing mining company (that owns or operates properties), a royalty or similar company would have to assess both quantitative and qualitative factors to determine whether the underlying mining operations are material.[113] Upon an affirmative materiality determination, the proposed rules would require a royalty or similar company to provide disclosure only for those underlying properties, or portions of underlying properties, that generate the registrant's royalties or similar payments, and only for the reserves and production that generated its payments in the reporting period.[114]

The proposed rules would require a royalty or similar company to describe the material properties that generate its royalties or similar payments and file a technical report summary for each such property. As proposed, such a registrant would not be required to submit a separate technical report summary about a property covered by a current technical report summary filed by the producing mining registrant. In that situation, the royalty or similar company could incorporate by reference [115] the producing registrant's previously filed technical report summary.[116]

We based this approach to royalty and other similar companies on our belief that investors in royalty and other similar companies need information about the material mining properties that generate the payments to the registrant, including mineral reserves and production, to be able to assess the amounts, soundness, and sustainability of future payments. We also recognized, however, that because a royalty or other similar company may not have access to information about portions of the mining property that do not contribute to the registrant's revenue stream, it should not be required to disclose information concerning the non-contributing portions.[117]

ii. Comments on the Rule Proposal

Many commenters generally supported the Commission's proposal to require a royalty company, or a company holding a similar economic interest in another company's mining operations, to provide all applicable mining disclosure if the underlying mining operations are material to its operations as a whole.[118] For example, one commenter stated that, in principle, a royalty company should be required to provide disclosures similar to those provided by the underlying mining company, but noted that such a requirement could give rise to difficulties when the royalty company is a registrant with the Commission but the underlying mining company is not, and when the property that is the subject of the royalty arrangement is not material to the underlying mining company, but the royalty stream is material to the royalty company.[119] In those circumstances, the required disclosure may not be readily available to the royalty company.[120]

Another commenter noted that the Commission's proposed disclosure for royalty companies is consistent with current guidance as it would only be required with respect to portions of the underlying mining properties that contribute to the royalty company's revenue stream.[121] Like the previous commenter, this commenter stated that the ability of royalty companies to comply with the proposed disclosure obligations, even as circumscribed, may be limited by their inability to access the requisite information and supporting documentation by the underlying mining company's qualified

[105] 17 CFR 1303(b)(2)(iii) [Item 1303(b)(2)(iii) of Regulation S–K].

[106] *See infra* Section II.G.2.

[107] 17 CFR 229.1304(d)(1) [Item 1304(d)(1) of Regulation S–K], which requires a summary of all mineral resources or reserves as of the end of the most recently completed fiscal year presented in two separate tables (one for resources, the other for reserves).

[108] *See id.*

[109] *See* the definition of mineral reserve in 17 CFR 229.1300 [Item 1300 of Regulation S–K].

[110] *See* Proposing Release, *supra* note 5, at Section II.B.1.iii.

[111] A royalty, in this context, is typically a payment to the royalty right holder from the property owner or operator in return for: (i) Providing upfront capital; (ii) paying part of amount due landowners or mineral right holders; or (iii) converting a participating interest in a joint venture into a royalty right. Such payment is most often based on a percentage of the minerals, revenues, or profits generated from the property.

[112] Examples include the right to purchase all or a portion of minerals from a mine under a metal purchase agreement (a ''stream'' agreement) or a working interest in the underlying property.

[113] *See* Proposing Release, *supra* note 5, at Section II.B.1.iii.

[114] *See id.*

[115] *See* 17 CFR 230.411, 17 CFR 240.12b–32, which permit any document filed with the Commission under any act administered by the Commission to be incorporated by reference as an exhibit to a statement or report filed with the Commission by the same or any other person, and require that the registrant clearly identify in the reference the document from which the material is taken.

[116] *See* Proposing Release, *supra* note 5, at Section II.B.1.iii.

[117] *See id.*

[118] *See* letters from Amec, AngloGold, CBRR, Davis Polk, Dorsey & Whitney, Eggleston, Midas, MMSA, Newmont, Rio Tinto, and SAMCODES 2.

[119] *See* letter from AngloGold.

[120] *See id.*

[121] *See* letter from Davis Polk.

person. Moreover, even if the royalty company has access to appropriate supporting documentation, this commenter stated that the operating mining company's qualified person may be unwilling to consent to its use by the royalty company for liability reasons. Accordingly, this commenter recommended that the Commission clarify that the disclosure obligations of a royalty company are limited to information that is known or reasonably available to it.[122]

Regarding the proposed provision requiring a royalty company to file a technical report summary if the owner or operator of the underlying mining operations has not done so, one commenter supported applying the proposed rules to royalty companies, but recommended that the Commission provide a limited exemption similar to the exemption under Canada's NI 43–101.[123] Two other commenters stated that a royalty company should be required to file summaries of current technical reports by an operating company but only for material properties.[124] Those commenters also indicated that a royalty company may not have access to all of the information required to complete a technical report at the level of detail required by the owner of the underlying mine. Therefore, one of the commenters recommended that the Commission allow such a royalty company to prepare an abbreviated report[125] while the other commenter recommended that the royalty company be permitted to reference the operating company's technical reports.[126]

Numerous other commenters opposed the Commission's proposal to require a royalty company to provide all applicable mining disclosure if the underlying mining operations are material to the royalty company.[127] Most of these commenters stated that because royalty holders generally have no executive or operational interest or other participation in the mineral properties to which the royalties relate, they typically have no access to the underlying mining operations or to the extensive technical data and other information available to the operator.[128]

According to one of those commenters, because, typically, the information a royalty holder is entitled to receive is limited to mill production, marketing, and sales data that is used to confirm the calculation of royalty payments, a royalty company generally lacks sufficient information to prepare a current technical report summary.[129] That commenter further objected to the proposed provision that would allow a royalty company to incorporate by reference a technical report summary previously filed by the owner or operator of the underlying property because it would impose potential Securities Act or Exchange Act liability on the royalty company for a third party's technical or other information regarding which the royalty company lacked responsibility or the ability to review or verify. According to the commenter, in order for a royalty company to verify a technical report summary or provide a technical report summary of its own, the royalty company would need to acquire extensive information and access rights from the owner or operator of a mineral property, which the commenter believed the owner or operator would not be willing to provide due to the proprietary nature of much of the information. Moreover, even if the owner or operator were willing to provide the information, the royalty company would be required to re-negotiate its royalty agreement, which would disadvantage a U.S. royalty company compared to its foreign competitors.

iii. Final Rules

We continue to believe that investors in royalty, streaming, and other registrants holding a similar economic interest in mining operations need information about the material mining properties that generate the payments to the registrant, including mineral reserves and production, to be able to assess the amounts, soundness, and sustainability of future payments. For the royalty or similar company and its investors, the mining property underlying the royalty or similar payments is the primary or only source of revenues and cash flow. As such, we believe that royalty companies and other companies holding similar economic interests should provide similar disclosure as provided by registrants conducting the underlying mining operations.

Accordingly, the final rules will require a royalty or other similar company to provide applicable mining disclosure if the mining operations that generate the royalty or other payment are material to the royalty or similar company's operations as a whole, subject to that information being known or reasonably available to the registrant.[130] Thus, a royalty or similar company will have to assess both quantitative and qualitative factors to determine whether the underlying mining operations are material.[131] Also as proposed, upon an affirmative materiality determination, the final rules will require a royalty or similar company to provide summary disclosure[132] and the disclosure required for individually material properties,[133] but only for those underlying properties, or portions of underlying properties, that generate the registrant's royalties or similar

[122] *Id.* Two other commenters made a similar recommendation. *See* letters from Dorsey & Whitney and Newmont. Another commenter urged the Commission to adopt special rules for royalty companies that would recognize their potential inability to provide detailed disclosure regarding the underlying property. This commenter stated that, at a minimum, a royalty company should be able to rely on information provided by the operator while disclaiming liability for that information. *See* letter from MMSA.

[123] *See* letter from Amec. Canada's NI 43–101 exempts a royalty company from having to file a technical report if: The owner or operator of the underlying mine is a reporting issuer in a Canadian jurisdiction or is a producing issuer whose securities trade on a specified exchange and that discloses mineral resources and reserves under an acceptable foreign code; the owner or operator has disclosed the scientific and technical information that is material to the royalty company; and the royalty company identifies in its disclosure document the source of the scientific and technical information. *See* Canada's National Instrument (''NI'') 43–101 (''Standards of Disclosure for Mineral Projects''), NI 43–101 (2011) 34 OSCB 7043 pt. 9.2 (Can.), *http://web.cim.org/standards/documents/Block484_Doc111.pdf.* Canada's NI 43–101 also exempts a royalty company from having to file a technical report or from complying with disclosure items requiring data verification, inspection of documents, or personal inspection of the property if the royalty company has requested but has not received access to the necessary data from the owner or operator and is not able to obtain the necessary information from the public domain. *See id.* at pt. 9.2(2). *But see* letter from SME 2 (stating that neither the Canadian approach nor the Commission's incorporation by reference proposal is workable because of ''the U.S securities law liability regime and the litigation environment in the U.S.'').

[124] *See* letters from Eggleston and Rio Tinto.

[125] *See* letter from Eggleston.

[126] *See* letter from Rio Tinto.

[127] *See* letters from AIPG, Alliance, Crowell & Moring, Laskowski, NRP, Royal Gold, SME 2, SRK 2, and Vinson & Elkins.

[128] *See, e.g.,* letters from Crowell & Moring, NRP, Royal Gold, SME 2, and Vinson & Elkins.

[129] *See* letter from SME 2; *see also* letter from NRP (''along with royalty payments, the company receives only monthly production reports and ''certain other limited economic and mining information that enables NRP to evaluate its royalty business and make periodic reports to its common unitholders'').

[130] 17 CFR 229.1301(a)(3) [Item 1301(a)(3) of Regulation S–K].

[131] 17 CFR 1301(c)(1) [Item 1301(c)(1) of Regulation S–K]. As we noted in the Proposing Release, because a registrant with royalty or other similar economic interests does not own or operate the producing property, revenues are often a more relevant benchmark than assets for determining materiality. *See* Proposing Release, *supra* note 5, at Section II.B.1.iii.

[132] 17 CFR 229.1303(a)(1)(iii) [Item 1303(a)(1)(iii) of Regulation S–K].

[133] 17 CFR 229.1304(a)(1)(iii) [Item 1304(a)(1)(iii) of Regulation S–K].

payments, and only for the reserves and production that generated its payments in the reporting period.[134]

In addition, as proposed, the final rules will also require the royalty or similar company to file a technical report summary for each material underlying property as an exhibit to the Commission filing.[135] However, as proposed, the final rules will not require a royalty or similar company to submit a separate technical report summary about a property that is covered by a current technical report summary filed by the producing mining registrant. In that event, the royalty or similar company should refer to the producing registrant's previously filed technical report summary in its filing with the Commission.[136] The purpose of this provision is to inform an investor or other interested party as to where to find detailed information about the underlying property. In a change from the proposed rules, such a reference will not be deemed to incorporate into the royalty company's or other similar company's filing the technical report summary previously filed by the mining registrant, absent an express statement that the company intends to incorporate it by reference.[137] We agree with commenters that it would not be appropriate to impose potential liability under the Securities Act or Exchange Act on a royalty company through the company's incorporation by reference of a third party owner's technical report summary if the royalty company has not been able to review and verify the information contained in the summary because of its lack of access to such information under its existing royalty agreement.[138]

As mentioned by many commenters,[139] we are cognizant that a royalty or similar company may lack, and may have difficulty obtaining, access to the information and supporting documentation required to comply with the Commission's disclosure requirements concerning the underlying mining properties. We therefore emphasize that what is true generally for our public company disclosure requirements applies to a royalty company's disclosure obligations regarding the underlying mining properties as well. Specifically, the required information concerning the underlying mining properties need be given only insofar as it is known or reasonably available to the registrant.[140] In order to underscore this basic tenet, in a change from the proposed rules, the final rules provide that a registrant that has a royalty, streaming, or other similar right, but which lacks access to any of the information about the underlying properties specified in either the summary disclosure provision (Item 1303 of Regulation S–K) or the individual property provision (Item 1304 of Regulation S–K) may omit such information, provided that the registrant:

- Specifies the information to which it lacks access;
- Explains that it does not have access to the required information because:
  - Obtaining the information would result in an unreasonable effort or expense; or
  - It requested the information from a person possessing knowledge of the information, who is not affiliated with the royalty company or similar registrant, and who denied the request; and
- Provides all required information that it does possess or which it can acquire without unreasonable effort or expense.[141]

The final rules further provide that a royalty company or similar registrant is not required to file a technical report summary for an underlying property if the registrant lacks access to the technical report summary because of substantially similar reasons.[142] For example, if the underlying property holder is private, and denies access to relevant information about the property, under the final rules, the royalty company will not be obligated to prepare a technical report summary. Overall, we believe that the adopted treatment of royalty and other similar companies will provide investors with information relevant to assessing investments in those companies without unduly burdening registrants.

5. Definitions of Exploration, Development and Production Stage

i. Rule Proposal

As noted in the Proposing Release,[143] Guide 7 defines the stages used to describe mining operations as ''exploration stage,'' [144] ''development stage,'' [145] and ''production stage,'' [146] but applies these definitions to the registrant as a whole and not on a property-by-property basis. As such, Guide 7 does not provide guidance as to when and how the definitions of exploration, development, and production stage apply to registrants that own properties in different stages. To address this ambiguity and to help ensure that investors receive disclosure that accurately reflects a registrant's operational status, we proposed to revise the Guide 7 definitions so that they apply to individual properties, as follows:

- An ''exploration stage property'' is a property that has no mineral reserves disclosed;
- A ''development stage property'' is a property that has mineral reserves disclosed, but with no material extraction; and
- A ''production stage property'' is a property with material extraction of mineral reserves.[147]

We also proposed to revise the Guide 7 definitions as they apply to issuers to recognize that issuers may have properties in differing stages, as follows:

- An ''exploration stage issuer'' is one that has no material property with mineral reserves;
- A ''development stage issuer'' is one that is engaged in the preparation of mineral reserves for extraction on at least one material property; and
- A ''production stage issuer'' is one that is engaged in material extraction of mineral reserves on at least one material property.[148]

We further proposed to specify that a registrant that does not have reserves on any of its properties, even if it has mineral resources or exploration results, or even if it is engaged in extraction

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[134] 17 CFR 229.1303(b)(2)(iv) [Item 1303(b)(2)(iv) of Regulation S–K] and 17 CFR 229.1304(d)(3) [Item 1304(d)(3) of Regulation S–K].

[135] 17 CFR 229.1302(b)(2) [Item 1302(b)(2) of Regulation S–K].

[136] 17 CFR 229.1302(b)(3)(i) [Item 1302(b)(3)(i) of Regulation S–K].

[137] *Id.*

[138] *See, e.g.,* letter from SME 2.

[139] *See supra* note 128 and accompanying text.

[140] This is consistent with 17 CFR 230.409 [Securities Act Rule 409] and 17 CFR 240.12b–21 [Exchange Act Rule 12b–21], the general rules governing the situation when required information is unknown or not reasonably available.

[141] 17 CFR 229.1303(a)(3) [Item 1303(a)(3) of Regulation S–K] and 17 CFR 229.1304(a)(2) [Item 1304(a)(2) of Regulation S–K].

[142] 17 CFR 229.1302(b)(3)(ii) [Item 1302(b)(3)(ii) of Regulation S–K] (conditioning omission of the technical report summary on a lack of access because obtaining the information would result in an unreasonable burden or expense; or because the registrant requested the technical report summary from the owner, operator, or other person possessing the technical report summary, who is not affiliated with the registrant, and who denied the request).

[143] *See* Proposing Release, *supra* note 5, at Section II.B.2.

[144] As defined by Guide 7, exploration stage ''includes all issuers engaged in the search for mineral deposits (reserves) which are not in either the development or production stage.'' Guide 7, *supra* note 7, ¶ (a)(4)(i).

[145] As defined by Guide 7, development stage ''includes all issuers engaged in the preparation of a determined commercially minable deposit (reserves) for its extraction which are not in the production stage.'' Guide 7, *supra* note 7, ¶ (a)(4)(ii).

[146] As defined by Guide 7, production stage ''includes all registrants engaged in the exploitation of a mineral deposit (reserve).'' Guide 7, *supra* note 7, ¶ (a)(4)(iii).

[147] *See* Proposing Release, *supra* note 5, at Section II.B.2.

[148] *See id.*

without first disclosing mineral reserves, cannot characterize itself as a development or production stage company.[149] Finally, we proposed to require a company to identify an individual property with no mineral reserves as an exploration stage property, even if it has other properties in development or production.[150]

ii. Comments on the Rule Proposal

Commenters expressed varying degrees of support for the Commission's proposed definitions of exploration, development and production stage as applied, respectively, to properties and issuers.[151] One commenter stated that both sets of definitions would be operable for the company and supported the proposed restriction on the use of the terms ''development and production stage companies.'' [152]

Another commenter supported the proposed definitions of exploration stage and development stage properties, but stated that the definition of production stage property should be revised to include ''current'' or ''on-going'' as opposed to past production.[153] This commenter further recommended that the Commission define a development stage issuer as one having at least one development stage property comprising more than 10% of the issuer's assets, and a production stage issuer as having at least one producing mine comprising more than 10% of the issuer's assets.[154]

While a third commenter generally found the two sets of definitions to be adequate, it stated that at least one material property should be enough to justify the production stage if it represents more than 50% of the registrant's asset value.[155] This commenter also believed that if a registrant has disclosed mineral resources, it should be able to characterize itself as a development stage company.[156]

One commenter supported the proposed definitions of exploration, development, and production stage issuers because they are substantially similar to the Guide 7 definitions.[157] The commenter suggested that the proposed definitions as applied to issuers should be used for accounting purposes only (*i.e.,* for the purposes of financial statement characterization), but did not think the proposed definitions would be useful as applied to properties.[158] In contrast, a different commenter supported having a set of definitions of exploration, development, and production stage applied to properties, but opposed having a corresponding set of definitions applied to issuers.[159]

Two other commenters opposed the proposed definitions.[160] One believed that both sets of definitions were too prescriptive for the mining industry and stated that because many mining operations have portions that are in the exploration, development, and production stages, it will be extremely difficult to attach a single label to a property.[161] In addition, that commenter did not believe it would be useful to define an issuer based on the characteristics of all of its mining properties, and further noted that a registrant is not required to characterize itself as being a particular type of issuer under the Canadian rules.[162] The other commenter asserted that the proposed sets of definitions were unnecessary, would add complexity and confusion, and be of limited value to issuers and investors.[163] A third commenter strongly opposed the definition of production stage because it depends on whether the company has mineral reserves and not on whether it is in production.[164]

iii. Final Rules

We are adopting the definitions of ''exploration stage property,'' ''development stage property,'' ''production stage property,'' ''exploration stage issuer,'' ''development stage issuer,'' and ''production stage issuer,'' as proposed.[165] Similar to a proposed instruction, we are also adopting a provision stating that a registrant must identify an individual property with no mineral reserves as an exploration stage property, even if it has other properties in development or production. The provision further states that a registrant that does not have reserves on any of its properties, even if it has mineral resources or exploration results, or even if it is engaged in extraction without first disclosing mineral reserves, cannot characterize itself as a development or production stage company.[166]

We believe that these adopted definitions and related provision will resolve the ambiguities in the Guide 7 definitions. Under the definitions, a registrant will be able to characterize its properties separately, but will be limited in when and how it can characterize its operational stage. Specifically, a registrant will not be able to characterize itself as a development stage issuer unless it is engaged in the preparation of mineral reserves for extraction on at least one material property. We believe this will benefit investors by providing them with clearer, more accurate and consistent disclosure about the type of company and level of risk involved. In particular, prohibiting a registrant without any mineral reserves from characterizing itself as a production or development stage issuer will help eliminate the possibility that such a registrant, by definition a company in a higher risk operational stage, will incorrectly characterize itself as being in a lower risk stage, thereby potentially misleading or confusing investors.

We do not believe it would be appropriate to adopt definitions of development stage issuer and production stage issuer that are based on a specific quantitative measure (*i.e.,* the development stage or production stage property must comprise more than 10% of the issuer's assets).[167] We

[149] As we noted in the Proposing Release, there are registrants that start development or production without first disclosing mineral reserves. Such practices increase the business' risks due to the absence of the detailed technical and economic analysis required to disclose reserves, thus increasing the degree of uncertainty surrounding the quantities and quality of the mineral to be extracted. *See* Proposing Release, *supra* note 5, at 29, n. 65.

[150] *See* Proposing Release, *supra* note 5, at Section II.B.2.

[151] *See, e.g.,* letters from Alliance, AngloGold, CBRR, Midas, Rio Tinto, SME 1, and SRK 1.

[152] *See* letter from AngloGold (supporting that a registrant lacking mineral reserves on any of its properties, even if it has mineral resources or exploration results, or even if it is engaged in extraction without first disclosing mineral reserves, cannot characterize itself as a development or production stage company).

[153] *See* letter from Midas.

[154] *See id.*

[155] Letter from CBRR.

[156] *See id.*

[157] *See* letter from SME 1.

[158] *Id.*

[159] *See* letter from SRK 1 (stating that ''[t]echnical disclosure should be dictated by property stage and materiality'' and ''[a] company's production status should not impact disclosure as there are many mining companies with immaterial small scale production or reserves that would classify them as production stage or development stage, but most of their value is in an exploration stage project'').

[160] *See* letters from Amec and Eggleston.

[161] *See* letter from Amec.

[162] *See id.*

[163] *See* letter from Eggleston.

[164] *See* letter from Energy Fuels. This commenter did not address the proposed definitions of exploration stage and development stage. The commenter described itself as the second largest uranium producer in the United States, but said that it does not currently own, and never has owned, any mineral reserves as defined by Guide 7. Most of its production at its largest facility has come from inferred mineral resources. The commenter stated that not being able to refer to itself as a production stage company is potentially misleading to investors.

[165] Definitions of specified terms used in subpart 1300 are located in 17 CFR 229.1300.

[166] 17 CFR 229.1304(c)(1) [Item 1304(c)(1) of Regulation S–K].

[167] *See* letter from Midas.

believe the less prescriptive approach of the final rules, which bases those definitions on the principle of materiality, is more consistent with the adopted disclosure threshold of materiality, which requires the consideration of both quantitative and qualitative factors, and is therefore preferable to a bright-line test. For the same reasons, we do not believe it would be appropriate to adopt a definition of a production stage issuer specifying that one material property will suffice provided that it represents more than 50% of the registrant´s asset value.[168]

We also do not believe it would be appropriate to define a production stage issuer as an issuer that is in production even if it has no mineral reserves,[169] or to define a development stage issuer as a company that has disclosed mineral resources, but not reserves.[170] We are concerned that such an approach would diminish the real difference in risk between a mining project for which only resources have been disclosed, and a more advanced project involving the affirmative determination of reserves, which could lead to investor confusion. Moreover, as a commenter noted, when applied to properties, such an approach would run counter to the definitions of ''development stage'' and ''production stage'' that are widely accepted in the industry.[171]

C. Qualified Person and Responsibility for Disclosure

1. The ''Qualified Person'' Requirement

i. Rule Proposal

We proposed that every disclosure of mineral resources, mineral reserves, and material exploration results reported in a registrant's filed registration statements and reports must be based on, and accurately reflect information and supporting documentation prepared by, a ''qualified person,'' [172] as defined by the proposed rules.[173] We proposed the qualified person [174] requirement to align the Commission's mining property disclosure rules with the CRIRSCO standards and to remedy a perceived gap in the current reporting regime.

All of the CRIRSCO-based codes require any public report [175] about a company's exploration results, mineral resources, and mineral reserves to be based on and fairly reflect information and supporting documentation prepared by a ''competent'' or ''qualified person.'' [176] The purpose of this requirement is to ensure that a registrant's public declaration of exploration results, mineral resources, and mineral reserves is supported by the findings of a mineral industry professional having the relevant level of expertise.[177] In contrast, neither Guide 7 nor Item 102 requires a registrant's disclosure of mineral reserves to be based on the findings of an appropriately experienced professional.[178] While an author of a study or technical report that forms the basis of mineral reserves disclosure in a Securities Act registration statement must consent to the use of its name as an expert,[179] there is no requirement to use an expert for reserves disclosure and, if one is used, there are no substantive requirements for that expertise.

In connection with the qualified person requirement, we proposed that the registrant must:

- Be responsible for determining that the person meets the qualifications specified under the proposed subpart's definition of ''qualified person'' and that the disclosure in the filing accurately reflects the information provided by the qualified person;
- Obtain a dated and signed technical report summary from the qualified person, which identifies and summarizes for each material property the information reviewed and conclusions reached by the qualified person about the registrant's exploration results, mineral resources or mineral reserves;
- File the technical report summary with respect to every material mining property as an exhibit to the relevant registration statement or other Commission filing when the registrant is disclosing for the first time mineral reserves, mineral resources, or material exploration results or when there is a material change in the mineral reserves, mineral resources, or exploration results from the last technical report filed for the property;
- Prior to filing the technical report summary as part of a registration statement or report, obtain the written consent of the qualified person to the use of the qualified person's name or any quotation from, or summarization of the technical report summary;
- Identify the qualified person who prepared the technical report summary in the filed registration statement or report; and
- State whether the qualified person is an employee of the registrant, and if the qualified person is not an employee of the registrant:
  - Name the qualified person's employer;
  - Disclose whether the qualified person or the qualified person's employer is an affiliate of the registrant or another entity that has an ownership, royalty or other interest in the property that is the subject of the technical report summary; and
  - If the qualified person or the qualified person's employer is an affiliate, disclose the nature of the affiliation.[180]

In the Proposing Release, we explained that if the filing that requires the technical report summary is a Securities Act registration statement, the qualified person would be deemed an ''expert'' who must provide his or her written consent as an exhibit to the filing pursuant to Securities Act Rule 436.[181] In such situations, the qualified

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[168] *See* letter from CBRR.

[169] *See* letter from Energy Fuels.

[170] *See* letter from CBRR.

[171] *See* letter from SRK 1.

[172] *See* Proposing Release, *supra* note 5, at Section II.C.1. The proposed provision specified that the qualified person requirement would apply to the disclosure required by the proposed summary disclosure provision (Item 1303) and the proposed individual property disclosure provision (Item 1304).

[173] *See infra* Section II.C.2. for a discussion of the proposed definition of qualified person.

[174] While we referred to the qualified person in the singular throughout the Proposing Release, we noted that it is common for a registrant to have more than one qualified person prepare a technical report for a mining property or project. We also noted that, as proposed, the registrant's responsibilities regarding the qualified person would apply to each qualified person so engaged. *See* Proposing Release, *supra* note 5, at 33, n. 74.

[175] As used in the CRIRSCO-based codes, ''public report'' includes all communication by a company to investors on exploration results, mineral resources, and mineral reserves. For example, Australia's JORC Code defines public s report as: ''. . . reports prepared for the purpose of informing investors or potential investors and their advisers on Exploration Results, Mineral Resources or Ore Reserves. They include, but are not limited to, annual and quarterly company reports, press releases, information memoranda, technical papers, website postings and public presentations.'' Joint Ore Reserves Committee, the JORC Code, pt. 6 (2012), *http://www.jorc.org/docs/JORC_code_2012.pdf.*

[176] *See, e.g.,* CRIRSCO International Reporting Template, *supra* note 20, cl. 8; Canada's NI 43–101, *supra* note 123, at pt. 2.1; JORC Code, *supra* note 175, at pt. 9.

[177] The competent or qualified person requirement supports the ''competence'' principle, one of the three governing principles that underlie the CRIRSCO standards. *See supra* note 39. All of the CRIRSCO-based codes define competence to mean that technical work should be done by a professional with requisite expertise. *See, e.g.,* CRIRSCO International Reporting Template, *supra* note 20, at cl. 3; JORC Code, *supra* note 175, at pt. 9; s*ee also* Society for Mining, Metallurgy & Exploration, SME Guide for Reporting Exploration Results, Mineral Resources and Mineral Reserves, pt. 3 (July 2017) (''SME Guide''), *https://www.smenet.org/SME/media/Publications-Resources/SMEGuideReporting_082017.pdf.*>

[178] Guide 7 only calls for disclosure of the name of the person estimating the reserves and the nature of his or her relationship to the registrant. *See* Guide 7, *supra* note 7, at ¶ (b)(5)(ii). In addition, if a registrant supplementally provides a copy of a technical report to staff, Guide 7 specifies that the copy include the name of its author and the date of its preparation, if known to the registrant. *See* Guide 7, *supra* note 7, at ¶ (c)(2).

[179] *See* 17 CFR 230.436 [Securities Act Rule 436]; *see also* 17 CFR 229.601(b)(23)(i) [Item 601(b)(23)(i) of Regulation S–K].

[180] *See* Proposing Release, *supra* note 5, at Section II.C.1.

[181] *See id.* A registrant would also have to file the written consent as an exhibit to an Exchange Act

person would be subject to liability as an expert for any untrue statement or omission of a material fact contained in the technical report summary under Section 11 of the Securities Act.[182]

ii. Comments on the Rule Proposal

Numerous commenters supported the Commission's proposal that every disclosure of mineral resources, mineral reserves and material exploration results reported in a registrant's filed registration statements and reports must be based on, and accurately reflect information and supporting documentation prepared by, a ''qualified person.'' [183] One commenter stated that investors would benefit from the qualified person requirement because it would provide the appropriate level of assurance and disclosure about both a registrant's operations and developing opportunities.[184] Other commenters maintained that the qualified person requirement would mitigate the risks associated with including disclosure about a registrant's mineral resource and exploration results in Commission filings.[185] Some commenters explained that the qualified person requirement would result in more accurate and reliable reports, foster proper risk level identification, and ensure that all aspects of industry standards are being assessed and implemented, which would assist investors in understanding each stage of a project.[186] Other commenters emphasized that adoption of the qualified person requirement would be a significant step in aligning the Commission's rules with the CRIRSCO standards and global industry practice.[187]

Many commenters also supported the Commission's proposal to make the registrant responsible for determining that the qualified person meets the qualifications specified under the new subpart's definition of ''qualified person.'' [188] One commenter stated that the registrant, through its board of directors, is ultimately responsible for the information disclosed by it and attributed to the qualified person.[189] A second commenter indicated that, in the case of a qualified person employed by a registrant, the registrant is in the best position to evaluate the qualified person's credentials and determine if he or she meets the requisite qualifications.[190] Other commenters stated that the responsibility for determining who is a qualified person should be a joint decision by the registrant and the named qualified person since the qualified person is responsible for preparing the technical report and knows what type of information he or she is qualified to provide an opinion on.[191] One commenter opposed imposing the responsibility for verifying the qualifications of the qualified person on the registrant because such verification would be based on personal information not readily available to the public.[192]

Many commenters supported the Commission's proposal to require a registrant to obtain a technical report summary for each material property from the qualified person, which identifies and summarizes the information reviewed and conclusions reached by the qualified person about the registrant's exploration results, mineral resources, or mineral reserves, before the registrant can disclose those results, resources, or reserves in Commission filings.[193] Two commenters noted that the technical report summary proposal is a requirement under all CRIRSCO codes,[194] with one maintaining that the requirement would not be a significant burden for issuers because many mining companies, including U.S. registrants that are cross-listed, are already required in CRIRSCO-based jurisdictions to prepare technical reports either for public filing or for internal use.[195] Another commenter stated that the technical report summary requirement ensures that facts, forward-looking statements and cautionary language considered to be material by the qualified persons involved are fully disclosed and in full context.[196] A fourth commenter indicated that technical reports have proven to be a useful method of providing transparency to the mining industry and have enhanced the confidence of investors.[197]

Some commenters recommended that our disclosure framework follow the format of Canada's NI 43–101F1 so that technical report summaries under the Commission's rules would be interchangeable with those filed under the Canadian reporting regime.[198] For similar reasons, some commenters stated that the technical report summary should follow the CRIRSCO Table 1 format of the registrant's home listing jurisdiction.[199]

Several commenters expressly supported the filing of a summarized technical report rather than an unabridged report.[200] One commenter, however, recommended requiring the filing of both the summarized technical report and the full technical report [201] while another commenter stated that an unabridged technical report should be required when a project advances to the development stage.[202]

Many commenters supported the Commission's proposal to require the filing of a technical report summary for a material property when the registrant first discloses mineral resources, mineral reserves, or material exploration results, or when there is a material change in the previously disclosed resources, reserves and exploration results.[203] Commenters stated that a requirement imposing more frequent filing would be unduly burdensome and costly.[204]

Some commenters stated that the proposed requirement to file a technical report summary for material properties would be a significant burden for smaller companies.[205] A few of these commenters suggested that the Commission could alleviate this burden by: Conforming the technical report summary to Table 1 of the CRIRSCO

registration statement or report when the Exchange Act filing is automatically incorporated into a previously filed Securities Act registration statement.

[182] 15 U.S.C. 77k(a)(4).

[183] *See* letters from AIPG, Amec, AngloGold, BHP, CBRR, Columbia Water, Earthworks, Eggleston, FCX, Gold Resource, Golder, Midas, Mousset-Jones, Newmont, NSPE, Northern Dynasty, Rio Tinto, SAMCODES 1, SME 1, SRK 1, Ur-Energy, Vale, and Willis.

[184] *See* letter from Rio Tinto.

[185] *See, e.g.,* letters from AngloGold, BP, and Gold Resource.

[186] *See, e.g.,* letters from CBRR, Eggleston, Midas, SRK 1, and Willis.

[187] *See, e.g.,* letters from AIPG and SME 1.

[188] *See* letters from AngloGold, CBRR, Eggleston, Gold Resource, Golder, MMSA, Rio Tinto, SME 1, and Vale.

[189] *See* letter from AngloGold.

[190] *See* letter from Vale.

[191] *See* letters from Amec, Eggleston, and Rio Tinto.

[192] *See l*etter from SRK 1.

[193] *See* letters from AngloGold, CBRR, CSP[2], Coeur, Eggleston, Gold Resource, Golder, Northern Dynasty, Rio Tinto, SME 1, Vale, and Willis.

[194] *See* letters from Rio Tinto and SRK 1.

[195] *See* letter from SRK 1.

[196] *See* letter from Golder.

[197] *See* letter from Eggleston.

[198] *See* letters from Coeur, Gold Resource, SME 1, and Willis.

[199] *See, e.g.,* letters from AngloGold and Rio Tinto.

[200] *See* letters from CSP[2], Eggleston, Gold Resource, Golder, and SRK 1. On a related point, four commenters stated that the name ''technical report summary'' was confusing as it suggested that there existed an unabridged technical report. *See* letters from Coeur, Eggleston, Northern Dynasty, and SME 1.

[201] *See* letter from Columbia Water.

[202] Letter from CSP[2].

[203] *See* letters from AngloGold, CBRR, CSP[2], Eggleston, Golder, Midas, Northern Dynasty, Rio Tinto, SRK 1, and Vale.

[204] *See, e.g.,* letters from AngloGold, Golder, Midas, and SRK 1.

[205] *See, e.g.,* letters from AngloGold, Eggleston, and Gold Resource.

International Reporting Template;[206] not requiring the filing of the technical report summary more frequently than under the CRIRSCO-based codes;[207] not requiring the disclosure of exploration results; or minimizing the required use of an independent qualified person.[208] One commenter also stated that the Commission could reduce the compliance burden by allowing all Canadian registrants, and not just those that file under the MJDS, to report under Canada's NI 43–101, and by considering a similar accommodation for foreign issuers that report under the other CRIRSCO-based codes.[209]

Some commenters opposed a requirement to file a technical report summary as an exhibit to a Commission filing because they believed it would be burdensome for registrants that are not subject to similar requirements in other jurisdictions.[210] Other commenters opposed the technical report summary filing requirement because it would compel the disclosure of information that is proprietary and competitively sensitive.[211]

Several commenters supported the Commission's proposal to have each qualified person date and sign the technical report summary prepared by him or her.[212] According to the commenters, this requirement would help establish the document's legitimacy [213] as well as a reference date for the report.[214] One commenter noted that the proposed requirement to have a qualified person date and sign the technical report summary is a requirement under all of the CRIRSCO-based codes.[215]

In addition, many commenters supported the Commission's proposal to require a registrant to obtain the written consent of each qualified person who prepared a technical report summary to the use of the qualified person's name or any quotation from, or summarization of the technical report summary in the registration statement or report.[216] One commenter indicated that the written consent requirement ''is very important to ensure that a QP's descriptions, summaries, results, conclusions and recommendations are construed accurately and appropriately by a registrant'' and ''also provides the QP with an additional opportunity to access the quality control and quality assurance of a registrant's disclosure as they pertain to the QP.'' [217]

In connection with the proposed written consent requirement, some commenters noted that registrants frequently hire multiple qualified persons for a particular mining project.[218] Those commenters recommended that the final rules clarify that multiple qualified persons may prepare a technical report summary and, in such a situation, a registrant must have each qualified person identify the particular parts of the technical report summary for which he or she is responsible, date and sign each part, and provide his or her written consent for the use of his or her name and reference to those parts of the technical report summary prepared by each qualified person.[219]

Some commenters opposed the proposed requirement to have the qualified person sign the technical report summary on an individual basis.[220] These commenters objected on the grounds that liability concerns are more pronounced in the United States and such a requirement would place a qualified person in a position similar to an executive or financial officer of the registrant.

Numerous other commenters maintained that the Commission should not subject qualified persons to expert liability under Section 11 of the Securities Act.[221] Those commenters opposed such expert liability on the grounds that: Ultimate responsibility for a public report concerning a registrant's exploration results, mineral resources, or mineral reserves rests with the registrant, acting through its board of directors;[222] the proposed requirements for qualified persons, such as membership in a professional organization that requires compliance with standards of competence and ethics, and the written consent provisions, would provide adequate safeguards to ensure the reliability of supporting documentation by a qualified person;[223] the Section 11 liability regime is unique and would impose significant costs on individuals that are not yet subject to it;[224] imposing Section 11 liability on qualified persons would likely have a chilling effect on the willingness of individuals to serve in that role and thereby increase the cost of hiring a qualified person, and could deter registrants from hiring qualified persons;[225] and the naming of individual professionals in Commission filings is not required with respect to accounting, auditing, and legal matters or in the determination of oil and gas reserves and, in any event, is not important to the protection of investors.[226]

Some commenters that expressed concerns about Section 11 liability requested that the Commission explore alternatives to the individual signing requirement, such as permitting the firm employing the qualified person to sign the technical report summary, which would be consistent with the Commission's treatment of auditors and its treatment of engineering firms under the Commission's oil and gas rules.[227] Those commenters further noted that not requiring an individual qualified person to sign the technical report summary would be consistent with the Commission's treatment of audit engagement partners whereby the naming or signature of the individual audit engagement partner is not required in Commission filings.[228]

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[206] *See* letter from AngloGold.

[207] *See* letters from AngloGold and Midas.

[208] *See* letter from Gold Resource.

[209] *See* letter from Northern Dynasty.

[210] *See* letters from Alliance, Chamber, Davis Polk, and FCX. Davis Polk and the Chamber believed that, because only Canada and Australia impose a similar requirement, the proposed technical report summary requirement would ''result in an incremental reporting burden in the United States relative to most other jurisdictions.''

[211] *See* letters from Alliance and FCX.

[212] *See, e.g.,* letters from AngloGold, CSP[2], Eggleston, Golder, and SRK 1.

[213] *See* letter from SRK 1.

[214] *See* letters from Golder and SRK 1. Golder indicated that the dating requirement would protect the qualified person by establishing the effective or cutoff dates of data and observations used and alleviate other timing-related issues.

[215] *See* letter from Rio Tinto.

[216] *See* letters from AngloGold, Eggleston, Midas, Newmont, Northern Dynasty, Rio Tinto, SRK 1, Vale, and Willis.

[217] Letter from SRK 1.

[218] *See* letters from Coeur, Eggleston, Energy Fuels, Golder, MMSA, SME 1, Ur-Energy, Vale, and Willis; *see also* letter from Newmont (recommending the use by the qualified person of a ''sub-certifications control process accompanied by disclosure of the areas and personnel relied upon'').

[219] *See, e.g.,* letters from Coeur, MMSA, and SME 1.

[220] *See* letters from Andrews Kurth, Gold Resource, and NMA 1.

[221] *See* letters from AusIMM, Chamber, Cleary & Gottlieb, Cloud Peak, Davis Polk, FCX, JORC, MMSA, NSSGA, SAMCODES 1, Shearman & Sterling, Sullivan & Cromwell, and Ur-Energy.

[222] *See, e.g.,* letters from AusIMM, FCX, JORC, SAMCODES 1, and Shearman & Sterling.

[223] *See* letters from Davis Polk, Shearman & Sterling, and Sullivan & Cromwell.

[224] *See id.; see also* letter from Andrews Kurth.

[225] *See* letters from Andrews Kurth, Chamber, Davis Polk, FCX, MMSA, NSSGA, Shearman & Sterling, and Ur-Energy.

[226] *See* letter from FCX.

[227] *See* letters from Gold Resource and NMA 1. *See also* letter from SME 1 (suggesting a sub-certification procedure to deal with the liability concerns regarding qualified persons).

[228] *See* letters from Gold Resource and NMA 1. An audit engagement partner is, however, required to be named on PCAOB Form AP. *See* Public Company Accounting Oversight Board; Order Granting Approval of Proposed Rules To Require Disclosure of Certain Audit Participants on a New PCAOB Form and Related Amendments to Auditing Standards, Exchange Act Release No. 34–77787 (May 9, 2016) [81 FR 29925].

On a related issue, many commenters recommended that the Commission adopt the approach under Canada's NI 43–101 or another CRIRSCO-based code and permit a qualified person to disclaim liability if relying on a report, opinion or statement of another expert who is not a qualified person, or on information provided by the issuer, concerning legal, political, environmental, or tax matters relevant to the technical report.[229] According to these commenters, a limited disclaimer is necessary because the consideration of all applicable modifying factors in the determination of reserves, or all relevant technical and economic factors in the determination of resources, is typically beyond the scope and knowledge of a single individual. Commenters maintained that without a limited disclaimer provision, and particularly in light of concerns about Section 11 liability, the Commission would be imposing liability on qualified persons for opinions and conclusions outside of their fields of expertise, which would discourage individuals from acting as qualified persons under the Commission's rules, and potentially discourage registrants from hiring qualified persons.[230]

Other commenters, however, supported the Commission's proposal to preclude a qualified person from disclaiming responsibility if relying on a report, opinion, or statement of another expert who is not a qualified person.[231] One commenter stated that such a provision ''is key to obtaining reliable and accurate information'' on a project.[232]

Many commenters supported the Commission's proposal to require a registrant to identify the qualified person who prepared the technical report summary, disclose whether the qualified person is an employee of the registrant, identify the qualified person's employer if other than the registrant, and disclose whether the qualified person or the qualified person's employer is an affiliate of the registrant or another issuer that has an ownership or similar interest in the subject mining property.[233] Commenters stated that such disclosure would be consistent with the CRIRSCO standards' transparency obligations.[234] One commenter, however, opposed a requirement to name a qualified person's employer, as this may have changed since it prepared the technical report summary.[235] Instead, that commenter suggested that a registrant state whether the qualified person is independent of the registrant and, if not, provide an explanation for the lack of independence.

In response to whether, as an alternative to the rule proposal, we should require a registrant to state whether its qualified person is independent, numerous commenters answered in the affirmative, but also recommended that, consistent with Canada's NI 43–101, the final rules require an independent qualified person only under certain circumstances (*e.g.,* for the first-time disclosure of mineral resources and mineral reserves and for 100% or greater changes to previously disclosed resources and reserves) with an exception for producing issuers.[236] Those commenters also recommended adopting Canada's NI 43–101's definition of independence and related guidance. Most of those commenters opposed requiring a registrant to obtain an independent review of a technical report prepared by a qualified person that is an employee or affiliate of the registrant.[237]

Other commenters opposed any provision that would require a registrant to hire an independent qualified person or to conduct an independent review.[238] One commenter also opposed any provision that would require the registrant to state whether the qualified person is independent.[239] According to that commenter, there is very little difference between an employee and a consultant who is paid by the company and both could be unduly influenced. To guard against such undue influence, this commenter recommended requiring a qualified person to be a member of a professional organization that can sanction ''those that transgress.'' [240]

One commenter did not believe that naming a qualified person would add value to the registrant's Commission filings. This commenter noted that many outside specialists assist it with various estimations and evaluations used in its Form 10–K annual report, and ''assistance regarding reserve estimations is not exceptionally greater than any other area of consultation or professional guidance.'' [241] This commenter did state, however, that if the Commission requires the naming of a qualified person, it would be appropriate for a registrant to disclose whether the qualified person is independent using the definition of independence under Canada's NI 43–101.

iii. Final Rules

We are adopting the requirement, as proposed, that a registrant's disclosure of exploration results, mineral resources, or mineral reserves in Commission filings must be based on and accurately reflect information [242] and supporting documentation prepared by a qualified person,[243] as defined in subpart 1300 of Regulation S–K.[244] Adopting this requirement will more closely align the Commission's mining property disclosure regime with the CRIRSCO standards.[245]

The Securities Act and the Exchange Act both provide that the registration statements and periodic reports required under those statutes shall contain such information and documents as the Commission may require, as necessary or appropriate in the public interest and

[229] *See* letters from AIPG, Amec, BHP, CIM, Cleary Gottlieb, Cloud Peak, Coeur, CRIRSCO, Davis Polk, Eggleston, Energy Fuels, FCX, Gold Resource, Graves, Midas, MMSA, Newmont, NMA, Northern Dynasty, PDAC, Randgold, Rio Tinto, Shearman & Sterling, SME 1, SRK 1, Ur-Energy, Vale, and Willis.

[230] *See, e.g.,* letters from CIM, Davis Polk, Eggleston, FCX, Shearman & Sterling, SME 1, and Ur-Energy.

[231] *See* letters from Columbia, CSP[2], and Montana Trout.

[232] *See* letter from CSP[2].

[233] *See* letters from AngloGold, CBRR, CIM, Coeur, Eggleston, Gold Resource, Golder, Midas, MMSA, Northern Dynasty, Rio Tinto, SAMCODES 2, SME 1, SRK 1, Vale, and Willis.

[234] *See, e.g.,* letters from Eggleston and Vale. As previously noted, transparency is one of the three governing principles underlying the CRIRSCO standards. *See supra* note 39.

[235] *See* letter from Amec.

[236] *See* letters from Amec, CIM, Coeur, Eggleston, Gold Resource, Midas, MMSA, Newmont, Northern Dynasty, SAMCODES 2, SME 1, SRK 1, Vale, and Willis. Another commenter supported requiring a registrant to state whether its qualified person is independent, but did not mention the circumstances under Canada's NI 43–101 that would limit when an independent qualified person is required. *See* letter from Golder.

[237] *See* letters from AngloGold, Eggleston, Gold Resource, Golder, Midas, Northern Dynasty and SRK 1.

[238] *See* letters from AngloGold, BHP, CRIRSCO, FCX, JORC, and Rio Tinto.

[239] *See* letter from AngloGold.

[240] *Id.*

[241] Letter from Alliance.

[242] As used in subpart 1300 of Regulation S–K, the term ''information'' prepared by a qualified person includes the findings and conclusions of a qualified person relating to material exploration results or estimates of mineral resources or mineral reserves. *See* 17 CFR 229.1302(a)(1) [Item 1302(a)(1) of Regulation S–K].

[243] *id.* Like the proposed provision, the final rule refers to Item 1303, the summary disclosure provision, and Item 1304, the individual property disclosure provision, to specify the disclosure to which the qualified person requirement applies.

[244] We define ''qualified person'' in Item 1300 of Regulation S–K. *See infra* Section II.C.2.

[245] This requirement is consistent with the ''competence'' principle underlying the CRIRSCO standards, which requires that each person who has prepared the technical report summary meets the definition of qualified person and is, therefore, competent to make the findings and conclusions contained in the technical report summary.

for the protection of investors.[246] We believe that the requirement that a registrant's disclosure of mineral resources, mineral reserves, and material exploration results in Commission filings be based on and fairly reflect information and supporting documentation prepared by a ''qualified person'' will further the protection of investors by helping to make the determination and reporting of estimates of mineral resources and reserves or exploration results more reliable. This is particularly important since we are adopting rules that, for the first time, will allow a registrant with material mining operations to disclose mineral resources in its Commission filings. As commenters noted, the qualified person requirement will help to mitigate any risks associated with the disclosure of mineral resources or exploration results, which reflect a lower level of certainty about the economic value of mining properties than is reflected in the disclosure of mineral reserves.[247] Requiring that the disclosure of exploration results, mineral resources, and mineral reserves in Commission filings be based on the work of a person having the requisite professional credentials and experience should help to foster proper risk assessment and disclosure, which is key to an investor's understanding of each stage of a mining project.[248] Moreover, by adopting the qualified person requirement, the Commission will be strengthening its mining property disclosure requirements in a manner consistent with most foreign jurisdictions' mining disclosure requirements, thus promoting uniformity and comparability, which should benefit both registrants and investors.

We also are adopting the requirement that the registrant is responsible for determining that the qualified person meets the specified qualifications, and that the disclosure in the registrant's filing accurately reflects information provided by the qualified person.[249] Although we acknowledge that the qualified person has a role to play in establishing that he or she possesses the requisite credentials and experience,[250] placing the ultimate responsibility on the registrant is consistent with the registrant's duty under federal securities laws to ensure that the information in a Commission filing is accurate and free of material misstatements or omissions.

We are adopting the requirement that a registrant must obtain a dated and signed technical report summary from the qualified person, which identifies and summarizes the information reviewed and conclusions reached by the qualified person about the registrant's mineral resources or mineral reserves determined to be on each material property.[251] We also are adopting the requirement that a registrant must file the technical report summary as an exhibit to the relevant Commission filing when disclosing mineral reserves or mineral resources for the first time or when there is a material change in the mineral reserves or mineral resources from the last technical report summary filed for the property.[252]

We believe that the technical report summary filing requirement will not only help ensure that the registrant's disclosure in the Commission filing is accurate and reliable, it will also enhance investor understanding of a registrant's material mining properties. Specifically, the technical report summary will provide investors with a summary of the scientific and technical information that is the basis for the registrant's disclosure of mineral resources, mineral reserves, and exploration results, which should enable investors to better assess the value of the registrant's material mining properties. Moreover, to the extent that the data in the technical report summary constitutes part of the information used by the board of directors and management for corporate planning purposes (*e.g.,* deciding which mining projects to pursue) and, once the mining project is underway, to help assess the operational performance of the mine, requiring this information to be filed will enable investors to better understand the corporate decision-making of the mining registrant.

As commenters noted, mining companies, including U.S. registrants that are cross-listed, are already required in jurisdictions with CRIRSCO-based codes to obtain technical reports either for public filing or for internal use.[253] We agree with commenters that stated that such reports enhance transparency in the industry to the benefit of investors.[254] Moreover, as noted by some commenters, the requirement to have the technical report summary dated and signed will help to establish the authenticity and relevance of the document.[255]

As proposed, the final rules require the registrant to file the technical report summary as an exhibit, rather than in the body of the annual report or registration statement, in order to separate the underlying scientific and technical information in the technical report summary from the narrative disclosure concerning the registrant's operations.[256] We believe this will result in clearer and more accessible disclosure for investors, enabling them to understand the disclosure more effectively from both an operational and technical viewpoint.

A few commenters objected to the required filing of the technical report summary based on their belief that, because only Canada and Australia have a similar technical report filing requirement, the Commission's filing requirement will be burdensome for mining registrants that are not listed in those countries.[257] While we acknowledge that the final rules will impose a new compliance burden for some registrants, as explained above, we believe the filing of a technical report summary will provide important benefits to investors. In response to commenters' concerns, we are adopting measures that we believe will limit this compliance burden by requiring technical report summaries only for material properties, and by requiring the filing of those documents only when a registrant first discloses mineral resources or mineral reserves, or when there is a material change in the mineral reserves or mineral resources from the last technical report summary filed for the property.

In addition, in a change from the proposed rules, as further discussed below,[258] while exploration results, if disclosed, must be based on the findings and conclusions of a qualified person, we are not mandating that a registrant

[246] *See* Securities Act Section 7(a) [15 U.S.C. 77g(a)]; Exchange Act Sections 12(b)(1),)12(g)(1), 13(a) [15 U.S.C. 78l(b)(1), 78l(g)(1), 78m(a)].

[247] *See supra* note 185 and accompanying text.

[248] *See supra* note 186 and accompanying text.

[249] 17 CFR 229.1302(a)(2) [Item 1302(a)(2) of Regulation S–K]. This requirement is consistent with the CRIRSCO standards. *See, e.g.,* CRIRSCO International Reporting Template, *supra* note 20, at cl. 8; JORC Code, *supra* note 175, at pt. 9.

[250] *See supra* note 191 and accompanying text.

[251] 17 CFR 229.1302(b)(1) [Item 1302(b)(1) of Regulation S–K].

[252] 17 CFR 229.1302(b)(2)(i) [Item 1302(b)(2)(i) of Regulation S–K].

[253] *See, e.g.,* letters from Rio Tinto and SRK 1.

[254] *See, e.g.,* letter from Eggleston.

[255] *See, e.g.,* letters from Golder and SRK 1.

[256] The staff currently has the ability to request a copy of a technical report as supplemental material, where it is deemed appropriate, during the course of its review of a registration statement or report. *See* 17 CFR 230.418 [Securities Act Rule 418]; 17 CFR 240.12b–4 [Exchange Act Rule 12b–4]. Securities Act Rule 418(a)(6) specifically authorizes the staff, ''where reserve estimates are referred to in a document,'' to request ''a copy of the full report of the engineer or other expert who estimated the reserves.'' 17 CFR 230.418(a)(6).

[257] *See* letters from Chamber, Davis Polk, and FCX.

[258] *See infra* Section II.D.

obtain a dated and signed technical report summary from a qualified person to support the disclosure of exploration results. Under the final rules, a registrant may elect to obtain a technical report summary in connection with the disclosure of exploration results on a material property and file it as an exhibit to the relevant Commission filing, but it is not required to do so.[259] We believe that this elective treatment will help to mitigate the concern of some commenters that opposed the technical report summary filing requirement because it would compel the disclosure of proprietary and competitively sensitive information.[260]

Some commenters indicated that the proposed disclosure of certain specified information in the technical report summary, such as pricing assumptions or cash flow analysis, could reveal proprietary and commercially sensitive information.[261] As discussed below,[262] the final rules do not exclude pricing assumptions and cash flow analysis from the technical report summary because we believe that such exclusion would omit material information about a registrant's mineral resource or reserve estimates that is necessary for an investor to assess the registrant's current and prospective mining operations.

Consistent with the suggestion of some commenters,[263] the final rules clarify that a registrant may use multiple qualified persons to prepare a technical report summary. First, the final rules provide that if a registrant has relied on more than one qualified person to prepare the information and documentation supporting its disclosure of exploration results, mineral resources or mineral reserves, the registrant's responsibilities as specified in 17 CFR 229.1302 (Item 1302 of Regulation S–K) pertain to each qualified person.[264] Second, the final rules state that if more than one qualified person has prepared the technical report summary, each qualified person must date and sign the technical report summary, and the technical report summary must clearly delineate the section or sections of the summary prepared by each qualified person.[265]

We also are adopting the proposed requirement that a registrant obtain the written consent of each qualified person who prepared a technical report summary to the use of the qualified person's name or any quotation from, or summarization of, the technical report summary in the relevant registration statement or report, and to the filing of the technical report summary as an exhibit to the registration statement or report.[266] The written consent would only pertain to the particular section or sections of the technical report summary prepared by each qualified person.

Adoption of the written consent requirement will align the Commission's mining disclosure rules with the CRIRSCO-based codes, which impose a similar written consent requirement.[267] It also will help ensure that the qualified person's findings and conclusions are not included in a Commission filing without that person's actual knowledge.

In addition, requiring the registrant to obtain the qualified person's written consent is consistent with the Commission's approach to the use of an expert's report in Securities Act filings.[268] In this regard, as proposed, the final rules provide that, for Securities Act filings, the registrant must file the written consent as an exhibit to the registration statement.[269] Because a mining registrant is currently required to file the written consent of the mining engineer, geologist, or other expert upon whom it has relied when filing a Securities Act registration statement, the adopted written consent requirement should not impose an additional burden.[270] For Exchange Act reports, the registrant is not required to file the written consent obtained from the qualified person, but should retain the written consent for as long as it is relying on the qualified person's information and supporting documentation for its current estimates regarding mineral resources, mineral reserves, or exploration results.[271]

In a clarification of the proposed rules, the final rules provide that a third-party firm comprising mining experts, such as professional geologists or mining engineers, may sign the technical report summary instead of, and without naming, its employee, member, or other affiliated person who prepared the summary.[272] If a third-party firm signs the technical report summary, the final rules further provide that the third-party firm must provide the written consent.[273] This is consistent with current practice, pursuant to which the third-party firm that employs or controls the expert upon whom the registrant has relied typically files the written consent instead of the individual expert. It is also consistent with the treatment of other written consents provided by auditors and engineering experts, whether in oil, natural gas, or mining.

We are adopting these third-party firm signature and written consent provisions to assuage some of the concerns raised by commenters in connection with the potential Section 11 liability of qualified persons. Because the third-party firm that signs the technical report summary and provides the written consent will be treated as the expert upon whom the registrant has relied when making its mining property disclosures,[274] and because the third-party firm is not required to name the individual employee, member or other affiliated person who prepared the various sections of the technical report summary, the third-party firm will incur potential liability under Section 11 rather than the unnamed individual. Thus, qualified persons who are employed or otherwise affiliated with third-party firms will not automatically be exposed to potential Section 11 liability as a result of their participation in the preparation of supporting

[259] *See* Item 1302(b)(1) of Regulation S–K.

[260] *See supra* note 211 and accompanying text; *see also infra* Section II.D.

[261] *See, e.g.,* letters from BHP and SME 1.

[262] *See infra* Sections II.E.4., II.F.1., and II.G.3.

[263] *See, e.g.,* letters from Coeur, MMSA, and SME 1.

[264] 17 CFR 229.1302(a)(3) [Item 1302(a)(3) of Regulation S–K].

[265] 17 CFR 229.1302(b)(1)(i) [Item 1302(b)(1)(i) of Regulation S–K].

[266] 17 CFR 229.1302(b)(4)(i) [Item 1302(b)(4)(i) of Regulation S–K].

[267] *See, e.g.,* Canada's NI 43–101, *supra* note 123, at pt. 8.3; JORC Code, *supra* note 175, at pt. 9; SAMREC Committee, The South African Code for the Reporting of Exploration Results, Mineral Resources and Mineral Reserves: SAMREC Code, pt. 8 (2016) (''SAMREC Code''), *https://www.samcode.co.za/samcode-ssc/about-samcodes*; SME Guide, *supra* note 177, at pt. 8.

[268] *See, e.g.,* Securities Act Rule 436.

[269] 17 CFR 229.1302(b)(4)(iv) [Item 1302(b)(4)(iv) of Regulation S–K].

[270] As discussed below, current practice has permitted a third-party firm employing the individual mining expert to provide the written consent.

[271] *See* Item 1302(b)(4)(iv). A registrant may be required to furnish supplementally a written consent obtained in connection with an Exchange Act report at the request of Commission staff during a review of the Exchange Act filing. In addition, consistent with current practice, a registrant must file the qualified person's written consent as an exhibit to an Exchange Act report that is being incorporated by reference into a Securities Act registration statement.

[272] 17 CFR 229.1302(b)(1)(ii) [Item 1302(b)(1)(ii) of Regulation S–K].

[273] 17 CFR 229.1302(b)(4)(iii) [Item 1302(b)(4)(iii) of Regulation S–K].

[274] A registrant that receives a technical report summary signed by a third-party firm is nevertheless subject to its responsibilities regarding the qualified person under subpart 1300 of Regulation S–K. *See* Item 1302(a) of Regulation S–K. Therefore, if a registrant receives a technical report summary signed by a third-party firm, it should consult with the firm and confirm that each individual employee, member, or other person affiliated with the third-party firm who prepared the technical report summary meets the specified qualifications under the definition of qualified person. *See* 17 CFR 229.1300.

documentation for registrants that are subject to our final rules. The final rules should therefore mitigate concerns expressed by some commenters that potential Section 11 liability may reduce the willingness of some individuals to serve as qualified persons.[275]

If the qualified person is an employee of the registrant, however, he or she must provide the written consent on an individual basis.[276] This is consistent with current practice concerning other experts who are employees of the registrant. For example, when a legal opinion is provided by a registrant's in-house counsel, the individual counsel typically provides the written consent.

The final rules do not provide a complete exemption for qualified persons from expert liability under Section 11 of the Securities Act. While we acknowledge the concerns raised by commenters in this regard,[277] not imposing Section 11 liability would be a departure from the current requirement that imposes such liability on the named person that prepares the reserve estimates.[278] It also would be at odds with the express design of the statute, which specifically posits engineers or ''any person whose profession gives authority to a statement made by him'' as potentially subject to Section 11 liability, and would greatly diminish the protection afforded investors under the Securities Act.[279]

However, we recognize that in preparing complex reports of this nature, the qualified person will, when necessary, rely on information and input from others, including the registrant. For example, while the qualified person typically estimates capital and operating costs for the mining project,[280] he or she typically relies on the registrant to provide other economic information regarding macroeconomic trends, data, and assumptions, and interest rates, all of which are material to the economic analysis required to support the qualified person's reserve estimate.[281]

There are other required matters in the technical report summary that may fall outside the expertise of the qualified person, and regarding which the registrant may provide assistance. For example, the qualified person may require assistance from the registrant when considering the following aspects of some of the modifying factors:

- Marketing information and plans within the control of the registrant; [282]
- legal matters outside the expertise of the qualified person, such as statutory and regulatory interpretations affecting the mine plan; [283]
- environmental matters outside the expertise of the qualified person; [284]
- accommodations the registrant commits or plans to provide to local individuals or groups in connection with its mine plans; [285] and
- governmental factors outside the expertise of the qualified person.[286]

Because the qualified person may require assistance from the registrant on these matters, the final rules provide that the qualified person may indicate in the technical report summary that the qualified person has relied on information provided by the registrant in preparing its findings and conclusions regarding those modifying factors.[287] The final rules also provide that, in a separately captioned section of the technical report entitled ''Reliance on Information Provided by the Registrant,'' the qualified person must: Identify the categories of information provided by the registrant; identify the particular portions of the technical report summary that were prepared in reliance on information provided by the registrant pursuant to paragraph (f)(1) of this section, and the extent of that reliance; and disclose why the qualified person considers it reasonable to rely upon the registrant for any of the information specified according to this rule.[288] We believe that this disclosure will help investors and other interested persons understand the source and reliability of the information pertaining to those factors. We also note that this disclosure is consistent with the disclosure recommended when a qualified or competent person relies on information provided by the registrant under the CRIRSCO standards.[289]

Where the registrant has provided the information relied upon by the qualified person when addressing these modifying factors, we believe that it would be appropriate for the registrant, rather than the qualified person, to be subject to potential Section 11 liability pertaining to a discussion of these matters in the technical report summary or other part of the registration statement.[290] In these situations, requiring the qualified person to certify this information may not be necessary for investor protection given that the registrant remains liable for the contents of the registration statement and consequently will be incentivized to exercise due care in the preparation of this information. Accordingly, the final rules provide that any description in the technical report summary or other part of the registration statement of the procedures, findings, and conclusions reached about matters identified by the qualified person as having been based on information provided by the registrant pursuant to this section, shall not be considered a part of the registration statement prepared or certified by the qualified person within the meaning of Sections 7 and 11 of the Securities Act.[291] We have limited this accommodation to the above described aspects of certain modifying factors because we believe that these aspects are most likely to fall outside of the qualified person's expertise and for which he or she is most likely to require assistance from the registrant.

We also recognize that the qualified person may hire on his or her own third-party specialists who are not qualified persons. For this reason, the final rules provide that a qualified person may include in the technical

[275] *See supra* note 225 and accompanying text.

[276] *See* Item 1302(b)(4)(iii) of Regulation S–K.

[277] *See supra* note 221.

[278] *See* Guide 7, *supra* note 7, at ¶ (b)(5)(ii) (calling for the name of the person making the estimates and the nature of his relationship to the registrant).

[279] *See* 15 U.S.C. 77k(a)(4) (referring to ''every accountant, engineer, or appraiser, or any person whose profession gives authority to a statement made by him, who has with his consent been named as having prepared or certified any part of the registration statement, or as having prepared or certified any report or valuation which is used in connection with the registration statement, with respect to the statement in such registration statement, report, or valuation, which purports to have been prepared or certified by him'').

[280] *See* 17 CFR 229.601(b)(96)(iii)(B)(*18*) [Item 601(b)(96)(iii)(B)(*18*) of Regulation S–K].

[281] *See* 17 CFR 229.601(b)(96)(iii)(B)(*19*) [Item 601(b)(96)(iii)(B)(*19*) of Regulation S–K].

[282] *See* 17 CFR 229.601(b)(96)(iii)(B)(*16*) [Item 601(b)(96)(iii)(B)(*16*) of Regulation S–K].

[283] *See, e.g.,* 17 CFR 229.601(b)(96)(iii)(B)(*3*) and (*17*) [Items 601(b)(96)(iii)(B)(*3*) and 601(b)(96)(iii)(B)(*17*) of Regulation S–K].

[284] *See* Item 601(b)(96)(iii)(B)(*17*) of Regulation S–K.

[285] *See id.*

[286] *See, e.g.,* Items 601(b)(96)(iii)(B)(*3*) and (*17*) of Regulation S–K.

[287] 17 CFR 229.1302(f)(1) [Item 1302(f)(1) of Regulation S–K].

[288] 17 CFR 229.1302(f)(2) [Item 1302(f)(2) of Regulation S–K].

[289] *See, e.g.,* SME Guide For Reporting Exploration Information, Mineral Resources, And Mineral Reserves (2017) (2017 SME Guide), Appendix C.

[290] Some commenters indicated that liability for mining property disclosure in a Commission filing should fall primarily on the registrant. *See* letter from BHP (stating that because a public report is the responsibility of the company acting through its board of directors, which should act as an assurance element for investors, any potential liability imposed on a qualified person should not be broader than that of the company's principal executive and financial officers); *see also* letter from Cloud Peak.

[291] 17 CFR 229.1302(f)(3) [Item 1302(f)(3) of Regulation S–K]; *see also* 17 CFR 230.436(h) [Securities Act Rule 436(h)]. For the reasons discussed herein, we find that these provisions are necessary and appropriate in the public interest and consistent with the protection of investors. See 15 U.S.C. 77z–3.

report summary information and documentation provided by a third-party specialist who is not a qualified person, such as an attorney, appraiser, and economic or environmental consultant, upon which the qualified person has relied in preparing the technical report summary.[292] However, unlike the case with certain information provided by the registrant, the final rules provide that the qualified person may not disclaim responsibility for any information and documentation prepared by a third-party specialist upon which the qualified person has relied, or any part of the technical report summary based upon or related to that information and documentation.[293] Although many commenters suggested that we permit such disclaimers,[294] doing so could undermine the quality of the technical report summary, as neither the qualified person nor the third-party specialist would be accountable for material misstatements or omissions in such information and documentation. This is in contrast to the situation in which the registrant retains Section 11 liability for the information that it provides to the qualified person and which may be disclaimed by the qualified person. We understand the concern of commenters that, by prohibiting disclaimers of responsibility, a qualified person could become liable for material misstatements or omissions of fact in the technical report summary that are attributed to the third-party specialist upon whom the qualified person has relied.[295] However, under the final rules, the qualified person will be able to determine whether and under what terms it engages the third-party specialist, which should help the qualified person mitigate any attendant risks.

Although we are not providing a complete exemption from Section 11 liability for qualified persons or otherwise permitting them to disclaim information provided by a third-party specialist, there are limitations on the extent of liability the qualified person will incur, particularly when other qualified persons are involved in preparation of the technical report summary, as the final rules now expressly permit. Under Section 11, a qualified person, as an expert, would have an affirmative defense against liability for such misstatements or omissions made on the authority of another expert if the qualified person ''had no reasonable ground to believe and did not believe, at the time such part of the registration statement became effective, that the statements therein were untrue or that there was an omission to state a material fact required to be stated therein or necessary to make the statements therein not misleading, or that such part of the registration statement did not fairly represent the statement of the expert or was not a fair copy of or extract from the report or valuation of the expert.'' [296] In addition, the written consent requirement, which requires a qualified person to provide a consent only regarding the section or sections of the technical report summary prepared by that person, would further serve to limit the qualified person's liability under Section 11 for material misstatements or omissions made by other contributing qualified persons.

The final rules provide that a registrant is not required to file a written consent of any third-party specialist upon which a qualified person has relied.[297] This is consistent with other Commission rules, which do not require a registrant to provide the written consent of a secondary specialist upon which a consenting expert has relied.[298]

As proposed, the final rules require the registrant to state whether each qualified person who prepared the technical report summary is an employee of the registrant.[299] If the qualified person is not an employee of the registrant, the final rules require the registrant to name the qualified person's employer, disclose whether the qualified person or the qualified person's employer is an affiliate of the registrant or another entity that has an ownership, royalty or other interest in the property that is the subject of the technical report summary, and if an affiliate, describe the nature of the affiliation.[300] The terms ''affiliate'' and ''affiliated'' have the same meaning as in Securities Act Rule 405 or Exchange Act Rule 12b–2.[301]

This provision will provide investors with relevant information to assess the reliability of the disclosure and align the Commission's mining rules with most of the CRIRSCO-based codes, which impose a similar identification requirement.[302] Although several commenters also recommended that we require a registrant to state whether its qualified person satisfies the independence requirement of Canada's NI 43–101,[303] we do not believe an independence requirement is appropriate for the reasons stated in the Proposing Release.[304] First, we believe that our approach will help to limit the compliance burdens on registrants. Second, we believe that other aspects of the final rules, such as disclosure of the qualified person's credentials and his or her affiliated status with the registrant or another entity having an ownership or similar interest in the subject property, along with the application of potential expert liability in Securities Act filings, should provide adequate safeguards for investors. Finally, our approach is consistent with most of the CRIRSCO-based codes, which permit a qualified person to be an employee or other affiliate of the registrant as long as the registrant discloses its relationship with the qualified person.[305]

2. The Definition of ''Qualified Person''

i. Rule Proposal

We proposed to define a ''qualified person'' as a person who is a mineral industry professional with at least five years of relevant experience in the type of mineralization and type of deposit under consideration and in the specific type of activity that person is

[292] 17 CFR 229.1302(b)(6)(i) [Item 1302(b)(6)(i) of Regulation S–K].

[293] 17 CFR 229.1302(b)(6)(ii)] [Item 1302(b)(6)(ii) of Regulation S–K].

[294] *See supra* note 229 and accompanying text.

[295] *See supra* note 230 and accompanying text.

[296] *See* Section 11(b)(3) of the Securities Act [15 U.S.C. 77k(b)(3)]. One commenter stated that the Commission ''does not specify how a Qualified Person might establish a due diligence defense'' under Section 11 of the Securities Act. *See* letter from Chamber. We typically do not indicate how persons may establish defenses under the Securities Act, and we refrain from doing so here.

[297] 17 CFR 229.1302(b)(6)(iii) [Item 1302(b)(6)(iii) of Regulation S–K].

[298] *See* 17 CFR 230.436(f) [Securities Act Rule 436(f)] (''Where the opinion of one counsel relies upon the opinion of another counsel, the consent of the counsel whose prepared opinion is relied upon need not be furnished'').

[299] 17 CFR 229.1302(b)(5) [Item 1302(b)(5) of Regulation S–K].

[300] *See id.*

[301] *See id.*

[302] *See, e.g.,* JORC Code, *supra* note 175, at pt. 9; *see also* the Pan-European Reserves and Resources Reporting Committee, PERC Reporting Standard pt. 3.5 (2017) (''PERC Reporting Standard''), *http://www.vmine.net/PERC/documents/PERC%20REPORTING%20STANDARD%202017.pdf.* A limited exception to this is Canada, which requires a registrant to file a technical report summary prepared by an independent qualified person in certain circumstances: When becoming a first-time registrant; when supporting the first time reporting of mineral resources, mineral reserves, or a preliminary economic assessment of a material property; or when reporting a 100% or greater change in the total mineral resources or reserves on a material property, when compared to the last disclosure. *See* Canada's NI 43–101, *supra* note 123, at pt. 5.3 (Can.).

[303] *See supra* note 236 and accompanying text.

[304] *See* Proposing Release, *supra* note 5, at Section II.C.1. For similar reasons, we also do not believe it would be appropriate to require an independent review of a technical report prepared by a qualified person that is an employee or affiliate of the registrant.

[305] *See id.*

undertaking on behalf of the registrant. In addition, the proposed definition requires a qualified person to be an eligible member or licensee in good standing of a recognized professional organization at the time the technical report is prepared.[306]

Under the proposed rules, a ''recognized professional organization,'' would have to be either recognized within the mining industry as a reputable professional association,[307] or be a board authorized by U.S. federal, state or foreign statute to regulate professionals in the mining, geoscience, or related field. Furthermore, the organization must:

- Admit eligible members primarily on the basis of their academic qualifications and experience;
- Establish and require compliance with professional standards of competence and ethics;
- Require or encourage continuing professional development;
- Have and apply disciplinary powers, including the power to suspend or expel a member regardless of where the member practices or resides; and
- Provide a public list of members in good standing.[308]

As we explained in the Proposing Release, this proposed definition is similar to the definition of competent or qualified person under the CRIRSCO-based codes.[309] It differs, however, from those codes in at least one respect. Although CRIRSCO provides some guidance about what constitutes a ''recognized professional organization,'' [310] most of the CRIRSCO-based codes require that a competent or qualified person be a member of one or more ''approved'' organizations identified in an appendix to the code.[311] This list is updated periodically by the various code regulators. We did not propose a similar ''approved list'' approach because of our belief that a more principles-based approach provides flexibility.[312]

We also proposed detailed instructions to the definition of ''qualified person'' to assist registrants in applying the definition. The proposed instructions describe the specific types and amount of experience necessary for various types of mining activities and mineral deposits.[313]

ii. Comments on the Rule Proposal

Numerous commenters supported the Commission's proposal to require the qualified person to be an individual person.[314] Commenters noted that this requirement is consistent with the CRIRSCO standards and indicated that it helps ensure that the qualified person assumes the appropriate personal responsibility for his or her findings and conclusions.[315] One commenter, however, maintained that professional associations have no ability to sanction a company and most have no mechanism for corporate membership.[316] Another stated that if a firm can meet all the qualifications required under the qualified person definition and has quality controls recognized by professional boards or state regulatory agencies in place, the firm should be allowed to meet the qualified person definition.[317]

Many commenters also generally supported the Commission's proposed definition of ''qualified person'' as an individual person who is a mineral industry professional with at least five years of relevant experience in the type of mineralization and type of deposit under consideration and in the specific type of activity that person is undertaking on behalf of the registrant.[318] Those commenters noted that the proposed five year minimum experience requirement is consistent with the minimum experience requirement under the CRIRSCO-based codes.[319] Other commenters recommended that the qualified person have at least seven years of postgraduate experience in the mineral industry with at least three years in positions of responsibility (defined as requiring independent judgment).[320] Two commenters, however, stated that the provision requiring at least five years of relevant experience in the particular type of mineralization and deposit under consideration is too restrictive.[321]

Several commenters recommended adding an educational requirement to the definition (*e.g.,* the attainment of a bachelor's or equivalent degree in an area of geoscience, metallurgy, or mining engineering).[322] Two of those commenters stated that, alternatively, a university degree in civil or chemical engineering would qualify if the person also had the requisite post-graduate experience in the minerals industry.[323] In contrast, three commenters opposed an educational requirement because the recognized professional organizations include such a requirement in their membership criteria.[324]

A majority of commenters addressing the issue generally supported the Commission's proposal to require a qualified person to be an eligible member or licensee in good standing of a recognized professional organization at the time the technical report is

[306] *See* Proposing Release, *supra* note 5, at Section II.C.2.

[307] The ''reputable professional association'' standard is also used in Canada's NI 43–101. *See* the definition of ''professional association'' in Canada's NI 43–101, *supra* note 123, at pt. 1.1.

[308] *See* Proposing Release, *supra* note 5, at Section II.C.2.

[309] The CRIRSCO standards require that a competent or qualified person have at least five years of relevant experience ''in the style of mineralization and type of deposit under consideration and in the activity which that person is undertaking'' and be a member or licensee in good standing of a recognized professional organization. *See* CRIRSCO International Reporting Template, *supra* note 20, at pt. 11; JORC Code, *supra* note 175, at pt. 11; *see also* SAMREC Code, pt. 10 (2016); PERC Reporting Standard, *supra* note 302, at pt. 3.1. The recognized professional organizations under CRIRSCO standards have and apply disciplinary powers to members and most require professional development to maintain such membership.

[310] *See* CRIRSCO International Reporting Template, *supra* note 20, at cl. 11 (stating that the organization of which a competent person is a member must have ''enforceable disciplinary processes including the powers to suspend or expel a member'').

[311] *See, e.g.,* JORC Code, *supra* note 175, at pt. 11; SAMREC Code, *supra* note 267, at pt. 9; SME Guide, *supra* note 177, at pt. 9; and PERC Reporting Standard, *supra* note 302, at pt. 3.1.

[312] *See* Proposing Release, *supra* note 5, at Section II.C.1.

[313] *See id.*

[314] *See* letters from Amec, AngloGold, CIM, CSP[2], Earthworks, Eggleston, Golder, Midas, MMSA, Rio Tinto, SAMCODES 2, SME 1, SRK 1, Ur-Energy, and Vale.

[315] *See, e.g.,* letters from AngloGold, Golder, Midas, and SME 1.

[316] *See* letter from Rio Tinto.

[317] *See* letter from Alliance.

[318] *See* letters from AIPG, AngloGold, AusIMM, BHP, CBRR, CIM, Coeur, Eggleston, FCX, Golder, JORC, Midas, MMSA, Rio Tinto, SAMCODES 1, SME 1, SRK 1, Vale, and Willis.

[319] *See* letters from CBRR, Eggleston, Midas, SAMCODES 1, and SRK 1.

[320] *See* letters from AIPG, Coeur, and SME 1. *See also* letter from MMSA (recommending requiring a minimum of 10 years of practical experience in geosciences including at least five years in positions of responsibility).

[321] *See* letters from Alliance and Amec. Amec preferred the definition of qualified person under NI 43–101, which requires a qualified person to have ''at least five years of experience in mineral exploration, mine development or operation or mineral project assessment, or any combination of these, that is relevant to his or her professional degree or area of practice'' as well as ''experience relevant to the subject matter of the mineral project and the technical report.''

[322] *See* letters from AIPG, Alliance, Amec, CIM, Coeur, CRIRSCO, Graves, MMSA, Rio Tinto, SME 1, and Willis.

[323] *See* letters from Coeur and Willis. Another commenter stated that a qualified person should simply hold a university degree or equivalent accreditation relevant to his or her area of practice. Such a flexible definition would allow a non-geoscientist, such as a biochemist or botanist, to be accepted as a qualified person to undertake the specialized baseline studies supporting permit applications, particularly environmental permits. *See* letter from Amec.

[324] *See* letters from AusIMM, JORC, and SAMCODES 1. Another commenter, SRK 1, agreed that most professional organizations impose a minimum education requirement but suggested that the Commission could also provide for such a requirement in the definition of qualified person.

prepared.[325] Several commenters generally agreed with the Commission's proposed criteria defining a ''recognized professional organization.'' [326] One commenter suggested adding a requirement that the organization have ''one or more membership categories requiring attainment of a position of responsibility that requires the exercise of independent judgment and a favorable confidential peer evaluation of the individual's character, professional judgment, experience, and ethical fitness.'' [327]

Some commenters stated that the Commission should define a recognized professional organization as encouraging but not requiring continuing professional development.[328] According to these commenters, a strict continuing professional development requirement is not necessary, particularly if the member is a full-time practitioner.[329] Other commenters stressed the importance of requiring the recognized professional organization to have the jurisdiction to discipline the qualified person, no matter where the person resides or practices or where the deposit is located.[330]

Most commenters that addressed the ''qualified person'' definition stated that the Commission should adopt and publish an approved list of ''recognized professional organizations'' similar to the approach under the CRIRSCO-based codes.[331] Commenters recommended that the Commission reference the list of approved organizations set forth in an Appendix to Canada's NI 43–101 CP (Companion Policy),[332] the list of approved organizations maintained by the SME,[333] or the approved organization list published by the Australian Securities Exchange (''ASX'').[334] According to commenters, referencing such lists would not only help achieve a level of consistency with the CRIRSCO-based codes regarding which groups constitute recognized professional organizations, it also would lessen the Commission's administrative burden of having to verify and update the list of approved organizations.[335]

Two commenters, however, supported the Commission's proposed approach requiring an organization to meet specified factors before it could qualify as a recognized professional organization rather than using a list of approved organizations,[336] preferring it as more flexible [337] and as ''a better and more practical alternative.'' [338]

iii. Final Rules

We are adopting the definition of qualified person, as proposed.[339] We are also adopting, as proposed, the specific criteria that qualify an organization to be a recognized professional organization.[340]

Adoption of the qualified person definition will align the Commission's rules with the CRIRSCO standards and, as commenters noted, help ensure that the qualified person assumes the appropriate personal responsibility for his or her findings and conclusions.[341] Although some commenters recommended adding to the requirement,[342] adoption of the ''at least five years of relevant experience'' requirement will provide further consistency with the CRIRSCO-based codes.[343]

Similar to proposed instructions, we are adopting a definition of the term ''relevant experience'' for purposes of determining whether a party is a qualified person. This definition is substantially similar to guidance provided under the CRIRSCO-based codes. For that reason, most commenters that addressed the issue found the proposed instructions to be adequate.[344] As one commenter explained, the proposed instructions ''are well aligned to established CRIRSCO template guidance.'' [345]

This definition first provides that the term ''relevant experience'' means, for purposes of determining whether a party is a qualified person, that the party has experience in the specific type of activity that the person is undertaking on behalf of the registrant. For example, if the qualified person is preparing or supervising the preparation of a technical report concerning exploration results, the relevant experience must be in exploration. If the qualified person is estimating, or supervising the estimation of mineral resources, the relevant experience must be in the estimation, assessment, and evaluation of mineral resources and associated technical and economic factors likely to influence the prospect of economic extraction. Similarly, if the qualified person is estimating, or supervising the estimation of, mineral reserves, the relevant experience must be in engineering and other disciplines required for the estimation, assessment, evaluation and economic extraction of mineral reserves.[346]

This definition next provides that a qualified person must also have relevant experience in evaluating the specific type of mineral deposit under consideration (*e.g.,* coal, metal, base metal, industrial mineral, or mineral brine). What constitutes relevant experience in this regard is a facts and circumstances determination. For example, experience in a high-nugget, vein-type mineralization such as tin or tungsten would likely be relevant experience for estimating mineral resources for vein-gold mineralization whereas experience in a low grade disseminated gold deposit likely would not be relevant.[347]

This definition also explains that it is not always necessary for a person to have five years' experience in each and every type of deposit in order to be an

[325] *See* letters from AIPG, Amec, AngloGold, AusIMM, BHP, CBRR, CIM, Coeur, CRIRSCO, Eggleston, Golder, JORC, Midas, MMSA, Mousset-Jones, NSPE, Rio Tinto, SAMCODES 1, SME 1, SRK 1, Vale, and Willis.

[326] *See, e.g.,* letters from AIPG, AngloGold, CBRR, CIM, Rio Tinto, and SRK 1.

[327] Letter from SME 1.

[328] *See* letters from Amec, CBRR, Midas, Rio Tinto, SRK 1, and Vale.

[329] *See, e.g.,* letters from Midas and SRK 1. MMSA, however, indicated that continuing professional development should be compulsory.

[330] *See* letters from Amec, Coeur, MMSA, and Willis.

[331] *See* letters from AIPG, Amec, AusIMM, BHP, CBRR, CIM, CRIRSCO, Eggleston, Graves, JORC, Midas, SAMCODES 1, SME 1, SRK 1, and Vale.

[332] *See* letters from AIPG, CIM, Graves, SME 1, SRK 1, and Vale.

[333] *See* letters from AusIMM, CBRR, Graves, JORC, and SME 1.

[334] *See* letter from BHP.

[335] *See, e.g.,* letters from AIPG, Graves, and SME 1.

[336] *See, e.g.,* letters from Alliance and Golder.

[337] *See* letter from Alliance.

[338] *See* letter from Golder.

[339] *See* 17 CFR 229.1300.

[340] *See id.* For an organization to be a recognized professional organization, it must: Be either an organization recognized within the mining industry as a reputable professional association, or a board authorized by U.S. federal, state or foreign statute to regulate professionals in the mining, geoscience or related field; admit eligible members primarily on the basis of their academic qualifications and experience; establish and require compliance with professional standards of competence and ethics; require or encourage continuing professional development; have and apply disciplinary powers, including the power to suspend or expel a member regardless of where the member practices or resides; and provide a public list of members in good standing. With respect to the first requirement, one commenter opposed allowing a state board to authorize a recognized professional organization. *See* letter from Mousset-Jones. We continue to believe that this criterion is appropriate because, as one commenter noted, in the United States, it is typically a board authorized by state statute that regulates professionals in the mining, geoscience, engineering, geology or related field. *See* letter from NSPE.

[341] *See supra* note 315 and accompanying text.

[342] *See* letters from AIPG, Coeur, MMSA, and SME 1.

[343] *See, e.g.,* letters from CBRR, Eggleston, Midas, SAMCODES 1, and SRK 1.

[344] *See* letters from AngloGold, CBRR, Eggleston, Midas, Rio Tinto, and SRK 1.

[345] Letter from Rio Tinto.

[346] *See* the definition of ''relevant experience'' in 17 CFR 229.1300.

[347] *See* paragraph (1) of the definition of ''relevant experience'' in 17 CFR 229.1300.

eligible qualified person if that person has relevant experience in similar deposit types. For example, a person with 20 years' experience in estimating mineral resources for a variety of metalliferous hard-rock deposit types may not require as much as five years of specific experience in porphyry-copper deposits to act as a qualified person. Relevant experience in the other deposit types could count towards the experience in relation to porphyry-copper deposits.[348]

This definition further provides that, in addition to experience in the specific type of mineralization, if the qualified person is engaged in evaluating exploration results or preparing mineral resource estimates, the qualified person must have sufficient experience with the sampling and analytical techniques, as well as extraction and processing techniques, relevant to the mineral deposit under consideration. ''Sufficient experience'' in this context means that level of experience necessary to be able to identify, with substantial confidence, problems that could affect the reliability of data and issues associated with processing.[349]

Finally, this definition provides that, for a qualified person applying the modifying factors to convert mineral resources to mineral reserves, he or she must have both sufficient knowledge and experience in the application of these factors to the mineral deposit under consideration, as well as experience with the geology, geostatistics, mining, extraction, and processing that is applicable to the type of mineral and mining under consideration.[350]

These detailed provisions regarding the meaning of ''relevant experience'' will help assure that the qualified person has the appropriate level of experience for both the type of activity and type of mineral deposit involved to make accurate assessments about the registrant's exploration results, mineral resources, and mineral reserves. At the same time, we believe that the adopted definition of ''qualified person,'' taken together with these related provisions, will provide sufficient flexibility in terms of the required level of experience and professional standing. Moreover, because the CRIRSCO-based codes provide similar guidance for the type of experience required for a competent or qualified person, the adopted definition of qualified person and related provisions should not significantly alter existing disclosure practices for registrants subject to those codes.[351]

The final rules do not require a qualified person to have attained a specific minimum education level because, as several commenters noted, the recognized professional organizations typically address such a requirement in their membership criteria.[352] Although one commenter suggested adding other criteria to the definition of ''recognized professional organization,'' [353] we believe our less prescriptive approach, which establishes the minimum criteria that an organization must meet to be considered a recognized professional association, is the better approach. Consistent with the proposed rules, the final rules include requiring or encouraging continuing professional development as one of the defining criteria of a recognized professional organization. Like most commenters that addressed the issue,[354] we agree that it is better to leave the treatment of continuing professional development to the professional organizations who are more knowledgeable about whether industry developments require additional training of their members.[355]

We are not publishing an approved list of ''recognized professional organizations.'' We continue to believe that our principles-based approach, which some commenters preferred because of its flexibility,[356] provides assurance that the qualified person has the appropriate level of professional expertise to support the disclosure of exploration results, mineral resources, or mineral reserves without unduly restricting the pool of eligible qualified persons. Although we acknowledge that the ''approved organization'' approach may be initially easier to apply, it could also become outdated as circumstances change, which could adversely affect the quality of disclosure.[357]

D. Treatment of Exploration Results

1. Rule Proposal

Neither Guide 7 nor Item 102 addresses the disclosure of exploration results in Commission filings.[358] In contrast, the CRIRSCO-based codes permit the disclosure of exploration results, which are defined as data and information generated by mineral exploration programs that might be of use to investors but which do not form part of a disclosure of mineral resources or mineral reserves.[359]

We proposed to require that a registrant disclose its exploration activity and its material exploration results for each of its material properties for its most recently completed fiscal year.[360] Similar to the CRIRSCO-based codes, we proposed to define exploration results as data and information generated by mineral exploration programs (*i.e.,* programs consisting of sampling, drilling, trenching, analytical testing, assaying, and other similar activities undertaken to locate, investigate, define or delineate a mineral prospect or mineral deposit) that are not part of a disclosure of mineral resources or reserves. We further proposed an instruction explaining that when determining whether exploration results are material, a registrant should consider their importance in assessing the value of a material property or in deciding whether to develop the property.[361]

In addition, we proposed to prohibit the use of exploration results, by themselves, to derive estimates of tonnage, grade, and production rates, or in an assessment of economic viability because of the level of risk associated with exploration results.[362] As we explained, exploration results, by themselves, are inherently speculative in that they do not include an assessment of geologic and grade or quality continuity and overall geologic uncertainty. Therefore, we indicated that exploration results are insufficient to support disclosure of estimates of tonnage, grade, or other quantitative

[348] *See* Note 1 to paragraph (1) of the definition of ''relevant experience'' in 17 CFR 229.1300.

[349] *See* paragraph (2) of the definition of ''relevant experience'' in 17 CFR 229.1300.

[350] *See* paragraph (3) of the definition of ''relevant experience'' in 17 CFR 229.1300.

[351] *See, e.g.,* CIM Standing Committee on Reserve Definitions, CIM Definition Standards—For Mineral Resources and Mineral Reserves 2 (2014) (''CIM Definition Standards''), *https://mrmr.cim.org/media/1016/cim_definition_standards_20142.pdf;* JORC Code, *supra* note 175, at pt. 11; SAMREC Code, *supra* note 267, at pt. 10; and SME Guide, *supra* note 177, at pt. 9.

[352] *See supra* note 324 and accompanying text.

[353] *See* letter from SME 1.

[354] *See* letters from Amec, CBRR, Midas, Rio Tinto, SRK 1, and Vale.

[355] *See, e.g.,* letter from Rio Tinto.

[356] *See* letters from Alliance and Golder.

[357] We also do not believe it would be appropriate to reference a specific approved list of recognized professional organizations adopted under one of the CRIRSCO-based codes, as suggested by some commenters. *See supra* notes 332–334. This would effectively bind the Commission's rules to a current and future standard adopted by a third-party entity over which the Commission would have little to no control or influence.

[358] Accordingly, the staff does not currently request disclosure of exploration results. If a registrant voluntarily provides exploration results, the staff will review, and if appropriate, issue comments on, such disclosure.

[359] *See, e.g.,* JORC Code, *supra* note 175, at pts. 18–19; SAMREC Code, *supra* note 267, at pt. 20; PERC Reporting Standard, *supra* note 302, at pt. 6; and SME Guide, *supra* note 177, at pts. 33–34.

[360] *See* Proposing Release, *supra* note 5, at Section II.D.

[361] *See id.*

[362] *See id.*

estimates.[363] As proposed, tonnage and grade estimates would only be part of mineral resource and reserve estimates, which must include an assessment of geologic and grade or quality continuity and overall geologic uncertainty.[364]

2. Comments on the Rule Proposal

Several commenters generally supported requiring the disclosure of material exploration results on material properties.[365] One commenter stated that exploration results on material properties are the basis for valuing the property and, hence, should be disclosed in a technical report specific to the property in question.[366] Another commenter stated that exploration results are ''important information for investors, particularly in respect of exploration or development companies, where exploration results might be all or a significant portion of the information on the company's properties.'' [367] A third commenter stated that disclosure of material exploration results for material properties should be required for exploration stage registrants, but not for large production stage registrants, because the same level of exploration results might not be deemed material.[368] A fourth commenter supported the required disclosure of material exploration results for material properties as long as the exploration information required to be disclosed is consistent with the CRIRSCO definitions.[369]

Many other commenters opposed requiring the disclosure of material exploration results on a registrant's material properties.[370] Most of those commenters expressed concern that requiring the disclosure of material exploration results could compel the disclosure of commercially sensitive information and the potential violation of confidentiality agreements with joint venture partners and other mining operators (*e.g.,* on adjacent properties).[371] Several of those commenters asserted that compulsory disclosure of exploration results would be inconsistent with the CRIRSCO-based codes, which permit or encourage but do not require such disclosure.[372] One of the commenters stated that, under the CRIRSCO standards, disclosure of exploration results is voluntary until such information becomes material to investors.[373] Because the rule proposal would require the disclosure of material exploration results on a material property on a yearly basis, this commenter expressed concern that a registrant might be compelled to disclose its exploration results in most instances even before those exploration results would be considered material to investors.[374] Other commenters expressed concern that investors would misconstrue the significance of exploration results.[375] For example, one commenter stated that the disclosure of material exploration results ''is very likely to mislead investors into thinking that a property is more economically viable than it may actually be given the low level of certainty of exploration results.'' [376]

Because of the above concerns, most of the commenters that addressed the issue recommended that the Commission permit, but not require, the disclosure of material exploration results on material properties.[377] In this regard, some commenters distinguished between exploration or development stage issuers, on the one hand, and production stage issuers, on the other.[378] These commenters stated that because exploration results may be the only available information for certain exploration or development stage issuers, the disclosure of exploration results would be material for investors in these types of issuers. For production stage issuers, however, the disclosure of exploration results would generally result in immaterial information that would be costly and burdensome to prepare.

A number of commenters also opposed the Commission's proposed prohibition of the use of exploration results to derive estimates of tonnage and grade because, under the CRIRSCO standards, qualified persons and registrants are allowed to disclose exploration targets, which are quantitative estimates of the ranges of tonnage and grade of a mineral deposit, which is the target of exploration.[379] These commenters recommended that the Commission permit the disclosure of exploration targets, as defined under the CRIRSCO standards,[380] which would allow a registrant to provide a range of estimates of tonnage and grade, while also requiring the registrant to provide ''cautionary language of equal prominence that the potential quantity and grade is conceptual in nature, that there has been insufficient exploration to define the mineralization as a mineral resource and that it is uncertain if further exploration will result in the target delineated as a mineral resource.'' [381]

Commenters that addressed the proposed definition of exploration results had varied opinions. One commenter supported without elaboration the Commission's proposed definition of exploration results.[382] Another commenter generally agreed with the proposed definition of exploration results, indicating that they ''are correctly defined as not forming part of a mineral resource or mineral reserve,'' but suggested adding to the definition information generated by ''geophysical and geochemical surveys, remote sensing information, bulk sampling, test mining (not for commercial purposes).'' [383]

A third commenter, however, opposed the proposed definition because it does not include all techniques typically employed by exploration geologists and therefore

[363] *See id.*

[364] *See id.* Similar restrictions on the use of exploration results exist under the CRIRSCO standards. *See, e.g.,* CRIRSCO International Reporting Template, *supra* note 20, at cl. 18, which states that ''[i]t should be made clear in public reports that contain Mineral Exploration Results that it is inappropriate to use such information to derive estimates of tonnage and grade.''

[365] *See* letters from BHP, Eggleston, Midas, Rio Tinto, and SAMCODES 2.

[366] *See* letter from Eggleston.

[367] Letter from Midas.

[368] *See* letter from Rio Tinto; *see also* letter from BHP (agreeing with the proposed material exploration results disclosure requirement because it is a common practice promoted in other jurisdictions for small to medium-sized listed companies to disclose material exploration results).

[369] *See* letter from SAMCODES 2.

[370] *See* letters from Alliance, AngloGold, Cloud Peak, CIM, Cleary & Gottlieb, Coeur, Davis Polk, FCX, Gold Resource, Newmont, NMA 1, Royal Gold, SME 1, SRK 1, Vale, and Willis.

[371] *See* letters from Alliance, Cleary & Gottlieb, Cloud Peak, CIM, Davis Polk, FCX, Gold Resource, Newmont, NMA 1, Royal Gold, SME 1, and Vale.

[372] *See, e.g.,* letters from CIM, Cleary & Gottlieb, Gold Resource, SME 1, and Vale.

[373] *See* letter from SME 1.

[374] *See id.*

[375] *See* letters from Alliance, AngloGold, and SRK 1.

[376] Letter from Alliance.

[377] *See* letters from AngloGold, Cleary & Gottlieb, Cloud Peak, CIM, Coeur, Davis Polk, FCX, Gold Resource, Newmont, Royal Gold, SME 1, SRK 1, Vale, and Willis.

[378] *See* letters from Amec, Cleary & Gottlieb, and Vale. Another commenter agreed that exploration results ''may be all or a significant portion of the available information regarding the properties of an exploration or development-stage mining company,'' but nevertheless recommended the voluntary disclosure of exploration activity and exploration results, including by exploration or development stage companies. Letter from FCX.

[379] Letter from CIM. *See also* letters from Amec, AngloGold, BHP, CBRR, Coeur, CRIRSCO, JORC, SAMCODES 1, SME 1, SRK 1, Vale, and Willis.

[380] Under the CRIRSCO standards, an exploration target is a statement or estimate of the exploration potential of a mineral deposit in a defined geological setting where the statement or estimate, quoted as a range of tons and a range of grade or quality, relates to mineralization for which there has been insufficient exploration to estimate mineral resources. CRIRSCO International Reporting Template, *supra* note 20, at cl. 17.

[381] *Id.; see also* letter from CIM.

[382] *See* letter from AngloGold.

[383] Letter from Midas.

recommended adding to the definition ''[a]ll industry standard activities of geologic exploration.'' [384] A fourth commenter objected to the part of the proposed definition that excludes exploration results from forming part of a declaration of mineral resources or mineral reserves because exploration results are the basis of the mineral resource and mineral reserve estimates.[385]

3. Final Rules

We continue to believe that the disclosure of exploration results, to the extent that they are material, will provide investors with a more comprehensive picture of a registrant's mining operations and help them make more informed investment decisions. However, we also recognize the concern of commenters that, because we proposed to require annual disclosure of material exploration results on a material property, a registrant might misinterpret the requirement as compelling it to disclose its exploration results in most instances, even before those exploration results would be considered material to investors.[386] Such a result would conflict with the approach under the CRIRSCO standards, pursuant to which ''the release of exploration results [is] optional, and an issuer is only required to provide full disclosure of exploration results when considered appropriate and material to the investor.'' [387]

The approach we are adopting regarding the disclosure of exploration results is substantially similar to the CRIRSCO approach. To make this clear, the final rules provide that if the registrant is disclosing exploration activity or exploration results for its most recently completed fiscal year, it must then provide the specified disclosure, as discussed below.[388] This approach recognizes that the disclosure of exploration activity and exploration results is voluntary and largely within the discretion of the registrant until such activity and the concomitant results become material for investors. Once the exploration activity and related results become material, under the final rules they must be disclosed.[389] When determining whether exploration results and related exploration activity are material, the registrant should consider all relevant facts and circumstances, such as the importance of the exploration results in assessing the value of a material property or in deciding whether to develop the property, and the particular stage of the property.[390]

A company engaged in mining activities frequently uses exploration results, prior to a determination of mineral resources, to assess the economic potential of its property as part of its decision to develop a property. In addition, a company uses exploration results to determine whether mineral resources exist and to estimate the mineral resources. To the extent that mineral resources (and mineral reserves estimated from them) on a particular property are material, depending on the facts and circumstances, the exploration results that led to the estimation of those mineral resources could also be material.

The registrant will be required to make a good faith determination regarding the materiality of its exploration activity and exploration results at the end of each completed fiscal year. In this regard, we are providing some guidance for a registrant's materiality determination regarding exploration results and related exploration activity.[391] Because materiality is a facts-and-circumstances determination, what is material for one registrant may not be material for another. For example, as commenters have noted,[392] investors may be more likely to find material the exploration activity and exploration results of an exploration-stage issuer since such information may comprise most, if not all, of the information regarding mining assets available for that registrant. In contrast, investors may be less likely to find material the exploration activity and exploration results of a production-stage issuer where the primary activity and investor interest are regarding the reserves being extracted and their economic value.

As previously noted, one factor to be considered when determining the materiality of a registrant's exploration activity and concomitant exploration results is the importance of that information in assessing the value of a material property or in deciding whether to develop the property.[393] For example, exploration results that have significantly affected the registrant's analysis or estimates of the life of a material mining project would likely be considered material, thus triggering a disclosure obligation. In contrast, exploration results in the early stages of exploration activity may not rise to the level of material information if they do not affect the registrant's decision to develop the property. Similarly, an exploration result may not be material if the registrant has determined that other features of the property make the development of the property unlikely.

Requiring the disclosure of exploration results only when they have become material to investors will more closely align our disclosure rules with the CRIRSCO standards,[394] which should help limit the final rules' compliance costs. Furthermore, although some commenters expressed concern that investors would misconstrue the significance of exploration results, we believe this risk will be mitigated by precluding the use of exploration results alone, without due consideration of geologic uncertainty and economic prospects, to serve as a basis for disclosure of tonnage, grade, and production rates, or in an assessment of economic viability.

In a change from the proposed rules, if a registrant discloses exploration results, the final rules do not require the registrant to file a technical report summary to support such disclosure, even though the disclosure itself must still be based on information and supporting documentation by a qualified person.[395] This elective treatment of technical report summaries for exploration results should also help limit compliance costs for the registrant and could reduce the potential for investor confusion regarding the significance of the disclosed results, about which some commenters expressed concern.[396] Furthermore, making the technical report summary optional for exploration results should also mitigate the concern of some

[384] Letter from SRK 1.

[385] *See* letter from Amec. Because ''exploration results do not become something other than exploration results once a [m]ineral [r]esource or [m]ineral [r]eserve is declared,'' the commenter preferred the definition of ''exploration information'' under Canada's NI 43–101. That definition provides that exploration information ''means geological, geophysical, geochemical, sampling, drilling, trenching, analytical testing, assaying, mineralogical, metallurgical, and other similar information concerning a particular property that is derived from activities undertaken to locate, investigate, define, or delineate a mineral prospect or mineral deposit.'' Canada's NI 43–101, *supra* note 123, at pt. 1.1.

[386] *See, e.g.,* letter from SME 1.

[387] *Id.*

[388] 17 CFR 229.1304(g)(1) and (2) [Item 1304(g)(1) and (2) of Regulation S–K].

[389] 17 CFR 229.1304(g)(4) [Item 1304(g)(4) of Regulation S–K], which states that a registrant must disclose exploration results and related exploration activity for a material property under this section if they are material to investors.

[390] *See id.*

[391] *See id.*

[392] *See supra* note 378 and accompanying text.

[393] *See* Proposing Release, *supra* note 5, at Section II.D.

[394] *See* letter from SME 1.

[395] *See* Item 1302(b)(1) of Regulation S–K.

[396] *See supra* note 375 and accompanying text.

commenters [397] who believed that requiring the disclosure of exploration results would result in the disclosure of proprietary and commercially sensitive information. This is because such information is more likely to be found in the technical report summary's detailed disclosure requirements for exploration activity and exploration results (compared to the disclosure required in the narrative part of the Commission filing).

We are adopting the definition of exploration results, as proposed.[398] Although some commenters objected to the definition because it does not include all activities related to exploration programs,[399] the specific activities mentioned are intended to be illustrative of exploration activities and are not meant to exclude other activities. In this regard, we note that the definition includes ''other similar activities undertaken to locate, investigate, define or delineate a mineral prospect or mineral deposit.'' [400] Moreover, the specific activities mentioned in the definition are substantially similar to the activities mentioned in the definition of ''exploration information'' under Canada's NI 43–101.[401]

While some commenters objected to the definition of exploration results as referencing data and information ''that are not part of a disclosure of mineral resources or reserves,'' [402] this part of the definition is consistent with the definition of exploration results under the CRIRSCO-based codes.[403] This language is not meant to deny the connection between, and continuum of, exploration results, mineral resources and mineral reserves, which a successful mining project will reveal. Rather, it is meant to underscore the geologic and economic uncertainties underlying exploration results, compared to the levels of certainty required to arrive at estimates of mineral resources and reserves, which only additional work by the qualified person can resolve.

Because of the low level of certainty underlying exploration results, we are adopting the proposed restriction that a registrant must not use exploration results alone to derive estimates of tonnage, grade, and production rates, or in an assessment of economic viability. This restriction is generally consistent with the CRIRSCO standards [404] although, as some commenters stated,[405] those standards permit the disclosure of exploration targets, which are expressed as a range of tonnages and grades. Noting that the Proposing Release did not discuss exploration targets, these commenters requested that we specifically include exploration targets as a permitted item of disclosure under the Commission's rules.[406]

We recognize that, as commenters indicated, it is common practice for mining companies to discuss their exploration activities in terms of an exploration target.[407] As one commenter noted, placing exploration results within the context of an exploration target helps determine the materiality of those results.[408] Moreover, as several commenters indicated, exploration targets are typically discussed in a technical report summary, particularly where the targets are in proximity to mineral resources and reserves and, thus, may be material to investors.[409]

Therefore, in response to commenters, the final rules provide that a registrant may disclose an exploration target for one or more of its properties that is based upon and accurately reflects information and supporting documentation of a qualified person.[410] This change will also more closely align our rules with industry practice and global standards. The final rules also provide that a qualified person may include a discussion of an exploration target in a technical report summary.[411] Further, similar to the definition under the CRIRSCO standards,[412] the final rules define an exploration target to mean a statement or estimate of the exploration potential of a mineral deposit in a defined geological setting where the statement or estimate, quoted as a range of tonnage and a range of grade (or quality), relates to mineralization for which there has been insufficient exploration to estimate a mineral resource.[413]

However, we also recognize that the disclosure of exploration targets poses the potential for investor confusion in that an investor might misconstrue an exploration target as an estimate of a mineral resource or mineral reserve. Therefore, the final rules provide that any substantive disclosure of an exploration target must be provided in a separate section of the Commission filing or technical report summary that is clearly captioned as a discussion of an exploration target. That section must include a clear and prominent statement that:

- The ranges of potential tonnage and grade (or quality) of the exploration target are conceptual in nature;
- There has been insufficient exploration of the relevant property or properties to estimate a mineral resource;
- It is uncertain if further exploration will result in the estimation of a mineral resource; and
- The exploration target therefore does not represent, and should not be construed to be, an estimate of a mineral resource or mineral reserve.[414]

This requirement is similar to the cautionary language required for the disclosure of an exploration target under the CRIRSCO-based codes.[415] Several commenters recommended that we require such disclosure of cautionary statements in conjunction with the disclosure of exploration targets.[416]

The final rules further require that any such disclosure of an exploration target must also include:

- A detailed explanation of the basis for the exploration target, such as the conceptual geological model used to develop the target;
- An explanation of the process used to determine the ranges of tonnage and grade, which must be expressed as approximations;
- A statement clarifying whether the exploration target is based on actual exploration results or on one or more proposed exploration programs, which should include a description of the level of exploration activity already completed, the proposed exploration activities designed to test the validity of the exploration target, and the timeframe in which those activities are expected to be completed; and
- A statement that the ranges of tonnage and grade (or quality) of the exploration

[397] *See* letters of Alliance and FCX.

[398] See the definition of ''exploration results'' in 17 CFR 229.1300.

[399] *See* letters from Amec and SRK 1.

[400] *See* 17 CFR 229.1300.

[401] *See supra* note 385 and accompanying text.

[402] *See* letters from Amec and Eggleston.

[403] *See, e.g.,* JORC Code, *supra* note 175, at pt. 18; SAMREC Code, *supra* note 267, at pt. 20; PERC Reporting Standard, *supra* note 302, at pt. 6; and SME Guide, *supra* note 177, at pt. 33.

[404] *See, e.g.,* CRIRSCO International Reporting Template, *supra* note 20, at cl. 18; and PERC Reporting Standard, *supra* note 302, at pt. 6.

[405] *See supra* note 379 and accompanying text.

[406] *See, e.g.,* letters from CBRR, CIM, CRIRSCO, and SME 1.

[407] *See, e.g.,* letter from SME 1.

[408] *See* letter from AngloGold.

[409] *See, e.g.,* letters from CIM, Coeur, SME 1, Vale, and Willis.

[410] 17 CFR 229.1302(c)(1) [Item 1302(c)(1) of Regulation S–K]. *See also* 17 CFR 229.1304(g)(5) [Item 1304(g)(5) of Regulation S–K] (providing that a registrant may disclose an exploration target when discussing exploration results or exploration activity related to a material property as long as the disclosure is in compliance with the requirements of § 229.1302(c)).

[411] *See* 17 CFR 229.1302(c)(1).

[412] *See* CRIRSCO International Reporting Template, *supra* note 20, at cl. 17; *see also* JORC Code, *supra* note 175, at pt. 17; and SAMREC Code, *supra* note 270, at pt. 21.

[413] *See* the definition of ''exploration target'' in 17 CFR 229.1300.

[414] 17 CFR 229.1302(c)(2) [Item 1302(c)(2) of Regulation S–K].

[415] *See, e.g.,* JORC Code, *supra* note 175, at pt. 17; and SAMREC Code, *supra* note 270, at pt. 22.

[416] *See, e.g.,* letters from CBRR, CIM, and SME 1.

target could change as the proposed exploration activities are completed.[417]

These disclosure requirements will help investors understand the conceptual basis and limitations of an exploration target, which should help mitigate the potential for investor confusion about the target. These disclosure requirements are also similar to the requirements for exploration target disclosure under the CRIRSCO-based codes.[418] Several commenters recommended that we require similar disclosure of explanatory statements in conjunction with the disclosure of exploration targets.[419]

We did not propose, and we are not requiring, the disclosure of exploration results by a registrant that has material mining operations in the aggregate but no individual properties that are material.[420] If a company has determined that it lacks material mining properties, we believe it is unlikely that such a company would have exploration results that are material. While a company with no material properties could voluntarily elect to disclose exploration results for its properties, we do not believe investors would benefit from a requirement to disclose exploration results under those circumstances.

E. Treatment of Mineral Resources

1. The Mineral Resource Disclosure Requirement

i. Rule Proposal

The determination of mineral resources is the second step, after mineral exploration, that geoscientists and engineers use to assess the value of a mining property.[421] Most foreign mining codes require the disclosure of material mineral resources.[422] In contrast, Item 102 and Guide 7 preclude the disclosure of mineral resources in Commission filings except in certain instances.[423] According to industry representatives, this restriction has limited the completeness and relevance of the disclosures in SEC filings, and has caused confusion among mining companies and their investors.[424]

We proposed to require a registrant with material mining operations to disclose specified information in its Securities Act and Exchange Act filings concerning any mineral resources, as defined in the proposed rules, that have been determined based on information and supporting documentation from a qualified person.[425] As proposed, a registrant with material mining operations that has multiple properties would have to provide both summary disclosure about its mineral resources for all properties and more detailed disclosure concerning its mineral resources for each material property.[426]

Under the proposed rules, while a registrant could not disclose that it has determined that a mineral deposit constitutes a mineral resource or mineral reserve unless that determination is based upon information and supporting documentation[427] prepared by a qualified person, there would be no requirement that a registrant make such an affirmative determination. For example, a registrant could choose not to engage a qualified person to conduct the analyses and prepare the documentation necessary to support a determination that a mineral deposit is a mineral resource or reserve. In that case, under the proposed rules, in the absence of such information and supporting documentation, the registrant would be deemed not to have any mineral resources, and as such, would not be required to disclose mineral resources in a filing. If, however, the registrant did make the determination that it had mineral resources based upon information and supporting documentation prepared by a qualified person (*e.g.,* as part of its efforts to attract investors or secure project financing), then under the proposed rules the registrant would be required to disclose such mineral resources. This approach is consistent with the CRIRSCO-based codes.[428]

As previously noted, Item 102 and Guide 7 preclude the disclosure of estimates other than reserves in SEC filings unless such information is required to be disclosed by foreign or state law or if obtained and reported in the context of an acquisition, merger, or business combination. Since we proposed to require the disclosure of estimates for mineral resources in addition to mineral reserves by a registrant with material mining operations, the foreign or state law or business transaction exception would no longer be necessary. Therefore, we also proposed to eliminate this exception.[429]

ii. Comments on the Rule Proposal

Numerous commenters supported the Commission's proposal to require a registrant with material mining operations to disclose determined mineral resources in addition to mineral reserves.[430] For example, one commenter stated that the requirement would align the Commission's disclosure rules with the CRIRSCO standards, provide a level playing field for U.S. mining registrants, and provide investors with important information about the mining registrant and its assets.[431]

Another commenter stated that shareholders and potential investors

[417] 17 CFR 229.1302(c)(3) [Item 1302(c)(3) of Regulation S–K].

[418] *See, e.g.,* JORC Code, *supra* note 175, at pt. 17; and SAMREC Code, *supra* note 267, at pt. 22.

[419] *See supra* note 416 and accompanying text.

[420] An example of such a registrant would be an industrial minerals company that has more than 50 properties none of which is individually material. Under the final rules, such a company would be required to provide summary disclosure concerning its mineral resources and mineral reserves. *See infra* Section II.G.1 and 17 CFR 229.1303.

[421] First, mining professionals use exploration results to determine if a mineral deposit is present. Next, they estimate mineral resources, which are the portions of the mineral deposit that have prospects of economic extraction. The last step is the determination of mineral reserves, which are the economically mineable portions of the mineral resources.

[422] *See, e.g.,* JORC Code, *supra* note 175, at pts. 14 and 20; SAMREC Code, *supra* note 267, at pts. 3 and 24; SME Guide, *supra* note 177, at pts. 17 and 35; and PERC Reporting Standard, *supra* note 302, at pts. 2.8 and 7.

[423] Both Guide 7 and Item 102 permit the disclosure of non-reserve deposits, such as mineral resources, if such information is required to be disclosed by foreign or state law or if such estimates previously have been provided to a person (or any of its affiliates) that is offering to acquire, merge, or consolidate with the registrant, or otherwise to acquire the registrant's securities. *See* Instruction 3 to paragraph (b)(5) of Guide 7 and Instruction 5 to Item 102 of Regulation S–K. Only Canada has adopted a mining disclosure code as a matter of law. Other foreign mining codes have been adopted as listing standards for foreign securities exchanges or as guidelines by foreign securities commissions. *See* Proposing Release, *supra* note 5, Section 5, note 14 and accompanying text.

[424] *See* SME Petition for Rulemaking, *supra* note 6, at 1–2.

[425] *See* Proposing Release, *supra* note 5, at Section II.E.

[426] *See* Proposing Release, *supra* note 5, at Sections II.G.1–2.

[427] For both the proposing and final rules, ''information and supporting documentation'' means an initial assessment for mineral resource determination and a preliminary or final feasibility study for mineral reserve determination, each as prepared by a qualified person or persons. *See* Proposing Release, *supra* note 5 and *infra* at Sections II.E.3. II.E.4., and II.F.2.

[428] Similarly, other significant mining jurisdictions do not require a registrant to make the determination that it has mineral resources or reserves, as defined by those codes. The regulatory frameworks do, however, require disclosure of mineral resources and mineral reserves once the registrant has made the determination that it has them and they are material. *See, e.g.,* Australian Security Exchange Listing Rules (July 2014), r 5.7, 5.8, 5.9 (''ASX Listing Rules''), *https://www.asx.com.au/documents/rules/Chapter05.pdf* (providing guidance for disclosure of exploration results, mineral resources and mineral reserves for ''material mining projects'').

[429] *See* Proposing Release, *supra* note 5, at Sections II.E., VIII.

[430] *See* letters from Amec, AngloGold, BHP, CBRR, CIM, Eggleston, FCX, Gold Resource, Midas, Newmont, Northern Dynasty, Rio Tinto, SAMCODES 2, SRK 1, and Vale.

[431] *See* letter from Midas.

should be made aware of a company's mineral resources because such resources are recognized internationally as assets of a mineral property and can materially change the valuation of the company.[432] This commenter also stated that U.S. companies have been put at a disadvantage by not being able to disclose the potential value of their properties through the disclosure of mineral resources.[433] A third commenter indicated that the ''resource component is useful to investors in understanding the potential asset life and forward development options still under development.'' [434] Because of the widespread disclosure of mineral resources under the CRIRSCO-based codes, several commenters saw little to no risk to investors from the Commission's proposal to require a registrant with material mining operations to disclose mineral resources.[435]

One commenter acknowledged that there is a minor risk that investors could interpret mineral resources as mineral reserves (*i.e.,* that they imply economic viability).[436] This commenter, however, further stated that because of the widespread reporting of resources in CRIRSCO jurisdictions, most investors understand the difference between resources and reserves. Moreover, this commenter believed that the Commission could mitigate any risk from resource disclosure by requiring disclaimers as under Canada's NI 43–101, such as ''mineral resources are not mineral reserves and do not have demonstrated economic viability.'' [437]

A number of commenters in the industrial minerals or aggregates industry were critical of the proposed mineral resource disclosure requirement. One such commenter opposed a requirement to disclose mineral resource information on the grounds that because resources are marginally economic and of lower certainty, reporting resources ''could mislead investors with limited knowledge of the mining industry into believing that a mining operation has a larger number of future saleable tons than would likely be the case.'' [438] Another commenter disagreed with the Commission's statement that mining companies and their investors consider mineral resource estimates to be material and fundamental information about a company and its projects. That commenter described the statement as an overgeneralization that does not apply to the aggregates business.[439]

Several commenters expressly supported the Commission's proposal to require any disclosure of mineral resources in Commission filings to be based on information and supporting documentation of a qualified person.[440] Some of these commenters stated that they did not know of any circumstance that would justify the public disclosure of mineral resources without the determination and approval of a qualified person.[441] One commenter, however, opposed the required disclosure of mineral resources even if supported by a qualified person's information and documentation.[442] According to this commenter, the costs of preparing such disclosure may be significant whereas the benefits of such disclosure may be limited because of the inherent uncertainties in resource estimation. For this reason, this commenter recommended that the Commission make the disclosure of mineral resources optional even if supported by a qualified person.[443]

iii. Final Rules

As proposed, the final rules provide that a registrant with material mining operations must disclose specified information in its Securities Act and Exchange Act filings concerning mineral resources that have been determined to exist based on information and supporting documentation from a qualified person.[444] We continue to believe that requiring a mining registrant with material mining operations to disclose mineral resources in addition to mineral reserves will provide investors with important information concerning the registrant's operations and prospects. The importance of this information is demonstrated by the fact that most foreign mining codes require the disclosure of mineral resources; mining companies, including U.S. registrants, routinely disclose mineral resource information on their websites; and many mining company analysts consider mineral resource information as an important factor in their valuations and recommendations.[445] Requiring the disclosure of mineral resources will also help place U.S. registrants on a level playing field with Canadian mining registrants and non-U.S. mining companies that are subject to one or more of the other CRIRSCO-based mining codes. For these reasons, numerous commenters supported the required disclosure of determined mineral resources in Commission filings.[446]

Requiring disclosure of mineral resources in Commission filings could increase the reporting costs for those mining companies that do not currently disclose mineral resource information. We believe, however, that any such increase would be modest as most mining companies already assess mineral resources in order to determine reserves.[447]

As some commenters noted, requiring the disclosure of mineral resources could also increase the possibility that investors may misunderstand the economic value of a mining company, given that mineral resources are less certain than mineral reserves.[448] As discussed below, however, we believe that this risk is limited by the definition of the term mineral resource, by requiring disclosure of the particular class of mineral resource, and by requiring an initial assessment for mineral resource disclosure.

We also believe that there are important potential benefits to investors from the disclosure of mineral resources, including more comprehensive and potentially more accurate disclosure of mineral reserves. Given that mineral reserve estimates are based on estimates of mineral resources,

[432] *See* letter from Northern Dynasty; *see also* letter from SRK 1 (stating that disclosed mineral resources ''are an industry standard evaluation of a potential or actual mining property'' that ''are commonly used by registrants and investors alike to evaluate and compare specific properties as to their potential economic value'').

[433] *See* letter from Northern Dynasty.

[434] Letter from Rio Tinto.

[435] *See* letters from AngloGold, Eggleston, Rio Tinto, and SRK 1. Another commenter stated that it did not anticipate any risks from the required disclosure of mineral resources as long as the Commission adopted the CRIRSCO template and accompanying definitions. *See* letter from CBRR.

[436] *See* letter from Midas.

[437] *Id.*

[438] Letter from Alliance.

[439] *See* letter from NSSGA.

[440] *See, e.g.,* letters from Amec, AngloGold, Eggleston, Gold Resource, Midas, Northern Dynasty, and SRK 1.

[441] *See, e.g.,* letters from Eggleston, Midas, and SRK 1.

[442] *See* letter from Davis Polk.

[443] *See id.*

[444] 17 CFR 229.1303(b)(3) [Item 1303(b)(3) of Regulation S–K] and 229.1304(d)(1) [Item 1304(d)(1) of Regulation S–K].

[445] *See, e.g.,* SME Petition for Rulemaking, *supra* note6; letters from Northern Dynasty and SRK 1; CRIRSCO International Reporting Template, *supra* note 20, at cl. 21; and JORC Code, *supra* note 175, at pt. 20.

[446] *See supra* note 430.

[447] Best practice in mining engineering is to first determine the quantity and quality of the material of economic interest (*i.e.,* mineral resource estimation), prior to engineering and economic evaluation, to determine if any or all of that material can be extracted economically (*i.e.,* mineral reserve estimation). *See, e.g.,* Alan C. Noble, *Mineral Resource Estimation,* in 1 SME Mining Engineering Handbook 203 (P. Darling, ed., 2011), which states ''[t]he ore reserve estimate follows the resource estimate.''

[448] *See* letters from Alliance and Midas.

we believe that the required rigor surrounding the disclosure of mineral resources as well as the attendant scrutiny from the qualified person, particularly regarding mineral resource classification, is likely to lead to more reliable mineral reserves disclosure.[449]

We recognize that some industry participants, such as those in the industrial minerals and aggregates business, view mineral resources as less important to their business than other mining registrants and therefore have opposed a requirement to disclose mineral resources.[450] As previously explained, however, like the proposed rules, the final rules do not impose an affirmative obligation to determine mineral resources.[451] If an aggregates or other mining company does not want to incur the expense of hiring a qualified person to determine the existence of mineral resources, it need not do so. In that case, however, the company would not be able to declare that it has mineral resources in a Commission filing.

Once a registrant with material mining operations does determine that it has mineral resources, based on information and supporting documentation of a qualified person, then, because of their importance to the potential valuation of the company and to investors,[452] we do not believe that the registrant should have the option, as one commenter suggested,[453] of not disclosing the mineral resources in a Commission filing, or of otherwise being excepted from disclosing them. In this regard we note that the approach we are taking is consistent with the regulatory frameworks of the CRIRSCO-based codes, which, without exception, require disclosure of mineral resources (and mineral reserves) once the registrant has made the determination that it has them and they are material.[454]

2. Definition of Mineral Resource

i. Rule Proposal

We proposed to define ''mineral resource'' as a concentration or occurrence of material of economic interest in or on the earth's crust in such form, grade or quality, and quantity that there are reasonable prospects for its economic extraction.[455] We further proposed to define the term ''material of economic interest,'' as used in the definition of mineral resource, to include mineralization, including dumps and tailings,[456] geothermal fields, mineral brines, and other resources extracted on or within the earth's crust. As proposed, the term ''material of economic interest'' would not include oil and gas resources resulting from oil and gas producing activities, as defined in Regulation S–X,[457] gases (*e.g.,* helium and carbon dioxide), or water.[458]

The proposed rules further specified that, when determining the existence of a mineral resource, a qualified person must be able to estimate or interpret the location, quantity, grade or quality continuity, and other geological characteristics of the mineral resource from specific geological evidence and knowledge, including sampling.[459] In addition, when determining the existence of a mineral resource, as proposed, the qualified person must conclude that there are reasonable prospects for economic extraction of the mineral resource based on an initial assessment that he or she conducts by qualitatively applying the modifying factors likely to influence the prospect of economic extraction.[460]

Similar to the CRIRSCO-based codes, we proposed to state in connection with the definition of mineral resource that it is not to be merely an inventory of all mineralization [461] drilled or sampled.[462] A mineral resource is instead a reasonable estimate of mineralization, taking into account relevant factors such as cut-off grade,[463] likely mining dimensions, location or continuity, which, with the assumed and justifiable technical and economic conditions, is likely to, in whole or in part, become economically extractable.[464]

We further proposed to include within the definition of mineral resource non-solid matter, such as geothermal fields and mineral brines, in addition to mineralization, even though the CRIRSCO-based codes restrict mineral resources to solid matter.

ii. Comments on the Rule Proposal

Several commenters generally supported the Commission's proposal to define ''mineral resource'' as a concentration or occurrence of material of economic interest in or on the earth's crust in such form, grade or quality, and quantity that there are reasonable prospects for its economic extraction.[465] Some commenters supported the proposed definition because it is aligned or consistent with the CRIRSCO standards.[466] Another commenter indicated the proposed definition was reasonable because it included the requirement that there are ''reasonable prospects for economic extraction'' as under the CRIRSCO jurisdictions.[467] In contrast, although agreeing that mineral resources must have reasonable prospects for their economic extraction, one commenter opposed the proposed definition on the grounds that a qualified person will not be able to assure that all modifying factors can be accommodated for eventual economic extraction.[468]

Several commenters recommended that the Commission revise the definition of mineral resource by requiring that there be reasonable prospects for *eventual* economic extraction, as under the CRIRSCO standards.[469] As one commenter explained, under the proposed definition, ''there is an implication that a mineral resource has reasonable prospects for economic extraction today'' whereas ''[i]n many cases, mineral resources are identified that may not have reasonable prospects today, but with improved prices, technology, may be economic tomorrow.'' [470] Some commenters

[449] *See, e.g.,* letter from Northern Dynasty (stating that because mineral resources, if rigorously estimated, can materially change the valuation of a company, shareholders and potential investors should be made aware of those assets).

[450] *See supra* notes 438–439 and accompanying text.

[451] *See supra* Section II.E.1.i.

[452] *See, e.g.,* letter from Northern Dynasty.

[453] *See* letter from Davis Polk.

[454] *See supra* note 428 and accompanying text.

[455] *See* Proposing Release, *supra* note 5, at Section II.E.1.

[456] The term ''dumps'' refers to stockpiles of mined material. The term ''tailings'' refers to a mixture of fine mineral matter and process effluents generated by mineral processing plants.

[457] *See* 17 CFR 210.4–10(a)(16)(i) [Rule 4–10(a)(16)(i) of Regulation S–X].

[458] *See* Proposing Release, *supra* note 5, at Section II.E.1.

[459] *See id.*

[460] *See id.*

[461] The term ''inventory of mineralization'' means an estimate of the total quantity of mineralization based on the available evidence.

[462] *See, e.g.,* CRIRSCO International Reporting Template, *supra* note 20, at cl. 21; JORC Code, *supra* note 175, at pt. 20; and SAMREC Code, *supra* note 267, at pt. 24.

[463] The term cut-off grade refers to the grade (the concentration of metal or mineral in rock) at which the destination of the material changes during mining. For establishing prospects of economic extraction, it is the grade that distinguishes between the material that is uneconomic and the material that is economic and therefore going to be mined and processed. Terms with similar meanings include net smelter return, pay limit and break-even stripping ratio. *See* the definition of cut-off grade in 17 CFR 229.1300.

[464] *See* Proposing Release, *supra* note 5, at Section II.E.1.

[465] *See, e.g.,* letters from AngloGold, Eggleston, Midas, Northern Dynasty, and Rio Tinto.

[466] *See* letters from AngloGold, CBRR, and Rio Tinto.

[467] *See* letter from Midas.

[468] *See* letter from SRK 1.

[469] *See* letters from Amec, AngloGold, BHP, Eggleston, Energy Fuels, Rio Tinto, and Vale.

[470] Letter from Eggleston; *see also* letter from Energy Fuels; letter from Vale (explaining that

further recommended that the Commission provide interpretive guidance on the meaning of the term ''eventual.'' [471]

Several commenters supported the proposed definition's inclusion of dumps and tailings.[472] One commenter explained that mine dumps and tailings are a significant source of metals and, in some cases, are the only identified mineral resource on a property.[473] Another commenter stated that, in addition to dumps and tailings, the definition of mineral resource should specifically include ''slag heaps (dumps), stockpiles, heap or dump leach pads, and backfill materials.'' [474]

Some commenters generally supported the proposed definition's inclusion of mineral brines.[475] Two of those commenters conditioned their support on the Commission's adoption of significant additional guidance regarding mineral brines.[476] Two commenters also supported the proposed inclusion of geothermal energy.[477] One of the commenters conditioned support on the Commission's adoption of separate rules for geothermal energy with additional guidance.[478]

In contrast, several commenters expressly opposed the inclusion of mineral brines and geothermal energy in the definition of mineral resource.[479] One commenter explained that extraction of mineral brines and geothermal energy ''requires the pumping of fluids rather than digging of solid materials'' and, like water and gases, which the proposed definition would exclude, involves scientific and engineering principles that are substantially different from those used to estimate solid mineral resources.[480] Regarding geothermal energy, this commenter stated that there is no internationally accepted standard protocol to estimate and report the potential for geothermal energy.[481]

Some commenters believed that disclosure of mineral brines should be regulated under the oil and natural gas rules.[482] A few commenters recommended regulating disclosure of geothermal energy under its own set of rules.[483]

Several commenters supported the proposed exclusion of oil and gas resources resulting from oil and gas producing activities, as defined in Regulation S–X, gases (*e.g.,* helium and carbon dioxide), and water from the definition of mineral resource.[484] As one commenter explained, the above substances are not traditional or industry standard commodities considered as ''mining operations.'' [485]

Many commenters supported requiring in the definition of mineral resource that a qualified person estimate or interpret the location, quantity, grade or quality continuity, and other geological characteristics of the mineral resource from specific geological evidence and knowledge, including sampling.[486] Commenters noted that the proposed requirement is in alignment with CRIRSCO standards [487] and is the current industry standard.[488] One commenter stated that a qualified person should also consider non-geologic factors, such as processing, mining method costs, and economic evaluation, when determining the reasonable prospects for a mineral resource's economic extraction.[489]

iii. Final Rules

We are adopting the definition of mineral resource, as proposed, to mean a concentration or occurrence of material of economic interest in or on the Earth's crust in such form, grade or quality, and quantity that there are reasonable prospects for economic extraction.[490] As commenters noted, this definition is consistent with the requirement under the CRIRSCO-based codes that, in order for a deposit, in whole or part, to be determined to be a mineral resource, there must be reasonable prospects for its economic extraction.[491]

In order to classify a deposit as a resource, a qualified person must establish that there are reasonable prospects of economic extraction by estimating or interpreting key geological characteristics from specific geological evidence. We believe that requiring an analysis based on specific geological evidence to establish prospects of economic extraction provides an appropriate standard, and importantly, one that is more exacting than what we are requiring for the disclosure of exploration results. A qualified person should have a higher level of confidence to determine that a deposit is properly classified as a mineral resource (which is an estimate of tonnage and grade that has reasonable prospects of economic extraction) than to report exploration results (which may not indicate the existence of any tonnage with reasonable prospects of economic extraction) because of the relatively greater weight that investors are likely to place on estimates of mineral resources. This in turn should help mitigate the uncertainty inherent in the determination of mineral resources. Moreover, because the CRIRSCO-based codes impose a substantially similar requirement, we do not believe this aspect of the definition of mineral resources would significantly alter existing disclosure practices of registrants subject to these codes.[492]

We are not modifying the proposed definition of mineral resource to mean that there must be reasonable prospects for its *eventual* economic extraction.[493] Because a qualified person must consider relevant technical and economic factors likely to influence the prospect of economic extraction, including pricing for the resource that could be based on forward-looking price

''[t]he word ''eventual'' indicates timing for economic extraction, and timing may vary depending on the commodity or mineral'').

[471] *See* letters from SME 1 and Vale.

[472] *See* letters from Amec, AngloGold, Eggleston, Midas, Northern Dynasty, Rio Tinto, and SRK 1.

[473] *See* letter from Eggleston.

[474] Letter from Amec.

[475] *See* letters from Eggleston, Northern Dynasty, and Rio Tinto.

[476] *See* letters from Eggleston and Rio Tinto.

[477] *See* letters from Eggleston and Northern Dynasty.

[478] *See* letter from Eggleston.

[479] *See* letters from Amec, CBRR, CRIRSCO, Davis Polk, SAMCODES 2, SME 1, and SRK 1.

[480] *See* letter from SME 1; *see also* letter from Amec (stating that the definition of mineral resource should exclude mineral brines because ''[m]ineral brine reservoirs are dynamic systems, and the methodology for estimation of brine resources and brine reserves is significantly different to that used in Mineral Resource and Mineral Reserve estimates, since brine resource and brine reserve estimates also require temporal measurements of fluid flow and brine chemistry'').

[481] *See* letter from SME 1.

[482] *See, e.g.,* letters from Rio Tinto and SRK 1; *see also* letter from SAMCODES 2 (stating that disclosure of both mineral brines and geothermal energy should be regulated under oil and natural gas rules).

[483] *See* letters from Amec and SRK 1; *see also* letter from MMSA (recommending the adoption of separate rules for both geothermal energy and mineral brines because ''these commodities do not closely correspond with solid minerals'').

[484] *See* letters from Amec, AngloGold, CBRR, Eggleston, Rio Tinto, and SRK 1.

[485] *See* letter from SRK 1.

[486] *See* letters from Amec, AngloGold, Eggleston, Midas, Northern Dynasty, Rio Tinto, and SRK 1.

[487] *See* letters from AngloGold, Eggleston, and Rio Tinto.

[488] *See* letter from SRK 1.

[489] *See* letter from CBRR.

[490] *See* the definition of ''mineral resource'' in 17 CFR 229.1300.

[491] *See, e.g.,* letters from CBRR and Midas. *See infra* note 493 and accompanying text for why we are not adopting the modifier ''eventual'' as used in the CRIRSCO definition of mineral resource.

[492] As discussed below, in a change from the proposed rules, the final rules require a qualified person to consider relevant technical and economic factors likely to influence the prospect of economic extraction, rather than applicable modifying factors, at the resource determination stage in order to more closely align the final rules with the CRIRSCO standards. *See infra* Section II.E.4.

[493] *See, e.g.,* letters from Eggleston and Vail.

forecasts,[494] when determining whether mineral resources exist on a property, we believe it is clear from the definition of mineral resource that the reasonable prospects for economic extraction will occur over a timeline.

To be clear, by requiring that there be reasonable prospects for a mineral resource's economic extraction, we do not mean that the extraction must occur immediately. Rather, we expect that it will occur over a temporal period, which will vary depending on the mineral or commodity being mined. As noted by the CRISCRO-based codes, for coal, iron ore, bauxite or other bulk minerals and commodities, it may be reasonable to consider economic extraction as occurring over a time period of 50 or more years when determining whether the deposit is a mineral resource. However, for smaller mineral deposits, it would likely be reasonable to consider economic extraction as occurring over a much shorter time period, for example, no more than 10–15 years.[495] Under the final rules, the qualified person will choose the appropriate temporal period when determining whether mineral resources exist and, if the property is material, must explain its choice in the technical report summary.[496]

The final rules provide that the term ''material of economic interest,'' when used in the context of mineral resource determination, includes mineralization, including dumps and tailings, mineral brines, and other resources extracted on or within the earth's crust.[497] Most commenters [498] that addressed the issue supported including dumps and tailings within the definition because it reflects industry practice and is consistent with the CRIRSCO-based codes.[499] The inclusion of dumps and tailings in the definition of mineral resource reflects the fact that, under certain circumstances, these byproducts from older mining operations possess value.

The final rules do not exclude mineral brines from the definition of mineral resource [500] because we continue to believe that, by definition, extracting minerals, such as lithium, from mineral brines constitutes mining.[501] While such extraction may involve the consideration and application of additional factors, the scientific and engineering principles used to characterize mineral brine and resources and reserves are substantially similar to those used to characterize solid mineral resources and reserves. We also note that, although the CRIRSCO-based codes define a mineral resource as ''solid material,'' at least one CRIRSCO-based jurisdiction has determined that disclosure regarding the mining of mineral brines should be regulated under the same set of rules governing mineral resources.[502] Moreover, including minerals extracted from mineral brines within the definition will provide registrants with a workable, reasonable, and consistent framework for disclosure related to these activities while providing investors with useful and reliable information about the properties containing the mineral brines.[503]

In a change from the proposed rules, the adopted definition of mineral resource does not include geothermal energy.[504] We have been persuaded to exclude geothermal energy from the definition of mineral resource due to the lack of consensus regarding how to regulate the disclosure of geothermal energy resources.[505]

The adopted definition of mineral resource also excludes oil and gas resources resulting from oil and gas producing activities, as defined in Rule 4–10(a)(16)(i) of Regulation S–X,[506] gases (*e.g.,* helium and carbon dioxide), and water.[507] Most commenters that addressed the issue supported the exclusion of oil and gas resources because their exclusion is consistent with industry practice.[508] Also consistent with industry practice, we are excluding gases (such as helium and carbon dioxide) and water because the scientific and engineering principles used to estimate these resources are substantially different from those used to estimate mineral resources.

As proposed, the final rules provide that a mineral resource is a reasonable estimate of mineralization, taking into account relevant factors such as cut-off grade, likely mining dimensions, location or continuity that, with the assumed and justifiable technical and economic conditions, is likely to, in whole or in part, become economically extractable. It is not merely an inventory of all mineralization drilled or sampled.[509]

Several commenters supported requiring in the definition of mineral resource that a qualified person estimate or interpret the location, quantity, grade or quality continuity, and other geological characteristics of the mineral resource from specific geological evidence and knowledge, including sampling.[510] As commenters noted, this requirement is in alignment with CRIRSCO standards [511] and is the current industry standard.[512] Accordingly, its adoption should help promote uniformity in the disclosure of mineral resources. Although some commenters suggested that we expand the definition to include other specific factors to consider at the resource determination stage,[513] we believe that such expansion would increase the prescriptive nature of subpart 1300 and could thereby increase the compliance burden of the final rules without providing significant additional benefits for investors.

3. Classification of Mineral Resources

i. Rule Proposal

We proposed to adopt the CRIRSCO-based classification of mineral resources [514] by requiring a registrant

[494] *See infra* Section II.E.4.

[495] *See, e.g.,* JORC Code, *supra* note 175, at pt. 20; and SME Guide, *supra* note177, at pt. 35.

[496] *See infra* Section II.E.4.

[497] *See* the definition of ''material of economic interest'' in 17 CFR 229.1300.

[498] *See supra* note 472.

[499] *See, e.g.,* JORC Code, *supra* note 175, at pt. 20; SAMREC Code, *supra* note 267, at pt. 24; PERC Reporting Standard, *supra* note 302, at pt. 7.4; and SME Guide, *supra* note 177, at pt. 35.

[500] *See supra* note 479 and accompanying text.

[501] Mining can be defined as the ''[p]rocess of obtaining useful minerals from the earth's crust.'' Lewis & Clark, Elements of Mining 20 (1964).

[502] *See* Ontario Securities Commission (OSC), *Mineral Brine Projects and National Instrument 43–101 Standards of Disclosure for Mineral Projects,* Notice 43–704 (July 22, 2011) (''In our view mineral brine projects are mineral projects as defined in NI 43–101'').

[503] *See, e.g.,* OSC Notice 43–704 (''We also think that it is in the public interest for mineral brine projects to be subject to the requirements of NI 43–101. NI 43–101 provides a proper and rigorous disclosure framework for mineral projects hosted in a brine'').

[504] *See* the definition of ''material of economic interest'' referenced in the definition of mineral resource in 17 CFR 229.1300.

[505] *See, e.g.,* letter from SME 1. For example, the Australian Geothermal Energy Association's Geothermal Code Committee concluded that JORC was a better model for the Australian Geothermal Reporting Code than the Society of Petroleum Engineers' Resources Management System, which is favored by some U.S. industry groups. *See, e.g.,* J.V. Lawless, M. Ward and G. Beardsmore, *The Australian Code for Geothermal Reserves and Resources Reporting: Practical Experience,* Proceedings of the World Geothermal Congress (2010).

[506] 17 CFR 210.4–10(a)(16)(i).

[507] *See* the definition of ''material of economic interest'' referenced in the definition of mineral resource in 17 CFR 229.1300.

[508] *See supra* note 484.

[509] *See* the definition of ''mineral resource'' in 17 CFR 229.1300; *see also* 17 CFR 229.1302(d)(1)(i)(A) [Item 1302(d)(1)(i)(A) of Regulation S–K].

[510] *See* letters from Amec, AngloGold, Eggleston, Midas, Northern Dynasty, Rio Tinto, and SRK 1.

[511] *See* letters from AngloGold, Eggleston, and Rio Tinto.

[512] *See* letter from SRK 1.

[513] *See, e.g.,* letter from Amec.

[514] *See, e.g.,* CRIRSCO International Reporting Template, *supra* note 20, at cl. 21; JORC Code,

with material mining operations to classify its mineral resources into inferred, indicated, and measured mineral resources, in order of increasing confidence based on the level of underlying geological evidence.[515] We further proposed to define each of those subcategories of mineral resources.

a. Inferred Mineral Resources

Similar to the CRIRSCO-based codes,[516] we proposed to define ''inferred mineral resource'' as that part of a mineral resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling.[517] As the proposed rules explained, ''limited geological evidence'' means evidence that is only sufficient to establish that geological and grade or quality continuity is more likely than not. The proposed rules further provided that the level of geological uncertainty associated with an inferred mineral resource is too high to apply modifying factors in a manner useful for evaluation of economic viability.[518] Because an inferred mineral resource has the lowest level of geological confidence of all mineral resources, under the proposed rules it may not be considered when assessing the economic viability of a mining project and may not be converted to a mineral reserve.[519]

We further proposed to establish the level of certainty that a qualified person must strive to achieve when determining the existence of an inferred mineral resource. As proposed, the qualified person must have a reasonable expectation that the majority of inferred mineral resources could be upgraded to indicated or measured mineral resources with continued exploration. In addition, the qualified person should be able to defend the basis of this expectation before his or her peers.[520]

b. Indicated and Measured Mineral Resources

We proposed to define ''indicated mineral resource'' as that part of a mineral resource for which quantity and grade or quality are estimated on the basis of adequate geological evidence and sampling.[521] As the proposed rules explained, ''adequate geological evidence'' means evidence that is sufficient to establish geological and grade or quality continuity with reasonable certainty. This means that the level of geological certainty associated with an indicated mineral resource is sufficient to allow a qualified person to apply modifying factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit.[522] We also proposed to explain that an indicated mineral resource has a lower level of confidence than that applicable to a measured mineral resource and may only be converted to a probable mineral reserve.[523]

We proposed to define ''measured mineral resource'' as that part of a mineral resource for which quantity and grade or quality are estimated on the basis of conclusive geological evidence and sampling.[524] As the proposed rules explained, ''conclusive geological evidence'' means evidence that is sufficient to test and confirm geological and grade or quality continuity. This means that the level of geological certainty associated with a measured mineral resource is sufficient to allow a qualified person to apply modifying factors in sufficient detail to support detailed mine planning and final evaluation of the economic viability of the deposit.[525] We also proposed to provide that, because a measured mineral resource has a higher level of confidence than that applying to either an indicated mineral resource or an inferred mineral resource, it may be converted to a proven mineral reserve or to a probable mineral reserve.[526]

c. Considerations of Geologic Uncertainty

We proposed to require that the qualified person quantify the uncertainty associated with each class of mineral resources by disclosing the uncertainty associated with the production estimates derived from each class of mineral resources.[527] While a qualified person would be permitted to develop mineral resource estimates using any generally accepted method, including geostatistics, simulation, or inverse distance, under the proposed rules, he or she would also be required to estimate the uncertainty associated with each class of mineral resource, expressed in a prescribed format that depended upon the specific classification of the resource.

As we explained in the Proposing Release,[528] for indicated and measured mineral resources, the qualified person would be required to provide the confidence limits of relative accuracy,[529] at a specific confidence level, of the preliminarily estimated production quantities per period from the resource.[530] This approach for reporting the level of uncertainty is consistent with what many have suggested in the mining engineering literature to be best practice.[531] When proposing this approach, we did not impose any restrictions on the acceptable confidence limits of relative accuracy or confidence level required to disclose indicated or measured mineral resources. In that regard, we recognized that the natural variability of geologic characteristics is different for different deposits.

supra note 175, at pt. 20; SAMREC Code, *supra* note 267, at pt. 24; and PERC Reporting Standard, *supra* note 302, at pt. 7.2.

[515] *See* Proposing Release, *supra* note 5, at Section II.E.2.

[516] *See, e.g.,* CRIRSCO International Reporting Template, *supra* note 20, at cl. 22; JORC Code, *supra* note 175, at pt. 21; SAMREC Code, *supra* note 267, at pt. 25; and PERC Reporting Standard, *supra* note 302, at pt. 7.5.

[517] *See* Proposing Release, *supra* note 5, at Section II.E.2.

[518] *See id.*

[519] *See id.*

[520] *See id.*

[521] *See id.*

[522] *See id.*

[523] *See id.*

[524] *See id.*

[525] *See id.*

[526] *See id.*

[527] We proposed to require this quantification of uncertainty in the ''initial assessment'' prepared by the qualified person. We proposed to define ''initial assessment'' as a preliminary technical and economic study of the economic potential of all or parts of mineralization to support the disclosure of mineral resources. *See* Proposing Release, *supra* note 5, at Section II.E.2. An initial assessment is different from a pre-feasibility study in that a pre-feasibility study is used to determine whether all or part of a mineral resource can be converted into a mineral reserve. We discuss the initial assessment requirement in detail in Section II.E.4 below.

[528] *See* Proposing Release, *supra* note 5, at Section II.E.2.

[529] The term ''confidence limits of relative accuracy'' refers to the values on both sides of zero (the average relative accuracy for unbiased mineral resource estimates) that show, for a specified probability (the confidence level), the range in which the relative accuracy lies. For example, if a report says the confidence limits of relative accuracy for a mineral resource is ±10% at 90% confidence for annual production quantities, it means there is a nine out of ten chance that the actual annual production quantities will be between 90% and 110% of the planned quantities.

[530] Using this approach, the geologic uncertainty associated with indicated and measured mineral resources is stated by keeping any two of the three relevant variables (confidence limits of relative accuracy, confidence level, and production periods) constant while varying the third. For example, the risk could be stated as ±15% at 90% confidence for monthly, quarterly, or annual production estimates, or ±10% or ±15% at 90% confidence for annual production estimates.

[531] The mining engineering literature makes clear that specifying the confidence limits of relative accuracy, at a specific confidence level, of production quantities per period is the best way to quantify uncertainty associated with resources. *See, e.g.,* E.H. Isaaks, and R.M. Srivastava, *An Introduction to Applied Geostatistics* 489–513 (1990); and M.E. Rossi, and C.V. Deutsch, *Mineral Resource Estimation* 209–222 (2014). *See generally* P.R. Stephenson, *Mineral Resource Classification. How the Viability of Your Project May Hang On a Qualified Person's Judgment* (2011); and P. Stoker and C. Moorhead, *Confidence in Resource Estimates—Beyond Classification* (2009).

We further proposed that, when estimating the geologic uncertainty associated with indicated and measured mineral resources, the qualified person would be required to consider the limitations of the data, assumptions, and models used to determine the resource estimates. This is because the numerical estimates of uncertainty from geostatistics or simulation do not account for risk factors associated with the input such as, but not limited to, drilling or sampling methods, laboratory assaying methods, outlier treatment, assumptions made during modeling of domains and geologic controls, compositing (averaging grades over similar sampling volumes or lengths), and establishing upper limits of grades. Consequently, such numerical estimates may underestimate the uncertainty associated with the mineral resources.

Regarding inferred mineral resources, we proposed to require qualified persons to state the minimum percentage of inferred mineral resources they believe will be converted to indicated and measured mineral resources with further exploration.[532] As we explained, because inferred resources have such a low level of confidence, it would be inappropriate for a qualified person to use them in production estimates for a period equal to or shorter than a year. Differences between actual and estimated production for such periods would have such high standard deviations that they would not provide an appropriate basis for investment decisions.[533]

ii. Comments on the Rule Proposal

Many commenters supported the Commission's proposal to require a registrant to classify its mineral resources into inferred, indicated, and measured mineral resources because such a requirement would be consistent with the CRIRSCO standards.[534] Other commenters supported the classification requirement as long as the definitions of inferred, indicated and measured mineral resources are identical to those under the CRIRSCO-based codes.[535]

One commenter saw little value in the classification of mineral resources. According to that commenter, ''[b]ecause resources are considered economically marginal and of lower certainty to begin with, dividing resources into low, middle, and high level of certainty offers little value'' and ''tends to give additional credibility to the resources as a whole that may not be warranted.'' [536]

a. Inferred Mineral Resources

Some commenters supported requiring a registrant with material mining operations to disclose inferred resources, despite limited geologic evidence underlying those resources, on the grounds that such a requirement is consistent with CRIRSCO [537] or industry standards.[538] Other commenters, however, recommended permitting rather than requiring the disclosure of inferred resources.[539] According to one of those commenters, an optional approach is warranted because of the high level of geologic uncertainty associated with that class of mineral resource.[540]

Several commenters supported defining ''inferred mineral resource'' as that part of a mineral resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling.[541] Other commenters, however, objected to the proposed definition of inferred resource because it is not identical to the CRIRSCO definition.[542] For example, one commenter objected to the proposed definition of ''limited geological evidence'' as evidence that is only sufficient to establish that geological and grade or quality continuity is more likely than not. Instead, that commenter recommended substituting the CRIRSCO definition of inferred mineral resource, which includes the requirement that ''[g]eologic evidence is sufficient to imply but not verify geological and grade or quality continuity.'' According to that commenter, by using the CRIRSCO definition, ''the assumptions underlying the estimates of inferred mineral resources are more clearly defined.'' [543]

One commenter supported the Commission's proposed prohibition regarding the use of inferred resources in economic assessments of mining properties.[544] This commenter indicated that using inferred resources in this way could mislead registrants and investors on the economic potential of the property.[545]

Many other commenters opposed the Commission's proposal to prohibit the use of inferred resources to make a determination about the potential economic viability of extraction.[546] Commenters stated that this prohibition would be inconsistent with the CRIRSCO-based codes, which permit the inclusion of inferred resources in a scoping study or a preliminary economic assessment (as permitted under Canada's NI 43–101) as long as cautionary disclaimers regarding the geologically speculative nature of inferred resources and the corresponding high level of risk associated with them are provided.[547] According to several of these commenters, adoption of this prohibition would place U.S. registrants at a significant disadvantage and deprive investors of information they have found relevant to their investment decisions.[548]

Commenters generally agreed with the Commission's proposal to preclude the conversion of inferred resources into a mineral reserve because of the high level of geologic uncertainty associated with inferred resources.[549] In response to our request for comment about whether we should require a registrant to use a legend or cautionary language when disclosing inferred resources, while commenters supported such use in a preliminary economic assessment or scoping study to warn of a high level of geologic uncertainty,[550] a few commenters opposed the use of cautionary language in the reporting of inferred resources because such language is already captured in the

[532] We proposed to require uncertainty estimates for inferred mineral resources to be stated in the form ''the qualified person expects at least z% of inferred mineral resources to convert to indicated or measured mineral resources with further exploration and analysis.'' *See* Proposing Release, *supra* note 5, at note 180 and accompanying text.

[533] Possible sources of uncertainty that affect the reporting of inferred resources may include sampling or drilling methods, data processing and handling, geologic modeling and estimation.

[534] *See* letters from Amec, AngloGold, BHP, CBRR, Eggleston, FCX, Midas, Rio Tinto, SAMCODES 2, SRK 1, and Vale.

[535] *See, e.g.,* letters from Amec, CIM, Coeur, Northern Dynasty, and SAMCODES 2.

[536] Letter from Alliance.

[537] *See, e.g.,* letters from AngloGold, Midas, and Rio Tinto.

[538] *See* letter from SRK 1.

[539] *See* letters from CBRR, Eggleston, and Gold Resource.

[540] *See* letter from Gold Resource.

[541] *See, e.g.,* letters from AngloGold, Eggleston, Gold Resource, and Rio Tinto.

[542] *See supra* note 535.

[543] Letter from CIM.

[544] *See* letter from Gold Resource.

[545] *See id.*

[546] *See* letters from Amec, AngloGold, BHP, CBRR, Coeur, CRIRSCO, Eggleston, Energy Fuels, JORC, Midas, MMSA, NMA, Northern Dynasty, Randgold, SAMCODES 2, SME 1, SRK 1, Ur-Energy, Vale, and Willis.

[547] *See* letters from Amec, Coeur, CRIRSCO, Eggleston, Energy Fuels, JORC, Midas, MMSA, NMA, Northern Dynasty, SME 1, SRK 1, Ur-Energy, Vale and Willis.

[548] *See* letters from Coeur, NMA, Northern Dynasty, SME 1, Ur-Energy, and Vale.

[549] *See* letters from Amec, AngloGold, CBRR, Eggleston, Gold Resource, Rio Tinto, SAMCODES 1, SRK 1, and Vale.

[550] *See, e.g.,* letters from CBRR, Coeur, Northern Dynasty, SRK 1, and Vale.

definition.[551] Another commenter supported providing an appropriate cautionary statement to accompany the reporting of inferred resources, but asserted that a cautionary statement should be required for all mineral resource and mineral reserve statements because they are estimates based on various assumptions that may or may not be met at a particular time.[552]

b. Indicated and Measured Mineral Resources

Several commenters supported the Commission's proposal to define ''indicated mineral resource'' as that part of a mineral resource for which quantity and grade or quality are estimated on the basis of adequate geological evidence and sampling.[553] Those commenters stated that the proposed definition aligned with the CRIRSCO definition of indicated mineral resource.[554] The commenters also supported the proposed definition of ''adequate geological evidence'' as evidence that is sufficient to establish geological and grade or quality continuity with reasonable certainty. Two of those commenters further agreed that the definition of ''adequate geologic evidence'' should be based on a qualified person's ability to apply modifying factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit.[555]

Other commenters urged the Commission to adopt verbatim the CRIRSCO definition of indicated mineral resource, which includes the provision that ''[g]eologic evidence is derived from adequately detailed and reliable exploration, sampling and testing and is sufficient to assume geological and grade or quality continuity between points of observation.'' [556] Commenters stated that the CRIRSCO definition ''is more specific'' [557] than the Commission's proposed definition and is the industry standard.[558] In opposing the proposed definition of indicated mineral resource, one of those commenters further explained that a qualified person will not be able to assure that all modifying factors can be accommodated for eventual economic extractions.[559]

Some commenters supported the Commission's proposal to define ''measured mineral resource'' as that part of a mineral resource for which quantity and grade or quality are estimated on the basis of conclusive geological evidence and sampling.[560] Those commenters further supported the proposed definition of ''conclusive geological evidence'' as evidence that is sufficient to test and confirm geological and grade or quality continuity, which means that the level of geological certainty associated with a measured mineral resource is sufficient to allow a qualified person to apply modifying factors in sufficient detail to support detailed mine planning and final evaluation of the economic viability of the deposit.[561] Those commenters stated that the proposed definition of measured mineral resource is consistent with the CRIRSCO standards.[562]

Other commenters recommended that the Commission adopt the CRIRSCO definition of measured mineral resource instead of the proposed definition.[563] Commenters stated that the CRIRSCO definition is the industry standard,[564] did not favor use of the term ''conclusive geological evidence'' because, in their view, it sets an unrealistic standard,[565] and maintained that a qualified person would not be able to assure that all modifying factors could be accommodated for eventual economic extraction.[566] One of the commenters recommended replacing the term ''conclusive'' with ''a high level of confidence.'' [567]

c. Considerations of Geologic Uncertainty

Many commenters opposed the Commission's proposal to quantify the level of risk associated with indicated and measured mineral resources based on the confidence limits of relative accuracy at a particular confidence level for production estimates for periods of one year or less.[568] While acknowledging that the use of confidence limits of relative accuracy is considered best practice in the industry, one commenter opposed mandating such a requirement because, depending on the deposit, a quantitative assessment of risk may not be necessary and, in any event, may not be available to the company.[569] Instead, this commenter recommended relying on the application of the CRIRSCO definitions of inferred, indicated, and measured mineral resource, each of which requires a certain level of geological evidence, and requiring the qualified person to disclose the basis for the classification.[570]

A second commenter stated that qualitative risk assessments (*e.g.,* low, medium, high) are more likely to provide investors with a sense of the risks inherent in mineral resource and reserve estimates than numerical risk assessments that inherently fail to account for the underlying geological uncertainties, estimates and interpretations.[571] A third commenter stated that quantitative estimation of uncertainties is burdensome and, in most cases, the costs outweigh the benefits. That commenter recommended that the Commission follow CRIRSCO's approach, which encourages but does not require the quantitative estimation of uncertainties.[572]

Many commenters opposed the Commission's proposal to require a qualified person to describe the level of risk associated with an inferred mineral resource based on the minimum percentage that he or she estimates would convert to indicated or measured mineral resources with further exploration.[573] Commenters stated that there is no realistic way to quantify such an estimate with any degree of accuracy,[574] such a requirement would be impractical and burdensome for small mining companies,[575] and such a

[551] *See* letters from AngloGold and Rio Tinto. Another commenter opposed the use of cautionary statements regarding inferred resources because ''[r]equiring prescriptive statements is not beneficial to the industry.'' Letter from Amec.

[552] *See* letter from Eggleston.

[553] *See* letters from AngloGold, CBRR, Midas, Northern Dynasty, and Rio Tinto.

[554] *See, e.g.,* letters from CBRR, Midas, and Rio Tinto.

[555] *See* letters from AngloGold and Northern Dynasty.

[556] *See* letters from Amec, CIM, Coeur, SRK 1, and Willis.

[557] *See* letter from Willis.

[558] *See* letters from SRK 1 and Willis.

[559] *See* letter from SRK 1.

[560] *See* letters from AngloGold and CBRR.

[561] *See id.*

[562] *See id.*

[563] *See* letters from Amec, Coeur, Northern Dynasty, Rio Tinto, and SRK 1.

[564] *See* letters from Coeur and SRK 1.

[565] *See* letters from Amec, Midas, Rio Tinto, and SRK 1.

[566] *See id.*

[567] *See* letter from SRK 1.

[568] *See* letters from AIPG, Amec, AngloGold, BHP, CBRR, Cloud Peak, Eggleston, FCX, Gold Resource, JORC, Midas, MMSA, Northern Dynasty, NSSGA, Rio Tinto, SAMCODES 1 and 2, SRK 1, Ur-Energy, and Vale.

[569] *See* letter from SAMCODES 1.

[570] *See id.*

[571] *See* letter from AIPG. Several other commenters recommended that the Commission permit a qualified person to provide a qualitative discussion of the uncertainties involved in resource determination in lieu of a quantitative assessment based on the confidence limits of relative accuracy. *See* letters from Cloud Peak, Gold Resource, Midas, Northern Dynasty, Rio Tinto, and SRK 1.

[572] *See* letter from Vale; *see also* letters from Eggleston and MMSA.

[573] *See* letters from Amec, CBRR, Eggleston, Gold Resource, JORC, Midas, MMSA, Northern Dynasty, Rio Tinto, Royal Gold, SRK 1, Ur-Energy, and Vale.

[574] *See, e.g.,* letters from Amec, Eggleston, Gold Resource, Northern Dynasty, SRK 1, and Vale.

[575] *See* letter from MMSA.

requirement is not imposed by other jurisdictions.[576]

Some commenters noted that, consistent with the CRIRSCO-based codes, the proposed definition of inferred mineral resource included the requirement that the qualified person have a reasonable expectation that the majority of inferred mineral resources could be upgraded to indicated or measured mineral resources with continued exploration. Those commenters suggested that this proposed requirement would act as a substitute for the proposed quantification in that, if the qualified person cannot meet this expectation with regard to part of a deposit, that part could not be classified as inferred resources.[577]

iii. Final Rules

We are adopting the proposed requirement that a registrant with material mining operations classify its mineral resources into inferred, indicated, and measured mineral resources, in order of increasing confidence based on the level of underlying geological evidence.[578] We believe this classification requirement will improve the accuracy of a registrant's mining disclosure in Commission filings, and thereby benefit investors, because it is based upon an assessment of ''geologic uncertainty,'' which is the risk related to the quality, quantity and location of the mineral in the ground. Geologic uncertainty directly affects two very significant estimates, production quantities per period and related cash flows, which are crucial to a registrant's determination, and an investor's understanding, of mineral resource disclosure. We, therefore, believe that the final rules should require, and not merely allow, the classification of mineral resources.[579]

As several commenters noted, requiring the classification of mineral resources into inferred, indicated, and measured mineral resources is consistent with the CRIRSCO standards and prevailing industry practice.[580] Thus, adoption of this classification requirement will more closely align the Commission's mining property disclosure rules with global industry practice and promote uniformity in mining property disclosure.

a. Inferred Mineral Resources [581]

We are adopting the definition of ''inferred mineral resource,'' largely as proposed.[582] In a slight change from the proposed rules, the adopted definition of inferred mineral resource provides that the level of geological uncertainty associated with an inferred mineral resource is too high to apply relevant technical and economic factors likely to influence prospects of economic extraction in a manner useful for evaluation of economic viability.[583] In response to commenters, the final rules use the term ''relevant technical and economic factors'' instead of ''modifying factors,'' as proposed, in order to more closely align the definition of inferred resources with that under the CRIRSCO-based codes.

As some commenters noted, the adopted definition of inferred mineral resource is generally consistent with the definition under the CRIRSCO-based codes.[584] The central tenet under both definitions is that inferred mineral resources are estimates of quantity and grade or quality based on limited geological evidence and sampling.[585] Although our definition of ''limited geological evidence'' differs slightly from the definition of geologic evidence in the CRIRSCO definition of inferred mineral resource,[586] its meaning is substantially similar to the CRIRSCO definition.

As commenters noted, it is consistent with the CRIRSCO standards to require the disclosure of inferred resources, which have been determined by a qualified person, in the Commission filings of a registrant with material mining operations.[587] Although some commenters recommended that we permit rather than require the disclosure of inferred resources in Commission filings because they have the lowest level of geologic confidence,[588] we believe that inferred mineral resources are nonetheless important to an investor's understanding of a registrant's mining operations because they may be converted into indicated or measured mineral resources with further exploration.

Additionally, the definition of inferred mineral resource will reduce any potential investor misunderstanding of the nature of a registrant's mining operations by providing appropriate context for and limitations on the disclosure of inferred resources. First, the definition clearly highlights for investors that inferred mineral resources have the highest degree of uncertainty, allowing investors to take this factor into account when assessing a registrant's disclosure. Second, the definition prohibits a registrant from using inferred mineral resources as a basis to determine mineral reserves. Rather, inferred resources will first have to meet the definitional requirements of, and be converted into, measured or indicated mineral resources, before they will be eligible to be considered as potential mineral reserves under the final rules. This will help limit the incentive for a registrant to be aggressive in disclosing inferred mineral resources because such disclosure would not increase the likelihood that such resources would ultimately be deemed to be mineral reserves.

b. Indicated and Measured Mineral Resources

We are adopting the proposed definition of indicated mineral resource.[589] This definition provides

[576] *See* letter from Vale.

[577] *See* letters from Amec, Eggleston, Northern Dynasty, Rio Tinto, and Ur-Energy.

[578] *See, e.g.,* 17 CFR 229.1302(d)(1)(iii)(A) [Item 1302(d)(1)(iii)(A) of Regulation S–K]; 17 CFR 229.1303(b)(3); and 17 CFR 229.1304(d)(1).

[579] Depending on the particular classes of resources that are determined (*e.g.,* if most or all of the determined resources are inferred resources), a registrant should consider whether appropriate risk factor disclosure is needed to explain to investors the limitations and risks of the resource determination.

[580] *See* letters from AngloGold, BHP, Eggleston, Midas, Rio Tinto, and SAMCODES 2.

[581] *See also* Section II.E.4.c. below for our discussion concerning the inclusion of inferred mineral resources in a quantitative assessment of the potential economic viability of a deposit.

[582] *See* the definition of ''inferred mineral resource'' in 17 CFR 229.1300 to mean that part of a mineral resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling.

[583] *See id.* As proposed, the final rules also explain that, because an inferred mineral resource has the lowest level of geological confidence of all mineral resources, which prevents the application of the modifying factors in a manner useful for evaluation of economic viability, an inferred mineral resource may not be considered when assessing the economic viability of a mining project, and may not be converted to a mineral reserve. *See id.*

[584] *See supra* note 541 and accompanying text.

[585] *See, e.g.,* the CRIRSCO International Reporting Template, *supra* note 20, at cl. 22; JORC Code, *supra* note 175, at pt. 21; and SAMREC Code, *supra* note 267, at pt. 25.

[586] When used in the context of mineral resource determination, ''limited geological evidence'' means evidence that is only sufficient to establish that geological and grade or quality continuity is more likely than not. *See* the definition of ''limited geological evidence'' in 17 CFR 229.1300. Under CRIRSCO's definition of inferred mineral resource, the requisite evidence is defined to mean geologic evidence that is sufficient to imply but not verify geological and grade or quality continuity. *See* CRIRSCO International Reporting Template, *supra* note 20, at cl. 22. We believe our articulation of the requisite evidence is more appropriate because it provides a clearer description of the low level of evidence that may support a determination of inferred mineral resources.

[587] *See supra* note 537 and accompanying text.

[588] *See, e.g.,* letter from Gold Resource.

[589] *See* 17 CFR 229.1300, which defines an indicated mineral resource as that part of a mineral resource for which quantity and grade or quality are estimated on the basis of adequate geological evidence and sampling. When used in the context

that the level of geological certainty associated with an indicated mineral resource is sufficient to allow a qualified person to apply modifying factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit.[590] The definition further explains that an indicated mineral resource has a lower level of confidence than that applying to a measured mineral resource and may only be converted to a probable mineral reserve.[591] As those commenters that supported the proposed definition noted,[592] this definition of indicated mineral resource is consistent with the comparable definition and guidance under the CRIRSCO-based codes.[593]

We are also adopting the proposed definition of measured mineral resource.[594] This definition provides that the level of geological certainty associated with a measured mineral resource is sufficient to allow a qualified person to apply modifying factors in sufficient detail to support detailed mine planning and final evaluation of the economic viability of the deposit.[595] The adopted definition also explains that a measured mineral resource has a higher level of confidence than that applying to either an indicated mineral resource or an inferred mineral resource, and may be converted to a proven mineral reserve or to a probable mineral reserve.[596]

Although some commenters opposed the use of the term ''conclusive evidence'' because they believed that it set an unrealistic standard,[597] we believe the term is appropriate because, as other commenters noted,[598] it is consistent with the CRIRSCO standards and conveys that the level of evidence is sufficiently high enough to enable a qualified person to conclude that he or she may proceed with detailed mine planning and final evaluation of the economic viability of the deposit using measured mineral resources. The term is not meant to convey that there is no uncertainty in the estimate. But rather, as is the case with the CRIRSCO-based codes, the term means there is no reasonable doubt, in the opinion of the qualified person estimating mineral resources, that the tonnage and grade of the deposit can be estimated to such accuracy that any variation from the estimate would have an insignificant effect on the potential economic viability.[599]

Because the definitions of ''indicated mineral resource'' and ''measured mineral resource'' are substantially similar to the corresponding CRIRSCO-based definitions, their adoption will more closely align the Commission's mining property disclosure requirements with the foreign mining code provisions, which would benefit both registrants and investors by promoting uniformity in mining disclosure standards. For those mining registrants that are dual-listed and already subject to the CRIRSCO-based requirements, such alignment should help to limit any potential additional costs imposed by the new requirement under the final rules to disclose indicated and measured mineral resources. In addition, some registrants, even if not currently subject to the CRIRSCO-based requirements, nonetheless apply substantially similar definitions of indicated and measured mineral resources as part of the process of determining mineral reserves,[600] and should therefore benefit from their familiarity with the adopted definitions.

c. Considerations of Geologic Uncertainty

In a change from the proposed rules, the final rules do not require that the qualified person quantify and disclose the uncertainty associated with indicated and measured mineral resources in terms of the uncertainty associated with the production estimates derived from them by providing the confidence limits of relative accuracy, at a specific confidence level, of the preliminarily estimated production quantities per period from the resource.[601] Although this approach for reporting the level of uncertainty is consistent with best practice in the industry,[602] we acknowledge that, for the reasons several commenters stated, requiring this approach in all instances could be impractical or inappropriate, unduly burdensome, and costly for many registrants.[603]

In lieu of a provision mandating a quantitative assessment of risk regarding indicated and measured mineral resources, we are requiring the qualified person to disclose the criteria used to classify a resource as indicated or measured and to justify the classification.[604] This disclosure must include a discussion of the uncertainty in the indicated or measured mineral resource estimates, the sources of the uncertainty, and how those sources were considered in the estimates.[605] This approach is consistent with commenters' suggestion that we permit a qualitative discussion of the uncertainties involved in resource determinations in lieu of a quantitative assessment.[606] While the final rules do not require a qualified person to use estimates of confidence limits derived from geostatistics or other numerical methods to support the disclosure of uncertainty surrounding mineral resource classification, if the qualified person chooses to use such confidence limit estimates, the final rules instruct that he or she should consider the limitations of these methods and adjust the estimates appropriately to reflect

of mineral resource determination, the term ''adequate geological evidence'' means evidence that is sufficient to establish geological and grade or quality continuity with reasonable certainty. *See id.*

[590] *See id.*

[591] *See id.*

[592] *See supra* note 553 and accompanying text.

[593] *See, e.g.,* CRIRSCO International Reporting Template, *supra* note 20, at cl. 23; JORC Code, *supra* note 175, at pt. 22; and SAMREC Code, *supra* note 267, at pt. 27.

[594] *See* 17 CFR 229.1300, which defines a measured mineral resource to mean that part of a mineral resource for which quantity and grade or quality are estimated on the basis of conclusive geological evidence and sampling. When used in the context of mineral resource determination, the term ''conclusive geological evidence'' means evidence that is sufficient to test and confirm geological and grade or quality continuity. *See* the definition of ''conclusive geological evidence'' in 17 CFR 229.1300.

[595] *See* the definition of ''measured mineral resource'' in 17 CFR 229.1300.

[596] *See id.*

[597] *See supra* note 565 and accompanying text.

[598] *See supra* note 560 and accompanying text.

[599] *See, e.g.,* JORC Code, *supra* note 175, at pt. 23 (stating that ''[m]ineralisation may be classified as a Measured Mineral Resource when the nature, quality, amount and distribution of data are such as to leave no reasonable doubt, in the opinion of the Competent Person determining the Mineral Resource, that the tonnage and grade of the mineralisation can be estimated to within close limits, and that any variation from the estimate would be unlikely to significantly affect potential economic viability'').

[600] As previously explained, the best practice in mining engineering is to determine mineral resources, prior to engineering and economic evaluation, to determine if any or all of those resources can be classified as mineral reserves. *See supra* note 447 and accompanying text. The predominant approach in the mining engineering literature is that mineral resource classification should be based on the estimator's judgment of the uncertainty in estimates due to the geologic uncertainty. *See, e.g.,* JORC Code, *supra* note 175, at pt. 24; and SAMREC Code, *supra* note 267, at pt. 29. This is consistent with the adopted definitions of mineral resource classifications.

[601] *See* 17 CFR 229.601(b)(96)(iii)(B)(*11*)(*v*) [Item 601(b)(96)(iii)(B)(*11*)(*v*) of Regulation S–K].

[602] *See supra* note 531 and accompanying text.

[603] *See, e.g.,* letters from CBRR, MMSA, Rio Tinto, and Vale.

[604] 17 CFR 229.601(b)(96)(iii)(B)(*11*)(*iv*) [Item 601(b)(96)(iii)(B)(*11*)(*iv*) of Regulation S–K].

[605] *See* Item 601(b)(96)(iii)(B)(*11*)(*v*) of Regulation S–K.

[606] *See supra* notes 570–572 and accompanying text.

sources of uncertainty that are not accounted for by these methods.[607]

The adopted approach is similar to the approach under the CRIRSCO-based codes, which encourages but does not require a quantitative assessment of risk regarding indicated or measured mineral resource estimates, and leaves the decision whether to use estimates of confidence limits to the discretion of the qualified person.[608] The qualified person may use estimates of confidence limits when assessing the level of uncertainty regarding his or her mineral resource estimates if he or she believes that such use would be practical and helpful. If, however, the qualified person determines that the use of estimates of confidence limits would be inappropriate or impractical, he or she may refrain from undertaking such a quantitative assessment of risk regarding his or her indicated or measured mineral resource estimates.

For similar reasons, the final rules do not require a qualified person to state the minimum percentage of inferred mineral resources he or she believes will be converted to indicated and measured mineral resources with further exploration. Many commenters objected to the proposed requirement because they believed that it would be impractical and burdensome.[609] We have been persuaded that such a requirement may not be necessary because the final rules require the qualified person to have a reasonable expectation that the majority of inferred mineral resources could be upgraded to indicated or measured mineral resources with continued exploration.[610] As some commenters suggested, this required expectation will act as a substitute for the proposed quantification in that, if the qualified person cannot meet this expectation with regard to part of a deposit, that part cannot be classified as inferred resources.[611] Further, the provision requiring the qualified person to be able to defend the basis for his or her reasonable expectation before his or her peers[612] will also help to dissuade the determination and disclosure of unreasonable inferred mineral resource estimates.

Similar to the approach adopted regarding indicated and measured resources, in lieu of a provision requiring a quantitative assessment of risk regarding inferred resources, we are requiring the qualified person to disclose the criteria used to classify a resource as inferred and to justify the classification.[613] This disclosure must include a discussion of the uncertainty in the inferred resource estimates, the sources of the uncertainty, and how those sources were considered in the estimates. This approach is again consistent with commenters' suggestion that we permit a qualitative discussion of the uncertainties involved in resource determination. We believe that such a required qualitative discussion of the criteria used to classify and justify a deposit, in whole or part, as inferred resources would serve to inform investors about the reliability of the disclosure without unduly burdening registrants.

Regardless of whether the qualified person provides a qualitative or quantitative assessment of risk, under the final rules the qualified person must adequately explain his or her reasons for classifying a mineral resource as inferred, indicated, or measured and that his or her classification is consistent with the definitions of inferred, indicated, and measured mineral resources. In this regard, the final rules require the qualified person to list all of the factors considered regarding the level of uncertainty and explain how those factors contributed to the final conclusion about the level of uncertainty underlying the resource estimates.[614]

4. The Initial Assessment Requirement

i. Rule Proposal

We proposed that a registrant's disclosure of mineral resources must be based upon a qualified person's ''initial assessment'' supporting the determination of mineral resources.[615] We proposed to define an ''initial assessment'' as a preliminary[616] technical and economic study of the economic potential of all or parts of mineralization to support the disclosure of mineral resources. As proposed, the initial assessment must be prepared by a qualified person and must include appropriate assessments of reasonably assumed modifying factors together with any other relevant operational factors that are necessary to demonstrate, at the time of reporting, that there are reasonable prospects for economic extraction.[617] Also as proposed, an initial assessment is required for disclosure of mineral resources but cannot be used as the basis for disclosure of mineral reserves.[618]

As we explained in the Proposing Release, an initial assessment is not a scoping[619] or conceptual study as

[607] *See* Item 601(b)(96)(iii)(B)(*11*)(*v*) of Regulation S–K. For example, if a qualified person uses geostatistics or simulation to estimate the uncertainty associated with a particular mineral resource as ''±15% relative accuracy at 90% confidence level for annual production quantities,'' then he or she, after determining that the risks associated with external risk factors are negligible, may report the numerically derived estimate without adjusting for any external risks. On the other hand, if the qualified person first determines that the risk factors external to the calculation are not negligible, then he or she should adjust the confidence limits to be wider than ±15% or use a confidence level less than 90% to account for the risk factors external to the calculation. In such case, the specific confidence limits (*e.g.,* ±25%) or confidence level (*e.g.* 80%) that would be appropriate will depend on the nature and significance of the risk factors external to the calculation of confidence limits obtained using numerical methods (*e.g.,* kriging or conditional simulation).

[608] *See, e.g.,* JORC Code, *supra* note 175, at pt. 25 (''Competent Persons are encouraged, where appropriate, to discuss the relative accuracy and confidence level of the Mineral Resource estimates with consideration of at least sampling, analytical and estimation errors. The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnage. Where a statement of the relative accuracy and confidence level is not possible, a qualitative discussion of the uncertainties should be provided in its place'').

[609] *See supra* note 573 and accompanying text.

[610] 17 CFR 229.1302(d)(1)(iii)(B)(*1*) [Item 1302(d)(1)(iii)(B)(*1*) of Regulation S–K].

[611] *See supra* note 577 and accompanying text.

[612] *See* Item 1302(d)(1)(iii)(B)(*2*) of Regulation S–K [Item 1302(d)(1)(iii)(B)(*2*) of Regulation S–K].

[613] *See* Item 601(b)(96)(iii)(B)(*11*)(*iv*) of Regulation S–K.

[614] *See* Item 601(b)(96)(iii)(B)(*11*)(*v*) of Regulation S–K. In deciding between inferred and indicated mineral resources, the qualified person should note that our definitions provide that the level of geological uncertainty associated with inferred mineral resources is too high to apply relevant technical and economic factors likely to influence the prospect of economic extraction in a manner useful for evaluation of economic viability whereas the level of geological uncertainty associated with indicated mineral resources is sufficient to allow a qualified person to apply modifying factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit. Similarly, in deciding between indicated and measured mineral resources, the qualified person should note that our definitions provide that the level of geological certainty associated with an indicated mineral resource is sufficient to allow a qualified person to apply modifying factors in sufficient detail to support mine planning whereas the level of geological uncertainty associated with measured mineral resources allows it to be used for ''detailed'' mine planning. This guidance is consistent with the CRIRSCO standards. See CRIRSCO International Reporting Template, *supra* note 20, at cl. 25.

[615] *See* Proposing Release, *supra* note 5, at Section II.E.3.

[616] As used in this context, the term ''preliminary'' refers to a less rigorous study than what is required for feasibility studies, as defined and discussed in Section II.G.2., below.

[617] *See* Proposing Release, *supra* note 5, at Section II.E.3.

[618] *See id.*

[619] A scoping study is ''an order of magnitude technical and economic study of the potential viability of Mineral Resources. It includes appropriate assessments of realistically assumed Modifying Factors together with any other relevant operational factors that are necessary to

defined in some of the CRIRSCO-based codes [620] or a preliminary economic assessment as defined in Canada's NI 43–101.[621] The purpose of an initial assessment is narrower than those studies as it would be done solely to support disclosure of mineral resources and not to determine whether to proceed with further work leading to preparing a pre-feasibility study for reserve determination.

As proposed, at a minimum, the qualified person's initial assessment must include a qualitative evaluation of modifying factors to establish the economic potential of the mining property or project (*i.e.,* that there are reasonable prospects for economic extraction of the mineral resource.) As we explained in the Proposing Release, requiring a well-defined and specific technical study to support disclosure of mineral resources would provide greater assurance to investors that mineral resource disclosure is reliable.[622]

a. Cut-Off Grade and Price Estimation

We proposed instructions to the initial assessment requirement designed to elicit material information concerning the basis for the qualified person's conclusion that there are reasonable prospects for economic extraction. The first proposed instruction was that an initial assessment must include cut-off grade estimation, based on assumed unit costs for surface or underground operations and estimated mineral prices.[623] As we explained, cut-off grade refers to the grade at which the destination of the material changes during mining. For purposes of the initial assessment, cut-off grade distinguishes between material that is going to the waste dump and material that is going to the processing plant (in surface mining) or between material that is not mined and material mined to be processed (in underground mining).

As part of the proposed initial assessment, the qualified person would need to assume the cost to mine a typical unit of the specific material involved. We did not propose to require the qualified person to estimate all specific operating and capital costs in detail in order to estimate unit cost as part of the initial assessment.[624] Rather, for the initial assessment, the proposed rule requires the qualified person to make assumptions about the two key determinants of cut-off grade estimation—operating costs and commodity prices. As we explained, any cut-off grade estimation that is not based upon, or does not disclose, these two assumptions may not fully meet the standard required to demonstrate reasonable prospects of economic extraction.[625]

As proposed, a qualified person must base the unit cost estimate used in cut-off grade estimation in an initial assessment on assumed unit costs derived, for example, from historic data or factoring, for either underground or surface mining. In addition, the qualified person must make and disclose an assumption about whether the deposit will be mined with underground or surface mining methods.[626]

When estimating mineral prices for the cut-off grade estimation, we proposed to require the qualified person to use a commodity price that is no higher than the average spot price during the 24-month period prior to the end of the last fiscal year, determined as an unweighted arithmetic average of the daily closing price for each trading day within such period, unless prices are defined by contractual arrangements.[627] For purposes of consistency, we proposed that qualified persons use this same ceiling for all other commodity price estimates in the proposed mining disclosure for both mineral resources and reserves.[628]

When explaining our reasons for proposing the 24-month trailing average price requirement, we stated our belief that the qualified person must use commodity price estimates that are reasonable and justifiable and represent long term [629] market trends in mineral resource and reserve estimation. However, we also noted that most foreign jurisdictions allow the qualified person to use any reasonable and justifiable price, which is based on the qualified person's or management's view of long term market trends.[630]

b. Qualitative Assessment of Factors and Permitted Assumptions

A second proposed instruction requires the qualified person to provide a qualitative assessment of all other relevant modifying factors to establish economic potential and justify why he or she believes that all issues can be resolved with further exploration and analysis.[631] We proposed to provide the minimum requirements for various factors that the qualified person must evaluate when preparing an initial assessment, pre-feasibility study, or feasibility study in a single table to facilitate a comparison of the modifying factors evaluation requirement across the three key technical studies proposed to be used for mineral resource and reserve disclosure. According to the proposed presentation, the modifying factors evaluative process becomes more exacting as mining property assessment progresses from mineral resource estimation to mineral reserve estimation.[632]

As proposed, at the initial assessment stage, a qualified person would be

demonstrate at the time of reporting that progress to a Pre-Feasibility Study can be reasonably justified.'' JORC Code, *supra* note 175, at pt. 38 and SME Guide, *supra,* note 177, at pt. 50.

[620] *See, e.g.,* JORC Code, *supra* note 175, at pt. 38 and SME Guide, *supra* note 177, Table 2, at 68–69 (providing requirements for scoping, pre-feasibility, and feasibility studies).

[621] *See* Canada's NI 43–101 *supra* note 123, at pt. 1.1 (defining a preliminary economic assessment to mean ''a study, other than a pre-feasibility or feasibility study, that includes an economic analysis of the potential viability of mineral resources'').

[622] *See* Proposing Release, *supra* note 5, at Section II.E.3.

[623] *See id.*

[624] If the qualified person decides to include economic analysis in the initial assessment, then the proposed rules would require the inclusion of detailed cost estimates. *See* Proposing Release, *supra* note 5, at note 190 and accompanying text.

[625] *See* Proposing Release, *supra* note 5, at Section II.E.3.

[626] *See id.*

[627] *See id.*

[628] *See id.*

[629] ''Long term'' in this context refers to the life of the mine. *See, e.g.,* David Humphreys, *Pricing and Trading in Metals and Minerals,* 1 *SME Mining Engineering Handbook,* at 49 (stating that the assumed commodity price should be ''the expected annual average price to be achieved for the mined product during each year of the project's life'').

[630] For example, the JORC Code and Canada's NI 43–101 and CIM Standards call for the qualified person to report the assumptions underlying price estimates and do not prescribe a specific price model. *See, e.g.,* JORC Code, *supra* note 175, Table 1, at 32 (requiring the qualified person to report ''[t]he derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products'' under revenue factors). *See also* ASX Listing Rules-Guidance Note 31 pt. 2.4 (''ASX also notes that to the extent that an estimate of mineral resources or ore reserves involves a representation about future matters, it must be based on reasonable grounds—meaning that the price, capital expenditure and operational expenditure assumptions used to calculate the estimates must also be objectively reasonable . . .''). Canada's NI 43–101 requires that a registrant disclosing mineral resources or reserves must disclose ''the key assumptions, parameters, and methods used to estimate the mineral resources and mineral reserves.'' Canada's NI 43–101, *supra* note 123, at pt. 3.4(c). The CIM Best Practice Guidelines lists [commodity] prices as one such key assumption but provides no guidance on how prices should be determined except that ''if commodity prices used differ from current prices . . ., an explanation should be given, including the effect on the economics of the project if current prices were used.'' CIM Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines 30 (2003).

[631] *See* Proposing Release, *supra* note 5, at Section II.E.3 (discussing Table 1).

[632] The modifying factors and requirements in proposed Table 1 were modeled on accepted industry practice and supported by the relevant mining engineering literature. *See, e.g.,* Richard L. Bullock, *Mineral Property Feasibility Studies,* 1 *SME Mining Engineering Handbook,* at 227–261.

required to evaluate, at a minimum, the following factors:

- Site infrastructure (*e.g.,* whether access to power and site is possible);
- Mine design and planning (*e.g.,* what is the broadly defined mining method);
- Processing plant (*e.g.,* whether all products used in the preliminary economic assessment can be processed with methods consistent with each other);
- Environmental compliance and permitting (*e.g.,* what are the required permits and corresponding agencies and whether significant obstacles exist to obtaining those permits); and
- Any other reasonably assumed modifying factors, including socio-economic factors, necessary to demonstrate reasonable prospects for economic extraction.

Another proposed instruction to the initial assessment requirement refers the qualified person to proposed Table 1 for the assumptions permitted to be made when preparing the initial assessment. These include assumptions concerning infrastructure location and the required plant area, type of power supply, site access roads and camp or town site, production rates, processing method and plant throughput, post-mining land uses, and plans for tailings disposal, reclamation, and mitigation.[633]

c. Optional Economic (Cash Flow) Analysis

We explained in the Proposing Release that an initial assessment, the singular goal of which is to demonstrate reasonable prospects of economic extraction, not economic viability, need not contain the quantitative analysis required to demonstrate the economic feasibility of mining projects. To demonstrate such economic feasibility, estimates of future cash flows are necessary because capital expenditures, operating costs, and revenues vary over the life of a mine due to variations in mining conditions. We stated, however, that if the qualified person chose to demonstrate the economic potential of the mining property beyond the minimum requirements of an initial assessment by including a cash flow analysis, we believed such analysis could benefit investors, subject to appropriate restrictions.

One proposed instruction to the initial assessment requirement addresses the option of providing cash flow analysis as part of the initial assessment. This instruction states that, while a qualified person may include cash flow analysis in an initial assessment to demonstrate economic potential, the qualified person may not use inferred mineral resources in such cash flow analysis.[634] Moreover, if the qualified person includes cash flow analysis in the initial assessment, then operating and capital cost estimates must have an accuracy level of at least approximately ±50% [635] and a contingency level of no greater than 25% of the direct estimate.[636] The proposed instruction also provided that the qualified person must state the accuracy and contingency levels in the initial assessment.[637]

We also proposed, to the extent a qualified person wants to include an economic analysis in an initial assessment, he or she would only be permitted to use a cash flow analysis. All other quantitative analyses would be prohibited. We based this prohibition on our belief that other quantitative measures of economic potential that omit cash flows could be potentially misleading.[638]

ii. Comments on the Rule Proposal

Several commenters supported the Commission's proposal to require that a registrant's disclosure of mineral resources be based upon a qualified person's initial assessment, which supports the determination of mineral resources, including that the qualified person consider applicable modifying factors and relevant operational factors at the resource evaluation stage.[639] Many other commenters either offered only conditional support for or opposed the Commission's proposed initial assessment requirement because they believed it went beyond what is required under the CRIRSCO standards at the resource determination stage. For example, some commenters stated that, while there should be some form of documentation required by a qualified person to support the disclosure of mineral resources in Commission filings, it should be consistent with what is allowed under the CRIRSCO-based codes, and should not be termed ''an initial assessment'' in order to avoid investor confusion.[640] One commenter recommended that the required initial assessment take the form of a ''conceptual study,'' as defined under the CRIRSCO standards, which would include the consideration of applicable modifying factors.[641] Another commenter stated that the assessment of modifying factors as set forth in proposed Table 1 was overly prescriptive, but also agreed that the qualified person should ''apply the CRIRSCO principles for the qualitative assessment of modifying factors'' when determining mineral resources.[642] In lieu of the proposed initial assessment requirement, that commenter, as well as others, recommended allowing a report that conforms to JORC Table 1 on an ''if not why not basis.'' [643]

In explaining its opposition to the proposed initial assessment requirement, one commenter maintained that, under CRIRSCO, at the resource determination stage, all that is required is that the qualified person demonstrate that there are reasonable prospects for eventual economic extraction. That commenter stated that it is best left to the discretion of the qualified person to determine the most appropriate methodology for identifying, estimating, and disclosing mineral resources.[644]

a. Cut-Off Grade and Price Estimation

Most commenters that addressed the issue supported the proposed requirement that a qualified person's documentation in support of resource determination and disclosure include cut-off grade estimation based on assumed unit costs for surface or

[633] *See* Proposing Release, *supra* note 5, at Section II.E.3 (discussing Table 1).

[634] *See* Proposing Release, *supra* note 5, at Section II.E.3.

[635] The phrase ''accuracy level of at least approximately ±50%'' means that the qualified person must have a reasonable basis to believe that assumptions underlying the estimate will result in actual costs with a substantial likelihood of being within 50% and 150% of the estimate.

[636] The term ''contingency'' is used to address the level of confidence in the cost estimates. It generally means the amount ''set aside for any additional, unforeseen costs associated with unanticipated geologic circumstances or engineering conditions.'' Scott A. Stebbins, *Cost Estimating for Underground Mines,*1 *SME Mining Engineering Handbook,* at 270. Thus, a contingency level of ≤25% means the contingency cannot be more than 25% of the direct cost estimate.

[637] *See* Proposing Release, *supra* note 5, at Section II.E.3.

[638] *See id.*

[639] *See* letters from CBRR (recommending that the initial assessment include material risk analysis, but that more comprehensive risk analysis should not be required because the more detailed analysis would be expected in a separate report); Columbia, CSP², Gold Resource (recommending that the initial assessment include a discussion of the material risks associated with the mineral resource determination); and Montana Trout.

[640] *See, e.g.,* letters from AngloGold, BHP, JORC, and Rio Tinto.

[641] *See* letter from AngloGold.

[642] *See* letter from BHP. In contrast, five other commenters indicated that proposed Table 1 would be useful. *See* letters from AngloGold, Midas, MMSA, NSSGA, and Northern Dynasty.

[643] *See* letters from BHP, JORC, and Rio Tinto. Such a report requires an estimate of mineral resources to be supported by a discussion of factors enumerated in that table, and if certain factors have been omitted, there must be a reasonable explanation of why they have been excluded. As one commenter explained, such a report would entail a qualitative assessment of modifying factors as well as a discussion of the assumptions underlying cut-off estimates. *See* letter from Rio Tinto.

[644] *See* letter from Eggleston.

underground operations.[645] One commenter recommended requiring that, consistent with current industry practice, the determination of the cut-off grade include estimates of processing costs, metallurgical recovery, and general and administrative costs.[646] Another commenter recommended using the term ''cut-off'' instead of ''cut-off grade'' because the criteria used may be grade, but could also be net smelter return or include quality or metallurgical characteristics.[647]

Many commenters opposed the proposed requirement that, when estimating mineral prices for the purpose of cut-off grade estimation or cash flow analysis for both mineral resource and reserve determination, the qualified person must use a commodity price that is no higher than the average spot price during the 24-month period prior to the end of the last fiscal year, determined as an unweighted arithmetic average of the daily closing price for each trading day within such period, unless prices are defined by contractual arrangements. While commenters generally agreed that cut-off estimation should be based on estimated prices, most commenters that addressed the issue opposed the proposed 24-month trailing average pricing model on the grounds that it is unrealistic and inconsistent with pricing requirements, guidance, and practice under the CRIRSCO-based codes, which permit prices to be based on forward-looking pricing forecasts. Consequently, according to those commenters, compliance with the historical-based pricing requirement would be costly and unduly burdensome for companies dual-listed in the United States and one or more of the CRIRSCO jurisdictions.[648]

According to those commenters, the prevailing industry practice in the CRIRSCO-based jurisdictions is to use forward-looking pricing forecasts when estimating mineral resources and reserves. The forecasted prices ''are typically based on consensus projections that are derived from an average of the short-term and an average of the long-term prices provided by numerous financial institutions that are independent of the companies that report mineral resources and reserves.'' [649] Because most mining companies base their mineral resource and reserve estimates on these consensus prices, investors can then compare similar mineral projects in different parts of the world. The proposed required use of a two-year trailing average price would not allow for this comparability. The commenters claimed this would force unrealistically optimistic price assumptions in a declining market and unrealistically pessimistic prices in a rising market.[650]

One commenter estimated that the proposed 24-month pricing model, if adopted, would result in a 40 percent reduction in mineral resources reported to the Commission compared to other jurisdictions.[651] Another commenter stated that the proposed historical pricing model would create timing concerns because registrants would not be able to conduct a rigorous reserve analysis between the end of the fiscal year and the filing deadline for Form 10–K annual reports. Accordingly, ''registrants would be forced, as a practical matter, months before the end of the reporting period, to make a very conservative estimate of what the actual mandated ceiling price will be, which may lead to overly conservative reserve and resource estimates.'' [652] One other commenter stated that the 24-month period is too short because pricing for coal can vary and fluctuate widely in a relatively short period of time and over multiple markets.[653]

Many commenters recommended that, in lieu of the 24-month trailing average price requirement, and consistent with the CRIRSCO-based codes, the Commission require that, when estimating prices for the purpose of both mineral resource and reserve disclosure, the qualified person use any reasonable and justifiable price, which is typically based on the qualified person's or management's view of long-term market trends, as long as the qualified person provides justification for, and discloses all material assumptions concerning the price used.[654] Some commenters further noted that such a requirement would be consistent with certain financial reporting requirements for the mining industry under U.S. GAAP.[655]

In contrast, one commenter recommended using a 36-month average because the commenter believed it is less volatile and, therefore more appropriate than the proposed 24-month period.[656] Another commenter also preferred the use of a 36-month period but only as a ''fallback position'' in the event that an issuer is not permitted to engage in forward-looking analysis of the price.[657] One commenter recommended that the Commission adopt a 12-month trailing average price model for mineral resource and reserve determination and disclosure because it would reflect mineral resource and reserve estimates based on current market conditions.[658]

Most of the commenters that addressed the pricing issue opposed the Commission's proposal to require the use of the same pricing standard for both mineral resource and mineral reserve determination.[659] Those commenters maintained that commodity prices used to estimate mineral resources are typically higher than the prices used to estimate mineral reserves because of the longer period it takes to effect commodity production from resources compared to reserves. According to commenters, using the same price standard for resources and reserves would result in an underestimation of a registrant's resources, which would put a U.S. registrant at a significant disadvantage relative to registrants not subject to the proposed rules.[660] A few commenters recommended using a price estimate for resources determination that is a set

[645] *See* letters from AngloGold, CBRR, Eggleston, Golder, Midas, Northern Dynasty, and SRK 1. One commenter, however, opposed requiring an initial assessment using assumed unit costs for operations that would include pricing and other cash flow information on the grounds that this information is proprietary, commercially sensitive, and confidential. *See* letter from Alliance.

[646] *See* letter from SRK 1.

[647] *See* letter from Amec. The commenter also stated that a qualified person should be allowed to make the determination of assumed unit costs based on benchmarking to similar deposit types and types of operations in the particular jurisdiction.

[648] *See* letters from AIPG, Alliance, Amec, AngloGold, BHP, CBRR, Chamber, CIM, Cleary & Gottlieb, Cloud Peak, Coeur, CRIRSCO, Davis Polk, Dorsey & Whitney, Eggleston, Energy Fuels, FCX, Golder, Graves, JORC, MMSA, Newmont, NMA 1, Northern Dynasty, PDAC, Randgold, Rio Tinto, Royal Gold, SAMCODES 1 and 2, Shearman & Sterling, SME 1, Ur-Energy, Vale, and Willis.

[649] Letter from CIM.

[650] *See id; see also* letter from SME 1.

[651] *See* letter from BHP.

[652] Letter from FCX.

[653] *See* letter from Alliance.

[654] *See, e.g.,* letters from AIPG, Amec, CBRR, Chamber , Cleary & Gottlieb, Cloud Peak, Davis Polk, Eggleston, Energy Fuels, FCX, JORC, Newmont, SAMCODES 1, Shearman & Sterling, SME 1, and Vale.

[655] *See* letter from AIPG (''U.S. GAAP requires that estimated future cash flows from mineral properties be used in determining the value of mining assets in a purchase price allocation and in testing mining assets for impairment. The estimated future cash flows are based on management's projections using projected sales prices reflecting the current and future forecasted prices. The forecasted prices should be consistent with the length of the mine life''). *See also* FCX, Newmont, SME 1, and Vale.

[656] *See* letter from Gold Resource.

[657] *See* letter from Eggleston.

[658] *See* letter from Andrews & Kurth.

[659] *See* letters from Amec, AngloGold, BHP, CBRR, CIM, Coeur, Eggleston, Energy Fuels, FCX, Golder, JORC, Midas, MMSA, Newmont, NMA 1, Northern Dynasty, Randgold, Rio Tinto, Royal Gold, SAMCODES 1, SME 1, SRK 1, Vale, and Willis.

[660] *See, e.g.,* letter from Vale; *see also* letter from SME 1.

percentage (ranging from 5% to 20%) higher than the price used for reserve estimation.[661]

An additional commenter believed that the research it conducts to estimate future commodity prices is sensitive intellectual property that is not required to be disclosed under the CRIRSCO template or JORC.[662] This commenter suggested that the Commission permit a registrant to discuss the methodology used to estimate its pricing model without requiring disclosure of the price itself. Alternatively, this commenter requested that a registrant be allowed to compare its forward-looking pricing to that produced by an industry recognized expert and comment on whether there is a material difference between the forward-looking pricing models.[663]

One commenter requested that the Commission allow a registrant to keep its future price assumptions confidential when reporting resources and reserves if those assumptions are commercially sensitive.[664] As conditions to keeping its price assumptions confidential, a registrant would have to disclose the methodology for estimating mineral resources and reserves, and state whether those resources and reserves would be extractable if commodity prices were not greater than a certain historical price. This commenter suggested using a 36-month average trailing price for this purpose rather than a 24-month average trailing price because it is less volatile.[665]

b. Qualitative Assessment of Factors and Permitted Assumptions

One commenter opposed requiring the determination of mineral resources to include appropriate assessments of reasonably assumed modifying factors because it believed that the term ''modifying factors'' should be used exclusively when converting mineral resources to mineral reserves.[666] That commenter recommended substituting the phrase ''technical and economic factors'' for ''modifying factors'' in order to be consistent with the CRIRSCO standards. That commenter also believed that the proposed initial assessment requirement may create an expectation of a much more detailed and formal evaluation of the technical and economic factors than what is currently industry-accepted practice.[667] A second commenter similarly indicated that because consideration of all applicable modifying factors is only appropriate at the reserve determination stage, requiring an assessment of the modifying factors at the resource evaluation stage could confuse investors into mistakenly believing that resources are reserves.[668]

Some commenters stressed the importance of considering environmental factors at the initial assessment stage.[669] According to two of those commenters, such consideration should include whether the company's operations will generate acid-mine drainage, which often requires post-project collection and treatment of pollution in perpetuity and results in considerable environmental and financial liability.[670] Another commenter recommended that the initial assessment discuss a mining project's water requirements and address how water availability for the region is predicted to change in the future, whether from increased incidents of drought, competing demands from nearby agricultural users, or groundwater drawdowns.[671]

c. Optional Economic (Cash Flow) Analysis

Some commenters maintained that the Commission should align itself with Canada's NI 43–101 and permit the disclosure of an economic assessment of resources, with cash flow analysis, including permitting the use of inferred resources as long as appropriate disclaimers are given, in addition to requiring disclosure of material assumptions and qualitative assessment of relevant technical and economic factors likely to affect prospects of economic extraction, if a registrant discloses mineral resource estimates.[672] Those commenters recommended that the Commission not use the term ''initial assessment'' and instead name the documentation to support a mineral resource estimate a ''resource study'' and name the report describing economic potential of mineral resources either a scoping study or preliminary economic assessment.[673] Commenters stated that, because inferred mineral resources are permitted to be included in economic analyses in preliminary economic assessments under Canada's NI 43–101 and in scoping studies under other CRIRSCO-based codes, U.S. registrants would be placed at a competitive disadvantage were the Commission to adopt the proposed prohibition of inferred mineral resources in economic assessments.[674]

iii. Final Rules

We are adopting the proposed requirement that a registrant's disclosure of mineral resources be based upon a qualified person's ''initial assessment'' supporting the determination of mineral resources.[675] The final rules define an initial assessment, as proposed, to mean a preliminary technical and economic study of the economic potential of all or parts of mineralization to support the disclosure of mineral resources.[676] However, in a change from the proposed rules, as a result of comments received, the final rules do not require the qualified person's initial assessment to include a qualitative evaluation of the modifying factors to establish the economic potential of the mining property or project. Rather, consistent with the suggestion of some commenters,[677] the final rules provide that, at a minimum, the initial assessment must include the qualified person's qualitative evaluation of relevant technical and economic factors likely to influence the prospect of economic extraction to establish the economic potential of the mining property or project.[678] To reflect this change, we have revised the proposed definition of initial assessment to provide that the initial assessment must include appropriate assessments of reasonably assumed technical and economic factors, together with any other relevant operational factors, that are necessary to demonstrate at the time

[661] *See, e.g.,* letters from SRK 1, Eggleston and Newmont.

[662] *See* letter from BHP.

[663] *See id.*

[664] *See* letter from Vale; *see also* letter from MMSA (requesting generally that the Commission allow for exemptions from the required disclosure ''to protect trade secrets, confidential information, product pricing, and marketing information that is vital for a company to maintain its competitive advantage or that could represent violations in anti-trust or other legislation in the country of operation'').

[665] *See* letter from Vale.

[666] *See* letter from Amec.

[667] *See id.*

[668] *See* letter from Eggleston; *see also* letter from Energy Fuels (opposing the proposed initial assessment requirement because it attempts to treat a mineral resource as a ''mineral reserve currently in the making,'' which would send the wrong message to investors); and SAMCODES 2 (stating that ''[i]t is good practice to undertake a high-level ''initial assessment'' to support the claim of reasonable prospects for economic extraction, but it is not necessary to have to disclose the process and modifying/operational factors that were applied.).

[669] *See* letters from Columbia, CSP[2], and Montana Trout.

[670] *See* letters from CSP[2] and Montana Trout.

[671] *See* letter from Columbia.

[672] *See, e.g.,* letters from Coeur, Midas, SME 1, and Willis.

[673] *See* letters from Coeur, SME 1, and Willis.

[674] *See, e.g.,* letters from Coeur and SME 1.

[675] 17 CFR 229.1302(d)(1) [Item 1302(d)(1) of Regulation S–K].

[676] *See* the definition of ''initial assessment'' in 17 CFR 229.1300.

[677] *See, e.g.,* letter from Amec.

[678] *See* 17 CFR 229.1302(d)(1)(i)(B) [Item 1302(d)(1)(i)(B) of Regulation S–K].

of reporting that there are reasonable prospects for economic extraction.[679]

This change is intended to address the concern of some commenters[680] that the proposed initial assessment requirement would exceed what is required under the CRIRSCO standards because full consideration of the modifying factors is only required at the mineral reserve determination stage. The adopted initial assessment requirement will more closely align the Commission's mining property disclosure requirements with the CRIRSCO standards.[681]

At the same time, the adopted requirement will underscore that, at the resource determination stage, the qualified person must assess both the geologic characteristics of the deposit as well as the relevant technical and economic factors likely to influence the prospect of economic extraction in order to conclude that the parts of the mineral deposit he or she is determining to be mineral resources have reasonable prospects of economic extraction. While the relevant technical and economic factors to be considered at the resource determination stage are likely to be similar to the modifying factors applied at the reserve determination stage, because the final rules only require a qualitative assessment of the technical and economic factors at the resource determination stage, that assessment will be less thorough and less certain than the assessment of modifying factors required at the reserve determination stage. Accordingly, the final rules provide, as proposed, that an initial assessment cannot be used as the basis for disclosure of mineral reserves.[682]

Although a commenter recommended that the format of the initial assessment conform to JORC Table 1's Checklist of Assessment and Reporting Criteria on an ''if not why not basis,'' [683] we are adopting, substantially as proposed, a format for the initial assessment that more closely resembles the technical report format of Canada's NI 43–101F1. While there is substantial overlap in the items required to be considered and discussed under JORC Table 1 and Canada's NI 43–101F1, we believe that the presentation of disclosure requirements in the Canadian technical report format is clearer and more comprehensive and, as such, will help elicit better disclosure.[684]

a. Cut-Off Grade and Price Estimation

Similar to the proposed rules, the final rules require that a qualified person include in the initial assessment a cut-off grade[685] estimation based on assumed unit costs for surface or underground operations and estimated mineral prices.[686] We continue to believe that a discussion of cut-off grade is an appropriate requirement for a technical study that supports mineral resource estimation because, by definition, a mineral resource estimate is not just an inventory of all mineralization. It is an estimate of that part of the deposit that has reasonable prospects of economic extraction.[687] We believe the cut-off grade is the best indicator, at this stage, of such prospects because it requires the qualified person to estimate and exclude that portion of the deposit that has no reasonable prospects of economic extraction at the time of the analysis.

In connection with the cut-off grade estimation requirement, the qualified person must make and disclose an assumption about whether the deposit will be mined with underground or surface mining methods.[688] Given the wide disparity between surface and underground mining costs, we are concerned that any unit costs estimate that is not specific to one of these two broad categories of mining methods may not adequately establish the reasonable prospects of economic extraction.

In a change from the proposed rules, in response to comments received, we are not requiring that the qualified person use a commodity price that is no higher than the average spot price during the 24-month period prior to the end of the last fiscal year, unless prices are defined by contractual arrangements. Consistent with the suggestion of numerous commenters, the final rules instead provide that, when estimating mineral prices, the qualified person must use a price for each commodity that provides a reasonable basis for establishing the prospects of economic extraction for mineral resources.[689] In addition, the qualified person must disclose the price used and explain, with particularity, his or her reasons for using the selected price, including the material assumptions underlying the selection. This explanation must include disclosure of the time frame used to estimate the commodity price and unit costs for cut-off grade estimation and the reasons justifying the selection of that time frame.[690] The selected price and all material assumptions underlying it must be current as of the end of the registrant's most recently completed fiscal year.[691] Similar to the proposed rule, the qualified person may use a price set by contractual arrangement, provided that such price is reasonable, and the qualified person discloses that he or she is using a contractual price when disclosing the price used.[692]

We believe that the adopted estimated pricing requirement will more closely align the Commission's disclosure rules to the ''any reasonable and justifiable price'' standard under the CRIRSCO-based codes and thereby address several concerns raised by commenters.[693] First, under the final rules, a qualified person is able to use a price that is either a historical price or one based on forward-looking pricing forecasts. Because, according to commenters, most mining companies currently rely on consensus prices based on forward-looking pricing forecasts,[694] the adopted estimated

[679] *See* 17 CFR 229.1300.

[680] *See, e.g.,* letters from Amec, Eggleston, and Northern Dynasty.

[681] *See, e.g.,* letter from Amec; *see also* CRIRSCO International Reporting Template, *supra* note 175, at cl. 21 (''The term 'reasonable prospects for eventual economic extraction' implies a judgement (albeit preliminary) by the Competent Person in respect of the technical and economic factors likely to influence the prospect of economic extraction, including the approximate mining parameters.'').

[682] *See* the definition of ''initial assessment'' in 17 CFR 229.1300.

[683] *See* letters from BHP, JORC, and Rio Tinto.

[684] *See infra* Section II.G.3. for a detailed discussion of the disclosure requirements for the technical report summary regarding mineral resources (in addition to those regarding mineral reserves and exploration results).

[685] The final rules define cut-off grade, as proposed, to mean the grade (*i.e.,* the concentration of metal or mineral in rock) which determines the destination of the material during mining. For purposes of establishing ''prospects of economic extraction,'' the cut-off grade is the grade that distinguishes material deemed to have no economic value (it will not be mined in underground mining or if mined in surface mining, its destination will be the waste dump) from material deemed to have economic value (its ultimate destination during mining will be a processing facility). Other terms used in similar fashion as cut-off grade include net smelter return, pay limit, and break-even stripping ratio. 17 CFR 229.1300.

[686] *See* 17 CFR 229.1302(d)(2) [Item 1302(d)(2) of Regulation S–K].

[687] *See, e.g.,* CIM Definition Standards at 4 (''A Mineral Resource is an inventory of mineralization that under realistically assumed and justifiable technical and economic conditions might become economically extractable.''). *See also* JORC Code, *supra* note 175, at pt. 20 (''Portions of a deposit that do not have reasonable prospects for eventual economic extraction must not be included in a Mineral Resource''); and SME Guide, *supra* note 177, at pt. 35 (''. . .a Mineral Resource is not an inventory of all mineralization drilled or sampled, regardless of cut-off grade, likely mining dimensions, location, or continuity; rather it is a realistic estimate of mineralization which, under assumed and justifiable technical and economic conditions, might become economically extractable.'').

[688] *See* Item 1302(d)(2) of Regulation S–K.

[689] *See id.*

[690] *See id.*

[691] *See id.*

[692] *See id.*

[693] We are also adopting this estimated pricing standard for the determination and disclosure of mineral reserves. *See infra* Section II.F.2.

[694] *See, e.g.,* letter from CIM.

pricing requirement will allow registrants to use the same prices for disclosing mineral resources in Commission filings as they do for their own internal management purposes and when reporting in CRIRSCO-based jurisdictions. This should help limit the compliance costs of the final rules.

Second, the revised estimated pricing requirement permits a registrant to use a different price for mineral resource determination than it uses for reserve determination, and to vary the estimated price for different commodities, as long as those prices are reasonable and justifiable. Consequently, the determination and disclosure of a registrant's mineral resources should more accurately reflect the information guiding a registrant's business decisions because the qualified person has more flexibility in selecting the different prices for mineral resource and reserve estimation (as opposed to being limited to prices less than the 24-month trailing average).[695]

Third, because the adopted estimated pricing requirement conforms to the CRIRSCO standards and global industry practice, it will help to promote uniformity and comparability regarding the disclosure of mineral resource and reserve estimates among mining registrants, which should benefit investors by enhancing their analysis and understanding of registrants' mining operations.[696]

We are not adopting a provision, as suggested by a few commenters,[697] that would exempt the disclosure of the price, and related material assumptions, underlying mineral resource (or mineral reserve) estimates. Because of the important role that pricing considerations play in determining estimates of mineral resources (and mineral reserves), we believe that such an exemption could lead to the omission of information that is material to an investor's understanding of those estimates.

b. Qualitative Assessment of Factors and Permitted Assumptions

We are adopting a provision that specifies the relevant technical and economic factors likely to influence the reasonable prospect of economic extraction that, at a minimum, the qualified person must qualitatively assess.[698] While the factors are identical to those in the proposed instruction, we have conformed that instruction to reflect the change in the definition of, and required disclosure concerning, the initial assessment. We believe a qualitative evaluation of these listed factors, at a minimum, is necessary to determine the economic potential of a mining property. An assessment of the geological characteristics of the mined material would not be complete if it did not include an evaluation and discussion of infrastructure, mine design, processing, and environmental issues that could pose obstacles to the material's extraction.

We are adopting another provision that refers the qualified person to Table 1 to paragraph (d) of Item 1302 for the assumptions permitted to be made when preparing the initial assessment as well as other technical studies.[699] This table sets forth the minimum requirements for various factors that the qualified person must evaluate when preparing an initial assessment, pre-feasibility study, or feasibility study. It is substantially similar to the proposed Table 1 but has been conformed to reflect the change in the definition of, and required disclosure concerning, the initial assessment. We are presenting the minimum factors to be considered for each study in one table to facilitate a comparison of the evaluative factor requirement across the three key technical studies proposed to be used for mineral resource and reserve disclosure. As this presentation demonstrates, the evaluative process becomes more exacting as mining property assessment progresses from mineral resource estimation to mineral reserve estimation.

The assumptions permitted to be made in the initial assessment include those pertaining to infrastructure location and the required plant area, type of power supply, site access roads and camp or town site, production rates, processing method and plant throughput, post-mining land uses, and plans for tailings disposal, reclamation, and mitigation. Allowing assumptions for a variety of factors at the resource determination stage is generally consistent with guidelines under the CRIRSCO-based codes.[700] Moreover, the assumption phase is temporary as the qualified person must substitute most assumptions with empirical evidence and facts as part of the pre-feasibility or feasibility study that is required for determining mineral reserves.

We are not expanding the disclosure of environmental factors in connection with the initial assessment, as suggested by some commenters.[701] As explained in greater detail below, we believe that the specified environmental factors required to be included in the technical report summary will likely cover the concerns raised by those commenters to the extent that they are material to investors.[702]

c. Optional Economic (Cash Flow) Analysis

Similar to a proposed instruction, we are adopting a provision stating that a qualified person may include cash flow analysis in an initial assessment to demonstrate economic potential. If the qualified person includes cash flow analysis in the initial assessment, then the adopted provision imposes the same accuracy and contingency levels required for operating and capital cost estimates as under the proposed instruction.[703] The qualified person must state the accuracy and contingency levels in the initial assessment. We believe that these accuracy and contingency requirements [704] for operating and capital costs are appropriate because they are generally consistent with those accepted for scoping studies.[705]

In a change from the proposed rules, the final rules will permit a qualified person to include inferred mineral resources in a cash flow analysis prepared as part of the initial assessment as long as the qualified person:

- States with equal prominence to the disclosure of mineral resource estimates that the assessment is preliminary in nature, it includes inferred mineral resources that are considered too speculative geologically to have modifying factors applied to them that would enable them to be categorized as mineral reserves, and there is no certainty

[695] *See supra* note 659 and accompanying text.

[696] *See, e.g.,* letter from CIM.

[697] *See supra* notes 662–664 and accompanying text.

[698] *See* 17 CFR 229.1302(d)(3) [Item 1302(d)(3) of Regulation S–K]. These factors include: site infrastructure; mine design and planning; processing plant; environmental compliance and permitting; and any other reasonably assumed technical and economic factors, including factors related to local individuals and groups, which are necessary to demonstrate reasonable prospects for economic extraction. *See also* Table 1 to paragraph (d) of Item 1302 of Regulation S–K.

[699] *See* 17 CFR 229.1302(d)(1)(iv) [Item 1302(d)(1)(iv) of Regulation S–K].

[700] *See, e.g.,* SME Guide, *supra* note177, Table 1, at 44–67.

[701] *See supra* notes 669–671 and accompanying text.

[702] *See infra* Section II.G.3.

[703] 17 CFR 229.1302(d)(4)(i) [Item 1302(d)(4)(i) of Regulation S–K], which requires operating and capital cost estimates to have an accuracy level of at least approximately ±50 percent and a contingency level of no greater than 25 percent.

[704] We have included both accuracy and contingency requirements for operating and capital cost estimates in Table 1 to paragraph (d) of Item 1302 of Regulation S–K.

[705] *See, e.g.,* SME Guide, *supra* note177, Table 2, at 68–69 (providing accuracy and contingency ranges for capital and operating cost estimates in scoping, pre-feasibility, and feasibility studies).

that this economic assessment will be realized;

- Discloses the percentage of the mineral resources used in the cash flow analysis that are classified as inferred resources; and
- Discloses, with equal prominence, the results of the economic analysis excluding inferred resources in addition to the results that include inferred resources.[706]

These conditions are generally in line with the approach of Canada's NI 43–101, which permits the use of inferred resources in a preliminary economic assessment as long as cautionary language about such use is provided. We are adopting this change to address commenters' concern that, because inferred resources may be included in economic analyses in preliminary economic assessments under Canada's NI 43–101 and in scoping studies under other CRIRSCO-based codes, U.S. registrants would be at a competitive disadvantage were we to adopt subpart 1300, as proposed.[707] We believe that the above conditions will appropriately caution investors concerning the level of risk underlying such mineral resource estimates and provide them with additional information to help evaluate whether to invest on the basis of estimates that include inferred resources.

As previously noted, an initial assessment is not required to have an economic analysis, and when it does not include such an analysis, its scope is narrower than that of a preliminary economic assessment under Canada's NI 43–101 or a scoping study under other CRIRSCO-based codes.[708] But if a qualified person opts to provide an economic analysis, which includes inferred resources, in an initial assessment under the final rules, a U.S. registrant may use such an initial assessment for substantially similar purposes as a Canadian registrant uses a preliminary economic assessment or another non-U.S. registrant uses a scoping study in Australia, South Africa, or other foreign jurisdiction that has adopted a CRIRSCO-based code.

As previously discussed, we do not believe that other quantitative measures of economic potential that omit cash flows are appropriate, and we are concerned that they potentially could be misleading.[709] Capital expenditures, operating costs, and revenues vary over the life of a mine due to variations in mining conditions. Hence, economic analyses that do not account for these variations may not tell a complete story. For example, a gross profit evaluation that does not account for the timing of capital outlays and revenues could indicate that a project is viable, yet in actuality timely loan repayments may not be possible. Consequently, to the extent a qualified person wants to include an economic analysis in an initial assessment, he or she must use a cash flow analysis.

5. USGS Circular 831 and 891

i. Proposed Interpretation

In the Proposing Release, we explained why we do not believe that it would be appropriate to permit the continued classification of mineral resources based on United States Geological Survey (''USGS'') Circulars 831 and 891 following adoption of subpart 1300 of Regulation S–K.[710] Consistent with the mission of the USGS, these circulars were mostly suitable for national and regional level reporting of mineral resources and reserves for government planning purposes,[711] and were not intended to be the basis for public company disclosure to investors. While Circular 831 initially established a classification system for all mineral commodities, its classification scheme has been largely phased out for metal mining. It is still used in coal and some industrial minerals mining, while Circular 891 was specifically designed, and is still used, for resource or reserve classification of coal.[712]

In the past, the staff has not objected to mineral reserve disclosure that used these circulars to classify mineral resources as inferred, indicated, or measured resources.[713] However, we indicated in the Proposing Release that we do not believe the use of USGS Circulars 831 and 891 for resource classification in Commission filings would be consistent with the proposed rules. As we explained, the primary criterion for the required mineral resource classification under the CRIRSCO standards, upon which the Commission's proposed rules are based, is the geologic confidence in the estimates based on the geologic evidence (limited, adequate, or conclusive).[714] In addition, under the CRIRSCO standards and the Commission's proposed rules, all disclosed mineral resources must have reasonable prospects of economic extraction, which requires the qualified person to consider a variety of technical and economic factors, in addition to geologic evidence, when evaluating the economic potential of a deposit.[715]

In contrast, the primary criterion in the Circulars' classification system is the extent to which tonnages fall within particular distances from a drill hole or outcrop.[716] Although drill hole spacing may be a factor that informs the qualified person's assessment of geologic confidence, for the purposes of public company disclosure to investors, we indicated that we do not believe it should be the sole factor.[717] We therefore solicited comment on the appropriateness of using Circulars 831 and 891 to classify mineral resources.[718]

[706] 17 CFR 229.1302(d)(4)(ii) [Item 1302(d)(4)(ii) of Regulation S–K].

[707] *See supra* note 674 and accompanying text.

[708] *See supra* notes 619–621 and accompanying text.

[709] *See* Proposing Release, *supra* note 5, at Section II.E.3.

[710] *See* Proposing Release, *supra* note 5, at Section II.E.4, which refers to USGS Circular 891 (stating that ''[i]n 1980, the [USGS and Bureau of Mines] published Circular 831, 'Principles of the Mineral Resource Classification System of the U.S. Bureau of Mines and U.S. Geological Survey' (U.S. Geological Survey, 1980). The circular, which outlines a classification system for all mineral commodities, filled the classification needs of the Bureau of Mines, which was no longer responsible for coal resource classification, and was the basis for this revision of the coal resource classification system by the Geological Survey. The revision, embodied in this report, has two main objectives: (1) to provide detailed information lacking in Bulletin 1450–B; and (2) to provide standard definitions, criteria, guidelines, and methods required for uniform application of the principles outlined in Circular 831''). Gordon H. Wood, Jr et al., U.S. Geological Survey, U.S. Dep't of the Interior, *Coal Resource Reclassification System of the U.S. Geological Survey, USGS Circular 891* (1983), *http://pubs.usgs.gov/circ/1983/0891/report.pdf.*

[711] *See* Proposing Release, Section II.E.4, which refers to USGS Circular 831 (stating that ''[t]he system can be used to report the status of mineral and energy-fuel resources for the Nation or for specific areas''). U.S. Geological Survey & U.S. Bureau of Mines, U.S. Dep't of the Interior, *Principles of a Resource/Reserve Classification for Minerals: A Revision of the Classification System Published as USGS Survey Bulletin 1450–A, USGS Circular 831* (1980), *http://pubs.usgs.gov/circ/1980/0831/report.pdf.*

[712] *See id.*

[713] Guide 7 prohibits mineral resource disclosure and as such does not provide any guidance, or place any restrictions, on how to classify mineral resources.

[714] *See supra* Section II.E.3.

[715] *See supra* Sections II.E.2 and II.E.4.

[716] The Circulars prescribe strict guidelines to classify mineral resources based on the distance from a drill hole (''drill hole spacing'') that do not vary depending on the complexity and specific facts of the deposit. For example, these Circulars define measured (0- to ¼-mile), indicated (¼ to ¾-mile) and inferred (¾- to 3-miles) mineral resources based on drill hole (or outcrop) radii.

[717] *See, e.g.,* Ricardo A. Olea and James A. Luppens, *Modeling Uncertainty in Coal Resource Assessments, With an Application to a Central Area of the Gillette Coal Field, USGS Scientific Investigations Report 2014–5196* 1 (2014) (concluding that an approach that involved establishing confidence limits ''should be considered realistic improvement[ ] over distance methods used for quantitative classification of uncertainty in coal resource, such as U.S. Geological Survey Circular 891'').

[718] *See* Proposing Release, *supra* note 5, at Section II.E.4.

ii. Comments on the Proposed Interpretation

Numerous parties supported the Commission's position that use of USGS Circulars 831 and 891 to classify mineral resources would not be appropriate under the proposed rules.[719] Some commenters stated that the Circulars are inconsistent with the CRIRSCO standards and were designed for a different purpose (*i.e.,* government identification of mineral occurrences that may be of economic interest 25–50 years in the future.)[720] For that reason, according to those commenters, allowing continued use of the Circulars to classify resources would lead to investor confusion and should never be permitted,[721] even for coal.[722]

One commenter opposed the use of Circulars 831 and 891 to classify mineral resources because they are not based on modern geostatistical methods that are now routinely applied and, thus, are outdated.[723] Another commenter agreed that Circulars 831 and 891 are ''completely out of date and do not address many modern aspects of exploration, sampling, chain of custody, quality assessment/quality controls ('QA/QC'), resource estimation methods, validation and reconciliation.'' [724] One other commenter stated that the use of Circulars 831 and 891 to classify mineral resources would not be appropriate because of the poor alignment with CRIRSCO, the lack of economic criteria, and the potential to cause inconsistent disclosure.[725]

In contrast, a few commenters stated that the Commission should allow the use of the Circulars for coal deposits because they are still a valid tool in classifying coal deposits.[726] As one of those commenters explained, because coal is a tabular deposit that is often relatively consistent over large areas, it lends itself to the type of evaluation provided by the Circulars.[727]

iii. Final Interpretation

Having considered the comments received, we are affirming our position that the use of USGS Circulars 831 and 891 for resource classification in Commission filings should not be permitted under the final rules. As we explained in the Proposing Release, those Circulars provide a method of classification that primarily relies on a single criterion—the extent to which tonnages fall within particular distances from a drill hole or outcrop.[728] In contrast, the final rules, which provide a mineral resource classification scheme that is substantially similar to the CRIRSCO classification system, require a qualified person to assess the geologic confidence in the resource estimates based on the geologic evidence and, in addition, to consider a variety of relevant technical and economic factors likely to influence the prospect of economic extraction.[729]

Consequently, we agree with commenters that the method used to classify mineral resources in Circulars 831 and 891 is inconsistent with the CRIRSCO standards and should not be permitted under new subpart 1300, even when classifying coal resources.[730] Because, as commenters indicated, the USGS Circulars do not address many modern aspects of exploration, sampling, resource estimation methods, validation, and reconciliation,[731] which are included under the CRIRSCO standards, we do not believe that the Circulars are the most appropriate method for purposes of public company disclosure to investors. Rather, we believe that the continued reliance on those Circulars to classify mineral resources would lead to inconsistencies with mineral resource estimates determined under the CRIRSCO standards and investor confusion. Accordingly, neither a registrant nor its qualified person may use Circulars 831 and 891 to classify mineral resources when providing the disclosure required under subpart 1300.

F. Treatment of Mineral Reserves

1. The Framework for Determining Mineral Reserves

i. Rule Proposal

Guide 7 defines a mineral reserve as ''that part of a mineral deposit which could be economically and legally extracted or produced at the time of the reserve determination.'' [732] Guide 7 does not, however, delineate the factors that must be considered when making a reserve determination. In contrast, other jurisdictions have adopted the CRIRSCO framework whereby the determination of mineral reserves occurs by applying and evaluating specifically defined ''modifying factors'' to indicated and measured mineral resources.[733]

We proposed to revise the definition of mineral reserves to align it generally with the definition under the CRIRSCO-based codes by adopting the framework of applying modifying factors to indicated or measured mineral resources in order to convert them to mineral reserves.[734] As part of this framework, we proposed definitions of ''mineral reserves,'' ''probable mineral reserves,'' ''proven mineral reserves,'' and ''modifying factors.''

We proposed to define ''mineral reserve'' as an estimate of tonnage and grade or quality of indicated or measured mineral resources that, in the opinion of the qualified person, can be the basis of an economically viable project. More specifically, as proposed, a mineral reserve is the economically mineable part of a measured or indicated mineral resource, net of allowances for diluting materials and for losses that may occur when the material is mined or extracted.[735]

Under the proposed rules, the determination that part of a measured or indicated mineral resource is economically mineable would have to be based on a preliminary feasibility (pre-feasibility) or feasibility study conducted by a qualified person applying the modifying factors to indicated or measured mineral resources. Such study would have to demonstrate that, at the time of reporting, extraction of the mineral reserve is economically viable under reasonable investment and market assumptions. Moreover, the study would have to establish a life of mine plan that is technically achievable and economically viable, which would be the basis of determining the mineral reserve.[736]

As used in the proposed definition of mineral reserve, ''economically viable'' means that the qualified person has determined, using a discounted cash flow analysis, or has otherwise analytically determined, that extraction of the mineral reserve is economically viable under reasonable investment and market assumptions.[737] As used in this proposed definition, ''investment and market assumptions'' includes all

[719] *See, e.g.,* letters from AIPG, Amec, AngloGold, BHP, CBRR, Eggleston, Gold Resource, Midas, Northern Dynasty, Rio Tinto, SME 1, and SRK 1.

[720] *See, e.g.,* letters from AIPG and SME 1.

[721] *See, e.g.* letters from AIPG, Eggleston, and SME 1.

[722] *See* letters from AIPG and SME 1.

[723] *See* letter from BHP.

[724] Letter from SRK 1.

[725] *See* letter from Rio Tinto.

[726] *See* letters from Alliance, Cloud Peak, and NMA 1.

[727] *See* letter from Alliance.

[728] *See* Proposing Release, *supra* note 5, at Section II.E.4.

[729] *See supra* Sections II.E.2 through II.E.4.

[730] *See, e.g.,* letters from AIPG and SME 1.

[731] *See, e.g.,* letters from BHP and SRK 1.

[732] Paragraph (a)(1) of Guide 7.

[733] *See, e.g.,* CIM Definition Standards, *supra* note 351, at 5–6; JORC Code, *supra* note 175, at pt. 29; SME Guide, *supra* note 177, at pt. 41; SAMREC Code, *supra* note 267, at pt. 35; and PERC Reporting Standard, *supra* note 302, at pt. 8.1.

[734] *See* Proposing Release, *supra* note 5, at Section II.F.1.

[735] *See id.*

[736] *See id.*

[737] *See id.*

assumptions made about the prices, exchange rates, sales volumes and costs that are necessary and are used to determine the economic viability of the reserves.[738]

As proposed, the price used to determine the economic viability of the mineral reserves could not be higher than the average spot price during the 24-month period prior to the end of the fiscal year covered by the study, determined as an unweighted arithmetic average of the daily closing price for each trading day within such period, except in cases where sales prices are determined by contractual agreements. In such a case, the qualified person would be able to use the price set by the contractual arrangement, provided that such price is reasonable and the qualified person discloses that he or she is using a contractual price and discloses the contractual price used.[739]

The proposed rules used the CRIRSCO classification scheme and framework for mineral reserve determination, which subdivides mineral reserves, in order of increasing confidence in the results obtained from the application of the modifying factors to the indicated and measured mineral resources, into probable mineral reserves and proven mineral reserves.[740] Similar to the CRIRSCO classification scheme,[741] we proposed to define ''probable mineral reserves'' as the economically mineable part of an indicated and, in some cases, a measured mineral resource.[742]

As we explained in the Proposing Release, for a probable mineral reserve, the qualified person's confidence in the results obtained from the application of the modifying factors and in the estimates of tonnage and grade or quality is lower than what is sufficient for a classification as a proven mineral reserve, but is still sufficient to demonstrate that, at the time of reporting, extraction of the mineral reserve is economically viable under reasonable investment and market assumptions.[743] This lower level of confidence can be due either to higher geologic uncertainty when the qualified person converts an indicated mineral resource to a probable mineral reserve or higher risk in the results of the application of modifying factors at the time when the qualified person converts a measured mineral resource to a probable mineral reserve. As further required by the proposed rules, a qualified person must classify a measured mineral resource as a probable mineral reserve when his or her confidence in the results obtained from the application of the modifying factors to the measured mineral resource is lower than what is sufficient for a proven mineral reserve.[744]

Similar to the CRIRSCO classification scheme,[745] we proposed to define ''proven mineral reserves'' as the economically mineable part of a measured mineral resource.[746] As the proposed rules explained, for a proven mineral reserve, the qualified person must have a high degree of confidence in the results obtained from the application of the modifying factors and in the estimates of tonnage and grade or quality.[747] In addition, as proposed, a proven mineral reserve can only result from conversion of a measured mineral resource.[748]

We proposed to define ''modifying factors'' as the factors that a qualified person must apply to mineralization or geothermal energy and then evaluate in order to establish the economic prospects of mineral resources, or the economic viability of mineral reserves.[749] Similar to the CRIRSCO framework, a qualified person would have to apply and evaluate modifying factors to convert measured and indicated mineral resources to proven and probable mineral reserves.[750] As proposed, these factors included, but were not restricted to, mining, energy recovery and conversion, processing, metallurgical, economic, marketing, legal, environmental, infrastructure, social, and governmental factors. We also proposed that the number, type, and specific characteristics of the applied modifying factors are a function of and depend upon the mineral, mine, property, or project.[751]

We proposed several instructions about the conversion of mineral resources into mineral reserves. For example, one instruction explained that, similar to the CRIRSCO framework,[752] if the uncertainties in the results obtained from the application of the modifying factors, which prevented a measured mineral resource from being converted to a proven mineral reserve, no longer exist, then the qualified person may convert the measured mineral resource to a proven mineral reserve.[753]

Another instruction stated that a qualified person cannot convert an indicated mineral resource to a proven mineral reserve unless there is new evidence that justifies conversion of the indicated mineral resource to a measured mineral resource.[754] A third instruction explained that a qualified person cannot convert an inferred mineral resource to a mineral reserve without first obtaining new evidence that justifies converting it to an indicated or measured mineral resource.[755] These proposed instructions are consistent with the CRIRSCO framework for conversion of mineral resources into mineral reserves.[756]

We proposed a definition of mineral reserve as an estimate of tonnage and grade or quality that is net of allowances for diluting materials and mining losses. This is in contrast to the definition of mineral reserve under the CRIRSCO standards, which includes diluting materials in reserve estimates.[757] We proposed a net estimate for reserves because the proposed rules would require disclosure of mineral reserves at three points of reference: In-situ,[758] plant or mill feed, and saleable product.[759] As we explained, estimates that are exclusive of diluting materials and mining losses would provide a

[738] *See id.*

[739] *See id.*

[740] *See id.*

[741] *See, e.g.,* JORC Code, *supra* note 175, at pt. 30; CIM Definition Standards, *supra* note 351, at 6; SAMREC Code, *supra* note 267, at pt. 36; and PERC Reporting Standard, *supra* note 302, at pt. 8.11.

[742] *See* Proposing Release, *supra* note 5, at Section II.F.1.

[743] *See id.*

[744] *See id.*

[745] *See, e.g.,* JORC Code, *supra* note 175, at pt. 31; CIM Definition Standards, *supra* note 351, at 6; SAMREC Code, *supra* note 267, at pt. 37; and PERC Reporting Standard, *supra* note 302, at pt. 8.13.

[746] *See* Proposing Release, Section II.F.1.

[747] *See id.*

[748] *See id.*

[749] *See id.*

[750] *See, e.g.,* JORC Code, *supra* note 175, at pt. 12; CRIRSCO International Reporting Template, *supra* note 20, at cl. 12; SAMREC Code, *supra* note 267, at pt. 12; and PERC Reporting Standard, *supra* note 302, at pt. 4.3.

[751] *See* Proposing Release, *supra* note 5, at Section II.F.1.

[752] *See, e.g.,* JORC Code, *supra* note 175, at pt. 32; CRIRSCO International Reporting Template, *supra* note 20, at cl. 33; SAMREC Code, *supra* note 267, at pt. 38, and PERC Reporting Standard, *supra* note 302, at pt. 8.15.

[753] *See* Proposing Release, *supra* note 5, at Section II.F.1.

[754] *See id.*

[755] *See id.*

[756] *See, e.g.,* JORC Code, supra note 175, at pt. 32; CRIRSCO International Reporting Template, *supra* note 20, at cl. 33; SAMREC Code, *supra* note 267, at pt. 38; and PERC Reporting Standard, *supra* note 302, at pt. 8.15.

[757] In this regard, we stated our belief that, because excluding diluting materials is a minor computational step in reserve estimation, the proposed net estimate for reserves measure would not impose a significant additional compliance burden for registrants. *See* Proposing Release, *supra* note 5, at Sections II.F.1.

[758] In-situ means ''in its original place.'' It is used in this context to refer to mineral reserves estimated as in-place tons.

[759] *See* Proposing Release, *supra* note 5, at Sections II.F.1–2.

clearer picture of the efficiency of the processing method.[760]

Under the proposal, when discussing the analysis in the technical report summary, the qualified person would be required to disclose the assumptions made about prices, exchange rates, discount rate, sales volumes and costs necessary to determine the economic viability of the reserves.[761]

ii. Comments on the Rule Proposal

Many commenters generally supported the Commission's proposal to adopt the CRIRSCO framework of applying modifying factors to indicated or measured mineral resources in order to convert them to mineral reserves.[762] One commenter supported the Commission's proposed definition of ''mineral reserve'' as the economically mineable part of a measured or indicated mineral resource, net of allowances for diluting materials and for losses that may occur when the material is mined or extracted.[763] Another commenter stated that the proposed definition of mineral reserve was acceptable, but the definition in the CIM Definition Standards, which does not use a net reserve concept, is substantially better and consistent with international usage.[764] One other commenter preferred the CRIRSCO definition of mineral reserve, which includes dilution and allowances for losses, but stated that, alternatively, the Commission should permit a registrant to disclose its reserves both as inclusive of dilution and losses and as a net estimate.[765]

Many other commenters, however, strongly opposed the net reserve concept and urged the Commission to adopt the CRIRSCO definition of mineral reserve.[766] Those commenters disagreed with the Commission's statement that the calculation of a net estimate would be ''relatively minor.'' [767] Moreover, some commenters stated that, in addition to conflicting with the comparable definition under the CRIRSCO standards, the proposed definition of mineral reserve also is inconsistent with that part of the proposed definition that requires the application of the modifying factors to mineral resources in order to determine mineral reserves, and is therefore unrealistic.[768] Because application of the modifying factors, which include operational and processing factors, necessarily involves dilution and allowances for losses, it is not possible to exclude them and satisfy the modifying factors prong of the mineral reserve definition.[769]

Several commenters were generally supportive of the proposed definitions of probable and proven mineral reserve because they are consistent with the CRIRSCO definitions.[770] Several commenters also generally supported the proposed definition of modifying factors.[771] One commenter stated that the proposed definition is consistent with the CRIRSCO standards.[772] Other commenters recommended adding other specified factors to the definition, such as decommissioning costs, reclamation costs, and assumptions for mining losses, among other things.[773]

Several commenters supported the Commission's proposal to include a life of mine plan disclosure requirement in the technical studies required to support a determination of mineral reserves.[774] One commenter described the life of mine requirement as ''fundamental'' to determining whether a mine will be economically viable at the time of reporting.[775] A second commenter stated that the proposed life of mine plan requirement is consistent with requirements in global jurisdictions.[776]

One commenter, however, opposed a life of mine plan disclosure requirement because such a requirement would reveal commercially sensitive information and would be onerous on registrants with a large number of reserves.[777] Another commenter objected to the proposed life of mine plan disclosure requirement on the grounds that, because coal mine plans often include areas not yet controlled by a company, disclosing mine life plans would allow competitors to interfere with the company's operations by acquiring strategic mineral rights already targeted by the company.[778] That commenter also stated that, because life of mine plans are always subject to change, their disclosure could lead potential investors to assume incorrectly that mining is possible under all conditions.[779]

Several commenters generally supported the proposed requirement that a qualified person conduct a discounted cash flow analysis to demonstrate economic viability.[780] One commenter stated that discounted cash flows are the most widespread and industry accepted approach of evaluation and should be required.[781] Another commenter stated that we should require a non-discounted cash flow analysis in addition to the industry standard discounted cash flow analysis.[782]

In contrast, one commenter opposed the proposed discounted cash flow requirement because it ''is overly prescriptive compared to the CRIRSCO requirement to base reserves on studies that have determined a mine plan that is technically and economically achievable.'' [783] Another commenter stated that annual cash flow forecasts should be omitted for operating mines ''as publication may affect a competitive advantage in labor or customer negotiations.'' [784]

Similar to comments received on the proposed pricing requirement for mineral resource estimates, many commenters objected to the proposed requirement that a qualified person use a 24-month trailing average price for the discounted cash flow analysis required for the determination of mineral reserves. Commenters maintained that the proposed historical pricing requirement would conflict with the industry practice of relying on forward-looking pricing forecasts and the

[760] The efficiency of the processing method demonstrates how well the registrant converts the resource into saleable product. *See* Proposing Release, *supra* note 5, at Section II.F.1.

[761] *See id.*

[762] *See, e.g.,* letters from AngloGold, BHP, CBRR, Eggleston, Gold Resource, JORC, Midas, Northern Dynasty, Rio Tinto, SAMCODES 1 and 2, and Vale.

[763] *See* letter from Midas.

[764] *See* letter from Eggleston.

[765] *See* letter from Energy Fuels.

[766] *See* letters from Amec, AngloGold, BHP, CBRR, Coeur, FCX, Gold Resource, Golder, MMSA, NMA 1, Northern Dynasty, Randgold, Rio Tinto, Royal Gold, SAMCODES 1, SME 1, SRK 1, Vale, and Willis.

[767] *See, e.g.,* letters from BHP, FCX, Golder, and MMSA.

[768] *See, e.g.,* letters from BHP, CBRR, Randgold, and Rio Tinto.

[769] Some of the commenters made similar arguments when objecting to the proposed requirement to disclose mineral reserves as in-situ in addition to plant/mill feed and saleable product. *See, e.g.,* letters from Amec, Rio Tinto, SME 1, and Vale. *See infra* Section II.G. for further discussion.

[770] *See* letters from AngloGold, CBRR, Eggleston, Midas, Northern Dynasty, and SRK 1.

[771] *See, e.g.,* letters from AngloGold, CBRR, Golder, Midas, and SRK 1.

[772] *See* letter from CBRR.

[773] See letters from SRK 1 and Golder. As previously discussed, some commenters objected to the application of the modifying factors at the mineral resource determination stage. *See, e.g.,* letters from Amec and Eggleston. Those commenters requested that we remove from the definition of modifying factors their use to establish the economic prospects of mineral resources.

[774] *See* letters from Amec, CBRR, Eggleston, Gold Resource, Golder, Midas, Northern Dynasty, Rio Tinto, SAMCODES 2, and SRK 1.

[775] *See* letter from Eggleston.

[776] *See* letter from CBRR.

[777] *See* letter from BHP.

[778] *See* letter from Alliance.

[779] *See id.*

[780] *See, e.g.,* letters from Amec, AngloGold, Eggleston, Midas, Northern Dynasty, Rio Tinto, and SRK 1.

[781] *See* letter from Midas; *see also* letter from Eggleston.

[782] *See* letter from SRK 1.

[783] Letter from BHP.

[784] Letter from SME 1.

CRIRSCO guidance allowing the use of any reasonable and justifiable price.[785]

iii. Final Rules

We are revising the definition of mineral reserves (currently in Guide 7) by adopting the CRIRSCO framework of applying modifying factors to indicated or measured mineral resources in order to convert them to mineral reserves, as proposed. The adopted framework requires a registrant's disclosure of mineral reserves to be based on a qualified person's detailed evaluation of the modifying factors as applied to indicated or measured mineral resources, which would demonstrate the economic viability of the mining property or project.[786] The adopted framework includes a series of definitions that describe the relationship between the different classes of mineral resources and reserves and underscores the incremental nature of mineral resource and reserve determination.

We are adopting the definition of mineral reserve largely as proposed.[787] In a change from the proposed rules, the adopted definition of mineral reserve provides that a mineral reserve includes diluting materials and allowances for losses that may occur when the material is mined or extracted.[788] We have been persuaded to remove the proposed net reserve concept from the definition of mineral reserve by commenters that maintained that such removal was necessary to make the definition consistent with the comparable CRIRSCO definition [789] and to avoid internal inconsistencies.[790] As commenters noted, the CRIRSCO standards and the final rules [791] require the determination of mineral reserves to be based upon a qualified person's application of the modifying factors to indicated or measured mineral resources. The modifying factors include mining method, which is the source of dilution and mining losses, and mineral processing methods, which determine recovery factors. Because dilution and losses are realistic consequences of applying the modifying factors, we believe it is reasonable to include both diluting materials and allowances for losses in the definition of mineral reserve.[792]

The final rules no longer define modifying factors to include factors used to establish the economic prospects of mineral resources. Instead, the adopted definition provides that modifying factors are the factors that a qualified person must apply to indicated and measured resources and then evaluate in order to establish the economic viability of mineral reserves.[793] This change from the proposal is consistent with the change made to the initial assessment requirement, which no longer requires application of the modifying factors at the resource determination stage.[794] Referencing the modifying factors solely in the context of mineral reserve determination will align the final rules with the CRIRSCO standards and avoid confusing registrants and investors about the level of analysis required at the resource determination stage.

Consistent with the proposed rules, the adopted definition of modifying factors provides that a qualified person must apply and evaluate modifying factors to convert measured and indicated mineral resources to proven and probable mineral reserves. Also largely as proposed, the adopted definition provides examples of the modifying factors, which include, but are not restricted to: Mining; processing; metallurgical; infrastructure; economic; marketing; legal; environmental compliance; plans, negotiations, or agreements with local individuals or groups; and governmental factors.[795] Although some commenters suggested adding other specific factors to the list,[796] we decline to do so because the adopted definition makes clear that the list of factors is not exclusive, and is consistent with the factors specified in the CRIRSCO definition of modifying factors.[797]

The adopted definition of modifying factors further states, as proposed, that the number, type and specific characteristics of the modifying factors applied will necessarily be a function of and depend upon the mineral, mine, property, or project.[798] For example, applying and evaluating processing factors means the qualified person must examine the characteristics of the mineral resource and determine that the material can be processed economically into saleable product using existing technology. Similarly, applying and evaluating legal factors means the qualified person must examine the regulatory regime of the host jurisdiction to establish that the registrant can comply (fully and economically) with all laws and regulations (*e.g.,* mining, safety, environmental, reclamation, and permitting regulations) that are relevant to operating a mineral project using existing technology.

As proposed, the final rules provide that a qualified person must subdivide mineral reserves, in order of increasing confidence in the results obtained from the application of the modifying factors to the indicated and measured mineral resources, into probable mineral reserves and proven mineral reserves.[799] The final rules define ''probable mineral reserve'' to mean the economically mineable part of an indicated and, in some cases, a measured mineral resource.[800] As the final rules explain, for a probable mineral reserve, the qualified person's confidence in the results obtained from the application of the modifying factors and in the estimates of tonnage and grade or quality is lower than what is sufficient for a classification as a proven mineral reserve, but is still sufficient to

[785] *See, e.g.,* letters from Amec, AngloGold, CBRR, CIM, Eggleston, JORC, NMA 1, Northern Dynasty, Randgold, Rio Tinto, SME 1, and Vale.

[786] *See* Item 1302(e) of Regulation S–K [17 CFR 229.1302(e)].

[787] *See* 17 CFR 229.1300, which defines a mineral reserve as an estimate of tonnage and grade or quality of indicated and measured mineral resources that, in the opinion of the qualified person, can be the basis of an economically viable project. The adopted definition further provides that a mineral reserve is the economically mineable part of a measured or indicated mineral resource.

[788] *See id.*

[789] *See, e.g.,* CRIRSCO International Reporting Template, *supra* note 20, at cl. 30; JORC Code, supra note 175, at pt. 29; SAMREC Code, *supra* note 267, at pt. 35; and PERC Reporting Standard, *supra* note 302, at pt. 8.1.

[790] *See supra* note 768 and accompanying text.

[791] 17 CFR 229.1302(e)(2) [Item 1302(e)(2) of Regulation S–K] (providing in relevant part that the ''determination of probable or proven mineral reserves must be based on a qualified person's application of the modifying factors to indicated or measured mineral resources, which results in the qualified person's determination that part of the indicated or measured mineral resource is economically mineable'').

[792] In addition, removal of the net reserve concept from the definition of mineral reserve is consistent with our elimination of the requirement to disclose mineral reserves in-situ. *See infra* Section II.G.

[793] *See* the definition of ''modifying factors'' in 17 CFR 229.1300.

[794] *See supra* Section II.E.4.

[795] *See* 17 CFR 229.1300. These factors are similar to the modifying factors under the CRIRSCO standards, which include ''mining, processing, metallurgical, infrastructure, economic, marketing, legal, environmental, social, and governmental factors.'' CRIRSCO International Reporting Template, *supra* note 20, at cl. 12. Rather than refer to ''social'' or ''social-economic'' factors, as in the Proposing Release, the final rules refer more specifically to factors pertaining to local individuals or groups. Examples of such matters include consideration of: Limitations on a mining project that abuts a tribal burial ground; the potential need to relocate local individuals because of the scope of the mining project; and commitments to build a community center or local clinic. We believe this change will clarify the type of factors the qualified person may wish to consider in this area.

[796] *See* letters from Golder and SRK 1.

[797] *See* CRIRSCO International Reporting Template, *supra* note 20, at cl. 12.

[798] *See* 17 CFR 229.1300.

[799] *See* 17 CFR 229.1302(e)(2).

[800] *See* the definition of ''probable mineral reserve'' in 17 CFR 229.1300.

demonstrate that, at the time of reporting, extraction of the mineral reserve is economically viable under reasonable investment and market assumptions. The lower level of confidence is due to higher geologic uncertainty when the qualified person converts an indicated mineral resource to a probable mineral reserve or higher risk in the results of the application of modifying factors at the time when the qualified person converts a measured mineral resource to a probable mineral reserve.[801] The final rules further provide that a qualified person must classify a measured mineral resource as a probable mineral reserve when his or her confidence in the results obtained from the application of the modifying factors to the measured mineral resource is lower than what is sufficient for a proven mineral reserve.[802]

The final rules define ''proven mineral reserve,'' as proposed, to mean the economically mineable part of a measured mineral resource.[803] For a proven mineral reserve, the qualified person must have a high degree of confidence in the results obtained from the application of the modifying factors and in the estimates of tonnage and grade or quality.[804] Moreover, a proven mineral reserve can only result from conversion of a measured mineral resource.[805] The adopted definitions of probable and proven mineral reserves are generally consistent with the comparable definitions under the CRIRSCO-based codes and, as such, were supported by several commenters.[806]

As discussed below,[807] the determination that part of a measured or indicated mineral resource is economically mineable must be based on a preliminary feasibility (pre-feasibility) or feasibility study that discusses the qualified person's application of the modifying factors to indicated or measured mineral resources, and demonstrates that, at the time of reporting, extraction of the mineral reserve is economically viable under reasonable investment and market assumptions.[808] As proposed, the final rules provide that the study must establish a life of mine plan that is technically achievable and economically viable, and which will be the basis of determining the mineral reserve.[809] As commenters noted, establishing a life of mine plan is fundamental to determining the economic viability of a deposit and is consistent with global industry practice.[810] Although some commenters expressed concern that requiring the disclosure of a life of mine plan could result in the disclosure of proprietary, commercially sensitive information,[811] given the importance of the life of mine plan to determining the economic viability of a mining project, we believe that requiring disclosure of the life of mine plan is necessary to help an investor understand the basis of a registrant's mineral reserves estimate.

Consistent with numerous comments received,[812] the final rules provide, as proposed, that when used in reference to a mineral reserve, the term ''economically viable'' means that the qualified person has determined, using a discounted cash flow analysis, or has otherwise analytically determined, that extraction of the mineral reserve is economically viable under reasonable investment and market assumptions.[813] Although one commenter disagreed,[814] we believe the requirement to conduct a discounted cash flow or other similar analysis is consistent with industry practice [815] and the requirement under the CRIRSCO-based codes that mineral reserve determination must be based on a financial analysis under reasonable assumptions demonstrating that extraction of the reserve is economically viable.[816]

The final rules further provide, as proposed, that the term ''investment and market assumptions'' includes all assumptions made about the prices, exchange rates, interest and discount rates, sales volumes, and costs that are necessary and are used to determine the economic viability of the reserves.[817] In a change from the proposed rules, however, and in response to comments received, the final rules do not require the qualified person to use a price that is no higher than the 24-month trailing average price. Instead, the qualified person must use a price for each commodity that provides a reasonable basis for establishing that the project is economically viable.[818] The qualified person will be required to explain, with particularity, his or her reasons for selecting the price and the underlying material assumptions regarding the selection.[819] We are adopting this change for the same reasons that we changed the pricing requirement for the cut-off estimation required for the determination of mineral resources.[820]

We believe that the adopted framework for mineral reserve determination and disclosure is preferable to Guide 7's approach. Although Guide 7 similarly defines a mineral reserve as that part of a mineral deposit that can be economically and legally extracted or produced, it does not specify the level of geologic evidence that must exist or the factors that must be considered to convert the deposit to a mineral reserve. In contrast, under the adopted framework, the only estimates of grade or quality and tonnages that a registrant can disclose as mineral reserves are those parts of the indicated and measured mineral resources that, after all relevant modifying factors have been evaluated, can be shown to be part of a viable mineral project.[821] The adopted

[801] 17 CFR 229.1302(e)(2)(i) [Item 1302(e)(2)(i) of Regulation S–K].

[802] *Id.*

[803] *See* the definition of ''proven mineral reserve'' in 17 CFR 229.1300.

[804] 17 CFR 229.1302(e)(2)(ii) [Item 1302(e)(2)(ii) of Regulation S–K].

[805] *See* the definition of ''proven mineral reserve'' in 17 CFR 229.1300.

[806] *See supra* note 770 and accompanying text.

[807] *See infra* Section II.F.2.

[808] 17 CFR 229.1302(e)(1) and (3) [Item 1302(e)(1) and (3) of Regulation S–K].

[809] *See* Item 1302(e)(3) of Regulation S–K.

[810] *See, e.g.,* letters from CBRR and Eggleston; *see also supra* note 774. In this regard, we note that the SME Guide expressly requires a life of mine plan in its technical study. *See* SME Guide, *supra* note 177, Table 1, at 54 (''Mining method(s), mine plans and production schedules defined for the life of the project'' are required to support mineral reserve disclosure). Under the CRIRSCO-based codes, the qualified person has to develop mine plans in order to estimate cash flows, which are required by the codes for the financial analysis necessary to support mineral reserve disclosure. The cash flows must be based on costs and revenues associated with planned production over the life of the project. *See, e.g.,* JORC Code, *supra* note 175, at pt. 29 (stating that ''[d]eriving an Ore Reserve without a mine design or mine plan through a process of factoring of the Mineral Resource is unacceptable . . . The studies will have determined a mine plan and production schedule that is technically achievable and economically viable and from which the Ore Reserves can be derived'').

[811] *See supra* notes 777–778 and accompanying text.

[812] *See supra* note 780 and accompanying text.

[813] *See* the definition of ''economically viable'' in 17 CFR 229.1300. Whether the investment and market assumptions are ''reasonable'' will necessarily be a facts and circumstances determination based upon the relevant economic and market factors.

[814] *See* letter from BHP.

[815] *See* letters from Eggleston and Midas.

[816] *See, e.g.,* SME Guide, *supra* note 177, at pt. 41 (''The term 'economically viable' implies that extraction of the Mineral Reserve has been determined or analytically demonstrated (*e.g.,* such as by a cash flow in the report) to be viable and justifiable under reasonable investment and market assumptions''). *See also* JORC Code, *supra* note 175, at pt. 29 (''The term 'economically mineable' implies that extraction of the Ore Reserves has been demonstrated to be viable under reasonable financial assumptions'').

[817] *See* the definition of ''investment and market assumptions'' in 17 CFR 229.1300.

[818] 17 CFR 229.1302(e)(4) [Item 1302(e)(4) of Regulation S–K].

[819] *See id.*

[820] *See supra* Section II.E.4.iii.a.

[821] In this regard, a qualified person will not be able to use inferred mineral resources to support a determination of mineral reserves unless new

framework requires the qualified person to disclose the specific mining, processing, metallurgical, environmental, economic, legal, and other applicable factors that he or she has evaluated in detail, and which has led the qualified person to conclude that extraction of the deposit is economically viable. We therefore believe that the adopted framework will promote clearer, more detailed, and more accurate disclosure about the economic viability of a registrant's mineral deposits, which should enhance an investor's understanding of the registrant's mining operations.

When considered as a whole, and in light of the significant changes made to the proposed rules discussed above, we believe that the adopted mineral reserve disclosure framework is substantially similar to the CRIRSCO framework. As such, its adoption should enhance consistency in mining disclosure across jurisdictions and thereby facilitate comparability of information for investors. It also should limit reporting costs for the numerous mining registrants that are dual-listed and currently subject to different Commission and CRIRSCO-based disclosure requirements.

2. The Type of Study Required To Support a Reserve Determination

i. Rule Proposal

Historically, the staff has requested a final feasibility study to support the disclosure of mineral reserves in a Commission filing. In contrast, the CRIRSCO-based codes have permitted either a pre-feasibility study or a feasibility study in support of a determination of mineral reserves. To help align the Commission's mining property disclosure rules with the CRIRSCO standards, we proposed to permit either a preliminary feasibility study or a feasibility study to support the determination and disclosure of mineral reserves.[822] We proposed to define a ''preliminary feasibility study'' (or ''pre-feasibility study'') as a comprehensive study of a range of options for the technical and economic viability of a mineral project that has advanced to a stage where a qualified person has determined (in the case of underground mining) a preferred mining method, or (in the case of surface mining) a pit configuration, and in all cases has determined an effective method of mineral processing and an effective plan to sell the product.[823]

As proposed, a pre-feasibility study must include a financial analysis based on reasonable assumptions, based on appropriate testing, about the modifying factors and the evaluation of any other relevant factors that are sufficient for a qualified person to determine if all or part of the indicated and measured mineral resources may be converted to mineral reserves at the time of reporting.[824] The study's financial analysis must have the level of detail necessary to demonstrate, at the time of reporting, that extraction is economically viable. In addition, as noted in the proposed definition of a pre-feasibility study, while a pre-feasibility study is less comprehensive and results in a lower confidence level than a feasibility study, a pre-feasibility study is more comprehensive and results in a higher confidence level than an initial assessment.[825]

We proposed to define a ''feasibility study'' [826] as a comprehensive technical and economic study of the selected development option for a mineral project, which includes detailed assessments of all applicable modifying factors together with any other relevant operational factors, and detailed financial analysis that are necessary to demonstrate, at the time of reporting, that extraction is economically viable.[827] According to the proposed definition, the results of the study may serve as the basis for a final decision by a proponent or financial institution to proceed with, or finance, the development of the project. Thus, a feasibility study is more comprehensive, with a higher degree of accuracy, and yielding results with a higher level of confidence, than a pre-feasibility study. Under the proposed rules, it must contain mining, infrastructure, and process designs completed with sufficient rigor to serve as the basis for an investment decision or to support project financing.[828]

Although the use of a pre-feasibility study could increase the uncertainty regarding a registrant's disclosure about mineral reserves, compared to a feasibility study, we proposed to allow either study to support the determination and disclosure of mineral reserves based on our belief that any such uncertainty would be reduced by the requirements included in the proposed definitions and corresponding proposed instructions. One such proposed requirement was that all reserve disclosures based on a pre-feasibility study must include the qualified person's justification for using a pre-feasibility study instead of a final feasibility study.[829]

Another proposed requirement was that the pre-feasibility study must include a financial analysis at a level of detail sufficient to demonstrate the economic viability of extraction. A proposed instruction stated that the pre-feasibility study must include an economic analysis that supports the property's economic viability as assessed by a detailed discounted cash flow analysis.[830] This economic analysis must describe in detail applicable taxes and provide an estimate of revenues, which in certain situations (*e.g.,* where the products are not traded on an exchange or no established market or sales contract exists) must be based on at least a preliminary market study.[831] We also proposed to prohibit a qualified person from using inferred mineral resources in the pre-feasibility study's financial analysis.[832]

In another instruction, we proposed to require the use of a final feasibility study in high risk situations.[833] For example, as proposed, a final feasibility study would be required in situations where the project is the first in a particular mining district with substantially different conditions than existing company projects, such as environmental and permitting restrictions, labor availability and skills,

evidence (*e.g.,* data and analysis) has first caused an increased confidence in the geologic evidence sufficient to reclassify those resources as indicated or measured mineral resources. Similarly, a qualified person will not be able to convert an indicated mineral resource to a proven mineral reserve without first determining that conclusive, rather than just adequate, geological evidence exists to support reclassification to a measured mineral resource.

[822] *See* Proposing Release, *supra* note 5, at Section II.F.2.

[823] *See id.*

[824] *See id.*

[825] *See id.*

[826] As proposed, terms such as ''full, final, comprehensive, bankable, or definitive'' feasibility study are equivalent to a feasibility study. *See id.*

[827] *See id.*

[828] *See id.*

[829] *See id.*

[830] *See id.*

[831] We proposed to define a ''preliminary market study'' to mean a study that is sufficiently rigorous and comprehensive to determine and support the existence of a readily accessible market for the mineral. It must, at a minimum, include product specifications based on preliminary geologic and metallurgical testing, supply and demand forecasts, historical prices for the preceding five or more years, estimated long term prices, evaluation of competitors (including products and estimates of production volumes, sales, and prices), customer evaluation of product specifications, and market entry strategies. The study must provide justification for all assumptions. It can, however, be less rigorous and comprehensive than a final market study, which is required for a full feasibility study. *See* Proposing Release, *supra* note 5, at note 264 and accompanying text.

[832] *See* Proposing Release, *supra* note 5, at Section II.F.2.

[833] *See id.*

remoteness, and unique mineralization and recovery methods.[834]

We proposed other instructions to help ensure that the pre-feasibility study is sufficiently rigorous to support a conclusion that extraction of the reserve is economically viable. For example, one proposed instruction explained that the factors to be considered in a pre-feasibility study are typically the same as those required for an initial assessment, but considered at a greater level of detail or at a later stage of development.[835] According to another proposed instruction, the operating and capital cost estimates in a pre-feasibility study must have an accuracy level and a contingency range that are significantly narrower than those permitted to support a determination of mineral resources.[836]

An additional proposed instruction addressed whether and when a registrant would be required to take additional steps to support its determination of mineral reserves. As that instruction explained, a determination of mineral reserves does not necessarily require that extraction facilities are in place or operational, that the company has obtained all necessary permits, or that the company has entered into sales contracts for the sale of mined products. However, such determination does require that the qualified person has, after reasonable investigation, not identified any obstacles to obtaining permits and entering into the necessary sales contracts, and reasonably believes that the chances of obtaining such approvals and contracts in a timely manner are highly likely.[837] The qualified person must take into account the potential adverse impacts, if any, from any unresolved material matter on which extraction is contingent and which is dependent on a third party.

Another proposed instruction addressed when the completion of a preliminary or final market study, as part of a pre-feasibility or feasibility study, may be required to support a determination of mineral reserves. As proposed, a preliminary market study (for a pre-feasibility study) or final market study (for a feasibility study) would be required where the mine's product cannot be traded on an exchange, there is no other established market for the product, and no sales contract exists.

Finally, pursuant to another proposed instruction, a pre-feasibility study must identify sources of uncertainty that require further refinement in a final feasibility study.[838] We proposed this requirement to elicit appropriate disclosure about the areas of risk present in the pre-feasibility study, which we believed would help investors in assessing the reliability of the study.

We proposed several instructions regarding the use of a feasibility study to support the determination and disclosure of mineral reserves. Pursuant to one instruction, a feasibility study must apply and describe all relevant modifying factors in a more detailed form and with more certainty than a pre-feasibility study.[839]

According to another instruction, a feasibility study must include an economic analysis that describes taxes, estimates revenues, and assesses economic viability by a detailed discounted cash flow analysis.[840] In addition, in certain circumstances, the feasibility study must include an estimate of revenues based on at least a final market study [841] or possible letters of intent to purchase.

Pursuant to a third proposed instruction, operating and capital cost estimates in a feasibility study, at a minimum, must have an accuracy level of approximately ±15% and a contingency range not exceeding 10%.[842] As proposed, the qualified person must state the accuracy level and contingency range in the feasibility study.

ii. Comments on the Rule Proposal

Most commenters that addressed the issue supported the Commission's proposal to permit either a pre-feasibility or feasibility study to provide the basis for determining and reporting mineral reserves.[843] While commenters generally agreed with the proposed definitions of ''pre-feasibility study'' and ''feasibility study,'' many commenters opposed the Commission's proposal to require the use of a feasibility study in high risk situations.[844] Most of those commenters believed that the decision regarding whether to use a pre-feasibility or feasibility study should be left to the discretion and professional judgment of the qualified person.[845] One commenter explained that, for a pre-feasibility study, under CRIRSCO guidance, the qualified person is required to assess and disclose relevant risks, including high risks. If the qualified person has therefore met all of the requirements for a pre-feasibility study, he or she should not need to justify the use of a pre-feasibility study to support mineral reserve estimates.[846] A second commenter stated that ''with a high risk project, it is even more important to complete a pre-feasibility study prior to a feasibility study to help identify and mitigate the risks before proceeding to a feasibility study.'' [847] After stating that qualified persons should be allowed to use their discretion as to whether the risk associated with a pre-feasibility study is too high to support a reserve, a third commenter noted that if the first pre-feasibility study is inconclusive, it is common practice to not disclose mineral reserves until additional studies are completed and the development case is clear.[848]

In contrast, another commenter expressed its support for requiring a feasibility study for high risk situations where a proposed mining project has unique or particularly challenging conditions, such as when it is in close proximity to environmentally protected resources.[849] One other commenter stated that, for ''greenfield projects (including new process routes for production expansion of existing operations)'' and other high risk situations, a feasibility study should

[834] *See id.*

[835] *See id.*

[836] *See id.* According to this proposed instruction, operating and capital cost estimates in a pre-feasibility study must, at a minimum, have an accuracy level of approximately ±25% and a contingency range not exceeding 15%.

[837] *See id.*

[838] *See id.*

[839] *See id.*

[840] *See id.*

[841] We proposed to define a ''final market study'' to mean a comprehensive study to determine and support the existence of a readily accessible market for the mineral. Under the proposed rules, the study must, at a minimum, include product specifications based on final geologic and metallurgical testing, supply and demand forecasts, historical prices for the preceding five or more years, estimated long term prices, evaluation of competitors (including products and estimates of production volumes, sales, and prices), customer evaluation of product specifications, and market entry strategies or sales contracts. The study also must provide justification for all assumptions, which must include all material contracts required to develop and sell the reserves. *See* Proposing Release, *supra* note 5, at note 286 and accompanying text.

[842] *See id.*

[843] *See* letters from Amec, AngloGold, BHP, CBRR, CIM, Eggleston, Gold Resource, Golder, Midas, Northern Dynasty, Randgold, Rio Tinto, SAMCODES 2, SME 1, SRK 1, and Vale.

[844] *See* letters from Amec, AngloGold, Eggleston, Energy Fuels, Golder, Midas, Northern Dynasty, Rio Tinto, and SRK 1.

[845] *See, e.g.,* letters from Amec, AngloGold, Eggleston, Energy Fuels, Rio Tinto, and SRK 1.

[846] *See* letter from Amec.

[847] Letter from SRK 1.

[848] *See* letter from Rio Tinto.

[849] *See* letter from Columbia. The commenter also recommended requiring a feasibility study to address: Design criteria for tailing dams, specifically the risk of failure; contingency and emergency plans for tailings dam failures; drought management plans; and remediation plans.

support the definition of mineral reserves.[850]

One commenter opposed requiring either a pre-feasibility study or feasibility study to support the determination and disclosure of reserves. According to that commenter, ''[f]or coal companies operating in well-defined coal fields, these types of formal studies are not typically conducted, as on-going operations provide all the feasibility information that is required.'' [851] That commenter estimated that requiring either type of study would cost it several million dollars without providing a benefit. Moreover, according to that commenter, due to the competitive bidding nature of the coal industry, public disclosure of information contained in those studies would likely cause it competitive harm.[852]

One commenter stated that the proposed accuracy and contingency levels for a pre-feasibility study are too rigid and do not reflect the diversity of mining project locations and mine project types.[853] That commenter also was concerned with the level of detail required for certain items of the pre-feasibility study, such as environmental compliance and permitting requirements.

Some commenters expressly supported the Commission's proposal to include definitions of preliminary and final market studies as part of the instructions for pre-feasibility and feasibility studies.[854] One commenter stated that market studies should be required for non-freely traded commodities where there are barriers to market entry, but the Commission should not require disclosure of certain portions of the market studies if such disclosure would break confidentiality agreements or divulge planned market entry strategies that are proprietary to the company.[855] Other commenters, however, opposed the proposed definitions on the grounds that they are vague,[856] are not standard practice,[857] or include strategic market decisions that can affect the market competition.[858]

Some commenters objected to our inclusion of environmental compliance and permitting requirements or interests of agencies, non-governmental organizations, communities and other stakeholders as required items to be covered under a pre-feasibility or feasibility study.[859] These commenters stated that such inclusion would introduce an ''unworkable and inappropriate disclosure mandate'' and impose high direct and indirect costs. Other commenters advocated expanding the required disclosure of environmental and sustainability factors.[860]

iii. Final Rules

We are adopting the proposed requirement that a registrant's disclosure of mineral reserves must be based upon a qualified person's pre-feasibility study or feasibility study, which supports a determination of mineral reserves.[861] The pre-feasibility or feasibility study must include the qualified person's detailed evaluation of all applicable modifying factors to demonstrate the economic viability of the mining property or project.[862] Moreover, the technical report summary submitted by the qualified person to support a determination of mineral reserves must describe the procedures, findings, and conclusions reached for the pre-feasibility or feasibility study.[863]

Most commenters addressing the issue supported requiring either a pre-feasibility study or feasibility study to support a determination of mineral reserves.[864] Although one commenter opposed requiring either type of study on the grounds that, because neither study is commonly undertaken in the coal industry, the proposed requirement would be costly and could result in competitive harm,[865] we believe that, as evidenced by the widespread support from other commenters, the pre-feasibility or feasibility study requirement is consistent with current industry practice under the CRIRSCO standards. We also note that, as previously explained, the final rules do not require a mining company, such as a coal company, to hire a qualified person before it can develop and extract the mined commodity. However, once the company engages in public capital-raising, and seeks to classify and report its deposits as mineral reserves, then, consistent with the CRIRSCO standards, for the protection of investors, there must be a pre-feasibility or feasibility study to support its disclosure of reserves in Commission filings.

We also are adopting the proposed definitions of preliminary feasibility study [866] and feasibility study.[867] Because these definitions are substantially similar to the comparable definitions under the CRIRSCO-based codes,[868] many commenters supported their adoption.[869] These definitions establish that, while both a pre-feasibility and feasibility study are comprehensive technical and economic studies, which must include a financial analysis at a level of detail necessary to demonstrate, at the time of reporting, that extraction is economically viable, a pre-feasibility study is less comprehensive and results in a lower confidence level than a feasibility study. This is because of the key differences between a pre-feasibility study and a (final) feasibility study, which include that:

- A pre-feasibility study discusses a ''range of options'' for the technical and economic viability of a mineral project whereas a feasibility study focuses on a particular option selected for the development of the project;
- A pre-feasibility study generally has a less detailed assessment of the modifying factors necessary to demonstrate that extraction is economically viable than the corresponding assessment in a feasibility study; and
- A pre-feasibility study generally has a less detailed financial analysis that is based on less firm budgetary considerations (*e.g.,* historical costs rather than actual, firm quotations for major capital items) and more assumptions than the financial analysis in a feasibility study.

Despite these differences, we believe that revising our rules to allow a pre-feasibility study to support the determination and disclosure of mineral reserves benefits both registrants and investors. Permitting the use of a pre-feasibility study to determine mineral reserves under our rules would align the Commission's disclosure regime with those under the CRIRSCO-based codes and, as such, provide greater uniformity in global mining disclosure requirements to the benefit of both mining registrants and their investors. Permitting the use of a pre-feasibility study also could significantly reduce a mining registrant's costs in connection

[850] *See* letter from CBRR.

[851] Letter from Alliance.

[852] *See id.*

[853] *See* letter from Amec.

[854] *See* letters from Amec, AngloGold, Eggleston, Golder, Rio Tinto, and SRK 1.

[855] *See* letter from Amec.

[856] *See* letter from Northern Dynasty.

[857] *See* letter from SAMCODES 2.

[858] *See* letter from CBRR.

[859] *See, e.g.,* letters from NMA 2 and SME 1.

[860] *See, e.g.,* letters from Columbia and SASB.

[861] Item 1302(e)(1) of Regulation S–K.

[862] *See id.*

[863] *See id.,* referencing 17 CFR 229.601(b)(96).

[864] *See supra* note 843 and accompanying text.

[865] *See* letter from Alliance.

[866] *See* the definition of ''preliminary feasibility study'' in 17 CFR 229.1300.

[867] *See* the definition of ''feasibility study'' in 17 CFR 229.1300.

[868] *See, e.g.,* CRIRSCO International Reporting Template, *supra* note 20, at cl. 38–39; JORC Code, *supra* note 175, at pts. 39–40; SAMREC Code, *supra* note 267, at pts. 46–47; and PERC Reporting Standard, *supra* note 302, at pts. 5.5–5.9.

[869] *See, e.g.,* letters from AngloGold, BHP, CBRR, Rio Tinto, and SRK 1.

with the determination of mineral reserves.

We also continue to believe that the adopted requirements in the definition of, and provisions regarding, a pre-feasibility study will limit any additional uncertainty caused by its use. For example, like a feasibility study, a pre-feasibility study must include an economic analysis that supports the property's economic viability as assessed by a detailed discounted cash flow analysis or other similar financial analysis.[870] Consistent with other adopted provisions that contain a pricing requirement, an adopted provision states that, for either type of study, a qualified person must use a price for each commodity that provides a reasonable basis for establishing that the project is economically viable.[871] The qualified person must disclose the price used and explain, with particularity, his or her reasons for using the selected price, including the material assumptions underlying the selection. This explanation must include disclosure of the time frame used to estimate the price and costs and the reasons justifying the selection of that time frame.[872] As with other adopted pricing provisions, for the pre-feasibility or feasibility study, the qualified person may use a price set by contractual arrangement, provided that such price is reasonable, and the qualified person discloses that he or she is using a contractual price when disclosing the price used.[873]

In addition, the economic analysis for a pre-feasibility study must describe in detail applicable taxes and provide an estimate of revenues.[874] We believe that this level of detail for the economic analysis in a pre-feasibility study is consistent with current practice in the industry and comparable to the requirements for mineral reserve disclosure based on a pre-feasibility study in the CRIRSCO-based jurisdictions.[875]

Similar to a proposed instruction, the final rules require a qualified person to exclude inferred mineral resources from the pre-feasibility study's demonstration of economic viability in support of a disclosure of a mineral reserve.[876] Under the adopted framework, a qualified person cannot convert an inferred mineral resource to a mineral reserve without first obtaining new evidence that justifies converting it to an indicated or measured mineral resource.[877] This treatment of inferred resources is consistent with guidance under the CRIRSCO standards, which explains that, because confidence in the inferred resource estimate is usually not sufficient to allow the results of the application of technical and economic parameters to be used for detailed mine planning, there is no direct link from an inferred resource to any category of mineral reserves.[878]

Similar to proposed instructions, we are adopting other requirements that relate to the conversion of indicated or measured mineral resources into mineral reserves.[879] These requirements are consistent with the mineral resource classification scheme and mineral reserve disclosure framework under the CRIRSCO standards.[880]

Also similar to proposed instructions, we are adopting other provisions pertaining to the use of a pre-feasibility study. One such provision explains that factors to be considered in a pre-feasibility study are typically the same as those required for a feasibility study, but considered at a lower level of detail or at an earlier stage of development.[881] The list of factors is not exclusive. For example, a pre-feasibility study must define, analyze, or otherwise address in detail, to the extent material:

- The required access roads, infrastructure location and plant area, and the source of all utilities (*e.g.,* power and water) required for development and production;
- The preferred underground mining method or surface mine pit configuration, with detailed mine layouts drawn for each alternative;
- The bench lab tests[882] that have been conducted, the process flow sheet, equipment sizes, and general arrangement that have been completed, and the plant throughput;

The environmental compliance and permitting requirements, the baseline studies, and the plans for tailings disposal, reclamation and mitigation, together with an analysis establishing that permitting is possible; and

- Any other reasonable assumptions, based on appropriate testing, regarding the modifying factors sufficient to demonstrate that extraction is economically viable.[883]

Some commenters objected to the inclusion of environmental compliance and permitting requirements or the interests of agencies, non-governmental organizations, communities, and other stakeholders as required items to be disclosed in a pre-feasibility (or feasibility) study.[884] We believe that the inclusion of compliance, regulatory, and legal risks that are material to the

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[870] 17 CFR 229.1302(e)(5) [Item 1302(e)(5) of Regulation S–K].

[871] 17 CFR 229.1302(e)(4) [Item 1302(e)(4) of Regulation S–K].

[872] *See id.*

[873] *See id.* Like the other adopted pricing provisions, this provision further states that the selected price and all material assumptions underlying it must be current as of the end of the registrant's most recently completed fiscal year. When discussing the analysis in the technical report summary, the qualified person will be required to disclose the assumptions made about prices, exchange rates, discount rate, sales volumes and costs necessary to determine the economic viability of the reserves.

[874] *See* Item 1302(e)(5) of Regulation S–K.

[875] *See, e.g.,* CIM Definition Standards, *supra* note 351, at 3 (stating that the standard ''requires the completion of a Preliminary Feasibility Study as the minimum prerequisite for the conversion of Mineral Resources to Mineral Reserves''); *see also* CIM Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines 45 (2003) (in discussing work to determine the economic merits of a deposit, stating that ''[t]his work specifically includes mining engineering evaluations and, most importantly, the preparation of an appropriate cash flow analysis. These aspects are normal components of both feasibility studies and preliminary feasibility studies'').

[876] 17 CFR 229.1302(e)(6) [Item 1302(e)(6) of Regulation S–K].

[877] 17 CFR 229.1302(e)(15) [Item 1302(e)(15) of Regulation S–K].

[878] *See* CRIRSCO International Reporting Template, *supra* note 20, at cl. 22; *see also* JORC Code, *supra* note 175, at pt. 21 (''Confidence in the estimate of Inferred Mineral Resources is not sufficient to allow the results of the application of technical and economic parameters to be used for detailed planning in Pre-Feasibility (Clause 39) or Feasibility (Clause 40) Studies'').

[879] One provision states that the qualified person cannot convert an indicated mineral resource to a proven mineral reserve unless new evidence first justifies conversion to a measured mineral resource. *See* 17 CFR 229.1302(e)(14) [Item 1302(e)(14) of Regulation S–K]. Another provision states that if the uncertainties in the results obtained from the application of the modifying factors that prevented a measured mineral resource from being converted to a proven mineral reserve no longer exist, then the qualified person may convert the measured mineral resource to a proven mineral reserve. *See* 17 CFR 229.1302(e)(13) [Item 1302(e)(13) of Regulation S–K].

[880] *See, e.g.,* CRIRSCO International Reporting Template, *supra* note 20, at cl. 33; JORC Code, *supra* note 175, at pt. 32; SAMREC Code, *supra* note 267, at pt. 38; and PERC Reporting Standard, *supra* note 302, at pt. 8.15.

[881] 17 CFR 229.1302(e)(7) [Item 1302(e)(7) of Regulation S–K].

[882] In the design of industrial process plants, engineers test the design concepts at increasingly larger scales. An initial step in this process is to conduct laboratory tests using a laboratory simulation of the conceptual process plant (referred to as bench lab tests). If successful, engineers then conduct tests using a small scale field plant that can process bulk samples (referred to as pilot or demonstration plant tests). It is only when these tests are successful that designs for full scale industrial plants are approved and the plants are constructed. Feasibility studies, depending on the stage, involve bench lab scale or pilot scale tests. *See, e.g.,* Christopher G. Morris, *Academic Press Dictionary of Science and Technology* 244 (1992) (defining bench-scale testing as ''[t]he practice of examining materials, methods, or chemical processes on a scale that can be performed on a work bench''). *See also* American Geological Institute, *Dictionary of Mining, Mineral, and Related Terms* 406 (2d ed. 1997) (defining a pilot plant as ''a small-scale processing plant in which representative tonnages of ore can be tested under conditions which foreshadow (or imitate) those of the full-scale operation proposed for a given ore'').

[883] *See* Item 1302(e)(7) of Regulation S–K; *see also* Table 1 to paragraph (d) of Item 1302 of Regulation S–K.

[884] *See supra* note 859 and accompanying text.

conclusions of the study is necessary because factors such as environmental regulatory compliance, the ability to obtain necessary permits, and other legal challenges can directly impact the economic viability of a mining project. We are adopting requirements for pre-feasibility studies largely as proposed, but with modifications in order to simplify the description of the factors to be considered and to clarify that the pre-feasibility (or feasibility) factors must only be analyzed and discussed if they are material to the findings of the study.

Another provision requires that operating and capital cost estimates in a pre-feasibility study, at a minimum, have an accuracy level of approximately ±25% and a contingency range not exceeding 15%. The qualified person must state the accuracy level and contingency range in the pre-feasibility study.[885]

A further provision requires the pre-feasibility study to identify sources of uncertainty that require further refinement in a final feasibility study, as proposed.[886] This provision is consistent with the qualified person's duty to assess risk in a pre-feasibility study. As noted by one commenter, assessment of risk is intrinsic to completion of a pre-feasibility study, and material risks must be appropriately evaluated by the qualified person and disclosed by the registrant to protect investors.[887]

As noted by commenters,[888] these latter provisions (addressing the level at which the modifying factors are assessed, the appropriate accuracy level and contingency range for operating and capital costs, and sources of uncertainty) are generally consistent with current industry practice and comparable to requirements for the use of a pre-feasibility study in the CRIRSCO-based jurisdictions.[889] As such, the adopted provisions will cause a registrant's use of a pre-feasibility study in Commission filings to meet the industry established minimum level of detail and rigor sufficient to determine mineral reserves.

Similar to a proposed instruction, we are adopting a provision explaining that the term ''mineral reserves'' does not necessarily require that extraction facilities are in place or operational, that the company has obtained all necessary permits or that the company has entered into sales contracts for the sale of mined products. It does require, however, that the qualified person has, after reasonable investigation, not identified any obstacles to obtaining permits and entering into the necessary sales contracts, and reasonably believes that the chances of obtaining such approvals and contracts in a timely manner are highly likely.[890] This provision is similar to guidance provided under the CRIRSCO standards.[891]

The provision further states that, in certain circumstances, the determination of mineral reserves may require the completion of at least a preliminary market study, in the context of a pre-feasibility study, or a final market study, in the context of a feasibility study, to support the qualified person's conclusions about the chances of obtaining revenues from sales. For example, a preliminary or final market study would be required where the mine's product cannot be traded on an exchange, there is no other established market for the product, and no sales contract exists.[892] Although one commenter opposed the proposed requirement to obtain a preliminary or final market study on the grounds that it could compel the disclosure in the technical report summary of commercially sensitive information,[893] the final rules do not require the disclosure of all of the details of a market study. As with exploration results, a registrant only has a duty to disclose the details that are material to investors.

When assessing mineral reserves, the qualified person must take into account the potential adverse impacts, if any, from any unresolved material matter on which extraction is contingent and which is dependent on a third party.[894] Several commenters generally supported this requirement.[895] We believe that this provision will result in more detailed disclosure, when required under the circumstances, concerning the basis for the qualified person's conclusions as to whether the deposit is a mineral reserve.

In a change from the proposed rules, we are not requiring the qualified person to justify the use of a pre-feasibility study in lieu of a feasibility study. We also are not requiring the use of a feasibility study in high risk situations. We are persuaded by commenters' view that, consistent with the CRIRSCO standards, it should be left to the discretion and professional judgment of the qualified person to determine the appropriate level of study required to support the determination of mineral reserves under the circumstances.[896] We believe that the adopted disclosure requirements for a pre-feasibility study, taken as a whole, will help to mitigate any increased risk resulting from permitting the use of a pre-feasibility study to support the determination and disclosure of mineral reserves. If the qualified person satisfies those requirements, including conducting an assessment of material risks affecting the economic viability of the deposit, we do not believe additional disclosure concerning why he or she chose to conduct a pre-feasibility study is necessary. Moreover, in high risk situations, the qualified person will have to perform additional evaluative work to meet the level of certainty required for a pre-feasibility study. If, in the judgment of the qualified person, that level of certainty has been met, we believe the pre-feasibility study should be permitted to support the determination of mineral reserves.

Similar to a proposed instruction, we are adopting a provision requiring a feasibility study to contain the application and description of all relevant modifying factors in a more detailed form and with more certainty than a pre-feasibility study.[897] The list of factors is not exclusive. Pursuant to that provision, a feasibility study must define, analyze, or otherwise address in detail, to the extent material:

- Final requirements for site infrastructure, including well-defined access roads, finalized plans for infrastructure location, plant area, and camp or town site, and the established source of all required utilities (*e.g.,* power and water) for development and production;
- A finalized mining method, including detailed mine layouts and final development and production plan for the preferred alternative with the required equipment fleet specified, together with detailed mining schedules, construction and production ramp up, and project execution plans;

[885] 17 CFR 229.1302(e)(9) [Item 1302(e)(9) of Regulation S–K]; *see also* Table 1 to paragraph (d) of Item 1302 of Regulation S–K.

[886] 17 CFR 229.1302(e)(8) [Item 1302(e)(8) of Regulation S–K].

[887] *See* letter from Rio Tinto.

[888] *See, e.g.,* letters from AngloGold, Eggleston, SAMCODES 2, and SRK 1.

[889] *See, e.g.,* SME Guide, *supra* note 177, Tables 1–2.

[890] 17 CFR 229.1302(e)(3)(i) [Item 1302(e)(3)(i) of Regulation S–K].

[891] *See, e.g.,* CRIRSCO International Reporting Template, *supra* note 20, at cl. 30; SME Guide, *supra* note 267, at pt. 41; JORC Code, *supra* note 175, at pt. 29; and PERC Reporting Standard, *supra* note 302, at pt. 8.3.

[892] 17 CFR 229.1302(e)(3)(ii) [Item 1302(e)(3)(ii) of Regulation S–K].

[893] *See* letter from CBRR.

[894] *See* Item 1302(e)(3)(ii) of Regulation S–K.

[895] *See* letters from Amec, AngloGold, Eggleston, Golder, Rio Tinto, and SRK 1.

[896] *See supra* note 845 and accompanying text.

[897] 17 CFR 229.1302(e)(10) [Item 1302(e)(10) of Regulation S–K]; *see also* Table 1 to paragraph (d) of Item 1302 of Regulation S–K.

- Completed detailed bench lab tests and a pilot plant test,[898] if required, based on risk, in addition to final requirements for process flow sheet, equipment sizes, general arrangement, and the final plant throughput;
- The final identification and detailed analysis of environmental compliance and permitting requirements, together with the completion of baseline studies and finalized plans for tailings disposal, reclamation, and mitigation; and
- Detailed assessments of other modifying factors necessary to demonstrate that extraction is economically viable.[899]

Similar to another proposed instruction, we are adopting a provision requiring a feasibility study to include an economic analysis that describes taxes in detail, estimates revenues, and assesses economic viability by a detailed discounted cash flow analysis.[900] The qualified person must use a price for each commodity in the economic analysis that meets the requirements of the earlier described pricing provision.[901] Thus, as long as the price provides a reasonable basis for establishing that the project is economically viable, and the qualified person explains, with particularity, his or her reasons for using the selected price, including the material assumptions regarding the selection, the price used may be either a historical price or one based on forward-looking pricing forecasts.

Finally, similar to a proposed instruction, we are adopting a provision requiring that operating and capital cost estimates in a feasibility study, at a minimum, have an accuracy level of approximately ±15 percent and a contingency range not exceeding 10 percent. The qualified person must state the accuracy level and contingency range in the feasibility study.[902]

These requirements for the use of a feasibility study to support mineral reserve estimates are intended to promote accurate and uniform disclosure of mineral reserves in Commission filings, which should benefit investors as well as registrants. As commenters noted,[903] the requirements concerning the level of detail or stage of development for the evaluation of modifying factors, and those regarding the accuracy level and contingency range for operating and capital cost estimates, are generally comparable to those required for the use of a feasibility study to support mineral reserve estimates under the CRIRSCO-based codes.[904] We believe aligning the Commission's disclosure requirements with international standards will benefit investors and registrants by promoting uniformity in mining disclosure standards. In addition, these requirements are generally consistent with current practices regarding the use of a feasibility study to support a determination and disclosure of mineral reserves.

G. Specific Disclosure Requirements

1. Requirements for Summary Disclosure

i. Rule Proposal

We proposed that registrants with material mining operations that own two or more mining properties must provide summary disclosure of their mining operations.[905] We proposed the summary disclosure requirement based on our belief that investors would benefit from an overview of a registrant's mining operations in addition to a property by property description. We also believed that this proposed requirement would help foster more efficient and more effective disclosure, as a registrant would be able to provide summary disclosure about all of its properties where some or all are not individually material.[906]

As part of its summary disclosure, we proposed to require a registrant to include a map or maps showing the locations of all mining properties.[907] The proposed map requirement would provide investors a point of reference to assess the geographic and socio-political risks associated with the registrant's mining operations.[908]

We also proposed that the summary disclosure must include a presentation, in tabular form (Table 2 of the proposed rules), of certain specified information about the 20 properties with the largest asset values (or fewer, if the registrant has an economic interest in fewer than 20 mining properties).[909] For the purpose of determining the top 20 properties by asset value, we proposed to permit a registrant with interrelated mining operations to treat those operations as one mining property.[910] As proposed, for each of the properties required to be included in the summary disclosure, a registrant would be required to identify the property, report the total production from the property for the three most recently completed fiscal years, and disclose the following information:

- The location of the property;
- The type and amount of ownership interest;
- The identity of the operator;
- Title, mineral rights, leases or options and acreage involved;
- The stage of the property (exploration, development or production);
- Key permit conditions;
- Mine type and mineralization style; and
- Processing plant and other available facilities.[911]

We proposed this requirement to provide investors with an appropriately comprehensive and thorough understanding of a registrant's mining operations.

We further proposed to require a registrant to provide a summary, in tabular form (Table 3 of the proposed rules), of its mineral resources and mineral reserves at the end of its most recently completed fiscal year, by commodity and geographic area, and for each property containing 10 percent or more of the registrant's mineral reserves or 10 percent or more of the registrant's combined measured and indicated mineral resources.[912] The registrant would be required to provide this summary for each class of mineral reserves (probable and proven) and resources (inferred, indicated, and measured), together with total mineral reserves and total measured and indicated mineral resources.[913] As proposed, all mineral reserves and resources reported in the summary table must be based on, and accurately reflect, information and supporting documentation prepared by a qualified person.

The Commission also proposed several instructions to the proposed summary disclosure requirement that:

- Defined the term ''by geographic area'' to mean by individual country, regions of a country, state, groups of states, mining

[898] *See supra* note 882 and accompanying text.

[899] *See* Item 1302(e)(10) of Regulation S–K; *see also* Table 1 to paragraph (d) of Item 1302(d) of Regulation S–K.

[900] 17 CFR 229.1302(e)(11) [Item 1302(e)(11) of Regulation S–K].

[901] *See* Item 1302(e)(4) of Regulation S–K.

[902] 17 CFR 229.1302(e)(12) [Item 1302(e)(12) of Regulation S–K].

[903] *See, e.g.,* letters from Eggleston, SAMCODES 2, and SRK 1.

[904] *See, e.g.,* SME Guide, *supra* note 177, Tables 1–2.

[905] *See* Proposing Release, *supra* note 5, at Section II.G.1. The proposed provision specified that the registrant would be required to provide summary disclosure for all properties that: The registrant owns or in which it has, or it is probable that it will have, a direct or indirect economic interest; it operates, or it is probable that it will operate, under a lease or other legal agreement that grants the registrant ownership or similar rights that authorize it, as principal, to sell or otherwise dispose of the mineral; and for which it has, or it is probable that it will have, an associated royalty or similar right.

[906] *See id.*

[907] *See id.*

[908] *See id.*

[909] *See id.*

[910] *See id.*

[911] *See id.*

[912] *See id.*

[913] *See id.*

district, or other political units, to the extent material to and necessary for an investor's understanding of a registrant's mining operations;

- Explained that all disclosure of mineral resources must be exclusive of mineral reserves;
- Required that all disclosure of mineral resources and reserves must be only for the portion of the resources or reserves attributable to the registrant's interest in the property;
- Required all mineral resource and reserve estimates to be based on prices that are no higher than the average spot price during the 24-month period prior to the end of the fiscal year covered by the report, determined as an unweighted arithmetic average of the daily closing price for each trading day within such period, unless prices are defined by contractual arrangements; and
- Required that the mineral resource and reserve estimates called for in Table 3 of the proposed rules must be in terms of saleable product.[914]

As proposed, for a registrant with mining operations that are, in the aggregate, material but for which no individual property is material, this summary disclosure would be the only mining disclosure required in the registrant's filings. For a registrant with individual properties that are material, we proposed additional, more detailed, disclosure about such properties.[915] We proposed to exclude a registrant with only one mining property from the summary disclosure requirement because we did not see any benefit to requiring summary disclosure, in addition to individual disclosure, for a single material property.[916]

ii. Comments on the Rule Proposal

Several commenters offered conditional support for the Commission's summary disclosure proposal.[917] One commenter supported the proposed summary disclosure requirement but recommended that the requirement apply to 80% of the registrant's mining properties based on asset value rather than the top 20 properties out of concern that the proposed requirement would be costly for registrants with numerous immaterial properties and only a few material properties.[918]

A number of commenters supported the proposed summary disclosure requirements but stated that the requirement to disclose information about the top 20 properties by asset value should include only material properties.[919] One of those commenters also suggested allowing certain information, such as the description of mineral rights and key permit conditions, to be disclosed in abbreviated form.[920] That commenter also supported a version of the summary disclosure of mineral resources and reserves in tabular form because summary disclosure of mineral resource and mineral reserves in table form is industry practice and widely used.[921] Another commenter recommended merging the two tables for summary disclosure into one, excluding geographic disclosure, and eliminating the map requirement for summary disclosure.[922]

Many other commenters opposed the proposed summary disclosure requirements on the grounds that they were overly prescriptive, were inconsistent with CRIRSCO requirements, and/or would be burdensome in particular for U.S. registrants that are dual-listed in one of the CRIRSCO-based jurisdictions.[923] Commenters that indicated the proposed tables were too prescriptive stated that their ''one-size-fits-all'' approach reflected a lack of appreciation for the diversity of operations within the mining industry and the fact that many of the details required to be disclosed would not be comparable.[924] Some commenters urged the Commission to delete all of the tables and allow the registrant and its qualified persons to determine the most appropriate format for presentation of the required disclosure items (whether in text summaries or in tables designed by the registrant or its qualified persons).[925] Another commenter stated that summary disclosure and accompanying tables should be left to the discretion of the registrant as long as the disclosure follows an existing global standard, such as JORC, NI 43–101, or CRIRSCO.[926] Some commenters further stated that the Commission should limit the tables to a list of material properties and statements of mineral resources and mineral reserves.[927]

One commenter indicated that disclosure of information on the top 20 properties, by asset value, would not be useful for investors.[928] That commenter stated that a technical report summary would provide more meaningful information in a context that would allow an investor to understand better the value of a project.

Another commenter opposed the proposed summary disclosure requirement because it ''all but eliminates'' the discretion of the registrant and qualified person to determine the most suitable presentation of material information relating to each property. That commenter noted that other alternative bases for grouping operations other than by asset value, such as geographic region, commodity or reporting segment, may be more informative for investors.[929] Other commenters stated that the disclosure required regarding the top 20 properties by asset value was too complex to be put in a table.[930]

Several commenters opposed the proposed tabular presentation of summary disclosure of mineral resources and reserves because they believed it conflicted with CRIRSCO requirements that resources and reserves should not be reported in the same table, and inferred resources should not be presented alongside indicated and measured resources, in order to avoid misleading investors that resource estimates are as economically feasible as reserve estimates.[931] Some of the commenters, however, maintained that mineral resources should include reserves, as permitted under the CRIRSCO-based codes.[932]

Many commenters opposed the proposed instruction requiring the mineral resource and reserve estimates in proposed Table 3 to be in terms of saleable product.[933] Most of those commenters maintained that it is customary under the CRIRSCO-based

[914] *See id.*

[915] *See infra* Section II.G.2.

[916] *See* Proposing Release, *supra* note 5, at Section II.G.1.

[917] *See, e.g.,* letters from AngloGold, CBRR, Columbia, Davis Polk, Midas, Rio Tinto, and SRK 1.

[918] *See id.*

[919] *See* letters from Alliance, CBRR, FCX, Midas, and SRK 1.

[920] *See* letter from Midas.

[921] *See id.*

[922] *See* letter from SRK 1.

[923] *See* letters from AIPG, Amec, BHP, Chamber, CIM, Cleary & Gottlieb, Cloud Peak, Coeur, Eggleston, Graves, Newmont, NMA 1, NSSGA, Royal Gold, SAMCODES 1, SME 1, Vale, and Willis.

[924] *See* letters from AIPG, Chamber, Cleary & Gottlieb, NMA 1, NSSGA, SAMCODES 1, and SME 1.

[925] *See* letters from AIPG, Graves, NMA 1, SME 1, and Vale. Similarly, most commenters that responded to our request for comment opposed requiring the summary disclosure to be formatted in XBRL on the grounds that the data required to be disclosed in those tables was largely specific to each registrant and would not benefit from presentation in a structured format. *See* letters from AIPG, Alliance, Amec, AngloGold, CBRR, Chamber, Eggleston, MMSA, Rio Tinto, and SME 1.

[926] *See* letter from Cloud Peak.

[927] *See, e.g.,* letters from Coeur, SME 1, and Willis.

[928] *See* letter from Amec.

[929] *See* letter from Cleary & Gottlieb.

[930] *See* letters from AIPG, FCX, Newmont, and SME 1.

[931] *See* letters from AIPG, BHP, CIM, Cleary & Gottlieb, SME 1, and Vale.

[932] *See, e.g.,* letters from BHP 1 and SAMCODES 1.

[933] *See* letters from Amec, AngloGold, BHP, CIM, Eggleston, FCX, Newmont, Rio Tinto, SAMCODES 1, SME 1, and Vale.

codes to disclose mineral resources on an in situ basis and that the proposed instruction would effectively define a mineral resource as a mineral reserve.[934] Commenters further recommended requiring the disclosure of reserves on either a run of mine or plant/mill feed basis [935] (for metals and some coal and industrial mines) [936] or in terms of saleable product (if customary for some coal and industrial mines) and not on an in situ basis.[937]

One commenter stated that, due to the nature of the aggregates industry, where products are relatively low-priced, mines are shallow, the costs of developing an aggregates quarry or underground mine are far less, and the risks are low compared to other types of mines, many of the proposed tabular disclosure items about reserves, resources and related data points appeared to be either immaterial to investors or to consist of proprietary information the disclosure of which would harm an aggregates company's competitive position.[938]

iii. Final Rules

With some modification, we are adopting the proposed requirement that registrants with material mining operations, which own or otherwise have economic interests in two or more mining properties, provide summary disclosure of their mining operations.[939] Many commenters agreed with our proposal to require summary disclosure even if they disagreed with one or more of the specific disclosure items.[940] We continue to believe that, for registrants with material mining operations, requiring an overview of their mining operations, regardless of whether they have material individual properties, will be useful to investors and help foster more efficient and effective disclosure.

We recognize that many commenters opposed our proposal to require a presentation of summary disclosure, in tabular form, of certain specified information about the 20 properties with the largest asset values because they believed it to be overly prescriptive, inconsistent with CRIRSCO requirements, or burdensome in particular for U.S. registrants that are dual-listed in one of the CRIRSCO-based jurisdictions.[941] To reduce the prescriptive nature of the summary disclosure requirement, consistent with commenters' suggestions, the final rules will permit a registrant to present an overview of its mining properties and operations in either narrative or tabular format.[942]

In addition, in a change from the proposed rules, which required the disclosure of the total production from each of the registrant's top 20 properties by asset value for the three most recently completed fiscal years, the final rules require that the overview must include annual production on an aggregated basis [943] for the registrant's mining properties during each of the three most recently completed fiscal years.[944] Moreover, rather than require the disclosure of other specified information for each of a registrant's top 20 properties by asset value, the final rules provide that the overview should include the following information for the registrant's mining properties considered in the aggregate, and only as relevant:

- The location of the properties; [945]
- The type and amount of ownership interests;
- The identity of the operator or operators;
- Titles, mineral rights, leases or options and acreage involved;
- The stages of the properties (exploration, development, or production);
- Key permit conditions;
- Mine types and mineralization styles; and
- Processing plants and other available facilities.[946]

The final rules also include a provision explaining that, when presenting the overview, the registrant should include the amount and type of disclosure concerning its mining properties that is material to an investor's understanding of the registrant's properties and mining operations in the aggregate.[947] The provision further states that this disclosure will depend upon a registrant's specific facts and circumstances and may vary from registrant to registrant. Finally, this provision asks registrants to refer to, rather than duplicate, any disclosure concerning individually material properties provided in response to the individual disclosure requirements,[948] discussed below.[949]

We believe this more principles-based approach to eliciting summary disclosure on a registrant's mining operations addresses commenters' concerns while still providing a meaningful overview of registrants' mining operations, particularly for those registrants with no or only a few individually material properties. As previously explained, Guide 7 currently calls for the disclosure of all of the above listed items of information.[950] We note, for instance, that most registrants engaged in industrial minerals and aggregates mining have no or only a few individually material properties and currently provide disclosure similar to

[934] *See* letters from BHP, CIM, Eggleston, Newmont, Rio Tinto, and SME 1.

[935] ''Run of mine'' ore refers to ore in its unprocessed form (*i.e.,* in the form mined), while plant/mill feed refers to the material that is fed to a processing plant. Both terms are used in the mining industry, in this context, to refer to material that is affected by mining dilution and losses but is yet to be processed.

[936] *See* letters from AngloGold, CIM, Golder, Newmont, SME 1, and Vale. *See also* letter from FCX (mineral reserves should either be disclosed as ''run-of-mine (plant/mill feed) ore tons, contained product before plant recovery and saleable product after plant recovery'').

[937] *See* letters from CRIRSCO, Golder, Rio Tinto, SME 1, and Vale.

[938] *See* letter from NSSGA.

[939] 17 CFR 229.1303(a)(1) [Item 1303(a)(1) of Regulation S–K]. The registrant must provide the summary disclosure for all properties that the registrant owns or in which it has, or it is probable that it will have, a direct or indirect economic interest. It also must provide summary disclosure for properties that it operates, or it is probable that it will operate, under a lease or other legal agreement that grants the registrant ownership or similar rights that authorize it, as principal, to sell or otherwise dispose of the mineral. Further, a registrant must provide summary disclosure for properties for which it has, or it is probable that it will have, an associated royalty or similar right, unless the registrant lacks access to the information about the underlying properties, as specified in Item 1303(b) of Regulation S–K, and the registrant meets the conditions for omitting the summary disclosure pursuant to Item 1303(a)(3) of Regulation S–K. *See supra* Section II.B.4.

[940] *See, e.g.,* letters from AngloGold, CBRR, Columbia, Davis Polk, Midas, Rio Tinto and SRK 1.

[941] *See supra* note 923 and accompanying text.

[942] *See* 17 CFR 229.1303(b)(2).

[943] In a change from the proposed rules, the final rules eliminate the proposed instruction that would permit a registrant with interrelated mining operations to treat those operations as one mining property for the purpose of providing summary disclosure. Since we are no longer requiring the disclosure of specified information for each of a registrant's top 20 properties, and are only requiring such disclosure in the aggregate, we no longer believe that instruction to be necessary.

[944] 17 CFR 229.1303(b)(2)(i) [Item 1303(b)(2)(i) of Regulation S–K].

[945] As proposed, the summary disclosure must include a map or maps showing the locations of all mining properties. *See* Item 1303(b)(1) of Regulation S–K [17 CFR 229.1303(b)(1)]. We continue to believe the map requirement is an effective means of providing investors with a point of reference to assess the geographic and socio-political risks associated with the registrant's mining operations. Item 102 requires registrants to provide ''appropriate maps'' disclosing ''the location'' of significant properties, but does not address whether or when registrants with multiple properties, none of which are material, should provide a map (or maps) showing the location of all its mining properties. We believe that the adopted map requirement, which is consistent with current practices, will help ensure that investors are provided with beneficial information without significantly impacting current disclosure practices.

[946] 17 CFR 229.1303(b)(2)(ii) [Item 1303(b)(2)(ii) of Regulation S–K].

[947] 17 CFR 229.1303(b)(2)(iii) [Item 1303(b)(2)(iii) of Regulation S–K].

[948] *See id.*

[949] *See infra* Section II.G.2.

[950] *See* Proposing Release, *supra* note 5, Section II.G.1.

summary disclosure called for by Guide 7.

This more principles-based approach is also intended to address the concern of some commenters that the proposed rules established a ''one size fits all'' approach that did not account for the diversity of operations within the mining industry.[951] By requiring a registrant to provide an overview of its mining operations that includes the suggested items of information, as relevant, tailored to its particular facts and circumstances,[952] and presented in a manner of the registrant's choosing, we believe the final rules will elicit material information for investors without unduly burdening the registrant.

As proposed, the final rules require a registrant to provide a summary of its mineral resources and mineral reserves at the end of its most recently completed fiscal year, by commodity and geographic area,[953] and for each property containing 10 percent or more of the registrant's mineral reserves or 10 percent or more of the registrant's combined measured and indicated mineral resources. The registrant will be required to provide this summary, including the amount and grade or quality, for each class of mineral reserves (probable and proven) and resources (inferred, indicated, and measured), together with total mineral reserves and total measured and indicated mineral resources.[954]

We continue to believe that the summary disclosure of mineral resources and reserves is necessary to understand a registrant's material mining operations at fiscal year's end. For example, an understanding of the registrant's total mineral resources and reserves and where those mineral resources and reserves are located can enable investors to understand and evaluate the registrant's projected future earnings from its mining operations and its ability to replenish depleting mineral reserves, a well-established measure of financial performance in mining.[955] The breakdown of the mineral resources and reserves by category and source (geographic area and property) also will provide investors with a measure of the associated risk.

Contrary to the concerns of some commenters,[956] the final rules' requirement that a registrant provide a summary of its mineral resources and reserves does not impose an affirmative obligation to estimate mineral resources and reserves, as defined in these rules, on a mining property where the registrant has not estimated mineral resources and reserves. Registrants will have an obligation to disclose mineral resources and reserves in their summary disclosure only to the extent that they have already engaged a qualified person or persons to estimate such mineral resources and reserves.

In order to standardize the disclosure, facilitate a registrant's compliance with the disclosure requirements, and enhance investor understanding of this information, similar to our proposal, the final rules require that a registrant provide the summary of all mineral resources and reserves at the end of the most recently completed fiscal year in tabular format. However, we agree with those commenters that maintained that we should separate disclosure of mineral resources and reserves in order to reduce the potential for investor confusion.[957] Accordingly, the final rules require registrants to use separate tables when reporting mineral resources and reserves, as required by Item 1303(b)(3) of Regulation S–K. The disclosure should follow the format of the tables designated as Tables 1 and 2 to paragraph (b) of Item 1303.

Similar to a proposed instruction, we are adopting a provision requiring mineral resources, reported in the summary disclosure provided in Table 1 to paragraph (b) of Item 1303, to be exclusive of mineral reserves.[958] We continue to believe that requiring the disclosure of mineral resources exclusive of reserves in the main disclosure document (as opposed to such disclosure in the technical report summary, which is attached as an exhibit to the Commission filing) will reduce the risk of investor confusion. In contrast, we believe that, because the technical report summary is more likely to be read by analysts or investors possessing a more sophisticated understanding of the mining industry and its current practices than the average retail investor, permitting mineral resources to include mineral reserves when disclosed in the technical report summary is less likely to cause confusion.[959]

Similar to another proposed instruction, we are adopting a provision requiring that all disclosure of mineral resources and reserves be only for the portion of the resources or reserves attributable to the registrant's interest in the property.[960] Commenters did not oppose this proposed instruction.[961] For the reasons stated in the Proposing Release, we continue to believe that this provision is reasonable and would help reduce investor confusion.[962]

As previously discussed, we are revising our approach to what is permitted regarding selecting an appropriate price to determine ''prospects of economic extraction'' for mineral resources and ''economic viability'' for mineral reserves.[963] Consequently, the final rules provide that each mineral resource and reserve estimate must be based on a reasonable and justifiable price, selected by a qualified person, which provides a

[951] *See, e.g.,* letter from NMA 2.

[952] Another provision states that, as proposed, a registrant with a royalty or similar economic interest should provide only the portion of the production that led to royalty or other incomes for each of the three most recently completed fiscal years. *See* Item 1303(b)(2)(iv) of Regulation S–K. We continue to believe that registrants with a royalty or similar economic interest in mining properties, if they have access to such information, should only report the portion of production leading to their incomes to reduce the risk of confusing investors.

[953] Similar to a proposed instruction, the final rules define ''by geographic area'' to mean by individual country, regions of a country, state, groups of states, mining district, or other political units, to the extent material to and necessary for an investor's understanding of a registrant's mining operations. *See* 17 CFR 229.1303(b)(3)(i) [Item 1303(b)(3)(i) of Regulation S–K]. We continue to believe this breakdown is necessary for investors to understand the source and associated socio-political risks of the registrant's mineral reserves and resources.

[954] *See* 17 CFR 229.1303(b)(3). As previously discussed, all mineral reserves and resources reported in the summary disclosure must be based on, and accurately reflect, information and supporting documentation prepared by a qualified person. *See* Item 1302(a) of Regulation S–K; *see also* Section II.C.1. for a discussion of the final rules' stipulations on the responsibilities of the qualified person and the registrant.

[955] *See, e.g.,* R. L. Robinson and B. W. Mackenzie, *Economic Comparison of Mineral Exploration and Acquisition Strategies to Obtain Ore Reserves* 281–282 (1987). (''Mining company objectives are . . . profit, growth, and survival . . . To survive, the company must successfully invest . . . in replacing the depleted ore reserves. An underlying thread among the profit, growth, and survival objectives is ore reserve replacement and growth''). *See also* H. R. Bullis, *Gold Deposits, Exploration Realities, and the Unsustainability of Very Large Gold Producers* 313–320 (2003).

[956] *See, e.g.,* letter from NSSGA.

[957] *See supra* note 931 and accompanying text.

[958] 17 CFR 229.1303(b)(3)(ii) [Item 1303(b)(3)(ii) of Regulation S–K].

[959] S*ee infra* Section II.G.3. for a discussion of the adopted provision that permits a qualified person to disclose resources inclusive of reserves in the technical report summary as long as he or she also discloses resources as excluding reserves.

[960] 17 CFR 229.1303(b)(3)(iii) [Item 1303(b)(3)(iii) of Regulation S–K].

[961] Only one commenter addressed this proposed instruction. That commenter stated that, although it believed the decision to report mineral resources or mineral reserves on a 100% or other ownership basis should be at the discretion of the registrant, it considered ''that the information on the registrant's interest in the property is important information and should be included with the reporting of Mineral Resource and Mineral Reserve estimates.'' Letter from Amec.

[962] *See* Proposing Release, *supra* note 5, at Section II.G.1.

[963] *See supra* Sections II.E.4., II.F.2.

reasonable basis for establishing the prospects of economic extraction for mineral resources, and is the basis for determining the economic viability of the deposit for mineral reserves.[964] We believe this approach will further align the Commission's rules with the CRIRSCO requirements and help limit the compliance burden on registrants.

Many commenters stated that requiring registrants to disclose mineral resources and reserves at a specific point of reference (in this case, as saleable product) is counter to the CRIRSCO-based codes and current industry practice, which permit the estimation of resources and reserves at a disclosed single point of reference selected by the qualified person.[965] To help limit the compliance burden for registrants, especially those that are cross-listed in CRIRSCO-based jurisdictions, the final rules will permit a registrant and its qualified person(s) to disclose mineral resources and reserves at any point of reference as long as they disclose the selected point of reference. For summary disclosure, the final rules require that each mineral resource and reserve estimate in Tables 1 and 2 to paragraph (b) of Item 1303 be based on a specific point of reference selected by a qualified person. The registrant also must disclose the selected point of reference for each of these Tables 1 and 2.[966]

Another provision stipulates, as proposed, that the registrant may modify the tabular formats in Tables 1 and 2 to paragraph (b) of Item 1303 for ease of presentation or to add information.[967] While we continue to believe that the tabular presentation of summary resources and reserves disclosure will standardize the disclosure and make it easier for investors to understand and assess investments in registrants engaged in material mining operations, we emphasize that the tables can be modified to fit a registrant's particular situation. Contrary to the views of several commenters,[968] like the proposed rules, the final rules expressly provide, in recognition of the diversity in the mining sector, that registrants can modify the tables to fit their own particular facts and circumstances.

A final provision states that all material assumptions and information pertaining to the summary disclosure of a registrant's mineral resources and mineral reserves required by this section, including material assumptions related to price estimates, must be current as of the end of the registrant's most recently completed fiscal year.[969] We believe this provision is a useful reminder that, although the qualified person is responsible for determining the mineral resource or reserve estimates included in the summary disclosure, the registrant bears the ultimate responsibility for ensuring that those estimates, and the material assumptions underlying them, remain current as of the date for which the mineral resource or reserve estimates have been disclosed.

2. Requirements for Individual Property Disclosure

i. Rule Proposal

We proposed that a registrant with material mining operations provide, in addition to summary disclosure, more detailed information for each of its individual properties that is material to its business or financial condition.[970] We made this proposal because of our belief that summary property disclosure alone would not provide all relevant information about the properties and assets that generate a mining registrant's revenues. We therefore proposed that, for each material individual property, a registrant would have to provide a brief description of the property, including:

- The property's location, accurate to within one mile, using an easily recognizable coordinate system (*e.g.,* latitude and longitude), including appropriate maps, with proper engineering detail (such as scale, orientation, and titles), which must be legible on the page when printed;
- Existing infrastructure, including roads, railroads, airports, towns, ports, sources of water, electricity, and personnel; and
- A brief description, including the name or number and size (acreage), of the titles, claims, concessions, mineral rights, leases or options under which the registrant and its subsidiaries have or will have the right to hold or operate the property, and how such rights are obtained at this location, indicating any conditions that the registrant must meet in order to obtain or retain the property. If held by leases or options or if the mineral rights otherwise have termination provisions, the registrant would have to provide the expiration dates of such leases, options or mineral rights and associated payments.[971]

For each material property, the proposed rules also required a registrant to disclose a history of previous operations, a description of the condition and status of the property, and a description of any significant encumbrances to the property, including current and future permitting requirements and associated deadlines, permit conditions, regulatory violations and associated fines.[972]

We also proposed to require several items of disclosure in tabular form, including a summary of the exploration activity for the most recently completed fiscal year (Table 4 of the proposed rules), a summary of material exploration results for the most recently completed fiscal year (Table 5 of the proposed rules), a summary of all mineral resources and reserves (if mineral resources or reserves have been determined) (Table 6 of the proposed rules), and a comparison of the property's mineral resources and reserves as of the end of the last fiscal year against the mineral resources and reserves as of the end of the preceding fiscal year, with an explanation of any material change between the two (Tables 7 and 8 of the proposed rules).[973] A proposed instruction provided that registrants would be permitted to modify the tables for ease of presentation, to add information, or to combine two or more required tables throughout their disclosure.[974]

We further proposed that, if the registrant has not previously disclosed mineral reserve or resource estimates in a filing with the Commission or is disclosing material changes to its previously disclosed mineral reserve or resource estimates, it must provide a brief discussion of the material assumptions and criteria underlying the estimates and cite to the corresponding sections of the technical report summary, which would be filed as an exhibit.[975] We similarly proposed that, if the registrant has not previously disclosed material exploration results in a filing with the Commission, or is disclosing material changes to its previously disclosed exploration results, it must provide sufficient information to allow for an accurate understanding of the significance of the exploration results and cite to corresponding sections of the summary technical

[964] 17 CFR 229.1303(b)(3)(iv) [Item 1303(b)(3)(iv) of Regulation S–K].

[965] *See supra* note 933 and accompanying text.

[966] 17 CFR 229.1303(b)(3)(v) [Item 1303(b)(3)(v) of Regulation S–K].

[967] 17 CFR 229.1303(b)(3)(vi) [Item 1303(b)(3)(vi) of Regulation S–K]. However, a registrant may not modify the tabular format to remove any of the required disclosure from the tables.

[968] *See* letters from AIPG, Chamber, Cleary & Gottlieb, NMA, NSSGA, SAMCODES 1, and SME 1.

[969] 17 CFR 229.1303(b)(3)(vii) [Item 1303(b)(3)(vii) of Regulation S–K].

[970] *See* Proposing Release, *supra* note 5, at Section II.G.2.

[971] *See id.*

[972] *See id.*

[973] *See id.*

[974] *See id.*

[975] *See id.*

report, which would be filed as an exhibit.[976]

We proposed additional individual property disclosure instructions applicable to registrants that have not previously disclosed mineral resource or reserve estimates or material exploration results or that are disclosing a material change in previously disclosed mineral resource or reserve estimates or material exploration results. Most of those proposed instructions were designed to assist registrants in determining whether there has been a material change in estimates of mineral resources, mineral reserves, or material exploration results. For example, according to one proposed instruction, whether a change in exploration results, mineral resources, or mineral reserves, is material must be based on all facts and circumstances, both quantitative and qualitative. Pursuant to another proposed instruction, a change in exploration results that significantly alters the potential of the exploration target is considered material.

Other proposed instructions would establish quantitative thresholds for presumed materiality of a change in estimates of mineral resources or reserves. For example, according to one proposed instruction, an annual change in total resources or reserves of 10 percent or more, excluding production as reported in Tables 7 and 8 of the proposed rules, is presumed to be material, and thus would need to be disclosed.[977] According to another proposed instruction, a cumulative change in total resources or reserves of 30 percent or more in absolute terms, excluding production as reported in Tables 7 and 8 of the proposed rules, from the current filed technical report summary is presumed to be material. A third proposed instruction would require that, when applying these quantitative thresholds for presumed materiality, the registrant should consider the change in total resources or reserves on the basis of total tonnage or volume of saleable product.[978]

We also proposed an instruction that would require a registrant to consider whether the filed technical report summary is current with respect to all material assumptions and information, including assumptions relating to or underlying all modifying factors and scientific and technical information (*e.g.,* sampling data, estimation assumptions, and methods). To the extent that the registrant is not filing a technical report summary, but instead is basing the required disclosure upon a previously filed report, that report would also have to be current in these respects. If the previously filed report is not current in these respects, the registrant would have to file a revised or new summary technical report from a qualified person, which supports the registrant's mining property disclosures.[979]

Finally, we proposed an instruction explaining that a report containing estimates of the quantity, grade, or metal or mineral content of a deposit or exploration results that a registrant has not verified as a current mineral resource, mineral reserve, or exploration results, and which was prepared before the registrant acquired, or entered into an agreement to acquire, an interest in the property that contains the deposit, would not be considered current and could not be filed in support of disclosure.[980]

ii. Comments on the Rule Proposal

Many of the comments on the proposed individual property disclosure requirements were substantially similar to the comments in response to the proposed summary disclosure provisions. While commenters acknowledged the importance of disclosure on individually material properties,[981] many believed the proposed disclosure requirements were overly prescriptive and many were critical of one or more of the proposed tables.[982] One commenter opposed Tables 4–8 altogether because of the level of detail required, which in the commenter's view would likely result in any useful information being obscured, and which would be overly burdensome for registrants to produce.[983]

Another commenter stated that certain proposed provisions, which would require detailed information about leases, mining rights and encumbrances, would likely result in over-disclosure of information that is not material to investors.[984] In addition, one commenter stated that the Commission should revise the individual property disclosure requirements in proposed Item 1304 to align it with the checklist content and format in CRIRSCO Template Table 1.[985]

Several commenters opposed requiring the proposed tables for exploration activity and exploration results (Tables 4 and 5 of the proposed rules) on the grounds that they are inconsistent with CRIRSCO standards, are onerous to produce, and would result in disclosure that is potentially competitively harmful, or would not be meaningful to most investors.[986] Some of the commenters opposed Tables 4 and 5 of the proposed rules because, in their view, the tables implied that drilling is the only form of exploration and ignored various other forms of data collection and analysis, such as geochemical and geophysical surveys, which are routinely used in exploration.[987] Maintaining that it would be too difficult to include thousands of datum points regarding exploration into a single table, those commenters recommended that Tables 4 and 5 of the proposed rules either should be eliminated from the final rules[988] or allowed either in narrative form or in company-designed tables.[989]

While commenters generally supported the disclosure of mineral resources and reserves in tabular format,[990] most commenters that addressed the issue were critical of Table 6 of the proposed rules in various respects. Several commenters opposed proposed Table 6 on the grounds that it would require the disclosure of mineral resources and reserves in the same table, as well as inferred resources alongside

[976] *See id.*

[977] *See id.*

[978] *See id.*

[979] *See id.*

[980] *See id.*

[981] *See, e.g.,* letters from Eggleston, Midas, and Rio Tinto.

[982] *See* letters from AIPG, Amec, AngloGold, BHP, CBRR, CIM, Cleary & Gottlieb, Coeur, Davis Polk, Eggleston, FCX, Gold Resource, Midas, MMSA, Newmont, NSSGA, Rio Tinto, SAMCODES 1, SME 1, SRK 1, Vale, and Willis.

[983] *See* letter from Amec.

[984] *See* letter from Newmont; *see also* letter from Amec (objecting to some of the proposed requirements as requesting unnecessary detail for an annual disclosure filing, including the requirement to provide: A summary of the exploration activity and material exploration results for the most recently completed year; a description of any significant encumbrances to the property; a description of the titles, claims, concessions, mineral rights, leases or options regarding the property; and a history of previous operations) and letter from Cleary & Gottlieb (objecting to the proposed requirement to disclose the age and physical condition of the property on the grounds that it would not be useful to investors and would be very burdensome to a company with significant mining operations).

[985] *See* letter from BHP.

[986] *See* letters from Amec, AngloGold, Cleary & Gottlieb, FCX, Midas, MMSA, SME 1, SRK 1, and Vale.

[987] *See, e.g.,* letters from NSSGA, SME 1, SRK 1, and Vale.

[988] *See, e.g.,* letters from SRK 1 (recommending removal of proposed Table 5) and Vale (recommending removal of both proposed Tables 4 and 5).

[989] *See, e.g.,* letter from and SME 1; *see also* letter from Cleary (recommending a principles-based approach generally to the information required to be disclosed in tabular format, which would allow a registrant and its qualified persons to exercise greater judgment in determining the most suitable format and content of material mining disclosure).

[990] *See, e.g.,* letters from AngloGold, Eggleston, and Rio Tinto.

indicated and measured mineral resources, which would be inconsistent with CRIRSCO standards.[991] Commenters also opposed proposed Table 6 because it would require the disclosure of mineral reserves net of allowances for dilution and losses, which would be contrary to industry practice under the CRIRSCO-based codes.[992] For similar reasons, some commenters also opposed proposed Table 6 because it would require the disclosure of mineral resources as exclusive of mineral reserves.[993] One of those commenters stated that a registrant should be permitted to disclose mineral resources as inclusive or exclusive of mineral reserves as long as it clearly explains the basis of its disclosed estimate.[994]

Numerous commenters also opposed proposed Table 6 because it would require the disclosure of mineral reserves on the basis of three points of reference.[995] Commenters maintained that, to be consistent with the CRIRSCO-based codes, the Commission should only require the disclosure of mineral resources on an in situ basis [996] and reserves on a run of mine [997] or saleable product basis.[998]

One commenter stated that proposed Table 6 incorrectly suggests that different types of mining projects are comparable, which is inconsistent with the diversity found in the mining industry.[999] Another commenter opposed the overly prescriptive nature of Table 6 and recommended leaving its inclusion and format to the discretion of the qualified person.[1000]

In addition, many commenters opposed Table 6 because it would require the determination and disclosure of mineral resources and reserves based on a 24-month trailing average price.[1001] Some commenters further objected to the inclusion of the total cost or book value of a mining property and the commodity price in the case of commodities traded under contract, the terms of which are confidential.[1002]

One commenter supported the proposed reconciliation requirement in Tables 7 and 8 of the proposed rules because ''[r]econciliation between numbers on consecutive fiscal years is important to validate uncertainty assumptions and resource/reserve classification.'' [1003] Other commenters either supported proposed Tables 7 and 8 with little to no discussion [1004] or supported having a reconciliation requirement while disagreeing with various aspects of the proposed tabular format.[1005] Some commenters objected to the high granularity of disclosure required in proposed Tables 7 and 8, which they stated would impose a significant reporting burden for a registrant with a large number of properties reported.[1006] Noting that the mining industry has only formalized reconciliation reporting in the past 10 years, and stating that obtaining accurate reconciliation has been difficult for a variety of reasons, other commenters recommended that the Commission make resource and reserve reconciliation voluntary.[1007]

Some commenters provided conditional support for the Commission's proposed requirement to provide a discussion of the material assumptions underlying a registrant's disclosure of mineral resources, mineral reserves, or material exploration results when first disclosing them or when disclosing material changes to the previously disclosed estimates and results.[1008] One commenter stated that it supported the Commission's proposed requirement to provide a discussion of material assumptions as long as the Commission deemed the summaries prepared for CRIRSCO reporting (*e.g.,* based on JORC Table 1) to be acceptable for Commission reporting purposes.[1009]

Another commenter supported the proposed disclosure requirement for material assumptions but opposed any prescriptive requirement, such as the proposed percentage thresholds that would trigger when a material change has occurred, relating to such disclosure.[1010] A third commenter stated that, consistent with international practice, a detailed discussion of the material assumptions should be included in the technical report while a summary of material assumptions should occur in annual filings.[1011] This commenter, however, stated that while the proposed instruction, providing that an annual change in total resources or reserves of 10% or more is presumed to be material, was reasonable, a change of 25% might be better.[1012] A fourth commenter approved of the 30% cumulative change threshold while recommending a 15% threshold for an annual change.[1013] A fifth commenter believed that the 10% threshold for defining a material change for both mineral resources and reserves was too narrow. That commenter recommended allowing the qualified person to determine when a material change has occurred.[1014]

In response to our request for comment, most commenters that addressed the issue opposed requiring presentation of Tables 4 through 8 of the proposed rules in XBRL format.[1015] Commenters primarily objected to such a requirement because it would be expensive [1016] and, ''given the uniqueness of the information to the registrant,'' they did not feel there was any useful information that would benefit from being presented in a

[991] *See* letters from AIPG, BHP, CBRR, CIM, and SME 1.

[992] *See* letters from BHP, CIM, Newmont, and SRK 1.

[993] *See* letters from AngloGold, BHP, and JORC.

[994] *See* letter from JORC.

[995] *See* letters from Amec, BHP, CIM, Eggleston, JORC, MMSA, Newmont, Randgold, Royal Gold, SME 1, and SRK 1.

[996] *See, e.g.,* letters from Amec, CIM, Newmont, Randgold, and Rio Tinto.

[997] *See, e.g.,* letters from CIM, Randgold, and SME 1.

[998] *See, e.g.,* letters from MMSA, Randgold, and SME 1; *see also* letters from CBRR and FCX (recommending the reporting of reserves as run-of-mine (plant/mill feed) ore tons, contained product before plant recovery and saleable product after plant recovery).

[999] *See* letter from SME 1; *see also* letter from JORC (generally opposing all of the tables as being inconsistent with the diversity in the mining industry).

[1000] *See* letter from Vale.

[1001] *See* letters from AIPG, Alliance, AngloGold, BHP, CBRR, Chamber, CIM, Cleary & Gottlieb, Coeur, Davis Polk, Dorsey & Whitney, Eggleston, Gold Resource, Newmont, NMA 1, Northern Dynasty, Randgold, Rio Tinto, SAMCODES 1 and 2, Shearman & Sterling, SME 1, Vale, and Willis.

[1002] *See, e.g.,* letter from BHP; *see also* letter from NSSGA (opposing the disclosure of a weighted contract price in Table 3 on similar grounds).

[1003] Letter from CBRR.

[1004] *See* letter from Gold Resource.

[1005] *See* letter from AngloGold (supporting the proposed requirement for reconciliation, but also recommending leaving the ''level of granularity in the reconciliation'' to the discretion of the qualified person); letter from Eggleston (stating that requiring a comparison of mineral resources and reserves would be useful, but also maintaining that a meaningful comparison of mineral reserves could not be obtained using the proposed table); and letter from SRK 1 (stating that the proposed tables may provide useful information to a technically knowledgeable reader but may also create confusion for investors).

[1006] *See* letters from Amec, MMSA, and Rio Tinto.

[1007] Letters from AIPG and SME 1; *see also* letter from Vale (recommending that inclusion and format of Tables 7 and 8 be left to the discretion of the qualified person).

[1008] *See, e.g.,* letters from AngloGold, CBRR, Eggleston, Midas, Rio Tinto, and SRK 1.

[1009] *See* letter from Rio Tinto.

[1010] *See* letter from AngloGold.

[1011] *See* letter from Eggleston.

[1012] *See id.*

[1013] *See* letter from CBRR.

[1014] *See* letter from Newmont. Another commenter suggested a 25% materiality threshold for contained metal in reserves and a 50% threshold for contained metal in resources together with an ''additional overriding qualitative obligation that any change the registrant deems a material change should be disclosed.'' Letter from Midas.

[1015] *See, e.g.,* letters from AIPG, Alliance, Amec, AngloGold, CBRR, Chamber, Eggleston, MMSA, Rio Tinto, and SME 1.

[1016] *See* letter from SME 1.

structured format.[1017] One commenter, however, supported requiring the presentation of proposed Tables 4 through 8 in XBRL because it would ''likely benefit investors and potential investors as well as align SEC reporting requirements with potential industry standards in the near future.'' [1018]

Some commenters recommended that, consistent with CRIRSCO standards, such as NI 43–101 [1019] and JORC, but contrary to the Commission's proposal, the Commission allow a registrant and its qualified person(s) to use historical estimates of the quantity, grade or mineral content of a deposit that the registrant has not verified and that was prepared before the registrant acquired or entered into an agreement to acquire an interest in the property containing the deposit.[1020] As two of those commenters explained, the inability to use historical estimates in a Commission filing could render a proposed acquisition a practical impossibility because there could be insufficient time to complete an independent estimate of the resources or reserves for the target property.[1021]

iii. Final Rules

With modifications, we are adopting the proposed requirement that a registrant with material mining operations must disclose certain information about each property that is material to its business or financial condition.[1022] When determining the materiality of a property relative to its business or financial condition, a registrant must apply the same standards and other considerations to each individual property as required when determining whether its mining operations as a whole are material.[1023] We continue to believe that, because summary property disclosure alone will not provide all relevant information about the properties and assets that generate a mining registrant's revenues, detailed disclosure regarding a registrant's individually material properties is necessary to provide investors with a comprehensive understanding of a registrant's mining operations.

As proposed, the final rules require a registrant to provide a brief description of each material property, including: the property's location; [1024] existing infrastructure, including roads, railroads, airports, towns, ports, sources of water, electricity, and personnel; [1025] and a brief description, including the name or number and size (acreage), of the titles, claims, concessions, mineral rights, leases or options under which the registrant and its subsidiaries have or will have the right to hold or operate the property.[1026]

Further, as proposed, the final rules will require registrants with individually material mining properties to provide, as relevant to each material property: A brief description of the present condition of the property, the work completed by the registrant on the property, the registrant's proposed program of exploration or development, the current stage of the property as exploration, development or production, the current state of exploration or development of the property, and the current production activities; [1027] the age, details as to modernization and physical condition of the equipment, facilities, infrastructure, and underground development; [1028] the total cost for or book value of the property and its associated plant and equipment; [1029] a brief history of previous operations, including the names of previous operators, insofar as known; [1030] and a brief description of any significant encumbrances to the property, including current and future permitting requirements and associated timelines, permit conditions, and violations and fines.[1031]

Although several commenters opposed some of these individual disclosure requirements on the basis that they are too prescriptive and would be burdensome on registrants,[1032] the above items of disclosure are substantially similar to items called for by Item 102 of Regulation S–K and Guide 7.[1033] Also, these disclosures are

[1017] Letter from AngloGold; *see also* letters from AIPG and SME 1.

[1018] Letter from SRK 1.

[1019] As one of the commenters explained, under Canada's NI 43–101, the use of a historical estimate is contingent upon the registrant disclosing: The date and source of the historical estimate; the relevance and reliability of the historical estimate; the key assumptions, parameters and methods used to prepare the historical estimate if known; the work that needs to be done to upgrade or verify the historical estimate; and that the qualified person has not done sufficient work to classify the historical estimate as a current estimate and, therefore, the registrant is not treating the historical estimate as a current estimate of mineral resources or reserves. *See* letter from Coeur.

[1020] *See* letters from Amec, Coeur, Gold Resource, Newmont, and NMA 1.

[1021] *See* letters from Newmont and NMA 1.

[1022] 17 CFR 229.1304(a)(1) [Item 1304(a)(1) of Regulation S–K].

[1023] *See id.* The registrant would have to apply those standards and other considerations to each individual property that it owns or in which it has, or it is probable that it will have, a direct or indirect economic interest. It also would have to provide individual disclosure for each material property that it operates, or it is probable that it will operate, under a lease or other legal agreement that grants the registrant ownership or similar rights that authorize it, as principal, to sell or otherwise dispose of the mineral. Further, a registrant would have to provide individual disclosure for each material property for which it has, or it is probable that it will have, an associated royalty or similar right, unless the registrant lacks access to the information about the underlying properties, as specified in Item 1304(b) of Regulation S–K, and the registrant meets the conditions for omitting the individual property disclosure pursuant to Item 1304(a)(2) of Regulation S–K. *See supra* Section II.B.4.

[1024] *See* Item 1304(b)(1)(i) of Regulation S–K [17 CFR 229.1304(b)(1)(i)], which requires the description of the property's location to be accurate to within one mile, using an easily recognizable coordinate system, including appropriate maps, with proper engineering detail (such as scale, orientation, and titles) that must be legible on the page when printed. We continue to believe that this level of detail is similar to the level of detail required by the CRIRSCO-based codes. *See, e.g.,* PERC Reporting Standard, *supra* note 302, Table 1 (requirement on key plan, maps and diagrams, which calls for ''a location or index map and more detailed maps showing all important features described in the text, including all relevant cadastral and other infrastructure features . . . All maps, plans and sections noted in this checklist, should be legible, and include a legend, coordinates, coordinate system, scale bar and north arrow''). *See also* SAMREC Code, *supra* note 267, Table 1 (calling for a ''detailed topo-cadastral map'').

[1025] 17 CFR 229.1304(b)(1)(ii) [Item 1304(b)(1)(ii) of Regulation S–K].

[1026] Item 1304(b)(1)(iii) of Regulation S–K [17 CFR 229.1304(b)(1)(iii)], which also requires a description of how such property rights were obtained at this location, indicating any conditions that the registrant must meet in order to obtain or retain the property. If held by leases or options or if the mineral rights otherwise have termination provisions, the registrant must provide the expiration dates of such leases, options, or mineral rights and associated payments.

[1027] Item 1304(b)(2)(i) of Regulation S–K [17 CFR 229.1304(b)(2)(i)], which also requires the registrant to identify mines as either surface or underground, with a brief description of the mining method and processing operations. If the property is without known reserves and the proposed program is exploratory in nature or the registrant has started extraction without determining mineral reserves, the registrant must provide a statement to that effect.

[1028] 17 CFR 229.1304(b)(2)(ii) [Item 1304(b)(2)(ii) of Regulation S–K].

[1029] 17 CFR 229.1304(b)(2)(iii) [Item 1304(b)(2)(iii) of Regulation S–K].

[1030] 17 CFR 229.1304(b)(2)(iv) [Item 1304(b)(2)(iv) of Regulation S–K].

[1031] 17 CFR 229.1304(b)(2)(v) [Item 1304(b)(2)(v) of Regulation S–K].

[1032] *See* letters from Alliance, Amec, BHP, CBRR, FCX, Newmont, and SRK 1.

[1033] For example, paragraph (b) of Guide 7 calls for registrants to disclose the location and means of access to the property, a description of the title, claim, lease or option under which the registrant operates the property with appropriate maps to portray the location, a history of previous operations, a description of the present condition of the property, the work completed by the registrant on the property, the registrant's proposed program of exploration and development, the current state of exploration or development of the property, and a description of the rock formations and mineralization of existing or potential economic significance on the property, including the identity of the principal metallic or other constituents insofar as known.

substantially similar to what is called for under CRIRSCO-based rules.[1034] We continue to believe that these items elicit material information for investors.

Similar to a proposed instruction, the final rules include a provision that establishes guidelines for classifying the current stage of a property as exploration, development, or production.[1035] Also as proposed, a second provision advises registrants to include only geological information that is brief and relevant to property disclosure rather than an extensive description of regional geology.[1036] We believe that this latter provision is consistent with the transparency principle under the CRIRSCO standards and will help investors better understand a registrant's mining operations.

As proposed, we are adopting final rules that would require a registrant to disclose, if mineral resources or reserves have been determined, a summary of all mineral resources or reserves as of the end of the most recently completed fiscal year.[1037] While we are still requiring the same disclosure, in response to those commenters who noted that reporting mineral resources and reserves together is counter to the principles of the CRIRSCO-based codes and could cause investor confusion, we are modifying the presentation of the disclosure.[1038] Consequently, instead of one table (proposed Table 6), the final rules require that, for each property, the registrant disclose in tabular format, as provided in Table 1 to paragraph (d) of Item 1304, for each class of mineral resources (measured, indicated, and inferred), together with total measured and indicated mineral resources, the estimated tonnages and grades (or quality, where appropriate), and in Table 2 to paragraph (d) of Item 1304, for each class of mineral reserves (proven and probable), together with total mineral reserves, the estimated tonnages, grades (or quality, where appropriate), cut-off grades and metallurgical recovery. Furthermore, consistent with our approach to summary disclosure and in light of commenters' concerns about requiring three points of reference, the disclosures in these Tables 1 and 2 will be based on a specific point of reference selected by a qualified person.[1039] The registrant must disclose the selected point of reference for each of Tables 1 and 2 to paragraph (d) of Item 1304.[1040]

Similar to a proposed instruction, we are adopting an instruction that would permit a registrant to modify the tabular formats in these Tables 1 and 2 for ease of presentation, to add information, or to combine two or more required tables.[1041] This instruction is intended to provide registrants with the flexibility to organize the required data to fit their own particular circumstances. For example, depending on the number of individually material properties owned or operated, a registrant may decide to disclose mineral resources on separate properties all in one table or in multiple tables, and mineral reserves on separate properties all in one table or in multiple tables. The adopted instruction makes clear, however, that when combining tables, the registrant should not report mineral resources and reserves in the same table.[1042]

Another provision states that all disclosure of mineral resources by the registrant must be exclusive of mineral reserves.[1043] We are adopting this provision for the same reasons as our adoption of a substantially similar provision for summary disclosure.[1044]

We are adopting rules that, as proposed, will require a registrant to compare each material property's mineral resources and reserves as of the end of the last fiscal year with the mineral resources and reserves as of the end of the preceding fiscal year, and explain any material change between the two.[1045] However, unlike our rule proposal, and in response to comments received about various challenges associated with providing this disclosure,[1046] the final rules provide that the comparison may be in either narrative or tabular format. This will provide registrants greater flexibility in presenting their disclosure and should help limit the compliance burden for registrants, especially those with large numbers of reported properties. Like the proposed rules, the final rules specify that the comparison must disclose information concerning:

- The mineral resources or reserves at the end of the last two fiscal years;
- The net difference between the mineral resources or reserves at the end of the last completed fiscal year and the preceding fiscal year, as a percentage of the resources or reserves at the end of the fiscal year preceding the last completed one;
- An explanation of the causes of any discrepancy in mineral resources including depletion or production, changes in commodity prices, additional resources discovered through exploration, and changes due to the methods employed; and
- An explanation of the causes of any discrepancy in mineral reserves including depletion or production, changes in the resource model, changes in commodity prices and operating costs, changes due to the methods employed, and changes due to acquisition or disposal of properties.[1047]

This comparative disclosure requirement will help investors understand the reasons for the year to year changes in a registrant's mineral resources and reserves, which should help them analyze and evaluate a registrant's future prospects. While Guide 7 calls for annual disclosure of mineral reserves, it does not call for registrants to compare their current mineral reserve disclosure with previously provided disclosure. Registrants, however, provide much of the disclosure required under the comparative disclosure provision pursuant to current disclosure practices.[1048]

If the registrant has not previously disclosed mineral reserve or resource estimates in a Commission filing or is disclosing material changes to its previously disclosed mineral reserve or resource estimates, we are adopting rules, as proposed, requiring it to provide a brief discussion of the material assumptions and criteria underlying the estimates.[1049] The material assumptions and criteria will depend on the specific facts and circumstances surrounding the particular property and the mineral resource and reserve estimates.[1050] However, the disclosure of these assumptions and criteria must include all of the material information necessary

[1034] *See, e.g.,* ASX Listing Rules 5.1 and 5.3, which call for similar disclosures including, as relevant to mining exploration or production entities, details of exploration activities, mining production and development activities, exploration, mining and development expenditures, and information on mining tenements.

[1035] *See supra* Section II.B.5.iii (discussing Item 1304(c)(1) of Regulation S–K).

[1036] 17 CFR 229.1304(c)(2) [Item 1304(c)(2) of Regulation S–K].

[1037] 17 CFR 229.1304(d)(1).

[1038] *See supra* note 991 and accompanying text.

[1039] *See* 17 CFR 229.1304(d)(1).

[1040] *See id.*.

[1041] Instruction 1 to 17 CFR 229.1304(d)(1). As previously noted, a registrant may not modify the required tables to remove any of the required disclosure from the tables.

[1042] *See id.*

[1043] 17 CFR 229.1304(d)(2) [Item 1304(d)(2) of Regulation S–K].

[1044] *See supra* note 959 and accompanying text. As previously discussed, *see supra* Section II.B.4., a third instruction states that a registrant with only a royalty interest should provide only the portion of the resources or reserves that are subject to the royalty or similar agreement. *See* 17 CFR 229.1304(d)(3).

[1045] 17 CFR 229.1304(e) [Item 1304(e) of Regulation S–K].

[1046] *See supra* note 1005.

[1047] 17 CFR 229.1304(e)(1)–(4) [Items 1304(e)(1)–(4) of Regulation S–K].

[1048] *See, e.g.,* letters from AngloGold, CBRR, and Eggleston.

[1049] 17 CFR 229.1304(f)(1) [Item 1304(f)(1) of Regulation S–K].

[1050] 17 CFR 229.1304(f)(3) [Item 1304(f)(3) of Regulation S–K].

for investors reasonably to understand the disclosed mineral resources or reserves. In addition, the registrant must cite to corresponding sections of the technical report summary if one is filed as an exhibit pursuant to Item 1302(b).[1051]

As previously discussed, we have revised the proposed rules to state that, if a registrant is disclosing exploration activity and exploration results for any material property for its most recently completed fiscal year, it must provide summaries that include certain specified information.[1052] For exploration activity, the summary must describe, for each material property as relevant, the sampling methods used, and, for each sampling method used, the number of samples, the total size or length of the samples, and the total number of assays.[1053] For exploration results, the summary must identify, for each relevant material property, the hole, trench or other sample that generated the exploration results, describe the length, lithology, and key geologic properties of the exploration results, and include a brief discussion of the exploration results' context and relevance.[1054] If the summary of exploration results only includes results from selected samples and intersections, it should be accompanied with a discussion of the context and justification for excluding other results.[1055]

In a change from the proposed rules, in response to comments received, the final rules will permit registrants to provide the summaries of exploration activity and exploration results in narrative or tabular format.[1056] We believe this change will address the concerns of commenters that opposed Tables 4 and 5 of the proposed rules because those tables suggested that drilling is the only form of exploration and because it would be too difficult to include thousands of datum points regarding exploration into a single table.[1057] We agree that, as some commenters suggested, permitting registrants to provide disclosure on exploration activity and exploration results in narrative or tabular format will help limit the final rules' compliance burden while still providing important benefits to investors.[1058]

As previously noted, the final rules permit a registrant to disclose an exploration target when discussing exploration results or exploration activity related to a material property as long as the disclosure is accompanied by the cautionary and explanatory statements specified in Item 1302(c) of Regulation S–K.[1059] Consistent with similar requirements under the CRIRSCO-based codes, the disclosure about an exploration target will help investors understand the significance of a registrant's disclosed exploration results and exploration activities, while the required accompanying statements will help investors understand the conceptual basis and limitations of the exploration target.[1060]

Similar to the disclosure requirement for mineral resources or mineral reserves, if the registrant has not previously disclosed exploration results in a filing with the Commission, or is disclosing material changes to its previously disclosed exploration results, the final rules require it to provide sufficient information to allow for an accurate understanding of the significance of the exploration results.[1061] This must include information such as exploration context, type and method of sampling, sampling intervals and methods, relevant sample locations, distribution, dimensions, and relative location of all relevant assay and physical data, data aggregation methods, land tenure status, and any additional material information that may be necessary to make the disclosure concerning the registrant's exploration results not misleading. The registrant must cite to corresponding sections of the summary technical report if one is filed.[1062]

Similar to proposed instructions, we also are adopting individual property disclosure provisions applicable to registrants that have not previously disclosed mineral resource or reserve estimates or exploration results or that are disclosing a material change in previously disclosed mineral resource or reserve estimates or exploration results. Most of these provisions are designed to assist registrants in determining whether there has been a material change in estimates of mineral resources, mineral reserves, or exploration results. For example, a pair of provisions explains that whether a change in exploration results, mineral resources, or mineral reserves, is material must be based on all facts and circumstances, both quantitative and qualitative.[1063] Another provision states that a change in exploration results that significantly alters the potential of the subject deposit is considered material.[1064]

In a change from the proposed rules, we are not providing quantitative guidance for what is presumed to be a material change in estimates of mineral resources or reserves. We have been persuaded by commenters that objected to the proposed quantitative guidance as being overly prescriptive.[1065]

If material assumptions in the filed technical report summary are no longer valid, under current facts and circumstances, then using such a technical report summary to support disclosure of mineral resources or reserves can be misleading to investors. Consequently, we are adopting a provision, similar to a proposed instruction, that requires a filed technical report summary to be current with respect to all material assumptions and information, including assumptions relating to all modifying factors and scientific and technical information (*e.g.,* sampling data, estimation assumptions and methods), as of the end of the registrant's most recently completed fiscal year.[1066] To the extent that the registrant is not filing a technical report summary but instead is basing the required disclosure upon a previously filed report, that report must also be current in these material respects. If the previously filed report is not current in these material respects, the registrant must file a revised or new summary technical report from a qualified person that supports the registrant's mining property disclosures.[1067]

Finally, we are adopting a provision stating that a report containing one or more estimates of the quantity, grade, or metal or mineral content of a deposit or exploration results that a registrant has not verified as a current mineral

[1051] *See* 17 CFR 229.1304(f)(1).

[1052] *See supra* Section II.D.3.

[1053] 17 CFR 229.1304(g)(1) [Item 1304(g)(1) of Regulation S–K].

[1054] 17 CFR 229.1304(g)(2) [Item 1304(g)(2) of Regulation S–K].

[1055] *See id.*

[1056] 17 CFR 229.1304(g)(3) [Item 1304(g)(3) of Regulation S–K].

[1057] *See, e.g.,* letters from Cleary & Gottlieb, NSSGA, SME 1, SRK 1, and Vale.

[1058] *See* letters from Cleary & Gottlieb and SME 1. Whether in narrative or tabular format (and, if in tabular format, whether the tables are similar to proposed Tables 4 and 5 or are tables designed by the registrant), the disclosure of exploration activity and material exploration results must be reasonably comprehensive and not omit material facts that may make the disclosure misleading.

[1059] *See* 17 CFR 229.1304(g)(5).

[1060] *See supra* Section II.D.3.

[1061] 17 CFR 229.1304(g)(6)(i) [Item 1304(g)(6)(i) of Regulation S–K].

[1062] *See id.*

[1063] 17 CFR 229.1304(f)(3) [Item 1304(f)(3) of Regulation S–K]; and 17 CFR 229.1304(g)(6)(ii) [Item 1304(g)(6)(ii) of Regulation S–K].

[1064] 17 CFR 229.1304(g)(6)(iii) [Item 1304(g)(6)(iii) of Regulation S–K].

[1065] *See, e.g.,* letter from AngloGold.

[1066] 17 CFR 229.1304(f)(2) [Item 1304(f)(2) of Regulation S–K].

[1067] *See id.*

resource, mineral reserve, or exploration results, and which was prepared before the registrant acquired, or entered into an agreement to acquire, an interest in the property that contains the deposit (*i.e.,* a ''historical estimate''), is not considered current and cannot be filed in support of disclosure.[1068]

However, in a change from the proposed rules, and as a result of comments received, we are adopting a targeted accommodation that permits a registrant to include a historical estimate in a Commission filing that pertains to a merger, acquisition, or business combination if the registrant is unable to update the estimate prior to the completion of the relevant transaction. In that event, when referring to the estimate, the registrant must disclose the source and date of the estimate, and state that a qualified person has not done sufficient work to classify the estimate as a current estimate of mineral resources, mineral reserves, or exploration results, and that the registrant is not treating the estimate as a current estimate of mineral resources, mineral reserves, or exploration results.[1069] These conditions are generally consistent with those required for the use of historical estimates under Canada's NI 43–101.[1070] This change should address the concern of commenters that the proposed prohibition regarding the use of historical estimates could render some acquisitions or other similar business transactions a practical impossibility. At the same time, to mitigate any potential risk from the use of older information, the adopted provision requires that investors be provided with additional information to help them evaluate an investment in a registrant that has engaged in a merger or similar business transaction involving the use of a historical estimate.

We believe these provisions will help a registrant determine when it must file a technical report summary as an exhibit to the filing and provide the appropriate accompanying disclosure in the filing about the resource or reserve estimates and exploration results. At the same time, the adopted provisions will help to ensure that investors are provided with current information about the registrant's mineral resources and reserves and exploration results.

Like the proposed rules, the final rules do not require a registrant to format any of its disclosure about its individually material properties in XBRL. In light of the flexibility provided in the final rules for these disclosures, which will permit registrants to tailor the disclosures to their unique facts and circumstances, we believe that presentation in a structured format, such as XBRL, would impose additional burdens on registrants without providing substantial additional benefits for users of the information.[1071] For similar reasons, we are not requiring registrants' summary disclosure to be formatted in XBRL.

3. Requirements for Technical Report Summaries

i. Rule Proposal

We proposed rules that would require a registrant to file, as an exhibit, a technical report summary to support the disclosure of mineral resources, mineral reserves, or material exploration results for each material property.[1072] The proposed rules would require a qualified person to identify and summarize the scientific and technical information and conclusions reached concerning material mineral exploration results, initial assessments used to support disclosure of mineral resources, and preliminary or final feasibility studies used to support disclosure of mineral reserves, for each material property, in the technical report summary.[1073] The qualified person also would be required to sign and date the technical report summary.[1074] We proposed this latter requirement to help ensure the reliability of the technical report summary.

We proposed specific requirements for the contents of the technical report summary to elicit scientific and technical information to support the determination and disclosure of mineral resources, mineral reserves, and material exploration results. The proposed requirements are similar in most respects to the items of information required for the summary report under Canada's NI 43–101.[1075] They are also similar to the contents suggested in the mining engineering literature.[1076] In the Proposing Release, we stated that these similarities support our view that the proposed sections of the technical report summary would provide relevant and useful information to facilitate an investor's understanding of a registrant's mineral resources, mineral reserves, and material exploration results.[1077]

We proposed that the technical report summary must not include large amounts of technical or other project data, either in the report or as appendices to the report.[1078] In addition, the proposed rules required the qualified person to draft the summary to conform, to the extent practicable, with plain English principles under the Securities Act and Exchange Act.[1079] While the proposed requirements were designed primarily to help improve the readability of the technical report summary for the benefit of those investors who do not have a technical scientific or engineering background, they would also benefit more sophisticated investors to the extent that they result in a more readable and understandable document. They also are consistent with similar Canadian mining disclosure standards.[1080]

We proposed that the technical report summary consist of some or all of 26 sections, depending upon the specific scope of the summary.[1081] As proposed, a technical report summary that reports the results of a preliminary or final feasibility study would have to include all 26 sections. A technical report summary that reports the results of an initial assessment or that reports material exploration results could omit information required by certain of the proposed technical report summary sections.[1082]

Although the proposed sections were similar in most respects to the items of information required for the summary

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[1068] 17 CFR 229.1304(h) [Item 1304(h) of Regulation S–K].

[1069] *See id.*

[1070] *See* Canada's NI 43–101, *supra* note 123, at pt. 2.4.

[1071] *See supra* notes 1015–1017 and accompanying text.

[1072] *See* Proposing Release, Section II.G.3.

[1073] *See id.*

[1074] *See id.*

[1075] *See* Canada's Form 43–101F1 (prescribing 27 sections for the technical report summary required for each material property pursuant to Canada's NI 43–101), *http://web.cim.org/standards/documents/Block484_Doc111.pdf.*

[1076] *See, e.g.,* W. Hustrulid, M. Kuchta, and R. Martin, 1 *Open Pit Mine Planning & Design* 14–16 (3rd ed. 2013); Richard West, *Preliminary, Prefeasibility and Feasibility Studies, Australian Mineral Economics—A Survey of Important Issues* (Philip Maxwell and Pietro Guj, eds, 2006).

[1077] *See* Proposing Release, *supra* note 5, at Section II.G.

[1078] *See id.*

[1079] *See* 17 CFR 230.421 [Securities Act Rule 421] and 17 CFR 240.13a–20 [Securities Exchange Act Rule 13a–20].

[1080] *See* Instruction 3 to Form 43–101F1 (''The qualified person preparing the technical report should keep in mind that the intended audience is the investing public and their advisors who, in most cases, will not be mining experts. Therefore, to the extent possible, technical reports should be simplified and understandable to a reasonable investor. However, the technical report should include sufficient context and cautionary language to allow a reasonable investor to understand the nature, importance, and limitations of the data, interpretations, and conclusions summarized in the technical report'').

[1081] *See* Proposing Release, *supra* note 5, at Section II.G.3.

[1082] *See id.*

report under Canada's NI 43–101,[1083] there were a couple of notable differences. First, the proposed rules did not permit a qualified person to include a disclaimer of responsibility if he or she relies on a report, opinion, or statement of another expert in preparing the technical report summary.[1084] Second, we proposed to include sections about hydrogeology and geotechnical data, including testing and analysis, which are not included in Canada's NI 43–101.

ii. Comments on the Rule Proposal

While acknowledging that the Commission's proposal to require 26 specified sections in the technical report summary is similar to the content required under Canada's NI 43–101, numerous commenters urged the Commission to follow explicitly the content and format of Canada's Form 43–101F1 so that technical report summaries filed with the Commission would be interchangeable with technical reports prepared under Canada's NI 43–101.[1085] One of those commenters also recommended that the Commission explicitly incorporate the Canadian form by reference, ''which would allow for regular updates without going through additional rulemaking.'' [1086] Several other commenters, however, recommended that the technical report summary follow the format of CRIRSCO's Table 1 and the corresponding guidance in JORC or SAMREC rather than the format and guidance under Canada's NI43–101 because they viewed the latter as being too prescriptive.[1087] One of those commenters further recommended that the Commission adopt ''carve-outs'' for commercially sensitive information.[1088] Another commenter opposed the proposed technical report summary requirement as being too prescriptive and recommended that the Commission refer U.S. registrants to the 2014 SME Guide, which would be included as an appendix to the final rules.[1089]

Two commenters opposed the technical report summary filing requirement on the grounds that it ''is a significant change to the current SEC rules and goes beyond most CRIRSCO-based disclosure regimes, other than Canada and Australia, which do not require filing of expert reports.'' [1090] One of those commenters also believed that many of the required sections in the proposed technical report summary seemed designed to satisfy some unstated social or political goal rather than to provide material information to investors.[1091] The other commenter stated that the proposed rules would require a registrant in the aggregates business to collect and report on data that management typically does not use in its own analysis of its business.[1092] Because that commenter believed that many sections of the technical report summary would result in immaterial information to investors due to the nature of the aggregates industry, and because of its concern that some of the requested information, such as pricing, would place confidential business plan information into the public domain to the detriment of its competitive position, the commenter requested that the Commission exclude registrants in the aggregates business from having to comply with the technical report summary requirement.[1093]

One commenter who opposed the proposed technical report summary because of its differences with CRIRSCO-based disclosure requirements stated that ideally the Commission should adopt mining disclosure rules that are substantially the same as the CRIRSCO-based codes. As an alternative, however, that commenter recommended that the Commission adopt a ''reciprocal recognition'' approach that would allow foreign issuers to file their home country (CRIRSCO-based) reports in satisfaction of the U.S. rules and U.S. issuers to file U.S. compliant reports in satisfaction of foreign requirements.[1094]

Several commenters recommended changing the name of the technical report summary to either ''summary technical report'' or just ''technical report.'' [1095] Commenters urged such a change in order to align the name of the required report with that required under the CRIRSCO-based codes and because the Commission's proposed name suggests that there is a full technical report when in many instances there is not.

Some commenters generally approved of the proposed 26 sections of the technical report summary while suggesting modifications for certain sections. For example, one commenter stated that adding sections on hydrogeology and geotechnical would be appropriate for reserve determination but not for resource estimation because such information is typically not available.[1096] Another commenter recommended excluding those sections when disclosing exploration results for the same reason.[1097] A third commenter recommended excluding from the technical report summary detailed hydrogeology and geotechnical data as well as any other detailed technical data that most investors would not find meaningful.[1098]

Another commenter, however, supported the inclusion of sections on hydrology and rock mechanics.[1099] This commenter agreed with most of the topics included in the proposed technical report summary requirement, but opposed requiring annual cash flow forecasts and measures of economic viability, such as net present value, internal rate of return and payback period of capital, under ''results of the economic analysis'' on the grounds that such information is sensitive and should only be requested under specific situations and afforded confidential treatment.[1100]

One commenter urged the Commission to adopt a technical report summary provision requiring ''detailed descriptions of infrastructure needs for mining projects, especially dams, tailings disposal, water and energy access.'' [1101] That commenter also supported adoption of the technical report summary provision requiring descriptions of the environmental, permitting, and social or community factors related to the project, which the commenter indicated would include a description of ''social license to operate'' risks.[1102]

Another commenter disagreed with the proposed requirement that a

[1083] *See supra* note 1075 and accompanying text.

[1084] In contrast, Canada's NI 43–101 would permit the qualified person to include a disclaimer of responsibility if he or she relies on a report, opinion, or statement of another expert who is not a qualified person in preparing the technical report summary. *See* Item 3 of Canada's Form NI 43–101F1.

[1085] *See* letters from AIPG, Amec, Coeur, Eggleston, Gold Resource, Northern Dynasty, SME 1, and Willis.

[1086] Letter from AIPG.

[1087] *See* letters from AngloGold, BHP, JORC, MMSA, Randgold, Rio Tinto, and SAMCODES 1.

[1088] *See* letter from BHP.

[1089] *See* letter from CRIRSCO.

[1090] *See* letters from Chamber and NSSGA.

[1091] *See* letter from Chamber.

[1092] *See* letter from NSSGA.

[1093] *See id.*

[1094] *See* letter from PDAC.

[1095] *See* letters from AIPG, Coeur, Eggleston, Gold Resource, Midas, and SME 1.

[1096] *See* letter from Midas; *see also* letter from MMSA.

[1097] *See* letter from Eggleston; *see also* letter from SRK 1 (recommending excluding those sections for both exploration results and resource estimation).

[1098] *See* letter from Andrews & Kurth; *see also* letter from Amec (recommending exclusion of hydrogeology and geotechnical sections in conjunction with recommendation to exclude mineral brines and geothermal energy from scope of rules).

[1099] *See* letter from CBRR.

[1100] *Id.*

[1101] Letter from Earthworks.

[1102] *See Id.*

qualified person opine on whether all issues relating to all relevant modifying factors can be resolved with further work. The commenter further opposed the proposed provision requiring a qualified person to justify the use of a pre-feasibility study instead of a feasibility study. According to that commenter, because the CRIRSCO standards require a pre-feasibility study to be sufficient for a competent person, acting reasonably, to determine if all or part of a mineral resource may be converted to a mineral reserve at the time of reporting, no additional justification for use of a pre-feasibility should be required.[1103]

In response to our solicitation of comment regarding whether we should expand the disclosure required by the technical report summary, most commenters[1104] that addressed the issue did not favor expanding the technical report summary provision that would require the qualified person to describe the environmental, permitting, and social or community factors related to the project.[1105] One of those commenters objected to expanding the mining property disclosure requirements to include a more detailed discussion regarding sustainability and related issues on the grounds that it already discloses material environmental, social, and governance information for investors in its corporate social responsibility reports that it publishes annually on its web site.[1106] The commenter further noted that, to the extent that sustainability issues present a material risk, a registrant would already have to disclose that risk in the Risk Factors section of its Exchange Act annual report.[1107]

Some commenters, however, recommended that the Commission require a registrant and its qualified person(s) to consider sustainability factors when determining mineral resources and reserves.[1108] For example, one commenter suggested that the Commission explicitly require a carbon budget analysis in the economic viability determination for proven reserves.[1109] This commenter also recommended that the Commission: (i) Require the use of a spectrum of price forecasts and sensitivity analysis in assessing the economic recoverability of a coal deposit; and (ii) expand the definition of a qualified person to require an expertise in conducting a carbon budget analysis.[1110]

Another commenter urged the Commission to require the consideration of numerous sustainability topics when applying the modifying factors in mineral resource and reserve determinations.[1111] Under this approach, for metals mining, a qualified person would have to consider greenhouse gas emissions, air quality, biodiversity impacts, community relations and rights of indigenous peoples, and workforce health, safety, and well-being together with energy management, water management, and waste and hazardous materials management. The commenter further recommended that the Commission explicitly require a qualified person to have relevant experience to assess and render judgment on any potential modifying factor.[1112]

One commenter supported the consideration of climate, environmental, social, safety, and health modifying factors both in technical studies and company reports.[1113] Noting that most companies address sustainability issues in detail in separate reports, the commenter recommended that sustainability information should only be provided in a technical report in summary form.[1114] Another commenter noted that, although environmental and social matters have become ''extremely important'' in the estimation of mineral resources and reserves, those matters are already part of the modifying factors required to be considered under the CRIRSCO framework.[1115]

One commenter requested clarification of two instructions to the proposed technical report summary provision that requires a qualified person to describe the current or proposed mineral processing methods and the reasons for selecting these methods as the most suitable for extracting the valuable products from the mineralization under consideration. That commenter objected to the use of the term ''successfully'' to qualify processing methods, plant designs, and other parameters that have not yet been used in a commercial production of the valuable product from the mineralization under consideration because he believed that the term was vague.[1116] The commenter found the phrase ''successfully extract'' to be technically vague and questioned whether there is a particular scale at which extraction is successful and whether ''successful'' means economically profitable or technically demonstrated. The commenter recommended replacing ''successfully extract'' with ''commercially'' or ''in production.'' The commenter also stated that ''[f]urther clarification is warranted to clarify if demonstration plants or pilot plant operations can be used to warrant a process method as 'successful'.'' [1117]

Some commenters urged the Commission to modify the proposed

[1103] *See* letter from Amec.

[1104] *See* letters from Alliance, Amec, AngloGold, CRIRSCO, Eggleston, JORC, Midas, Newmont, NMA 1, Rio Tinto, SME 1, and SRK 1. *See also* letter from CBRR (stating that the proposed items are sufficient but suggesting that the Commission clarify that a registrant may add ''any other significant information that is relevant to the project'').

[1105] *See, e.g.,* letter from Alliance (''We believe that requiring disclosure of issues related to environmental, permitting and social or community factors, such as how the registrant is going to manage greenhouse gases, workforce health, safety and well-being, within the technical report summary could require a qualified person to attempt to estimate amounts or impacts for which they have no expertise. . . . We believe that a qualified person should include in the technical report those amounts that can be readily determined based on the professional qualifications of the qualified person'').

[1106] *See* letter from Newmont.

[1107] *See id.*

[1108] *See* letters from Carbon Tracker, Columbia, CRIRSCO, CSP[2], Earthworks, and SASB.

[1109] *See* letter from Carbon Tracker. Such a provision would require a qualified person, as part of his or her coal resource and reserve determinations, to consider, as a modifying factor, whether the reserve could be economically produced in a scenario in which demand is consistent with the climate change prevention goal of maintaining a global temperature increase of no greater than 2° C on an annual basis.

[1110] *See id.*

[1111] *See* letter from SASB.

[1112] *See id; see also* letter from CSP[2] (stressing the importance of identifying potential environmental liabilities in the technical report summary); letter from Columbia (recommending requiring in the technical report summary a detailed discussion of three particular areas of water-related risk: Water scarcity; tailings dam operation and extreme rainfall; and environmental performance); and letter from Earthworks (recommending requiring a registrant to disclose several additional material environmental and social risks associated with its mining operations, including: Externalized impacts resulting from a particular mining project that fall upon the local community rather than the mining company; risks resulting from a registrant's reliance on self-bonds and other corporate guarantees; the potential for acid mine drainage and heavy metal discharge as revealed by initial exploratory drilling; risks from litigation or permit challenges; and local, regional, and state government resolutions against a mining project).

[1113] *See* letter from CRIRSCO.

[1114] *See id.*

[1115] *See* letter from JORC.

[1116] *See* letter from Moats.

[1117] *Id.* Another commenter recommended substituting for proposed Instruction 2 to paragraph (b)(96)(iv)(B)(*16*) the following: ''If the processing method, plant design or other parameters have never been used to successfully extract the valuable product from such mineralization and is still under development, then it is the responsibility of the Qualified Person to assess the scale and type of testing that has been completed and the entirety of the metallurgical data to determine whether or not mineral resources or mineral reserves can be disclosed. Justifications for the disclosures must be fully reported and detailed.'' Letter from Newmont. That commenter suggested this revised instruction to avoid unnecessarily restricting the application of future processing methods or designs in delineating resource and reserve estimates.

technical report summary provision requiring a qualified person to describe the results of the economic analysis, including annual cash flow forecasts based on an annual production schedule for the life of the project. Those commenters requested that the Commission follow Canada's NI 43–101 by allowing producing registrants to omit annual cash flow forecasts unless a material expansion of existing production is planned on the grounds that detailed information regarding costs, production, and cash flow is confidential business information.[1118]

Most commenters that addressed the issue agreed with the Commission's proposal that the technical report summary not include large amounts of technical or other project data either in the report or as appendices to the report.[1119] One commenter, however, stated that technical reports must include sufficient data to demonstrate the viability of mineral resources and mineral reserves, questioned the point at which the number of data becomes ''large,'' and recommended that the Commission require the inclusion of as much summary data as practicable.[1120] Another commenter stated that it is not necessary that large amounts of technical data, such as hydrologic and geotechnical information, be included as appendices in the technical report as long as the information is publicly available and accessible, and references to the information are provided.[1121]

Most commenters that addressed the issue also supported the Commission's proposal to require the public filing of the technical report summary as an exhibit to the Commission filing in which the registrant first discloses mineral resources, mineral reserves, or material exploration results or reports a material change to the previously disclosed estimates.[1122] Some commenters, however, opposed the proposed public filing requirement of a technical report summary on the grounds that: Because currently only two jurisdictions (Canada and Australia) require the public filing of a technical report summary, the proposed requirement would result in an incremental reporting burden in the United States relative to most other jurisdictions;[1123] or the technical report summary would require the inclusion of voluminous amounts of technical data, some of which would be competitively sensitive, and most of which would not be meaningful to investors, and which would be burdensome to produce.[1124] In lieu of a technical report summary, one of those commenters suggested that the Commission allow registrants to prepare reports in accordance with the guidelines set forth in CRIRSCO Table 1 or JORC Table 1.[1125]

iii. Final Rules

Like the proposed rules, the final rules require a registrant disclosing information concerning its mineral resources or mineral reserves determined to be on a material property to file a technical report summary by one or more qualified persons to support such disclosure of mineral resources or reserves.[1126] While the disclosure requirements for the technical report summary are based in particular on Canada's NI 43–101F1, they are substantially similar to the criteria specified in CRIRSCO's Table 1 and JORC's Table 1, which must be considered by the qualified or competent person when preparing reports on exploration results, mineral resources, or mineral reserves.[1127]

Many commenters supported the Commission's proposal to require a registrant to obtain a technical report summary from the qualified person for each material property when first reporting estimates of mineral resources or mineral reserves, or when reporting a material change in previously reported estimates.[1128] As one commenter indicated, many mining companies, including U.S. registrants that are cross-listed, already prepare technical reports in CRIRSCO-based jurisdictions either for public filing or for internal use.[1129] In addition to Canada and Australia, other foreign jurisdictions have adopted formal requirements for a technical report by a qualified or competent person, which are substantially similar to our final rule requirements.[1130] This confirms our view that our technical report summary requirement is consistent with the CRIRSCO standards and will help promote comparability in the reporting by qualified persons.

The final rules require that, for each material property, the qualified person(s) must identify and summarize the scientific and technical information and conclusions reached concerning initial assessments used to support disclosure of mineral resources, or concerning preliminary or final feasibility studies used to support disclosure of mineral reserves, in the technical report summary.[1131] The requirements for the contents of the technical report summary are intended to elicit the scientific and technical information necessary to support the determination and disclosure of mineral resources, mineral reserves, and, as applicable, exploration results, to the extent they are material to investors. Because these requirements are similar in most respects to the items of information required for the summary report under Canada's NI 43–101 [1132] and the criteria specified in CRIRSCO Table 1 and JORC Table 1 as well as to the contents suggested in the mining engineering literature,[1133] we continue to believe that the specified sections of the technical report summary will provide relevant and useful information to facilitate an investor's understanding of a registrant's mineral resources, mineral reserves, and material exploration results.

[1118] *See* letters from Amec, Newmont, SME 1, and Vale.

[1119] *See* letters from Alliance, Amec, AngloGold, CBRR, Gold Resource, Midas, Northern Dynasty, Rio Tinto, and SRK 1.

[1120] *See* letter from Eggleston.

[1121] *See* letter from CSP[2].

[1122] *See* letters from Amec, AngloGold, Carbon Tracker, Eggleston, Gold Resource, Midas, Northern Dynasty, Rio Tinto, SME 1, SRK 1, and Willis. Amec and Gold Resource supported the proposed filing requirement for mineral resources and reserves but not for material exploration results.

[1123] *See* letter from Davis Polk.

[1124] *See* letters from Alliance and FCX.

[1125] *See* letter from FCX.

[1126] 17 CFR 229.601(b)(96)(i) [Item 601(b)(96)(i) of Regulation S–K].

[1127] There is substantial overlap in the substantive requirements under Canada's NI 43–101F1 and the criteria specified in CRIRSCO's Table 1 and JORC's Table 1. The primary difference between Canada's NI 43–101F1 and the latter two Tables is in the format and organization of the resulting report. The ''checklist'' format of the two Tables tends to result in more abbreviated reporting than the more formal requirements of Canada's NI 43–101F1.

[1128] *See supra* note 193 and accompanying text.

[1129] *See* letter from SRK 1.

[1130] For example, the South African SAMREC Code includes requirements for a competent person's report that are substantially similar to our final rule requirements and those under Canada's NI 43–101F1 both in terms of content and organizational format. The SAMREC code recommends that all public disclosure of exploration results, mineral resources, and mineral reserves include a competent person's report or a reference to one. *See* SAMREC Code (2016), *supra* note 267, Appendix 1. The London Stock Exchange and its Alternative Investment Market also require a competent person's report from mining issuers as part of their initial listing requirements. These requirements are also similar to our final rule requirements. *See* London Stock Exchange, *AIM Note for Mining and Oil & Gas Companies* (June 2009).

[1131] *See* Item 601(b)(96)(i) of Regulation S–K. As previously discussed, *see supra* Section II.C.1.iii., each qualified person who has prepared the technical report summary must sign and date the technical report summary. If more than one qualified person has prepared the technical report summary, the technical report summary must clearly delineate the section or sections of the summary prepared by each qualified person. *See* Item 1302(b)(1) of Regulation S–K. The qualified person's signature must comply with 17 CFR 230.402(e) or 17 CFR 240.12b–11(d).

[1132] *See supra* note 1075 and accompanying text.

[1133] *See supra* note 1076 and accompanying text.

While we are adopting the technical report summary requirements largely as proposed,[1134] in response to the concern of some commenters [1135] that the proposed technical report summary requirement would impose an undue compliance burden on registrants, we have made a number of changes in the required content of the technical report summary. For example, the final rules clarify that the information specified under the various sections of the technical report summary is to be provided only to the extent that it is material.[1136] This clarification recognizes that, due to the diversity of operations in the mining industry, some sections may require little to no disclosure for certain registrants because those sections are not material to an investor's understanding of their particular mining operations.

Other revisions to the required content of the technical report summary reflect changes to the proposed disclosure rules that have already been discussed in some detail. We believe these changes will help decrease the compliance burden of the technical report summary requirement, relative to the proposed requirement. For example, the final rules:

- No longer require the technical report summary to include a quantitative assessment of risk for resource determination; [1137]
- permit the qualified person to disclose mineral resource estimates that include mineral reserves; [1138]
- permit the qualified person to use any reasonable and justifiable price when determining both mineral resource and reserve estimates; [1139]
- permit the qualified person to estimate both mineral resources and mineral reserves at a single point of reference selected by the qualified person; [1140]
- permit the qualified person to include inferred resources in the technical report summary's economic analysis when determining and disclosing mineral resource estimates; [1141] and
- require the qualified person to provide information describing the underlying property in which a royalty company registrant holds an interest only to the extent known or reasonably available.[1142]

In addition, unlike the proposed rules, the final rules permit, but do not require, a registrant to file a technical report summary to support the disclosure of material exploration results.[1143] We believe that this elective treatment will also help limit the final rules' compliance burden.

In another change from the proposed rules, in response to comments received,[1144] the final rules do not require separate sections about hydrogeology and geotechnical data, including testing and analysis. We have instead included the requirements for hydrogeology and geotechnical data, including testing and analysis, in the requirements for exploration data.[1145] Consistent with the views of some commenters,[1146] we continue to believe that disclosure regarding these two items, to the extent that they are material, is important and will benefit investors. Hydrogeology and geotechnical data are the basis for determining several design parameters that directly affect the safety of the designed mine. Moreover, these design parameters can affect the operating and capital costs and can, therefore, directly affect the economics of the mine (*i.e.,* the determination of reserves). Detailed hydrogeology and geotechnical data will therefore provide insight into the adequacy and appropriateness of the mine's design parameters, which will allow investors and their advisors to evaluate fully the disclosed economic viability of the mine. Nevertheless, by moving the disclosure requirements for these two items in the section regarding exploration data, we believe that it will be easier for registrants to understand and comply with those requirements since they will be placed within their proper context.

In response to the commenter [1147] who suggested that our instructions to the required disclosure on ''processing and recovery methods'' were vague because we used the term ''successfully'' to qualify processing methods, plant designs, and other parameters that have not yet been used in a commercial production of the valuable product from the mineralization under consideration, we are adopting an alternative provision.[1148] This provision states that, if the processing method, plant design or other parameters have never been used to ''commercially'' extract the valuable product from such mineralization, the qualified person must so state and provide a justification for why he or she believes the approach will be successful in this instance.[1149] Similarly, an instruction provides that, if the processing method, plant design, or other parameter has never been used to ''commercially'' extract the valuable product from such mineralization and is still under development, then no mineral resources or reserves can be disclosed on the basis of that method, design, or other parameter.[1150] We are also clarifying, in response to a commenter's concern,[1151] that we consider a processing method or plant design that has been demonstrated to be effective in a demonstration or pilot plant to be adequate to meet the standard that it is no longer ''under development.'' Such a processing method, plant design, or other parameters resulting from the demonstration or pilot plant can, therefore, be the basis for disclosure of mineral resources or reserves.

Consistent with comments received,[1152] we are adopting final rules, as proposed, that restrict the technical report summary from including large amounts of technical or other project data, either in the report or as appendices to the report.[1153] In addition, the qualified person must draft the summary to conform, to the extent practicable, with the plain English principles set forth under the Securities Act and Exchange Act.[1154] These

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[1134] 17 CFR 229.601(b)(96)(iii)(B) [Item 601(b)(96)(iii)(B) of Regulation S–K], which is set forth in its entirety in Section VII, below. A technical report summary that reports the results of a preliminary or final feasibility study must include all of the information specified in these sections. A technical report summary that reports the results of an initial assessment or that reports material exploration results could omit information required by certain of these sections. *See* 17 CFR 229.601(b)(96)(iii)(A) [Item 601(b)(96)(iii)(A) of Regulation S–K].

[1135] *See, e.g.,* letters from Chamber and NSSGA.

[1136] *See* Item 601(b)(96)(iii)(B) of Regulation S–K.

[1137] *See* 17 CFR 229.601(b)(96)(iii)(B)(*11*)(*v*).

[1138] *See* 17 CFR 229.601(b)(96)(iii)(B)(*11*)(*ii*) [Item 601(b)(96)(iii)(B)(*11*)(*ii*) of Regulation S–K]. The qualified person must also disclose mineral resource estimates that exclude the mineral reserves.

[1139] *See* 17 CFR 229.601(b)(96)(iii)(B)(*11*)(*iii*) [Item 601(b)(96))(iii)(B)(*11*)(*iii*) of Regulation S–K]; and 17 CFR 229.601(b)(96)(iii)(B)(*12*)(*iii*) [Item 601(b)(96))(iii)(B)(*12*)(*iii*) of Regulation S–K].

[1140] *See* 17 CFR 229.601(b)(96)(iii)(B)(*11*)(*i*) [Item 601(b)(96)(iii)(B)(*11*)(*i*) of Regulation S–K]; and 17 CFR 229.601(b)(96)(iii)(B)(*12*)(*i*) [Item 601(b)(96)(iii)(B)(*12*)(*i*) of Regulation S–K].

[1141] *See* 17 CFR 229.601(b)(96)(iii)(B)(*19*)(*iv*) [Item 601(b)(96)(iii)(B)(*19*)(*iv*) of Regulation S–K].

[1142] *See* 17 CFR 229.601(b)(96)(iii)(B)(*3*)(*vii*) [Item 601(b)(96)(iii)(B)(*3*)(*vii*) of Regulation S–K].

[1143] *See* Item 601(b)(96)(i) of Regulation S–K.

[1144] *See supra* notes 1097–1098 and accompanying text.

[1145] 17 CFR 229.601(b)(96)(iii)(B)(*7*) [Item 601(b)(96)(iii)(B)(*7*) of Regulation S–K].

[1146] *See, e.g.,* letters from Midas and MMSA.

[1147] *See* letter from Moats.

[1148] This provision is similar, although not identical, to the instruction suggested by another commenter. *See* letter from Newmont.

[1149] 17 CFR 229.601(b)(96)(iii)(B)(*14*)(*iv*) [Item 601(b)(96)(iii)(B)(*14*)(*iv*) of Regulation S–K].

[1150] Instruction 1 to 17 CFR 229.601(b)(96)(iii)(B)(*14*) [Item 601(b)(96)(iii)(B)(*14*) of Regulation S–K].

[1151] *See* letter from Amec.

[1152] *See supra* note 1119 and accompanying text.

[1153] 17 CFR 229.601(b)(96)(ii) [Item 601(b)(96)(ii) of Regulation S–K].

[1154] *See id; see also* Securities Act Rule 421 and Securities Exchange Act Rule 13a–20.

requirements should help improve the readability of the technical report summary for the benefit of investors, particularly for those who lack a scientific background, but also for more sophisticated investors who may be familiar with the mining industry but who are not geologists or mining engineers. These requirements are consistent with similar Canadian mining disclosure standards [1155] and also with the transparency principle under the CRIRSCO standards, which ''requires that the reader of a Public Report is provided with sufficient information, the presentation of which is clear and unambiguous, so as to understand the report and not to be misled.'' [1156]

While we acknowledge the concerns of those commenters [1157] that stated that we should use a different name, we continue to believe ''technical report summary'' more accurately reflects the disclosure we are requiring. By using this name, we do not mean to imply that there necessarily exists, in all cases, a single compilation of all the technical information and documentation (a ''technical report'') from which the qualified person will summarize the information and prepare the technical report summary. However, we believe that, in all cases, there will be such information and documentation (even if there is no single compilation), which forms the basis of the qualified person's (or persons') determination that there exist exploration results, mineral resources, or mineral reserves. Because, in preparing the technical report summary, the qualified person must summarize such information, we believe the name is appropriate.

We agree with those commenters that stated there is no need to expand the technical report summary provision to require the qualified person to describe in more detail the factors pertaining to environmental compliance, permitting, and local individuals or groups, which are related to the project. We do not believe it is necessary to prescribe more specific requirements about those factors because they are already required to be considered and disclosed by the qualified person as a technical or modifying factor.[1158] As is current industry practice, the final rules require the qualified person to describe all relevant factors pertaining to environmental compliance, permitting, and local individuals or groups, which are material to establishing reasonable prospects of economic extraction for mineral resources and economic viability for mineral reserves.[1159] The final rules require the technical report summary to include, among other matters: The results of environmental studies, such as environmental baseline studies or impact assessments; requirements and plans for waste and tailings disposal; project permitting requirements; plans, negotiations, and agreements with local individuals or groups; and mine closure plans, including remediation and reclamation plans, and the associated costs.[1160] The technical report summary must also include the qualified person's opinion on the adequacy of current plans to address any issues related to environmental compliance, permitting, and local individuals or groups. We believe the scope of these technical report summary requirements is sufficient to address the environmental and sustainability issues of concern to investors. We also agree with those commenters that stated that requiring additional disclosure on these issues in a registrant's technical report summary would be overly prescriptive and could duplicate disclosure that the registrant may provide in its corporate social responsibility report.[1161]

As proposed, the adopted rules require the qualified person to provide the results of the economic analysis in the technical report summary, which is filed as an exhibit to the registrant's disclosure.[1162] This further aligns our rules with the transparency principle underlying the CRIRSCO-based codes by requiring public disclosure of the underlying technical and economic analysis that is the basis for a disclosure of mineral resources or reserves. We note that Canada's NI 43–101 and Australia's JORC require disclosure of investment decision criteria such as net present value (NPV) and internal rate of return (IRR) to support the disclosure of mineral resources and reserves.[1163] Therefore, we believe this requirement should not impose an unduly high compliance burden, especially for those US registrants that are dual-listed in Canada or Australia.

The final rules do not provide exemptions for any particular class of registrants because we believe investors in all registrants with material mining operations will benefit from the requirement to file a technical report summary. This is generally consistent with the approach taken in those CRIRSCO-based jurisdictions that require disclosure of technical report summaries.[1164] Although some commenters requested that we permit producing registrants to omit cash flow forecasts under certain circumstances,[1165] we decline to do so because we believe that such an exemption could result in the omission of material information, to the detriment of investors. Cash flow forecasts are essential to establishing whether portions of indicated and measured mineral resources can be mined economically (at a profit) and, thus, meet the definition of a mineral reserve. Without this information, investors will have no basis to know the level of confidence to associate with any mineral reserve determination, especially since registrants, through management, choose what economic criteria to apply to make the determination that the mining is economic.

For similar reasons, we decline to exempt registrants from disclosing the qualified person's price assumption

[1155] *See* Instruction 3 to Canada's Form 43–101F1.

[1156] CRIRSCO International Reporting Template, *supra* note 20, at cl. 3. Also as proposed, the final rules similarly require a registrant, when providing either summary or individual property disclosure: To use plain English principles, to the extent practicable; to not include detailed illustrations and technical reports, full feasibility studies, or other highly technical data, but to furnish such reports and other material supplementally to the staff upon request; and to provide an appropriate glossary if the disclosure requires the use of technical terms relating to geology, mining, or related matters, which cannot readily be found in conventional dictionaries. *See* 17 CFR 229.1301(d). The first two requirements are consistent with Securities Act Rule 421 and Exchange Act Rule 13a–20. The third requirement is consistent with current practice pursuant to Guide 7's guidance that an appropriate glossary should be included in a Commission filing if technical terms relating to geology, mining, or related matters, whose definition cannot readily be found in conventional dictionaries, are used. *See* paragraph (b)(6) of Guide 7.

[1157] *See supra* note 1095 and accompanying text.

[1158] *See supra* note 1104 and accompanying text.

[1159] *See* Item 601(b)(96)(iii)(B)(*17*) of Regulation S–K.

[1160] *See id.*

[1161] *See, e.g.,* letter from CRIRSCO.

[1162] 17 CFR 229.601(b)(96)(iii)(B)(*19*) [Item 601(b)(96)(iii)(B)(*19*) of Regulation S–K].

[1163] *See, e.g.,* Canada's NI 43–101 F1, Item 22 (requesting the qualified person to ''[p]rovide an economic analysis that includes . . . (c) a discussion of net present value (NPV), internal rate of return (IRR), and payback period of capital with imputed or actual interest''). *See* also JORC Code, *supra* note 175, Table 1, Section 4 (requesting ''[t]he inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc. NPV ranges and sensitivity to variations in the significant assumptions and inputs'').

[1164] For example, Canada's NI 43–101 and JORC provide no exemptions from the requirement to provide technical report summaries to support mining property disclosures. We also note that Canadian registrants are subject to a broader technical report summary requirement in NI 43–101, which requires all material properties to have a technical report regardless of whether the registrant is disclosing mineral resources and reserves or not.

[1165] *See supra* note 1118 and accompanying text.

used to determine whether portions of indicated and measured mineral resources can be mined economically, in the technical report summary. We note that CRIRSCO-based codes also consider the price assumption to be a material assumption that the registrant must disclose in the supporting documentation.[1166]

We also are not exempting registrants in the industrial minerals or aggregates industry from the technical report summary requirements, as requested by some commenters.[1167] We note that industrial minerals or aggregates registrants are much less likely to ever have to provide technical report summaries since most have no individually material mining properties. If such a registrant has individually material properties, then we believe it is appropriate to provide a technical report summary as any disclosure of mineral resources and reserves on those properties will likely be material to investors. Also, since industrial minerals and aggregates registrants go through the same scientific and engineering analysis to estimate mineral resources and reserves, they should already generate much of the information we are requesting in the technical report summaries.

The final rules also do not incorporate by reference or otherwise adopt on a going forward basis the technical report requirements in Canada's NI 43–101,[1168] JORC,[1169] or the SME Guide,[1170] as suggested by some commenters. As previously mentioned, we believe that doing so would effectively bind the Commission's rules to current and future iterations and interpretations of these requirements, over which the Commission would have little to no control or influence.[1171]

We also are not adopting a ''reciprocal recognition'' approach that would allow non-U.S. foreign issuers to file their home country (CRIRSCO-based) reports in satisfaction of the Commission's rules, as suggested by some commenters.[1172] We do not believe a reciprocal recognition approach is appropriate because, although we have more closely aligned our technical report summary requirements with the CRIRSCO standards and, in particular, with the Canadian technical report requirements, there are nevertheless important differences, such as the final rules' prohibition against disclaimers of liability for information provided by the qualified person based on the work of a third-party specialist who the qualified person has hired.[1173] We believe these differences provide meaningful protection for investors.

4. Requirements for Internal Controls Disclosure

i. Rule Proposal

We proposed to require that a registrant describe the internal controls[1174] that it uses in its exploration and mineral resource and reserve estimation efforts. As proposed, such disclosure should address quality control and quality assurance programs, verification of analytical procedures, and comprehensive risk inherent in the estimation.[1175] We proposed an instruction stating that a registrant must provide the required internal controls disclosure whether it is providing summary disclosure under proposed Item 1303, individual property disclosure under proposed Item 1304, or under both items.[1176]

ii. Comments on the Rule Proposal

Most commenters that addressed the issue supported the proposal to require registrants to describe the internal controls that they use to help ensure the reliability of their disclosure of exploration results and estimates of mineral resources and mineral reserves.[1177] One commenter, however, opposed such a requirement, other than for mineral reserve estimates, indicating that this information should already be included as part of management's discussion of internal controls over financial reporting. According to that commenter, anything beyond that would create a significant burden on registrants and greatly outweigh any marginal benefit to investors.[1178] A second commenter opposed an internal controls disclosure requirement as part of the Commission's revised mining property disclosure rules on the grounds that there should be a global alignment of minimum reporting requirements for mining registrants. According to that commenter, the proposed internal controls disclosure requirement would impose a greater disclosure requirement on registrants reporting under a CRIRSCO-based code, such as JORC or SAMREC.[1179]

One commenter suggested a more detailed framework for the disclosure of internal controls. This framework addressed the accountability of management in the assessment of exploration results and estimates of mineral resources and mineral reserves, the assessment of internal controls over the reporting of exploration results and estimates of mineral resources and reserves, and changes in internal controls over the reporting of exploration results and estimates of mineral resources and reserves.[1180]

Another commenter stated that it is common industry practice to have QA/QC programs when undertaking mineral exploration.[1181] According to the commenter, however, the Commission's proposed internal control provision may have inappropriately included internal controls for corporate governance purposes. That commenter therefore requested that the Commission provide clear instructions regarding how the mining industry can achieve the objective of the internal controls requirement.[1182]

iii. Final Rules

We are adopting rules that, as proposed, require a registrant to describe the internal controls that it uses in its exploration and mineral resource and reserve estimation efforts, as proposed.[1183] The final rules specify that such disclosure should address quality control and quality assurance programs, verification of analytical procedures, and comprehensive risk inherent in the estimation.[1184] We

[1166] For example, both CRIRSCO Table 1 and JORC Table 1 require disclosure of the price for mineral reserve disclosure under ''revenue factors.''

[1167] *See* letters from Alliance and NSSGA.

[1168] *See supra* note 1085 and accompanying text.

[1169] *See supra* note 1087 and accompanying text.

[1170] *See* letter from NMA 2 and SME 3.

[1171] *See supra* Section II.C.2.

[1172] *See, e.g.,* letters from Dorsey & Whitney and PDAC.

[1173] Other differences include the final rules' requirement that a registrant disclose resource estimates exclusive of reserves and the inclusion of mineral brines in the definition of mineral resources.

[1174] Internal controls in this context refers to the internal controls used to ensure reliable disclosure of exploration results and estimation of mineral resources and mineral reserves. It is not to be confused with internal control over financial reporting. In this regard, the Commission's disclosure requirements for registrants engaged in oil and gas producing activities require similar disclosure of internal controls over estimation efforts. *See* 17 CFR 229.1202(a)(7) [Item 1202(a)(7) of Regulation S–K].

[1175] *See* Proposing Release, *supra* note 5, at Section II.G.4.

[1176] *See id.*

[1177] *See, e.g.,* letters from AngloGold, CBRR, Eggleston, Midas and Rio Tinto.

[1178] *See* letter from Alliance.

[1179] *See* letter from Randgold.

[1180] *See* letter from AngloGold.

[1181] *See* letter from Amec.

[1182] *See id.*

[1183] 17 CFR 229.1305(a) [Item 1305(a) of Regulation S–K].

[1184] *See id.* In this regard we are not adopting the detailed internal controls disclosure framework suggested by one commenter. *See* letter from AngloGold. While we recognize that some registrants may find it useful to model their internal controls disclosure along the lines suggested by this commenter, other registrants may reasonably

continue to believe that such internal controls disclosure would be beneficial to investors as it would help them evaluate whether the registrant has established acceptable levels of certainty and precision during exploration and whether and how it has verified and validated the quality of the data used in its analyses. This requirement is consistent with disclosure requirements in most foreign mining jurisdictions. The CRIRSCO-based codes require the disclosure of quality control and quality assurance procedures as they relate to exploration results (data) and techniques and assumptions (analysis) used for mineral resource and reserve estimation.[1185] In addition, the listing rules of some of these jurisdictions specifically call for disclosure of the internal controls relating to estimates of mineral resources and reserves.[1186]

Although not called for by Guide 7, some registrants provide disclosure about their internal controls, including quality control and quality assurance measures, which they have put in place to help ensure the reliability of their disclosure of exploration results and estimates of mineral resources and mineral reserves. The staff has also requested, on a case by case basis, that registrants provide a brief description of the quality control and quality assurance protocols for sample preparation, controls, custody, assay precision and accuracy as they relate to exploration programs. This current practice reinforces our belief that requiring internal controls disclosure by registrants regarding their exploration results and mineral resource and reserve estimates is appropriate and should not impose an undue burden.

Another provision states that a registrant must provide the required internal controls disclosure whether it is providing summary disclosure under Item 1303, individual property disclosure under Item 1304, or under both items.[1187] Estimating mineral resources and reserves requires use of statistical techniques to estimate tonnages and grades based on data derived from laboratory analysis of representative samples. In any such scientific study, best practice requires the analyst to disclose the quality control and quality assurance techniques employed to ensure the data used in the analysis is reliable.[1188] We believe this same practice should apply when preparing and analyzing data for the purpose of individually material property disclosure as well as disclosure regarding properties that are only material in the aggregate. We also believe an internal controls disclosure requirement is particularly important for a company with multiple properties to ensure that best practice is followed across all properties.

In response to commenters,[1189] we are clarifying that Item 1305 requires disclosure of internal controls that the registrant has put in place to ensure that its exploration results and mineral resource and reserve estimates on its mining properties are reliable, and not for any other purpose. Given the similarity between our mining property internal controls requirement and those of other mining jurisdictions, our requirement should not significantly alter the disclosure practices of those registrants that are listed in these jurisdictions. For registrants that are not currently subject to an internal controls disclosure requirement, and for which providing such disclosure has not become current practice, we believe investors will benefit from such disclosure, though we recognize that registrants will incur additional costs.

H. Conforming Changes to Certain Forms Not Subject to Regulation S–K

1. Form 20–F

i. Rule Proposal

Foreign private issuers[1190] use Form 20–F[1191] as a registration statement under Section 12 of the Exchange Act[1192] or as an annual or transition report filed under Section 13(a)[1193] or 15(d) of the Exchange Act.[1194] Form 20–F also provides much of the substantive disclosure requirements for foreign private issuers filing Securities Act registration statements on Forms F–1,[1195] F–3[1196] and F–4.[1197]

The Commission revised Form 20–F in 1999 to conform its disclosure requirements to the international disclosure standards endorsed by the International Organization of Securities Commissions (''IOSCO'') in September 1998.[1198] As a result, Form 20–F, rather than Regulation S–K, provides the primary non-financial disclosure requirements for foreign private issuers under the Securities Act and the Exchange Act. For example, Item 4.D of Form 20–F sets forth the disclosure requirements for a foreign private issuer's property[1199] rather than Item 102 of Regulation S–K. An instruction to Item 4 directs the registrant to ''[f]urnish the information specified in any industry guide listed in subpart 229.800 of Regulation S–K.''[1200] Thus, like domestic registrants, foreign private issuers currently provide the disclosures set forth in Guide 7.

Because of our belief that the Commission's mining property disclosure rules should continue to apply to both foreign private issuers and domestic registrants, we proposed to amend Form 20–F by adding an instruction to Item 4 that issuers engaged in mining operations must refer to and, if required, provide the disclosure under subpart 1300 of Regulation S–K.[1201] We further proposed to remove in their entirety the current instructions to Item 4.D of Form 20–F, which, among other matters, limit

conclude that a different or more abbreviated format is suitable for their mining operations.

[1185] *See, e.g.,* JORC Code, *supra* note 175, Table 1; Canada's NI 43–101, *supra* note 123, at pt. 3.3; SAMREC Code, *supra* note 267, Table 1, at pt. 3.6. The SME Petition also recognized the need for and importance of appropriate internal and disclosure controls in the estimation of mineral reserves. *See* SME Petition for Rulemaking, *supra* note 6, at 17.

[1186] *See, e.g.,* ASX Listing Rule 5.21.5 (requiring registrants to disclose ''[a] summary of the governance arrangements and internal controls that the mining entity has put in place with respect to its estimates of mineral resources and ore reserves and the estimation process'').

[1187] *See* 17 CFR 229.1305(b) [Item 1305(b) of Regulation S–K].

[1188] *See* S. C. Kazmierczak, *Laboratory Quality Control: Using Patient Data to Assess Analytical Performance, Clinical Chemistry and Laboratory Medicine* 617–627 (2003); *see generally* M. J. Chandra, *Statistical Quality Control* (2001).

[1189] *See* letters by FCX and Amec.

[1190] A foreign private issuer is any foreign issuer other than a foreign government, except for an issuer that has more than 50% of its outstanding voting securities held of record by U.S. residents, and regarding which any of the following is true: A majority of its officers and directors are citizens or residents of the United States, more than 50 percent of its assets are located in the United States, or its business is principally administered in the United States. *See* Securities Act Rule 405 and 17 CFR 240.3b–4(c) [Exchange Act Rule 3b–4(c)].

[1191] 17 CFR 249.220f.

[1192] 15 U.S.C. 78l.

[1193] 15 U.S.C. 78m(a).

[1194] 15 U.S.C. 78o(d).

[1195] 17 CFR 239.31.

[1196] 17 CFR 239.33.

[1197] 17 CFR 239.34.

[1198] *See* Securities Act Release No. 33–7745 (September 28, 1999) [64 FR 53900].

[1199] Form 20–F Item 4.D provides that the registrant must provide information regarding any material tangible fixed assets, including leased properties, and any major encumbrances thereon, including a description of the size and uses of the property; productive capacity and extent of utilization of the company's facilities; how the assets are held; the products produced; and the location. The registrant must also describe any environmental issues that may affect the company's utilization of the assets. With regard to any material plans to construct, expand or improve facilities, the registrant must describe the nature of and reason for the plan, an estimate of the amount of expenditures including the amount of expenditures already paid, a description of the method of financing the activity, the estimated dates of start and completion of the activity, and the increase of production capacity anticipated after completion.

[1200] Instruction 1 to Item 4 of Form 20–F.

[1201] *See* Proposing Release, *supra* note 5, at Section II.H.1.

the disclosure of estimates to proven and probable reserves.[1202]

In addition, we proposed to add an instruction to the exhibits section of Form 20–F stating that a registrant that is required to file a technical report summary pursuant to Item 1302(b)(2) of Regulation S–K must provide the information specified in Item 601(b)(96) of Regulation S–K as an exhibit to its registration statement or annual report on Form 20–F.[1203]

As previously mentioned, we proposed to eliminate the ''foreign or state law'' exception under Item 102 and Guide 7 whereby Canadian registrants that report pursuant to Form 20–F and file registration statements on Forms F–1, F–3, and F–4 are currently permitted to provide mining disclosure that meets the requirements of Canada's NI 43–101.[1204] Thus, as proposed, the sole group of Canadian registrants that could continue to report pursuant to Canadian disclosure requirements following adoption of the revised mining disclosure rules would be those Canadian issuers that report pursuant to the Multijurisdictional Disclosure System (''MJDS'').[1205]

ii. Comments on the Rule Proposal

Commenters that addressed the issue supported the Commission's proposal to amend Form 20–F to conform it to the disclosure requirements of proposed subpart 1300 and proposed Item 601(b)(96) of Regulation S–K so that foreign private issuers that use or refer to Form 20–F for their Commission filings would be subject to the same mining disclosure requirements as domestic mining registrants.[1206] One commenter also approved of the proposal to preclude Canadian issuers, other than MJDS issuers, from providing reports pursuant to Canada's NI 43–101 in order to ensure comparability of reporting under the proposed rules.[1207]

Numerous commenters, however, recommended permitting Canadian registrants, including those that do not qualify for the MJDS, to continue providing mining disclosure that meets the requirements of Canada's NI 43–101.[1208] As one commenter explained, ''the Foreign Law Exception should remain in place for Canadian foreign private issuers of all sizes as a recognition of the sufficiency of NI 43–101 for the protection of investors and the burdens of dual compliance for Canadian 20–F Filers.'' [1209]

Some commenters recommended allowing non-Canadian issuers to file the disclosure documents produced under their home country listing requirements as long as those requirements met CRIRSCO standards, such as JORC or SAMREC.[1210] Some commenters stated that not permitting these issuers to file their CRIRSCO-based disclosure documents would be burdensome particularly if the Commission adopted the mining property disclosure requirements as proposed.[1211]

iii. Final Rules

We are adopting the proposed revisions to Form 20–F so that foreign private issuers that use Form 20–F to file their Exchange Act annual reports and registration statements, or that refer to Form 20–F for their Securities Act registration statements on Forms F–1, F–3, and F–4, will have to comply with the mining disclosure requirements of new subpart 1300 of Regulation S–K and the technical report summary requirements in Item 601(b)(96), as applicable. We continue to believe that, with the exception of MJDS registrants, foreign private issuers with material mining operations should be subject to the same mining property disclosure requirements as domestic registrants. This treatment will protect investors, who require information about the material mining operations of foreign registrants just as much as those of domestic registrants, and facilitate the comparison of mining property disclosure among most registrants.

The final rules do not permit Canadian registrants that are not MJDS-eligible to continue to provide disclosure that meets the requirements of Canada's NI 43–101, nor do they permit non-Canadian registrants to file disclosure documents that meet the requirements of another CRIRSCO-based code to satisfy their U.S. reporting obligations, as recommended by some commenters. Commenters that made these recommendations were concerned about the significant differences between the CRIRSCO standards and the proposed rules, and the correspondingly significant compliance burden that a dual-listed registrant would incur if the Commission adopted those rules as proposed.[1212] The final rules eliminate many of these differences, and are less prescriptive than the proposed rules in several respects.[1213] For example, the final rules permit the registrant and its qualified person to use any reasonable and justifiable price when determining and disclosing estimates of mineral resources or mineral reserves. The final rules also permit a qualified person to prepare a pre-feasibility study for reserve determination, even in high risk situations, without being required to justify its use instead of a final feasibility study. We believe that these changes to the proposed rules, together with many others that we are adopting, will significantly limit the incremental burden of the final rules for dual-listed issuers, and in particular for Canadian registrants. Furthermore, although most of the technical report summary requirements are based on the Canadian NI 43–101F1, there nevertheless are important differences between the Canadian technical report requirements and the final rules, such as the final rules' general prohibition against using disclaimers of liability. For these reasons, we do not believe it is necessary or appropriate to continue to permit Canadian issuers to prepare and submit their Commission filings in accordance with Canada's NI 43–101 under the ''foreign or state law'' exception or otherwise.

We are not requiring MJDS registrants to comply with new subpart 1300 because, as we explained in the Proposing Release,[1214] the ability of

[1202] These instructions provide, among other matters, that, in the case of an extractive enterprise, other than an oil and gas producing activity, the issuer must provide material information about production, reserves, locations, developments and the nature of its interest. If individual properties are of major significance, the issuer must provide more detailed information about those properties and use maps to disclose information about their location. These instructions further provide that, in documents filed publicly with the Commission, the issuer must not disclose estimates of reserves unless the reserves are proven or probable and must not give estimated values of those reserves, unless foreign or state law requires the issuer to disclose the information. *See* Instruction 1 to Item 4.D of Form 20–F.

[1203] *See* Proposing Release, Section II.H.1. Because Forms F–1, F–3, and F–4 are already subject to the exhibit requirements of Item 601 of Regulation S–K, registrants using those forms that meet the requirements of proposed Item 1302(b)(2) would be required to file a technical report summary as an exhibit pursuant to proposed Item 601(b)(96).

[1204] *See supra* Section II.E.1.

[1205] The MJDS permits seasoned Canadian issuers meeting certain other requirements to use their Canadian disclosure documents when filing their Exchange Act registration statements and annual reports on Form 40–F or their Securities Act registration statements on Forms F–10, F–7, F–8 and F–80.

[1206] *See* letters from Alliance, Amec, AngloGold, CBRR, Eggleston, Midas, Rio Tinto, SAMCODES 2, and SRK 1.

[1207] *See* letter from CBRR.

[1208] *See* letters from Amec, AngloGold, Dorsey & Whitney, Eggleston, Midas, SAMCODES 2, SME 1, SRK 1, and Troutman Sanders.

[1209] Letter from Troutman Sanders.

[1210] *See* letters from AngloGold, Midas, and Rio Tinto.

[1211] *See, e.g.,* letters from Eggleston, Energy Fuels, and SME 1.

[1212] *See, e.g.,* letters from Dorsey & Whitney, SME 1, and Troutman Sanders.

[1213] *See supra* Section I.B. for a summary of the principal changes to the proposed rules.

[1214] *See* Proposing Release, *supra* note 5, at Section II.H.1.

those registrants to use their Canadian disclosure documents for purposes of their Exchange Act and Securities Act filings is based on their eligibility to file under the MJDS, and not on the ''foreign or state law'' exception under Guide 7 and Item 102. At least one commenter expressly approved of the Commission's proposal to permit MJDS filers to continue to meet their mining property disclosure obligations pursuant to Canada's NI 43–101.[1215]

2. Form 1–A

i. Rule Proposal

Regulation A provides an exemption from the registration requirements of the Securities Act for certain securities offerings that satisfy specified conditions, such as filing an offering statement with the Commission,[1216] limiting the dollar amount of the offering [1217] and, in certain instances, filing ongoing reports with the Commission.[1218] Form 1–A is the offering statement used by issuers that are eligible to engage in securities offerings under Regulation A.[1219]

When the Commission amended Regulation A in 2015,[1220] it updated Item 7 of Part II of Form 1–A concerning the required ''Description of Business'' disclosure by adding a provision stating that the disclosure guidelines in all Securities Act Industry Guides must be followed. The provision also stated that, to the extent that the industry guides are codified into Regulation S–K, the Regulation S–K industry disclosure items must be followed.[1221]

Because this provision, however, only appears in Item 7(c) of Part II, which governs ''business'' disclosure, we proposed to amend Part II of Form 1–A to apply the scope of the requirement to the description of property for certain issuers by adding similar language under Item 8 of Part II to Form 1–A.[1222] Specifically, in order to require the Form 1–A property disclosure requirements to include the mining disclosure provisions under proposed subpart 1300 of Regulation S–K, we proposed to add a provision stating that issuers engaged in mining operations must refer to and, if required, provide the disclosure under subpart 1300 of Regulation S–K in addition to any disclosure required by Item 8.

We also proposed to amend the instruction to Item 8, which currently provides that ''[d]etailed descriptions of the physical characteristics of individual properties or legal descriptions by metes and bounds are not required and should not be given.'' Because much of the disclosure under proposed subpart 1300 would require detailed descriptions of mining properties, we proposed to amend this instruction by excepting from its scope the disclosure required under the proposed rules, as referenced in paragraph (b) of Item 8.

In order to require Regulation A issuers engaged in mining operations to be subject to the new subpart's technical report summary filing requirement, we proposed to amend Item 17 (Description of Exhibits) of Part III under Form 1–A by adding a provision stating that an issuer that is required to file a technical report summary pursuant to Item 1302(b)(2) of Regulation S–K must provide the information specified in Item 601(b)(96) of Regulation S–K as an exhibit to its Form 1–A.[1223]

ii. Comments on the Rule Proposal

Several commenters addressed the Commission's proposal to amend Form 1–A to conform it to the disclosure requirements of proposed subpart 1300 and proposed Item 601(b)(96) of Regulation S–K so that Regulation A issuers engaged in mining operations would be subject to the same disclosure requirements as other issuers with mining operations.[1224] One commenter stated that because Form 1–A filers are subject to the property disclosures outlined in Guide 7, it would be appropriate to subject them to the new mining property disclosure requirements.[1225] Another commenter supported including Form 1–A filers within the scope of the new rules in order to align the mining property disclosure standards regardless of the type of registrant.[1226] The other commenters supported the proposal without explanation.[1227] No commenter opposed including Regulation A issuers within the scope of the new rules.

iii. Final Rules

We are adopting the proposed revisions to Form 1–A to require Regulation A issuers with material mining operations to comply with all of the disclosure requirements in subpart 1300 of Regulation S–K as well as the technical report summary requirements in Item 601(b)(96), as applicable. We continue to believe that investors in Regulation A offerings by issuers with material mining operations require the same information about those operations as investors in registered offerings. This treatment will also facilitate a comparison of mining property disclosure among issuers regardless of the type of issuer.

I. Transition Period and Compliance Date

Several commenters requested that the Commission provide a transition period in order to give registrants ample time to prepare their Commission filings in compliance with the new mining property disclosure regime.[1228] Several commenters recommended that the Commission provide a two-year transition period before the new regime would become mandatory.[1229] Other commenters recommended a three-year transition period.[1230] Commenters justified the need for a transition period based on the extensive changes to the current disclosure framework under Guide 7 [1231] and because some registrants may not be subject to similar disclosure requirements under the CRIRSCO-based codes.[1232] One of the commenters suggested that the Commission should permit registrants to comply earlier on a voluntary basis.[1233]

Although we have made numerous changes to the proposed rules that will more closely align our mining property disclosure regime with the CRIRSCO standards, we are persuaded by commenters that adoption of an appropriate transition period would

[1215] *See* letter from Dorsey & Whitney.

[1216] *See* 17 CFR 230.251(d) [Securities Act Rule 251(d)].

[1217] *See* 17 CFR 230.251(a) [Securities Act Rule 251(a)].

[1218] *See* 17 CFR 230.257 [Securities Act Rule 257].

[1219] 17 CFR 230.251–230.263.

[1220] *See* Securities Act Release No. 33–9741 (March 25, 2015) [80 FR 21806] (''Regulation A Adopting Release'').

[1221] *See* Form 1–A, Part II, Item 7(c).

[1222] *See* Proposing Release, *supra* note 5, at Section II.H.2. *See also* Item 8 of Part II to Form 1–A (Description of Property) (requiring that an issuer: ''[s]tate briefly the location and general character of any principal plants or other material physical properties of the issuer and its subsidiaries. If any such property is not held in fee or is held subject to any major encumbrance, so state and briefly describe how held. Include information regarding the suitability, adequacy, productive capacity and extent of utilization of the properties and facilities used in the issuer's business''). We proposed to designate this current provision as paragraph (a) of Item 8.

[1223] *See* Proposing Release, *supra* note 5, at Section II.H.2.

[1224] *See* letters from Alliance, AngloGold, CBRR, Midas, Rio Tinto, and SRK 1.

[1225] *See* letter from Alliance.

[1226] *See* letter from Rio Tinto.

[1227] *See* letters from AngloGold, CBRR, Midas, and SRK 1. One other commenter stated that he had no comment regarding the proposal. *See* letter from Eggleston.

[1228] The Proposing Release did not specify a particular compliance date for the proposed rules.

[1229] *See* letters from Cleary & Gottlieb, FCX, SME 1, and Vale.

[1230] *See* letters from Davis Polk and NMA 1.

[1231] *See* letter from Vale.

[1232] *See, e.g.,* letter from Davis Polk.

[1233] *See id.*

help to ease the burden of complying with the final rules. We are therefore adopting a two-year transition period so that a registrant will not be required to comply with the new rules until the first fiscal year beginning on or after January 1, 2021. Thus, for a calendar year-end company, a registrant will be required to comply with the final rules when filing Securities Act and Exchange Act registration statements on or after this date and when filing its Form 10–K or Form 20–F annual report for the fiscal year ended December 31, 2021.

We believe this transition period will provide ample time for mining registrants that are not familiar with the CRIRSCO standards to comply with the new rules. If any registrant not subject to the CRIRSCO standards finds that it faces unique challenges meeting the new disclosure requirements, we encourage such registrant to contact the staff.

The transition period also will help registrants that are currently subject to one or more of the CRIRSCO-based codes to comply with the few requirements under subpart 1300 that differ from the CRIRSCO standards (*e.g.,* the general prohibition against using disclaimers of liability). At the same time, we do not believe this transition period will significantly delay the benefits of the final rules for investors.

A registrant may decide that it would like to take advantage of the final rules (*e.g.,* by disclosing mineral resources in a Commission filing) prior to the completion of the transition period. Once the Commission has completed EDGAR reprogramming made necessary by the final rules, we will permit registrants to comply with the new mining property disclosure rules prior to the compliance date as long as they abide by all of subpart 1300's requirements.[1234] Until then, registrants should continue looking to Guide 7 for their mining property disclosures. Guide 7 will remain effective until all registrants are required to comply with the final rules, at which time Guide 7 will be rescinded.

III. Other Matters

If any of the provisions of these rules, or the application thereof to any person or circumstance, is held to be invalid, such invalidity shall not affect other provisions or application of such provisions to other persons or circumstances that can be given effect without the invalid provision or application.

IV. Economic Analysis

We are adopting amendments to modernize the property disclosure requirements for mining registrants, and related guidance, currently set forth in Item 102 of Regulation S–K and in Industry Guide 7. The discussion below addresses the economic effects of the final rules, including the likely costs and benefits of those rules, as well as the likely effect of the final rules on efficiency, competition, and capital formation.

We are mindful of the costs imposed by, and the benefits obtained from, the rules we adopt. Securities Act Section 2(b) and Exchange Act Section 3(f) require us, when engaging in rulemaking that requires us to consider or determine whether an action is necessary or appropriate in the public interest, to consider, in addition to the protection of investors, whether the action will promote efficiency, competition, and capital formation.[1235] Exchange Act Section 23(a)(2) requires us, when adopting rules under the Exchange Act, to consider the impact that any new rule would have on competition and to not adopt any rule that would impose a burden on competition that is not necessary or appropriate in furtherance of the purposes of the Exchange Act.[1236] We have considered the likely costs and benefits that will result from the final rules, as well as the potential effects on efficiency, competition, and capital formation.

We also have analyzed the potential benefits and costs of reasonable alternatives to the final rules. The alternatives we consider below represent different approaches to achieving the goal of modernizing the Commission's mining property disclosure requirements and policies. Given the goal of updating the existing regulatory framework, we evaluate the potential costs and benefits of these alternative approaches against the potential costs and benefits of the final rules' disclosure requirements, rather than against the baseline.

The final rules are intended to modernize the Commission's mining property disclosure requirements by providing investors with a more comprehensive and accurate understanding of a registrant's mining properties, all of which should help investors make more informed investment decisions. This, in turn, will reduce the cost of capital and enhance capital formation. As suggested by several commenters,[1237] the U.S. capital markets may be comparatively less attractive to potential mining registrants due, in part, to the Commission's current disclosure regime, with some commenters[1238] citing the comparatively low amount of capital among mining companies in the U.S. markets. The final rules will also align more closely with industry practices and standards as reflected in CRIRSCO-based disclosure standards.

A. Baseline

To assess the economic impact of the final rules, we consider, as part of our baseline, the current disclosure requirements and policies in Item 102 of Regulation S–K, Guide 7, Form 20–F, and Form 1–A, as well as current market practices. We also consider the disclosure standards of various CRIRSCO-based disclosure standards, because mining registrants compete in the international commodities and capital markets, making international disclosure standards an important benchmark for analysts and investors evaluating mining companies. Furthermore, these standards are relevant to consider because, as discussed above, many mining registrants are foreign private issuers or U.S.-incorporated registrants with reporting obligations in foreign jurisdictions. Thus, to the extent that the final rules align the Commission's requirements with CRIRSCO-based disclosure standards, we expect their economic impact to be less for these registrants.

1. Affected Parties

The final rules will primarily affect registrants with mining activities that are subject to the mining disclosure requirements and policies contained in Item 102 of Regulation S–K and in Guide 7. In addition to U.S. registrants with mining operations that are required to report under Regulation S–K in their annual reports and registration statements, the final rules will affect foreign private issuers with mining operations that file their Exchange Act annual reports and registration statements using Form 20–F or that refer to Form 20–F for certain of their disclosure obligations under Securities Act registration statements filed on Forms F–1, F–3, and F–4. Moreover, the affected registrants will include mining companies filing Form 1–A offering statements under Regulation A. Investors, analysts, and other users of

[1234] Notice of EDGAR system readiness will be provided in a manner similar to notices of EDGAR Filer Manual updates.

[1235] 15 U.S.C. 77b(b) and 15 U.S.C. 78c(f).

[1236] 15 U.S.C. 78w(a)(2).

[1237] *See* letters from Coeur, Midas Gold, NMA, SME 1, SRK 1, and Ur-Energy.

[1238] *See* letters from SRK 1 and Royal Gold.

the information in annual reports, registration statements, and offering statements filed with the Commission also will be affected by the final rules. Finally, mining professionals, such as geologists and mining engineers, who provide services to registrants related to exploration and estimation of mineral resources and reserves will potentially be affected due to the qualified person requirement and related provisions.

To estimate the number of current registrants that will potentially be affected by the final rules, we first identify those registrants as of December 2017 that filed annual reports or relevant registration statements at least once from January 2016 through December 2017. We then identify registrants with mining primary Standard Industrial Classification (''SIC'') codes.[1239] We also identify those registrants without mining primary SIC codes that provide disclosure concerning their mining operations in their SEC filings pursuant to Item 102 of Regulation S–K and Guide 7. Based on this approach, we estimate that the total number of potentially affected registrants is 267 (46 of which are registrants that do not have mining primary SIC codes), which includes one Regulation A issuer.

Among these registrants, we anticipate that the final rules will have a more significant effect on those mining registrants that are not currently reporting consistent with CRIRSCO-based disclosure standards. To estimate the number of registrants reporting consistent with CRIRSCO-based disclosure standards, we identify those registrants disclosing mining operations in jurisdictions using CRIRSCO-based codes in addition to those U.S.-incorporated registrants that we can manually verify are cross- or dual-listed, or otherwise reporting, in CRIRSCO jurisdictions. Out of 267 registrants, we identify 107 registrants—70 foreign private issuers and 37 U.S. registrants—that are potentially reporting mining operations according to CRIRSCO-based disclosure standards. Accordingly, we estimate that there are 160 identified registrants that report solely to the Commission and will therefore potentially be more affected by the final rules than registrants that currently report elsewhere according to CRIRSCO-based disclosure standards.

Included among the 107 registrants that are potentially reporting mining operations according to CRIRSCO-based disclosure standards are 85 registrants that are registered with one of the Canadian provincial securities administrators and therefore subject to the disclosure requirements of Canada's NI 43–101. Out of these registrants, 37 are U.S. domestic registrants and 48 are foreign private issuers (mainly companies incorporated in Canada). Among the 48 foreign private issuers registered in Canada, 10 voluntarily file with the Commission using domestic forms and 38 use the forms for foreign private issuers. As discussed above, Canadian registrants are currently able to provide disclosure in their Commission filings pursuant to NI 43–101, in addition to the disclosure called for by Guide 7 or Form 20–F. A number of the provisions in the final rules will more closely align our disclosure requirements with those in NI 43–101. As such, we estimate that the 38 Canadian registrants that are currently providing disclosure pursuant to NI 43–101 in their filings with the Commission will likely be the least affected by the final rules. In addition, we expect the 47 domestic registrants and foreign private issuers filing disclosures pursuant to NI 43–101 with Canadian securities administrators will be less affected than the remaining 22 foreign private issuers that are not Canadian registrants, but that are potentially reporting mining operations according to CRIRSCO-based disclosure standards.

Among the 22 foreign private issuers that are potentially reporting mining operations according to CRIRSCO-based (but not Canadian) disclosure standards are 14 companies listed in foreign jurisdictions with CRIRSCO-based codes that require technical reports similar to our final rule requirements.[1240] The degree of similarity of foreign jurisdictions' requirements to our final rule requirements should limit the degree to which foreign private issuers experience any increases in compliance costs. However, to the extent the requirements in these jurisdictions are less closely aligned with Canada's NI 43–101F1 compared to the requirements for the technical report summary in the final rules, we expect that these foreign private issuers will be affected by the final rules more than Canadian registrants, as the final rules are quite similar to Canadian disclosure requirements. On the other hand, we expect these foreign private issuers to be affected by the final rules less than foreign private issuers listed in other non-Canadian jurisdictions that have adopted CRIRSCO-based standards, but do not have requirements for technical reports, as these foreign private issuers will be familiar with a technical report requirement.

As discussed above, we believe that some domestic mining registrants are currently following certain of the CRIRSCO-based disclosure standards, such as those relating to the determination of mineral resources, for their own internal purposes, even if they are not currently permitted to disclose mineral resources in their Commission filings.[1241] These registrants also will be less affected by the final rules. Based on the comments received, it appears that domestic registrants in the industrial minerals and aggregates sector of the mining industry currently are least likely to follow CRIRSCO standards, such as those relating to mineral resources.[1242] Accordingly, we expect that registrants in the industrial minerals and aggregates sector will be more affected on average by the final rules. We estimate that 33 of the 267 registrants potentially affected by the final rules operate in the industrial minerals/aggregates industry. Five of those registrants may already be subject to the CRIRSCO standards.

We estimate that 43% of mining registrants (114 out of the 267 registrants identified above) have $5 million or less in total assets. Exploration-stage issuers, by definition, have no disclosed mineral reserves and are therefore likely to be under the $5 million asset threshold. In contrast, development-stage and production-stage issuers, by definition, have mineral reserves on material properties and are therefore likely to have assets that will push them above the $5 million threshold. Thus, it is likely that many of these smaller mining registrants are exploration-stage issuers. We expect that these smaller registrants may be comparatively more affected by the final rules compared to larger registrants. For example, the benefits of being able to disclose exploration targets and mineral resources may be relatively larger for these firms, as by definition they have no mineral reserves to disclose. In addition, although many of the disclosure requirements are qualified by a materiality standard, the effect of the final rules' compliance costs may be disproportionately larger for these

[1239] Specifically, the mining SIC codes considered are 1000, 1011, 1021, 1031, 1040, 1041, 1044, 1061, 1081, 1090, 1094, 1099, 1220, 1221, 1222, 1231, 1400, 1422, 1423, 1429, 1442, 1446, 1455, 1459, 1474, 1475, 1479, 1481, 1499, 3330, 3334, and 6795.

[1240] Among these companies are four companies listed in Australia and reporting pursuant to JORC, six companies listed on the London Stock Exchange and reporting pursuant to PERC, and six companies listed in South Africa and reporting pursuant to SAMREC. For a discussion of the requirements for technical reports in these codes, *see supra* notes 1127 and 1130, and accompanying text.

[1241] *See supra* note 447 and accompanying text.

[1242] *See supra* notes 438–439 and accompanying text.

registrants to the extent such compliance costs have a fixed cost component.

The final rules will also affect mining professionals, in particular those individuals who conduct the work that forms the basis for disclosure of exploration results, mineral resources, and mineral reserves. Commenters noted that many registrants already employ or hire professionals who meet the definition of a qualified person.[1243] More generally, we estimate that there are currently a large number of professionals in the United States who would meet the definition of qualified person. For example, the Society for Mining, Metallurgy, and Exploration currently has 15,000 members around the world.[1244] More than 800 of these members are registered with the organization and already meet the definition of a qualified person.[1245] Moreover, a study by the Bureau of Labor Statistics reported that in 2014 there were 34,000 geoscientists, 16,500 geological and petroleum technicians, and 8,300 mining and geological engineers employed in the United States.[1246] A significant fraction of these professionals likely meet the definition of qualified person, or could meet it after some professional development. For example, California alone had more than 5,000 recorded licensed professional geologists as of November 2014.[1247] We note that these estimates largely exclude professionals who are active in foreign markets and who could also qualify. Although we do not have access to information that would allow us to estimate how many foreign professionals may qualify as qualified persons, we believe there will be a significant number of such professionals who meet the criteria because similar requirements are in place in jurisdictions, such as Canada and Australia, that together have more than 1,800 publicly-listed mining companies.[1248]

2. Current Regulatory Framework and Market Practices

As discussed above, we evaluate the economic effects of the final rules against the Commission's current disclosure requirements and policies. Below we highlight three economically important aspects: (1) The structure and detail of the current disclosure framework, (2) the scope of the current disclosure framework, and (3) the lack of an expertise requirement for the preparer of technical information in the disclosures.[1249]

i. Structure and Detail of Current Disclosure Framework

The following aspects of the current disclosure regime can give rise to compliance burdens for mining registrants:

- *Overlapping disclosure framework.* The current disclosure framework is set forth in Item 102 of Regulation S–K, which is a Commission rule, Form 20–F, which is a form used by foreign private issuers that contains disclosure requirements,[1250] and Industry Guide 7, which represents the disclosure policies and practices followed by the Division of Corporation Finance. This overlapping structure may give rise to unnecessary complexity and uncertainty for mining registrants.[1251]
- *Multiple thresholds for disclosure.* Item 102 of Regulation S–K currently implies a two-tiered reporting standard. Registrants with ''significant'' mining operations are referred to the more extensive disclosure policies in Guide 7, whereas registrants without significant mining operations, but with one or more ''principal'' mines or other ''materially important'' properties, are required to comply with the more limited disclosure requirements in Item 102. As discussed above, Commission staff historically has advised that registrants apply a materiality standard for disclosure and, when that standard is met, provide disclosure according to both Item 102 and Guide 7.
- *Level of detail.* Because the disclosure policies in Guide 7 are broadly drafted, registrants often look to staff guidance to apply those policies. For example, as discussed above, Guide 7 calls for the disclosure of mineral reserves, defined as the part of a mineral deposit that can be economically and legally extracted or produced. It does not, however, specify the level of geological evidence or the analysis, such as the modifying factors the registrant should consider, to convert existing mineral deposits to reserves. By contrast, CRIRSCO-based disclosure standards specify a more detailed framework for determination and disclosure of mineral reserves that specifically addresses such issues. These aspects of the current disclosure framework can be burdensome for mining registrants, especially new registrants. In this regard, some industry participants have raised concerns regarding the need to look to informal staff guidance to achieve compliance.[1252]

ii. Scope of the Current Disclosure Requirements and Policies

As discussed above, Item 102 of Regulation S–K, Guide 7, and Form 20–F currently call for the disclosure of mineral reserves and preclude the disclosure of non-reserve estimates such as mineral resources, unless required by foreign or state law.[1253] Further, none of these provisions requires disclosure of mineral exploration results. By contrast, for mining companies providing disclosure in certain foreign jurisdictions, CRIRSCO-based codes require disclosure of material mineral resources in addition to material mineral reserves and require the disclosure of exploration results when they become material to investors.

The scope of the Commission's current disclosure regime relative to current industry practices for evaluating the prospects of mining properties can result in mining registrants omitting from their disclosures information about mineral resources they possess but are not allowed to disclose. Omitting such information may increase information asymmetries between mining registrants and investors, which could lead to potentially negative capital market consequences, such as reduced stock market liquidity and higher cost of capital.[1254] Moreover, because mining companies providing disclosure

[1243] *See* letters from AIPG, Alliance, Amec, Davis Polk, Eggleston, FCX, Golder, Graves, JORC, Rio Tinto, Shearman & Sterling, SME 1, SRK 1, Vale, and Willis.

[1244] *See* the SME website at: *https://www.smenet.org/about-sme/overview.*

[1245] *See* the SME website at: *http://www.smenet.org/membership/registered-member-directory.*

[1246] *See* Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook, 2016–17 Edition,* Geoscientists (available at: *http://www.bls.gov/ooh/life-physical-and-social-science/geoscientists.htm*), Geological and Petroleum Technicians (available at: *http://www.bls.gov/ooh/life-physical-and-social-science/geological-and-petroleum-technicians.htm*), and Mining and Geological Engineers (available at: *http://www.bls.gov/ooh/architecture-and-engineering/mining-and-geological-engineers.htm*).

[1247] *See* the website of the National Association of State Boards of Geology, *http://asbog.org/states/cd_states.htm#California.* A geologist licensed by any state in the United States, provided he or she has five years' relevant experience in mining with respect to the type of mineralization under consideration, will likely meet the definition of a qualified person.

[1248] For statistics on the number of listed mining issuers in Canada, s*ee https://www.tsx.com/listings/listing-with-us/sector-and-product-profiles/mining.* For statistics on the number of listed mining issuers in Australia, *see https://www.asx.com.au/documents/resources/00180_MetalsMiningSector_FactSheet_web.pdf.*

[1249] In addition, the current regulatory requirements impose Section 11 liability on the named person who prepares mineral reserve estimates. *See supra* note 278 and accompanying discussion.

[1250] *See* 17 CFR 249.220f.

[1251] *See supra* Section II.A. and note 36 and accompanying text.

[1252] *See supra* note 28 and accompanying text.

[1253] In practice, only Canadian issuers have been able to take advantage of this exception because only Canada has adopted its mining disclosure requirements as a matter of law. *See supra* note 423 and accompanying text.

[1254] The link between asymmetric information and cost of capital is well established in the academic literature. *See, e.g.,* Douglas W. Diamond and Robert E. Verrecchia ''Disclosure, Liquidity, and the Cost of Capital'' (1991), *Journal of Finance,* Volume 46, Issue 4, pp. 1325–1359, and David Easley and Maureen O'Hara, ''Information and the cost of capital'' (2004), *Journal of Finance,* Volume 59, Issue 4, pp. 1553–1583.

consistent with CRIRSCO-based disclosure standards in foreign jurisdictions are required to disclose mineral resources, U.S. registrants may suffer adverse competitive effects to the extent that the more limited scope of their disclosures has negative capital market effects. Industry participants have raised concerns regarding the adverse competitive effects potentially stemming from the current disclosure regime and, in particular, from the inability to disclose mineral resources.[1255]

Currently, registrants can supplement, to some extent, the scope of their mining property disclosures in several ways. First, although there is no requirement to disclose exploration results, registrants can voluntarily disclose such information in their SEC filings. While voluntary disclosures can serve as a useful signaling device for investors, the value of voluntary disclosures may be limited in the absence of a requirement that ensures consistency and quality of the disclosures.

Second, regarding the disclosure of mineral resources, Commission staff has periodically, on a case-by-case basis, not objected to disclosure of non-reserve mineral deposits in the form of ''mineralized material.'' [1256] In practice, the mineral resources covered by the definition of ''mineralized material'' generally correspond with the indicated and measured mineral resource categories defined in CRIRSCO-based disclosure standards. Commission staff previously has advised registrants that they should not disclose as mineralized material in their SEC filings non-reserve mineral deposits that would be equivalent to inferred resources. The absence of specific, published guidelines establishing how registrants should estimate and report mineralized materials may have contributed to compliance uncertainty and lack of consistency in disclosures.

Further, under the exception for disclosure of mineral resources, if required by foreign or state law, issuers registered in Canada are able to disclose mineral resources in SEC filings if they do so in their Canadian filings. Therefore, any potential competitive disadvantage of not being allowed to disclose mineral resources in SEC filings primarily affects registrants not also registered in Canada,[1257] which in our estimates represent about 82% of the registrants potentially affected by the final rules.[1258]

Given this, and also given that the disclosures of mineralized material that are currently permitted in SEC filings are not directly comparable to the disclosures of mineral resources required by CRIRSCO-based disclosure standards, some registrants have reported their mineral resources in press releases, on their website, or in their annual reports. Such disclosures, made outside of SEC filings, may present risks for investors who rely on them. These disclosures are not subject to the full range of disclosure rules and regulations, including corresponding liability provisions, to which SEC filings are subject (although disclosures outside SEC filings would be subject to the anti-fraud provisions of the federal securities laws). They also are not subject to staff review and comment, and may not be reported using commonly recognized standards.

iii. Role of Experts in Support of Disclosures of Mineral Reserves

Guide 7 provides, and Form 20–F requires, that a registrant disclose the name of the person estimating mineral reserves and describe the nature of his or her relationship to the registrant. There is, however, no current disclosure policy or requirement in Guide 7, Item 102, or Form 20–F that a registrant must base disclosures of mineral reserves (or a study or technical report supporting such disclosures) on findings of a professional with a particular level of expertise. The absence of an expertise requirement is in contrast to CRIRSCO-based disclosure standards, which require that disclosures of mineral reserves—as well as exploration targets, exploration results, and mineral resources—be based on information and supporting documentation prepared by a ''competent'' or ''qualified person.'' [1259]

In the absence of an expertise requirement, disclosures of exploration targets, exploration results, mineral resources, and mineral reserves may be viewed by investors as less credible.[1260] An expertise requirement provides greater assurance that the information provided by the qualified person is accurate. The lack of an expertise requirement may put U.S. registrants at a comparative disadvantage in terms of how investors value the disclosed information compared to companies disclosing exploration targets, exploration results, mineral resources, and mineral reserves according to CRIRSCO-based disclosure standards.[1261]

B. Analysis of Potential Economic Effects

In this section, we analyze the anticipated costs and benefits associated with the final rules against the baseline described above. We have attempted to quantify to the extent feasible the costs, benefits, and effects on efficiency, competition, and capital formation expected to result from the final rules. In many cases, however, we are unable to quantify the economic effects. Many of the relevant economic effects, such as the effects of disclosure on information asymmetries experienced by investors, are inherently difficult to quantify. In other cases, we lack the information necessary to provide reasonable estimates, including costs of incomplete convergence with CRIRSCO-based disclosure standards, benefits of disclosing mineral resources, or additional costs of hiring a qualified person subject to Section 11 liability, because, to our knowledge, no such data are publicly available and commenters have not provided data to allow such quantification. To the extent commenters have provided data to allow quantification of the expected economic effects of the final rules, including cost estimates, we examine that data below.

1. Broad Economic Effects of the Final Rules and Impact on Efficiency, Competition, and Capital Formation

We expect the final rules to increase the quality and availability of information about registrants' mining properties and thereby promote efficiency, competition, and capital formation. For example, the final rules require registrants with material mining

[1255] *See supra* note 34 and accompanying text.

[1256] *See supra* Section II.A.

[1257] *See* SME Petition for Rulemaking, *supra* note 6, at 14.

[1258] We do not include foreign private issuers that are registered in Canada but are voluntarily reporting on domestic forms in this estimate, as such registrants can transition to filing on Form 20–F instead of domestic forms if they perceive the burden of continuing to voluntarily file on domestic forms to be too large, for example due to competitive reasons.

[1259] An author of a study or technical report that forms the basis of mineral reserves disclosure in a Securities Act registration statement is required to consent to the use of his or her name as an expert and thereby becomes subject to expert liability under Section 11 of the Securities Act. *See* 17 CFR 230.436 and 17 CFR 229.601(b)(23). While this provides some assurance that the disclosure accurately reflects the technical study or report, it does not require that the author have any minimum level of technical expertise. CRIRSCO-based disclosure codes are based on the mutually reinforcing principles of transparency, materiality, and competence.

[1260] *See infra* Section IV.B.4.i.

[1261] Under the current disclosure regime, registrants can choose to hire an expert with similar qualifications as those required by CRIRSCO-based disclosure standards and voluntarily disclose this fact to mitigate any competitive disadvantage.

operations to disclose determined mineral reserves, mineral resources, and material exploration results. These requirements better align the Commission's disclosure requirements with the current practices used by mining companies to evaluate their projects, thereby reducing information asymmetries between registrants and investors about the prospects of mining operations. In addition, the qualified person requirement, together with detailed requirements for the supporting technical studies, should generate higher quality and more consistent disclosures, which should reduce uncertainty surrounding the disclosures. In turn, reduced information asymmetries and reduced uncertainty about the disclosures may help investors achieve a more efficient capital allocation while increasing demand for securities offerings, reducing the cost of capital, and enhancing capital formation for registrants.[1262]

In particular, we believe that the requirements for disclosure of material exploration results and mineral resources will reduce information asymmetries and uncertainty for smaller mining registrants, as these registrants tend to have mining properties in earlier stages of development with relatively fewer, if any, reported mineral reserves. As a result, we expect the anticipated positive effects on efficiency and capital formation to be relatively larger for smaller registrants. However, these effects may only materialize to the extent smaller registrants are able to pay for the studies that are required to support disclosure in the first place. We anticipate that there may be some smaller registrants who do not have access to the liquid funds needed to make that investment.

Although we expect the overall amount of disclosed information to increase under the final rules, there may be exceptions. We expect that the adopted disclosure requirements may increase the compliance costs for disclosure of material exploration results and the currently allowed (on a case-by-case basis) equivalent of mineral resources (*i.e.,* mineralized material). Registrants may also bear costs to the extent that the disclosure requirements will result in the disclosure of commercially-sensitive information to competitors.[1263] Therefore, despite the anticipated benefits from the final disclosure requirements, some registrants may, for certain expected lower-value exploration projects, find that these benefits do not outweigh the compliance and competitive costs and may not undertake the work necessary to disclose exploration targets or exploration results or to determine mineral reserves or mineral resources in accordance with the final rules. In such cases, this will reduce the information available to investors about a registrants' full range of projects and could have a negative impact on cost of capital and capital formation. However, this effect may be limited, in that expected lower-value projects are less likely to attract capital even if they were fully disclosed, whether voluntarily or not.

The positive effects we expect on efficiency and capital formation from the final rules may be lower for registrants that currently report in foreign jurisdictions with CRIRSCO-based disclosure codes. These registrants to a large degree already provide the disclosures required by the final rules. This is particularly the case for Canadian registrants, who disclose information pursuant to NI 43–101 standards in their Forms 20–F under the ''foreign or state law'' exception.

We expect the final rules to have certain competitive effects. For example, there may be reallocation of capital as registrants that previously could not disclose mineral resources or could not afford the feasibility studies required for disclosure of mineral reserves (but could afford pre-feasibility studies) may start to disclose a broader range of their business prospects, making it easier for these registrants to raise capital and compete with the mining companies that already report material mineral resources and reserves. We also anticipate that by aligning our disclosure requirements with CRIRSCO-based disclosure standards, the final rules will improve the competitiveness of U.S. securities markets and increase the likelihood of prospective registrants listing their securities in the United States, while decreasing the likelihood that current registrants would exit U.S. markets.[1264] In particular the qualified person requirement and associated requirements for the supporting technical studies may improve the global competiveness of U.S. registrants because such quality assurances have become internationally recognized practice and may help signal to market participants that U.S. registrants are able to meet the standards codified by the final rules.

There could be an opposite effect in some cases. Among foreign private issuers, registrants not currently reporting in foreign jurisdictions with CRIRSCO-based disclosure standards are most likely to experience an increase in compliance costs. If these compliance costs become too burdensome, some of these foreign private issuers may choose to withdraw from U.S securities markets. The impact of such a potential outcome is limited, however, as we have only identified six (as of December 31, 2017) foreign private issuers that are not subject to CRIRSCO-based reporting standards. Moreover, a company that did not want to comply with these or similar disclosure standards would only have a limited number of alternative jurisdictions in which to list, none of whose markets are as developed or robust as the U.S. or other financial markets that have such standards.

Some aspects of the final rules that are different from CRIRSCO-based disclosure standards, such as the imposition of Section 11 liability for qualified persons, may discourage prospective registrants from conducting registered offerings in the United States to the extent registrants will incur additional costs related to this liability.[1265] However, the final rules

[1262] The significant risk and negative impact on capital formation from uncertainty surrounding mining disclosure is illustrated by the evidence in William O. Brown, Jr. and Richard C.K. Burdekin, ''Fraud and Financial Markets: The 1997 Collapse of the Junior Mining Stocks'' (2000), Journal of Economics and Business, Volume 52, Issue 3, pp. 277–288. The authors utilize an event study methodology to analyze the effect on Canadian mining companies' stock returns around the revelations in spring 1997 of fraudulent disclosures of gold resources by the Canadian mining company Bre-X. The study documents that a portfolio of 59 Canadian gold mining stocks experienced significantly negative abnormal stock returns around the Bre-X fraud revelations. Similarly, the Vancouver Composite Index, which at the time was dominated by natural resource companies, also experienced significantly negative abnormal returns for the same event time period. We note that the Bre-X fraud contributed to the development of the Canadian NI 43–101 mining disclosure standards.

[1263] As discussed in *supra* Section II.D.3, we believe that the underlying documentation for exploration results is most likely to be associated with concerns about disclosing commercially sensitive information. To mitigate these concerns, the final rules make filing a technical report summary to support disclosure of material exploration results optional for registrants.

[1264] All else equal, the limited ability to provide valuable disclosure (*e.g.,* the full range of mineral resources or exploration targets) decreases the attractiveness of the U.S. capital markets for mining registrants relative to jurisdictions in which fuller disclosure is possible (if not required, as in Canada).

[1265] Several commenters noted the increased costs that subjecting qualified persons to Section 11 liability would likely impose on registrants and the chilling effect it could have on qualified persons' willingness to provide the required supporting documentation. *See* letters from Alliance, Amec, Andrews Kurth, Chamber, Cloud Peak, Davis Polk, Eggleston, Energy Fuels, Gold Resource, FCX, MMSA, NMA, NSSGA 1, Rio Tinto, Shearman & Sterling, Ur-Energy, and Vale. *See* also note 230 and accompanying discussion. Commenters also noted that such costs could fall disproportionately on small registrants. *See* letters from Gold Resource and Shearman & Sterling.

provide for some limitations on qualified persons' individual Section 11 liability with respect to when they rely on certain information outside their expertise provided by registrants, or when they are employed by third-party firms,[1266] which should mitigate such effects. Overall, we expect that the alignment of our disclosure requirements with international practices, as embodied in CRIRSCO-based disclosure standards, will make U.S. capital markets more competitive, notwithstanding these differences.

2. Consolidation of the Mining Disclosure Requirements

The final rules consolidate the mining disclosure requirements and policies of Regulation S–K and Industry Guide 7 into new subpart 1300 of Regulation S–K and rescind Industry Guide 7. Codifying the Commission's mining disclosure requirements in Regulation S–K will provide a single source for a mining registrant's disclosure obligations, eliminating the complexity and uncertainty associated with the fact that Guide 7 provides staff guidance and is not incorporated in Commission rules, such as in Regulation S–K, thus facilitating compliance and promoting more consistent disclosures to investors. The benefits of consolidation were confirmed by several commenters, who stated that the Commission's current disclosure regime for mining properties has caused compliance uncertainty for mining registrants.[1267] In contrast, one commenter [1268] noted that the status of Guide 7 was well understood by and presented little uncertainty for its members. For registrants in this category the benefits of reducing complexity and uncertainty by codifying and consolidating the Commission's mining disclosure requirements may be limited.

3. The Standard for Mining-Related Disclosure

i. Threshold Materiality Standard

The final rules replace the multiple standards of materiality in the current rules with a single materiality standard for when a registrant must provide disclosure about its mining properties or operations.[1269] In response to comments,[1270] the final rules do not include an instruction stating that a registrant's mining operations are presumed to be material if they consist of 10% or more of its total assets and emphasize that registrants may consider other quantitative or qualitative factors to evaluate materiality. These clarifications should help avoid the potential costs to investors of disclosing immaterial information and the potential burden for registrants of creating different disclosures for different jurisdictions.

The final rules will increase clarity in terms of the conditions under which registrants must provide disclosure and may facilitate compliance by more closely aligning the disclosure standard in the final rules with CRIRSCO-based disclosure standards. The final rules also will promote consistency in mining property disclosures, which may benefit investors' ability to compare and evaluate these disclosures over time and across registrants, thus fostering more efficient investment decisions.

ii. Treatment of Vertically-Integrated Companies

New subpart 1300 of Regulation S–K will apply to all registrants with material mining operations, including vertically-integrated manufacturers.[1271] Because requiring disclosure of mining operations by vertically-integrated manufacturers is consistent with the disclosure currently provided in Commission filings and under CRIRSCO-based disclosure codes, we do not expect this requirement will impose new compliance costs on registrants. By including vertically-integrated manufacturers in the requirement to disclose material mining operations, the final rules will provide investors with material information about such operations that will help with investment decisions, regardless of whether the company's primary business is mining.[1272]

iii. Treatment of Multiple Property Ownership

We are adopting the proposed treatment of multiple property ownership and the proposed treatment of ancillary properties, which, depending on the facts and circumstances, could give rise to disclosure obligations under the final rules.[1273] These provisions require a registrant to consider all of its mining properties in the aggregate, as well as individually, when assessing the materiality of its mining operations. These provisions should facilitate compliance for companies with multiple mining properties while eliciting material information for investors in appropriate circumstances. We also expect that the treatment of multiple property ownership will result in more efficient and more effective disclosure compared to current practice, as registrants will be able to provide summary disclosure about all of their mining properties where some or all of the properties are not individually material.

iv. Treatment of Royalty Companies

Because the value of a royalty company or similar registrant derives from the underlying mining properties that generate payments to the registrant, the final rules require these registrants to provide disclosure of the material underlying mining properties, analogous to that of mining companies. While the final rules are consistent with prior disclosure practices, we expect that consistent application of this requirement will provide investors with information useful to making informed investment decisions.[1274] To the extent the final rules will increase the quality and amount of disclosure by royalty companies and similar registrants about underlying material mining properties, we expect investors to benefit from access to more and higher quality information to aid their investment decisions. To the extent that royalty companies and similar registrants are able to omit information about underlying material mining properties that is not otherwise available, including not having to file a technical report summary, the benefits to investors will be limited.[1275]

We expect all royalty companies and similar registrants will incur compliance costs related to assessment of access to required information about underlying mining properties and/or the materiality of the underlying properties. These compliance costs will be limited for those royalty companies that already have access to the information required to comply with the final rules. These compliance costs also will be limited for those royalty companies that do not

[1266] *See supra* Section II.C.1.iii.

[1267] *See supra* note 28 and accompanying text.

[1268] *See* letter from NSSGA 1.

[1269] *See supra* Section II.B.1. The definition of ''material'' in the final rule is the same as under Securities Act Rule 405 and Exchange Act Rule 12b–2. Establishing materiality as the threshold for disclosure is also consistent with the disclosure standard under CRIRSCO-based disclosure standards.

[1270] *See* letters from Alliance, Amec, AngloGold, BHP, Eggleston, JORC, Rio Tinto, SAMCODES 1 and 2, SME 1, and SRK 1.

[1271] *See supra* Section II.B.2.iii.

[1272] *See supra* Section IV.B.1., regarding the broader economic benefits of disclosure.

[1273] *See supra* Section II.B.3.

[1274] *See supra* Section II.B.4.iii.

[1275] We have identified three mining royalty companies registered with the Commission as of December 31, 2017. Similarly, one commenter noted they were not aware of any ''primarily mining finance companies that participate in any mining or processing activities.'' *See* letter from Crowell & Moring.

have access to such information, as the final rules require disclosure about underlying mining properties only insofar as the information is known or reasonably available to the registrant.[1276]

In addition, we expect royalty companies and similar registrants that must provide disclosures and file technical report summaries about underlying material mining properties to incur additional compliance costs related to the preparation of those disclosures and reports. These will include both direct and indirect costs related to gathering the required information, potential payments to consultants, including qualified persons, and costs associated with reporting the required information in annual reports and registration statements filed with the Commission. One commenter asserted that for royalty interests, the costs of preparing the required disclosure for annual reports on Form 10–K could exceed $500,000.[1277] However, it is not clear whether this was a total cost or an incremental cost, or whether this was specific to royalty companies. In the instances where a material property is already covered by a technical report summary filed by the producing registrant, we expect these additional compliance costs to be substantially lower as the royalty company will be able to refer to the producing registrant's report. As noted above, compliance costs also will be limited to the extent the royalty company does not have access to such information and the information is not otherwise known or reasonably available to the registrant.

Many commenters opposed the requirement for royalty companies to provide disclosure for underlying mining properties that are material,[1278] but did not provide alternatives that would ensure that investors have access to relevant information about these properties. Excluding royalty companies from the final rules would eliminate the practical difficulties and compliance costs associated with providing disclosure about underlying mining properties. However, it also could leave investors in royalty and similar companies with less information about material mining properties than investors in other mining registrants and thereby undermine the goal of providing enhanced mining disclosure to the market generally. Some commenters noted that royalty and other similar companies are unlike other mining registrants, in that their revenue is based on royalty contracts and thus information about these contracts may be more relevant for investors in such companies.[1279] However, the properties underlying the contracts are the source of the revenue stream defined by those contracts. Thus, as noted by other commenters,[1280] royalty companies have an economic interest in such properties. Consequently, providing information about such properties' potential future production would enable investors in royalty and other similar companies to make more informed investment decisions.

v. Definitions of Exploration, Development, and Production Stage

The definitions adopted in the final rules of ''exploration stage property,'' ''development stage property,'' and ''production stage property,'' as well as the definitions of ''exploration stage issuer,'' ''development stage issuer,'' and ''production stage issuer'' will provide investors with clear, accurate, and consistent disclosure about the type of company and level of risk.[1281] For example, because the classification at issuer level would be derived from the individual property classifications, the final rules would prevent a registrant without material reserves from characterizing itself as a development stage or production stage issuer, which is possible under the current classification scheme. By clarifying and codifying existing practices, the final rules will also benefit registrants by reducing regulatory uncertainty.

Because registrants already possess the information necessary to be able to classify properties at the individual property level and because the final classifications are consistent with prior disclosure practices, we do not expect these provisions to increase compliance costs for most registrants. However, because the final rules change how registrants can classify themselves at the issuer level, there may be some issuers that incur costs because they cannot continue to identify themselves as development or production stage issuers under the final rules. For example, some current production stage issuers (who under the new rules will not be able to classify themselves as such) may find it more costly to raise capital to the extent investors assign a higher risk to the company's mining operations based on the change in classification. Moreover, some current production stage issuers that are able to continue classifying themselves as such under the new rules may need to undertake additional work in order to do so (*e.g.,* hiring a qualified person to make a determination about mineral resources and mineral reserves) and would therefore incur additional compliance costs.

4. Qualified Person and Responsibility for Disclosure

i. The ''Qualified Person'' Requirement

We are adopting the proposed requirement that every disclosure of mineral resources, mineral reserves, and material exploration results be based on, and accurately reflect, information and supporting documentation prepared by a qualified person.[1282] In a change from the proposed rules, the final rules will also permit the disclosure of exploration targets, with the same requirement that such disclosure be based on, and accurately reflect, information and supporting documentation prepared by a qualified person. We anticipate that the qualified person requirement, together with the technical report summary requirement, will benefit investors by enhancing the accuracy and transparency of disclosures. For example, the requirement that the qualified person have at least five years of relevant experience and be an eligible member or licensee in good standing of a recognized professional association helps ensure that estimates provided in disclosures are based on work consistent with current professional practice. This should, in turn, increase the reliability and informational value of the disclosures. Several commenters supported the qualified person requirement, citing similar benefits.[1283] For example, one commenter noted that ''[e]xperience in consulting firms has shown that when individual members of the firm are specifically identified as qualified persons, the work undertaken by the members of the firm in preparing or reviewing technical reports is more careful.'' [1284] Other commenters similarly expected the qualified person requirement to result in higher quality disclosure.[1285] In addition, the written consent requirement will help ensure that the qualified person's findings and conclusions are accurately represented by the registrant and should further increase the reliability of the disclosures.

Moreover, because the qualified person requirement in the final rules is

[1276] *Id.*

[1277] *See* letter from Royal Gold.

[1278] *See supra* note 127 and accompanying text.

[1279] *See* letters from Crowell & Moring, NRP, Royal Gold, and SME 2.

[1280] *See* letters from Rio Tinto and SAMCODES 2.

[1281] *See* 17 CFR 229.1304(c)(1).

[1282] *See supra* Section II.C.1.

[1283] *See* note 183 and accompanying text.

[1284] *See* SME 1.

[1285] *See* letters from BHP, Eggleston, Rio Tinto, and SRK 1.

consistent with most foreign jurisdictions' mining disclosure requirements, it should improve comparability between U.S. registrants and foreign companies reporting in those other jurisdictions, which will further benefit investors. A qualified person requirement helps ensure that the individual preparing documentation to support mining property disclosures in Commission filings possesses certain professional credentials and relevant experience. Comparability should therefore be improved, because qualified persons engaged by registrants are likely to adhere to a common set of professional standards.

These benefits to investors from the qualified person requirement will be accompanied by costs for mining registrants.[1286] We expect the increase in compliance costs to be primarily related to search and hiring costs for qualified persons. Registrants that wish to disclose mineral resources and reserves, but are not currently employing or contracting with professionals meeting the definition of qualified person, will incur expenses to identify a pool of professionals who meet the definition of qualified person and are willing to provide their services. The costs for services of a qualified person may also be higher than the costs for services of the professionals currently hired by such registrants due to the level of expertise required under the final rules and the liability that professionals will face under the final rules. In this regard, one commenter noted that a qualified person likely commands a 15–25% salary premium over a non-qualified person,[1287] although that premium does not appear to include any premium for accepting Section 11 liability.

Because the required disclosures derive from activities mining registrants already perform as a crucial part of their businesses (*i.e.,* mineral exploration and estimation of mineral resources and reserves), we believe that most registrants likely already engage experienced professionals meeting the required level of expertise, either as employees or as contractors.[1288] In particular, this should be the case for registrants reporting consistent with CRIRSCO-based disclosure standards, as those standards already require a similarly defined ''qualified'' or ''competent'' person to support the disclosures.[1289] To the extent registrants already engage professionals meeting the final qualified person requirement, they will not incur costs related to searching for qualified persons, as long as currently engaged professionals agree to act in the capacity of a qualified person to support disclosures.

Even if registrants that are currently employing or contracting with professionals meeting the final definition of a qualified person do not incur additional costs associated with searching for and initial hiring of such a person, they may nevertheless experience an increase in compensation costs for these professionals. First, these professionals may demand increased compensation due to increased competition for the services of professionals meeting the definition of a qualified person. We expect an increase in competition for these services because registrants currently not hiring such professionals will need to do so under the final rules to support disclosures of mineral resources and reserves. Second, several commenters stated that subjecting qualified persons to Section 11 liability would likely reduce the willingness of individuals to serve in that role, which would, in turn, limit the available supply and increase the cost of hiring qualified persons. In a change from the proposed rules, the final rules provide that the qualified person will not be subject to Section 11 liability for any description of the procedures, findings, and conclusions reached about matters based on information provided by the registrant in certain required areas outside of the qualified person's experience and expertise, which will limit a qualified person's exposure to Section 11 liability.[1290] Nevertheless, as a general matter, we expect mining professionals who are already engaged by registrants and who meet the definition of a qualified person would request additional compensation for the imposition of Section 11 liability. However, given the nature of individual risk aversion and the sunk costs in professional development, as well as the additional factors of increased compensation and the ability to allocate potential liability between individuals and firms (as discussed below), it is difficult to reliably estimate the behavioral response of individuals and firms to the imposition of Section 11 liability.

Rather than exiting the market entirely, professionals who currently meet the definition of qualified person may be willing to accept Section 11 liability, but only for a reduced scope of work. For example, a technical report summary may involve the introduction of analyses that draw on the range of experience and educational backgrounds within the definition of qualified person under the final rules.[1291] Due to liability concerns, a qualified person—who would be willing to assume responsibility for such items in a jurisdiction without Section 11 liability—may be willing to assume responsibility for only a subset of such items in Commission filings. In this case, the registrant would need to hire or engage a greater number of qualified persons to complete its technical report summary. For larger registrants, this may not be a significant issue because they are likely to already have access to multiple qualified persons. For smaller registrants, this may be more costly, especially, as noted by one commenter,[1292] where the only qualified persons are executives of the firm or, as noted by another commenter,[1293] where exploration and development companies with no production may not have qualified persons with specific experience on their staff. To the extent hiring of qualified persons to support disclosures becomes prohibitively costly for some registrants, for example, due to search costs or increased compensation demands in light of Section 11 liability, these registrants may choose to forgo making disclosure about mineral resources and reserves in their Commission filings, which would reduce the benefit of such disclosure for both investors and registrants.

It is difficult to assess the likelihood of these potential negative outcomes, but we note that, based on the statistics reported above in Section IV.A.1., there are many professionals who potentially meet the definition of a qualified person in the United States alone, and

[1286] Quantifying these costs is challenging due to data limitations. For example, we do not have access to data that would allow us to more precisely measure the current supply of mining professionals meeting the definition of a ''qualified person'' outside of the United States. We also do not have access to readily available data sources of comprehensive compensation data for geologists and mining engineers (in the United Sates or other countries) that would help us estimate the incremental cost of hiring a qualified person with the minimum level of expertise versus professionals who do not qualify as qualified persons.

[1287] *See* letter from SRK 1.

[1288] This view was affirmed by several commenters. *See supra* note 1243.

[1289] *See, e.g.,* letter from SRK 1.

[1290] *See supra* Section II.C.1.iii.

[1291] *See* letters from MMSA and SASB. For similar reasons, commenters requested that limited disclaimers be permitted. S*ee supra* note 229. The final rules clarify that multiple qualified persons may expertize a technical report summary, allowing a qualified person to limit their liability to a scope of work with which he or she is comfortable applying his or her competence, education, and experience.

[1292] *See* letter from SME 1.

[1293] *See* letter from Eggleston.

therefore, broadly speaking, we believe it is unlikely that there will not be a sufficient supply of qualified persons available to support disclosures for at least larger-scale material mining properties, where the benefits of disclosure for registrants likely outweigh any increase in costs of qualified persons due to Section 11 liability. Moreover, mining companies and mining consulting companies presently employ many professionals who already meet the definition of qualified person.[1294] Nevertheless, because the mining industry is not homogeneous, there may be segments of the mining industry for which the supply of professionals meeting the qualified person requirement is more limited, thus making it more difficult or costly for these registrants to satisfy this requirement.

Holding all else constant, the increased demand for qualified persons' services is likely to incentivize more professionals to become qualified, especially in areas in which the supply of qualified persons is currently more limited, although there could be a lag in the time required to obtain the relevant five years of experience. For smaller registrants, whose material properties will be relatively less valuable than the material properties of larger registrants, or registrants engaged in mining of certain minerals, for which there is a limited supply of professionals with the relevant experience, the potential negative effects of Section 11 liability may be more pronounced.

Several additional factors may mitigate the costs of subjecting qualified persons to Section 11 liability. Requiring the registrant to obtain the qualified person's written consent is consistent with the Commission's longstanding approach to the use of an expert's report in Securities Act filings.[1295] Because a mining registrant is currently required to file the written consent of the mining engineer, geologist, or other expert upon whom it has relied when filing a Securities Act registration statement, and such consent is already given today, the adopted written consent requirement may not impose a significant additional burden.

Additionally, in a change from the proposed rules, the final rules provide that a third-party firm comprising mining experts, such as professional geologists or mining engineers, may sign the technical report summary and provide the written consent instead of its employee, member, or other affiliated person who prepared the summary, and need not identify such individual.[1296] Because the third-party firm will be treated as the mining expert subject to potential Section 11 liability rather than the individual qualified person in these circumstances, this provision could further mitigate the costs of Section 11 liability for those individual professionals who are employed by third-party firms by shifting liability to an entity that is more equipped to bear it.

Furthermore, as noted above, the final rules provide that a qualified person will not be subject to Section 11 liability for certain information provided by the registrant upon which the qualified person relies.[1297] Qualified persons likely would be most concerned about being subjected to Section 11 liability for information outside their expertise that has been provided by others. By limiting qualified persons' individual liability exposure in cases where such information has been proved by the registrant, this provision, when applicable, will serve to limit the costs of Section 11 liability. At the same time, the provision is not likely to come at the expense of reduced assurance of quality in mining disclosures, as the registrant who is providing the information will retain residual Section 11 liability for the information and therefore will be incentivized to exercise care its preparation.

Although the final rules do not provide a complete exemption from Section 11 liability, it may be possible, as suggested by several commenters, to obtain insurance to protect against costs that could arise out of Section 11 litigation.[1298] As commenters noted,[1299] this would effectively impose an additional cost on registrants.[1300] While insurance may reduce qualified persons' reluctance to accept liability, we do not have access to data or other information that would allow us to quantify how much registrants' costs will increase due to higher compensation or provision of insurance.

Finally, the qualified persons will not be subject to strict liability. Under Section 11, a qualified person, as an expert, would have an affirmative defense against liability for misstatements or omissions made on the authority of another expert if the qualified person ''had no reasonable ground to believe and did not believe, at the time such part of the registration statement became effective, that the statements therein were untrue or that there was an omission to state a material fact required to be stated therein or necessary to make the statements therein not misleading, or that such part of the registration statement did not fairly represent the statement of the expert or was not a fair copy of or extract from the report or valuation of the expert.'' [1301] This framework may mitigate the costs of subjecting qualified persons to Section 11 liability.

The final rules do not require the qualified person to be independent of the registrant. The absence of an independence requirement is consistent with CRIRSCO-based disclosure codes, with the exception of Canada, where the qualified person must be independent of the company for new registrants or, in cases of significant changes to existing disclosures, for established registrants.[1302] Although there is some evidence that outside experts reduce information asymmetries about companies' valuations more than internal experts in related circumstances,[1303] this benefit must be balanced against the additional cost of having to find and hire an outside expert, instead of using an existing affiliated expert. Moreover, an outside expert may in practice not be independent of the company if the person derives a large fraction of overall compensation from that same company.

As an alternative we could have exempted qualified persons from Section 11 liability altogether. This would avoid the increased costs associated with potential liability while retaining the benefit to both registrants and investors of having qualified persons with relevant credentials and experience provide the basis for disclosure of exploration targets, exploration results, mineral resources, and mineral reserves. The experience of other jurisdictions using CRIRSCO-based codes that do not impose Section

[1294] *See supra* note 1288 and accompanying discussion.

[1295] *See supra* note 268 and accompanying text.

[1296] *See supra* Section II.C.1.iii.

[1297] *See id.*

[1298] *See* letters from Chamber, Cleary Gottlieb, Energy Fuels, FCX, Gold Resource, MMSA, NSSGA 1, Rio Tinto, Shearman & Sterling, SME 1, and Vale.

[1299] *See* letters from Energy Fuels, FCX, MMSA, NSSGA 1, Rio Tinto, Shearman & Sterling, and Vale.

[1300] One commenter cited increases in liability insurance costs for registrants ''well into six figures.'' *See* letter from MMSA.

[1301] 15 U.S.C. 77k(a)(4).

[1302] *See* Canada's NI 43–101, *supra* note 123, at pt. 5.3.

[1303] *See, e.g.,* Karl A. Muller III and Edward J. Riedl, ''External Monitoring of Property Appraisal Estimates and Information Asymmetry'' (2002), *Journal of Accounting Research,* Volume 40, Issue 3, pp. 865–881. Using a sample of UK investment property firms, the paper finds that bid-ask spreads are lower for firms employing external appraisers of property values versus those employing internal appraisers, suggesting the information asymmetry about the value of the company is lower in the former case.

11-type liability (but may have some other source of liability) suggests that Section 11 liability is not necessary to obtain some benefit from having a qualified person. However, relative to the final rules, an outright exemption from Section 11 liability could reduce the incentives for qualified persons to perform a thorough analysis of the relevant properties and ensure that the disclosure in Commission filings is complete and accurate.[1304] In this way, we expect that Section 11 liability will amplify the benefits of a qualified person requirement and, thus, enhance investor protection relative to an alternative that does not impose such liability, although we acknowledge that such liability will come at a cost to mining companies and investors in those companies.

ii. The Definition of ''Qualified Person''

We are adopting the proposed definition of a ''qualified person'' and related proposed criteria and provisions.[1305] We believe this definition will help ensure that disclosure of mineral resources, mineral reserves, and material exploration results in Commission filings is based on work by professionals who have the qualifications necessary for the disclosure to be consistent with current professional practices and accurately reflects the information and supporting documentation.

Providing a definition of qualified person will benefit investors by establishing common criteria for persons supporting disclosures of exploration results, mineral resources, and mineral reserves, thereby increasing the reliability and comparability of those disclosures for investors. As discussed above, however, the selection and hiring of qualified persons will impose costs on registrants. As noted above, these costs could be higher as a result of the level of expertise and other professional credentials required by the adopted definition. To the extent that professionals meeting all of the requirements are scarce, the cost of hiring such professionals will tend to increase, although this could draw more professionals into the field, thereby bringing costs back down.

As an alternative, we could have added an educational requirement to the definition (*e.g.,* the attainment of a bachelor's or equivalent degree in an area of geoscience, metallurgy, or mining engineering), as recommended by several commenters.[1306] An educational requirement may help ensure subject matter expertise and increase the quality and credibility of the mining disclosures. However, because the recognized professional organizations typically address such a requirement in their membership criteria,[1307] we believe the incremental benefit from adding such a requirement to the definition would be minimal as it would be largely redundant.

As another alternative, we could have required that the qualified person be a member of an approved list of ''recognized professional organizations,'' similar to the approach under CRIRSCO-based standards. This was recommended by numerous commenters.[1308] This alternative could provide more clarity for registrants about which organizations are considered to be ''recognized professional organizations,'' thereby facilitating compliance. However, as compared to the principles-based approach in the final rules, an approved list would be less flexible and could unduly restrict the pool of eligible qualified persons. In addition, a specific list of organizations risks becoming outdated over time as circumstances change, which could lead to deterioration in the credentials of qualified persons and a corresponding reduction in disclosure quality.

5. Treatment of Exploration Results

The final rules require a registrant to disclose exploration results and corresponding exploration activity if they are material to investors.[1309] This approach aligns the Commission's disclosure requirements for exploration results with those in CRIRSCO-based disclosure standards in that the disclosure of exploration results and corresponding exploration activity is largely voluntary until they become material to investors. Compared to the proposed rules, the final rules provide additional guidance for registrants to help them determine when exploration results are material, which should facilitate compliance to the benefit of both registrants and investors.

Because exploration results can guide a registrants' economic decision-making, such as internal decisions regarding whether to continue a project and enter into the determination of mineral resources and mineral reserves, we expect the disclosure of material exploration results to benefit investors by providing material information about registrants' mining operations and potential growth opportunities. Several commenters generally supported requiring the disclosure of material exploration results on material properties for similar reasons.[1310] We expect that exploration results by smaller mining registrants are especially likely to be considered material to investors because such registrants tend to have a narrower range of mining operations and fewer individual projects. Investors in such companies are therefore especially likely to benefit from this aspect of the final rules.

Exploration results, by themselves, are inherently associated with some level of uncertainty. Thus, it may be difficult for investors to evaluate exploration results accurately. There is a risk that some investors may weigh this information inappropriately, which, in turn, could lead to inefficient investment decisions. The final rules mitigate potential costs to investors related to both the reliability of and the uncertainty associated with the disclosure of exploration results in several ways. First, the final rules only require disclosure of material exploration results, which should reduce the risk of investors having to assess and possibly misconstrue the significance of exploration results that inherently are of low informational value. Second, the final rules preclude the use of exploration results, by themselves, to derive estimates of tonnage, grade, and production rates, or in an assessment of economic viability, which should decrease the risk of conveying inaccurate information. As such, these provisions should reduce the potential for investors to incorrectly value any disclosed exploration results. Third, because the disclosure of exploration results must be based on the analysis of a qualified person, the accuracy and reliability of the disclosed exploration results should be enhanced and the comparability of disclosures across registrants may increase.

In addition, the final rules will align the disclosure of exploration results in Commission filings with the requirements in CRIRSCO-based disclosure standards, which may further improve the comparability of the disclosed information relative to similar disclosures by mining companies in jurisdictions such as Canada and Australia, thereby improving the usefulness of this information for investors.

Findings from an academic study suggest that disclosures of exploration

[1304] An outright exemption from Section 11 liability would also be inconsistent with current requirements. *See supra* Section II.C.1.iii. and notes 278 and 279.

[1305] *See supra* Section II.C.2.

[1306] *See supra* note 322 and accompanying text.

[1307] *See supra* note 324 and accompanying text.

[1308] *See supra* note 331 and accompanying text.

[1309] *See supra* Section II.D.3.

[1310] *See supra* note 365 and accompanying text.

results can be valuable to investors in mining stocks. The study analyzes a sample of 1,260 exploration results announcements made by 307 unique Australian mining companies over the 2005–2008 time period and documents an average abnormal stock return of 2.8% on the announcement day.[1311] For each such company, the abnormal return was calculated relative to the return on the same day for a size-matched non-announcing commodity peer. Consistent with the disclosed exploration results being more value-relevant for smaller firms, the study also finds a significantly higher announcement-day return for smaller firms, where size is measured by pre-announcement market capitalization. We note that the announcements of explorations results in the sample were compliant with the 2004 edition of the Australian JORC code for mining disclosure, which contains requirements for disclosure of exploration results that are similar to the final requirements.[1312] Because it is unclear to what extent the companies in the study were able to selectively disclose only positive exploration results, the results should mainly be viewed as evidence of exploration results having significant informational value, rather than implying that all exploration results would be met by positive stock market reactions.[1313]

In terms of benefits to registrants, the final rules should help limit compliance costs by more closely aligning the Commission's disclosure requirements with CRIRSCO-based disclosure standards and may reduce regulatory uncertainty by directly addressing the treatment of material exploration results. As noted by one commenter, U.S. registrants will be on a more equal footing if they are ''able to disclose the potential value of their properties through the disclosure of exploration results.'' [1314]

While a registrant is required to base disclosure of exploration results on information and supporting documentation provided by a qualified person, the final rules do not require a technical report summary for disclosure. A commenter noted that exploration results are the basis of valuation for small exploration-stage and even some development-stage issuers, so the ability to disclose exploration results without incurring the cost of a technical report summary could yield significant cost savings for such registrants.[1315] Even larger registrants—regardless of production stage—may wish to disclose exploration results. In general, being able to disclose exploration results without a technical report summary constitutes a cost saving of the final rules relative to the proposed rules for any registrant. For example, one commenter estimated costs in Canada and Australia to range between $20,000 and $40,000 if a company has to hire a qualified person working for a third-party consulting firm to prepare a technical report in support of material exploration results.[1316] Another commenter also noted that, although exploration results support the disclosure of mineral resources and mineral reserves, ''exploration results are the only non-speculative information that an exploration program has.'' [1317] We believe maintaining the requirement for a qualified person to prepare the supporting documentation and analysis for material exploration results without requiring the filing of a technical report summary will promote meaningful disclosure without unduly burdening registrants.

Due to the lack of data, heterogeneity among registrants, and inability to know the precise tradeoffs faced by registrants, we are not able to quantify the costs and benefits associated with requiring registrants to disclose material exploration results. We expect an increase in compliance costs for those registrants that disclose material exploration results for the first time for any particular project. These costs may include the assessment of materiality, the costs of employing a qualified person to prepare the findings and conclusions, and the costs of reporting the results in annual reports and registration statements filed with the Commission. To the extent that these costs are fixed and do not scale with the size of the project, the cost burden may be relatively larger for smaller registrants. We believe many registrants are already likely to engage professionals who meet the definition of qualified person to conduct exploration and to document and analyze exploration results, in which case the additional compliance costs will be associated mainly with producing required disclosures. In addition, the compliance costs should be substantially mitigated for registrants that already report according to CRIRSCO-based disclosure standards, as those standards have similar disclosure requirements for material exploration results. However, as Section 11 liability likely will lead professionals that meet the definition of qualified person to demand increased compensation for their services, costs also may increase for registrants currently employing such professionals for exploration activities, including those registrants that report in jurisdictions with CRIRSCO-based disclosure standards.[1318]

Several commenters expressed concern that requiring the disclosure of material exploration results could come at the cost of disclosing commercially sensitive information or potentially violating confidentiality agreements with joint venture partners and other mining operators.[1319] We acknowledge that disclosure of material exploration results in this situation would impose costs for both registrants and their investors. However, the final rules do not require the filing of a technical report summary to support the disclosure of exploration results, which may help mitigate concerns about disclosure of commercially sensitive information. This is because such information is more likely to be found in the technical report summary's detailed disclosure requirements for exploration activity and exploration results (compared to the disclosure required in the narrative part of the Commission filing). We also note that the final requirement to disclose material exploration results does not impose an affirmative obligation to hire a qualified person to undertake the work necessary to make a determination about exploration results for purposes of disclosing such results in Commission filings.

A few commenters urged us to make disclosure of material exploration results (and mineral resources) optional in all cases.[1320] Making disclosure of material exploration results (and mineral resources) optional in all cases would reduce the costs associated with developing the required documentation by a qualified person and any costs associated with disclosing commercially sensitive information, because registrants would only choose to disclose when it is economically beneficial to do so. However, making disclosure optional in all cases would

[1311] *See* Ron Bird, Matthew Grosse, and Danny Yeung, ''The market response to exploration, resources, and reserve announcements by mining companies: Australian data'' (2013), *Australian Journal of Management,* Volume 38, Issue 2, pp. 311–331.

[1312] *See* JORC Code *supra* note 175, at pts. 16–18.

[1313] We also note that the study does not provide results for different sub-sectors of the mining industry (*e.g.,* aggregates and industrial materials) and therefore any inferences drawn may not be true across all types of mining companies.

[1314] *See* letter from Northern Dynasty.

[1315] *See* letter from Eggleston.

[1316] *See* letter from SRK 1.

[1317] *See* letter from Eggleston.

[1318] *See supra* Section IV.B.4.i.

[1319] *See supra* note 371 and accompanying text.

[1320] *See* letters from Davis Polk and Royal Gold.

undercut the benefits of disclosure that the rules are intended to achieve and would not align with CRIRSCO-based disclosure standards. Under this alternative, investors could be deprived of material information developed by the registrant for its own decision-making, but that is not in the registrant's best interest to disclose. In addition, where a registrant also produces disclosure in a jurisdiction that adheres to CRIRSCO-based disclosure standards (and would thus disclose such information), there could be a lack of comparability and confusion among investors.

As noted above, the final rule will permit the disclosure of exploration targets in Commission filings. This change more closely aligns the final rule with CRIRSCO-based disclosure standards. Moreover, allowing registrants to disclose exploration targets provides registrants with a credible way to communicate value-relevant information that could be important for investors' decision making. This will put U.S. registrants on a more equal footing with other registrants who may be able to disclose exploration targets in other jurisdictions. In addition, as suggested by one commenter, exploration targets may reflect a significant portion of the value of the company for small registrants.[1321] As such, permitting the disclosure of exploration targets in Commission filings could reduce registrants' cost of capital, especially for small registrants. Finally, registrants will be able to provide investors with information in their Commission filings that, due to the qualified person requirement, should be of higher quality and reliability than if this information is otherwise provided by the mining registrants outside Commission filings, such as on company websites.

Because exploration targets may have no or limited empirical basis, allowing the disclosure of exploration targets, even with cautionary language, could result in misleading or confusing disclosures, causing investors to misconstrue exploration targets as actual findings of exploration results or even mineral resources. However, industry and CRIRSCO definitions of exploration targets as well as the disclosure requirements in the final rules [1322] mitigate this risk of investor confusion.

As an alternative, we could have prohibited disclosure of exploration targets in Commission filings. We note that such a prohibition would not preclude a registrant from releasing the information about exploration targets in other media (*e.g.,* websites, blog posts, newsletters, or analysts' discussions). Because exploration targets could still be communicated by registrants outside of Commission filings, the availability of such information without the assurances provided by a qualified person requirement and the other protections associated with Commission filings could put investors at risk of being misled. Moreover, the benefits from allowing the disclosure of exploration targets discussed above would be foregone.

6. Treatment of Mineral Resources

i. Mineral Resource Disclosure Requirement

The final rules provide that a registrant with material mining operations must disclose specified information in its Securities Act and Exchange Act filings concerning mineral resources that have been determined based on information and supporting documentation from a qualified person.[1323] Absent such information and supporting documentation, the registrant would not have determined mineral resources as defined in the final rules and, as such, would not be required or allowed to disclose mineral resources in a Commission filing. Because disclosure of mineral resources is currently precluded in Commission filings unless required pursuant to foreign or state law, this provision will expand the scope of the current disclosure regime, while aligning the Commission's mining disclosure requirements with those in foreign jurisdictions that adopt CRIRSCO-based disclosure standards. Industry participants have raised concerns regarding the adverse competitive effects potentially stemming from the inability of U.S. registrants to disclose mineral resources. These industry participants have stated that mining companies and their investors consider mineral resource estimates to be material and fundamental information about a company and its projects.[1324]

We expect the final rules will result in investors gaining access to additional useful information concerning a mining registrant's operations and prospects, which will help improve their investment decisions. Because mining registrants assess mineral resources in the course of developing mining projects, requiring information about mineral resources to be disclosed will significantly reduce information asymmetries between investors and registrants and should lower registrants' cost of capital, promote capital formation, and improve the efficiency of investors' capital allocation.

As discussed above, allowing the disclosure of mineral resources is consistent with CRIRSCO-based disclosure standards. Closer alignment with international practice will enable U.S. registrants to provide disclosure that more closely matches that of Canadian mining registrants and non-U.S. mining companies that are subject to one or more of the other CRIRSCO-based mining disclosure codes. As such, the final rules will improve the ability of U.S. registrants to provide valuable information that analysts and investors are accustomed to receiving from non-U.S. companies, thus removing a competitive disadvantage and placing U.S. registrants on a more equal footing with non-U.S. registrants in terms of accessing capital markets. The ability to disclose mineral resources in Commission filings may be particularly beneficial to smaller exploration stage mining registrants (and their investors) as their valuations may be more dependent on non-reserve mineral deposits. The ability to disclose mineral resources may also improve the attractiveness of U.S. capital markets for mining companies more generally and encourage entry of new registrants, both domestic and foreign, in particular exploration and development stage companies that are not permitted to disclose mineral resources in filings with the Commission under the current rules.[1325]

For registrants that currently disclose ''mineralized materials'' there should be a comparatively lower incremental reduction in information asymmetries. Nonetheless, we expect the final rules to result in disclosures that are more consistently presented and more transparent to investors, thereby increasing comparability of such information across mining registrants. For example, the differences between measured and indicated mineral resources will be clearer under the final rules since they are distinct and not aggregated as mineralized material. In addition, the final rules require a registrant with material mining operations to disclose inferred resources, which are not included in the definition of mineralized material. The requirement that disclosures must be supported by information and

[1321] *See* letter from Eggleston.

[1322] *See supra* Section II.D.3.

[1323] *See supra* Section II.E.1.iii.

[1324] *See supra* Section II.E.1.ii.

[1325] Similar arguments were made by several commenters. *See, e.g.,* letters from Rio Tinto, SME 1, and SRK 1.

documentation provided by a qualified person also will improve the quality and reliability of the disclosures compared to the current disclosures of mineralized material, which will benefit investors. To the extent the above expected improvement in disclosure to investors reduces information asymmetries, the efficiency of investment decisions will increase and registrants that currently disclose mineralized material may experience a reduction in the cost of capital.

There is some empirical evidence suggesting that investors respond favorably to disclosures of mineral resources. For example, the previously discussed study regarding the disclosure of exploration results also analyzes the announcement returns to disclosures of mineral resources.[1326] Analyzing 624 resource announcements by 278 publicly-traded Australian firms between 2005 and 2008, the authors document an average abnormal stock return of 2.5% on the announcement day. As for the exploration results announcements, the abnormal return was calculated relative to the return on the same day for a size-matched non-announcing commodity peer. Unlike the announcements of exploration results, the authors find no relation between company size and abnormal returns. However, abnormal returns are significantly greater when a mining company announces mineral resources for the first time.[1327] The authors suggest this may be the case because much of the existing information asymmetry is resolved at the time of the first announcement.

The final rules will generate compliance costs for registrants that are required to disclose mineral resources. The incremental compliance costs will be greater for registrants not currently disclosing mineralized material. These include incremental costs (above the registrant's regular mineral resource assessment practices) of an initial assessment when first determining mineral resources and when disclosing a material change to mineral resource estimates that have been previously reported.[1328]

The compliance costs associated with disclosure of mineral resources may be mitigated to some extent for registrants that report in foreign jurisdictions with CRIRSCO-based disclosure codes given the similarity between the requirements in those codes and the final rules. In this regard, however, although all CRIRSCO-based disclosure codes require some type of documentation to support the determination and disclosure of mineral resources, most do not define a specific type of study. As such, the final requirement for an initial assessment (discussed further below) could result in increased burdens for these mining registrants to the extent that the initial assessment differs from registrants' prior practices for determining resources. To the extent industry practice in other jurisdictions is already largely consistent with CRIRSCO-based disclosure standards, whether or not such jurisdictions' disclosure codes are based on those standards, the marginal increase in costs to comply with the final rules is likely to be limited and to comprise a one-time switching cost to new disclosure formats and terminology, though this new terminology reflects current industry practice and usage.

ii. Definition of Mineral Resource

We are adopting the definition of mineral resource, as proposed, to mean a concentration or occurrence of material of economic interest in or on the Earth's crust in such form, grade or quality, and quantity that there are reasonable prospects for economic extraction.[1329] This definition generally aligns with the definition used in CRIRSCO-based disclosure standards and industry practice, and should therefore benefit investors by making the disclosure of mineral resources by U.S. mining registrants comparable to the disclosures in foreign jurisdictions.

We do not expect the adopted definition of mineral resources to impose any significant compliance costs, by itself, on registrants who are currently estimating mineral resources based on a similar definition for internal purposes and for reporting in foreign jurisdictions with CRISCO-based mining disclosure requirements. To the extent that registrants do not currently estimate resources similar to the definition in the final rules, they may incur incremental costs from having to change their estimation practices to meet the specific definition of mineral resources in the final rules. We note that these costs would need to be incurred only insofar as such registrants desire to disclose mineral resources in Commission filings. Registrants that find the benefit of disclosing mineral resources does not exceed the costs of determining mineral resources according to the definition in the final rules have no obligation to do so. It is possible to engage in mineral production without disclosing mineral resources or mineral reserves. Such issuers, however, absent any other material mineral reserves, would be classified as exploration-stage issuers. Registrants that currently find disclosure of mineral reserves to be valuable will have to incur the cost of determining and disclosing mineral resources in order to disclose mineral reserves. We believe, however, that it is reasonable to expect a mining industry participant that wishes to monetize mineral material (that could be disclosed as a mineral resource) would choose to determine the value of the mineral material, especially if the company is currently estimating and disclosing mineral reserves.

As an alternative to the final rules, we could have excluded mineral brines from the definition of mineral resource, as suggested by several commenters.[1330] This would further align our definition with CRIRSCO-based standards, which define a mineral resource as ''solid material,'' and could reduce compliance costs for registrants extracting minerals brines, especially if they are also reporting in jurisdictions where mineral brines do not need to be included in disclosure of mineral resources. To the extent the industry practice regarding extracting mineral brines is different from the industry practice of extracting solid minerals, subjecting such firms to a disclosure regime developed for solid mineral extraction may increase compliance costs related to reporting. However, as discussed above, mineral brines are regulated under Canada's NI 43-101 code by at least one Canadian provincial securities administrator,[1331] which suggests it may not be outside industry practice to treat extraction of mineral brines in a similar way to extraction of solid minerals. In addition, the scientific and engineering principles used to characterize mineral brine and resources and reserves are substantially similar to those used to characterize solid mineral resources and reserves, and Guide 7 has been applied historically to registrants that own or operate mining properties containing mineral brines.[1332] Therefore, excluding mineral brines from the definition of mineral resource could result in investors receiving less information about these resources than under the current disclosure framework.

iii. Classification of Mineral Resources

We are adopting the proposed requirement that a registrant with

[1326] *See supra* note 1311 and accompanying text.

[1327] *See supra* note 1313 on the generalizability of the results.

[1328] *See supra* Section IV.B.4.i., for discussion of the additional search costs and compensation costs that registrants also may incur.

[1329] *See supra* Section II.E.2.

[1330] *See supra* note 479 and accompanying text.

[1331] *See supra* note 502 and accompanying text.

[1332] *See supra* Section II.E.2.iii.

material mining operations classify its mineral resources into inferred, indicated, and measured mineral resources, in order of increasing confidence based on the level of underlying geological evidence.[1333] This more closely aligns the Commission's disclosure framework for mining registrants with CRIRSCO-based disclosure standards. We do not expect this requirement to result in significant compliance costs for registrants.

Estimates of mineral resources are associated with a greater geological uncertainty than estimates of mineral reserves. As discussed above, geological uncertainty is a crucial factor in a registrant's determination of mineral resources.[1334] As such, the classification of mineral resources in the final rules, which is based on the level of geological uncertainty, will benefit investors by helping them better assess the uncertainty surrounding mineral resource estimates.

The adopted definition of inferred mineral resource provides that the level of geological uncertainty associated with an inferred mineral resource is too high to apply relevant technical and economic factors likely to influence prospects of economic extraction in a manner useful for evaluation of economic viability.[1335] This change from the proposal will make the adopted definition substantially similar to the definition under CRIRSCO-based disclosure standards, further increasing the comparability of registrants' mineral resource disclosures with those in foreign jurisdictions.

Despite the low level of geological confidence in inferred resources, we believe investors' understanding of a registrant's mining operations will be increased by the required disclosure of inferred resources because these resources may be converted into indicated or measure mineral resources. However, such disclosure could lead to inefficient capital allocation decisions if investors overestimate the value of these resources. The risk that investors will overestimate the value of inferred resources is mitigated by the fact that the definition of inferred resources clearly indicates to investors that these are the mineral resources with the highest degree of geological uncertainty. Moreover, registrants are precluded from using inferred mineral resources as a direct basis for determining mineral reserves (they would first have to be converted into indicated or measured mineral resources). Therefore, registrants will have limited incentive to aggressively report inferred resources, because the likelihood that these mineral resources will ultimately be determined to be mineral reserves in the future is low.

The final rules do not require that a qualified person quantify the minimum percentage of inferred mineral resources he or she believes will be converted to indicated and measured mineral resources with further exploration. The final rules also do not require the qualified person to disclose the uncertainty associated with indicated and measured mineral resources by providing the confidence limits of relative accuracy, at a specific confidence level, of the preliminarily estimated production quantities per period derived from these resources.[1336] Although this approach for reporting the level of uncertainty is consistent with current practice in the industry,[1337] several commenters indicated that it could be impractical or inappropriate, unduly burdensome, and costly for many registrants.[1338] The less prescriptive approach we are adopting will avoid these potential costs. It will also mitigate potential misinterpretation of the information by investors, who—under the more prescriptive approach—might have misconstrued information to be more precise than it, in fact, is. In turn, investors may have made insufficiently informed decisions, leading to inefficient capital allocation. Additionally, the final rule will ensure greater consistency with CRIRSCO-based disclosure standards. As noted elsewhere, consistency with CRIRSCO-based disclosure standards reduces the compliance burden and costs associated with duplication of effort for registrants who are required to provide disclosure in multiple jurisdictions. Consistency also reduces the scope for investor confusion arising from differing standards of disclosure in different jurisdictions and the costs of gathering and processing information for investors.

iv. Initial Assessment Requirement

Mineral resource disclosures must be supported by an initial assessment by a qualified person. This assessment, at a minimum, must include a qualitative evaluation of technical and economic factors to establish the economic potential of the mining property or project.[1339] Compared to the proposed rule, which required the application of modifying factors, the final rule is closer to CRIRSCO-based disclosure codes. The initial assessment requirement—by supporting the disclosure of mineral resources—yields the benefits noted above from permitting the disclosure of mineral resources and serves to improve the accuracy and reliability of the mineral resource estimates for investors.[1340] The term ''initial assessment'' varies from the term ''resource report,'' as is commonly used in jurisdictions adhering to CRIRSCO-based disclosure standards. As noted by some commenters,[1341] this variation, in addition to other minor differences, could create uncertainty for registrants. However, given that the final rules are in much greater alignment with CRIRSCO-based disclosure standards, we do not expect these differences to result in significant additional compliance burdens for the majority of registrants reporting in jurisdictions adhering to CRIRSCO-based disclosure standards.

However, some registrants may face duplication costs or additional compliance costs to the extent that the different requirements are not interchangeable or do impose additional requirements. For example, since the final rules require qualified persons who choose to include inferred mineral resources in cash flow analysis in an initial assessment to disclose the results of the analysis with and without inferred mineral resources,[1342] which is not required by Canada's NI 43–101, a registrant that is dual-listed in Canada may be required to conduct the extra analysis and produce further documentation to comply with both disclosure standards. In these situations, there could be a cost to investors in terms of processing information, as investors may be unsure of how to reconcile and interpret differences. However, if the differences (*e.g.,* analysis with and without inferred resources) in the final rules vis-à-vis CRIRSCO-based disclosure standards enhance the quality of disclosure, then investors will benefit.

An alternative suggested by some commenters is to not define ''initial assessment,'' but instead adopt the standard used in CRIRSCO-based codes to make determinations of mineral resources. It is difficult to assess whether this alternative would result in lower costs for registrants since CRIRSCO-based disclosure standards do

[1333] See *supra* Section II.E.3.

[1334] See *supra* Section II.E.3.iii.

[1335] *See id.*

[1336] *See supra* Section II.E.3.iii.c.

[1337] *See supra* note 531 and accompanying text, affirmed by SME 1.

[1338] *See, e .g.,* letters from CBRR, MMSA, Rio Tinto, SME 1, and Vale.

[1339] *See supra* Section II.E.4.

[1340] *See supra* Section IV.B.6.i.

[1341] See letters from AngloGold, BHP, Eggleston, MMSA, and SRK 1.

[1342] *See* Item 1302(d)(4)(ii) of Regulation S–K.

not prescribe the specific requirements that a technical report must satisfy to support a determination of resources. For registrants not disclosing under CRIRSCO-based disclosure codes, there is likely to be no significant difference in the additional costs between adopting the final rules or simply adopting CRIRSCO-based disclosure standards. However, for registrants that already provide disclosure of resources in jurisdictions that conform to CRIRSCO-based disclosure standards, there may be lower compliance costs under this alternative to the extent the initial assessment requirement is different from the type of study the registrants currently conduct to determine and support disclosure of mineral resources.

In a change from the proposed rules in response to comments received, we are not requiring that the qualified person use a commodity price that is no higher than the average spot price during the 24-month period prior to the end of the last fiscal year, unless prices are defined by contractual arrangements.[1343] The final rules instead provide that, when estimating mineral prices, the qualified person must use a price assumption that is current as of the end of the registrant's most recently completed fiscal year for each commodity that provides a reasonable basis for establishing the prospects of economic extraction for mineral resources.[1344] Similar to the proposed rules, the qualified person may use a price set by contractual arrangement, provided that such price is reasonable, and that the use of such a contractual price is disclosed.[1345]

Providing greater flexibility in the methodology used for estimating prices will bring the Commission's requirements closer to global industry practice as well as the practice that registrants use for economic decision-making.[1346] In this regard, the final rules will allow registrants to use the same prices for disclosing mineral resources in Commission filings as they do for their own internal management purposes and when reporting in CRIRSCO-based jurisdictions, which should significantly limit the compliance costs of the final rules while allowing the qualified person to exercise professional judgment commensurate and consistent with the regulatory intent of the qualified person requirement. A potential cost of the increased flexibility of the final rules is that registrants may use this discretion to select overly optimistic prices, which the proposed rules restricted through a ceiling price feature. Overly optimistic prices may mislead investors about the actual prospects of the mining operations by inflating the value of the estimated mineral resources. Any tendency for registrants to select overly optimistic prices in an attempt to inflate estimates is mitigated under the final rules by the requirement that the qualified person disclose the price used and explain his or her reasons for selecting the particular price, including the material assumptions underlying the selection.

An alternative to the final rule would be to require registrants also to provide a sensitivity analysis of the estimates of mineral resources and reserves with respect to the commodity price used, where the price points used in the sensitivity analysis surrounding the base price would be selected by the registrant. A sensitivity analysis with respect to price would help investors better assess the price risk associated with the estimated mineral resources and reserves and could, therefore, lead to more informed investment decisions. However, because a sensitivity analysis would require registrants to calculate at least three estimates of resources and reserves (the base prices, as well as one price each above and below the base price, respectively), compliance costs would be higher than under the final rules. These compliance costs would be mitigated to the extent that registrants are able to use estimates based on existing calculations from an internal sensitivity analysis.

Another alternative would be to use a ceiling price model as in the proposed rules, but calculate the ceiling price differently, for example, as spot, forward, or futures price as of the end of the last fiscal year to incorporate more quickly shifts in price trends. However, due to the volatility associated with prices from any given specific day, the disclosed estimates of mineral resources and reserves may fluctuate more than the underlying fundamental values of the resources and reserves, thus increasing the uncertainty of the estimates for investors. The higher volatility of this alternative ceiling price may create even higher compliance costs as registrants may have to provide more frequent recalculations of their mineral resources and reserves, solely for the purpose of their SEC filings.

7. Treatment of Mineral Reserves

i. Framework for Determining Mineral Reserves

We are revising, as proposed, the definition of mineral reserves to align it with CRIRSCO-based disclosure standards by requiring that a qualified person apply defined modifying factors to indicated and measured mineral resources in order to convert them to mineral reserves.[1347] The adopted framework requires a registrant's disclosure of mineral reserves to be based on a qualified person's detailed evaluation of the modifying factors as applied to indicated or measured mineral resources, which would demonstrate the economic viability of the mining property or project. The final rules require disclosure of reserves to be based on the work of a qualified person.[1348] Because the adopted treatment of mineral reserves is consistent with established practices in the mining industry, we do not expect a significant increase in compliance costs for most registrants beyond the potential cost increases related to the qualified person requirement and the filing of the technical report summary, as discussed above.

In a change from the proposed rules, the adopted definition of mineral reserve provides that a mineral reserve includes diluting materials and allowances for losses that may occur when the material is mined or extracted.[1349] In response to commenters' concerns, we have adopted this change to make the definition consistent with the comparable definition in CRIRSCO-based disclosure standards, and to remove an inconsistency in the proposed rules.[1350] By removing this inconsistency and more closely aligning with CRIRSCO-based disclosure codes, the final rules will facilitate compliance and avoid potential confusion for registrants and investors.

In another change to the proposed rules, as a result of comments received, the final rules no longer define modifying factors to include factors used to establish the economic prospects of mineral resources. Instead, the adopted definition provides that modifying factors are the factors that a qualified person must consider applying to indicated and measured resources and then evaluate in order to establish the economic viability of mineral

[1343] *See supra* Section II.E.4.iii.

[1344] *See* Item 1302(d)(2) of Regulation S–K.

[1345] *See id.* We are also adopting this estimated pricing methodology for the determination and disclosure of mineral reserves. *See infra* Section II.F.

[1346] *See supra* note 651.

[1347] *See supra* Section II.F.1.iii.

[1348] *See id.*

[1349] *See* the definition of mineral reserve in 17 CFR 229.1300.

[1350] *See supra* note 768 and accompanying text.

reserves.[1351] This change is consistent with the change made to the initial assessment requirement, which no longer requires application of the modifying factors at the resource determination stage.[1352] Referencing modifying factors solely in the context of mineral reserve determination aligns the final rules with CRIRSCO-based disclosure standards, which will benefit registrants and investors by clarifying the level of analysis required at the resource determination stage.

In response to comments received, the final rules no longer require the qualified person to use a price that is no higher than the 24-month trailing average price, as proposed. Instead, the qualified person must use a price for each commodity that provides a reasonable basis for establishing that the project is economically viable. The qualified person will be required to explain his or her reasons for selecting the price and the underlying material assumptions regarding the selection.[1353] We expect the same economic effects related to the final pricing requirement for mineral reserves estimation as those discussed in relation to the final pricing requirement for mineral resources estimation.[1354]

In addition, because of this change from the proposed rules, the final rules will fully allow the use of different prices for estimation of mineral resources and mineral reserves by not imposing a price ceiling, which would otherwise require the prices to be the same when the ceiling is binding. As noted by commenters,[1355] the use of different prices for resources and reserves is a common industry practice. A registrant develops prices and other financial inputs that align with its expected operational schedule. The timeframes for development of resources can differ significantly compared to those for reserves. For these reasons, the removal of a price ceiling will benefit registrants by giving the qualified person more flexibility than under the proposed rules to use different prices for estimation of resources and reserves.

ii. The Type of Study Required To Support a Reserve Determination

The final rules permit registrants to disclose mineral reserves based on a pre-feasibility study rather than a feasibility study as required by current practice. In a change from the proposed rules, we are not requiring the qualified person to justify the use of a pre-feasibility study in lieu of a feasibility study.[1356] In addition, we are not requiring the use of a feasibility study in high-risk situations as required by the proposed rules. Under the final rules, the qualified person will determine the appropriate level of study required to support the determination of mineral reserves under the circumstances based on his or her professional judgment.[1357]

Pre-feasibility studies, while adequate for disclosure of mineral reserves, require less time to produce than feasibility studies. For example, one study estimates that between 12% and 15% of the engineering work on a project is completed by the end of the pre-feasibility study compared to between 18% and 25% at the end of the feasibility study.[1358] One commenter, a professional mining consulting company, provided cost estimates for a third-party qualified person producing and filing technical reports in support of disclosure of reserves in Canada and Australia.[1359] For technical reports based on a pre-feasibility study the estimated cost range is $200,000–$500,000, whereas for technical reports based on a feasibility study, this commenter estimated the cost range to be $500,000–$1,500,000.[1360] Another commenter, a large multinational foreign private issuer, stated that: ''For major projects, Pre-Feasibility Studies can cost around 30 to 50% of the cost of Feasibility Studies.'' [1361] These estimates suggest that a pre-feasibility study will be significantly less costly than a feasibility study, but also that there is significant variability in the relative cost of pre-feasibility studies compared to feasibility studies.

Allowing pre-feasibility studies may be especially beneficial for registrants that already have studies meeting the pre-feasibility standard, but not the feasibility standard. The lower cost may also benefit smaller registrants more to the extent they are likely to be more capital constrained than larger registrants and to the extent feasibility studies are associated with greater fixed costs. Allowing the use of pre-feasibility studies may therefore facilitate disclosures of mineral reserves by smaller registrants, which should be beneficial both to the registrants and investors.

In addition to compliance cost savings, allowing the use of pre-feasibility studies could provide several ancillary benefits for registrants and investors. Because CRIRSCO-based disclosure standards already allow the use of pre-feasibility studies, allowing their use under the final rules will place U.S and non-Canadian foreign registrants on an equal footing with Canadian registrants availing themselves of the ''foreign or state law'' exception and with other mining companies reporting only in jurisdictions using CRIRSCO-based disclosure standards. Thus, allowing the use of a pre-feasibility study will allow U.S. and non-Canadian foreign registrants to avoid producing studies that they find unnecessary and, consequently, to avoid compliance costs that could place them at a competitive disadvantage. The final rules allow a qualified person to exercise the same discretion as qualified persons in other jurisdictions, thus providing a level of rigor appropriate for internal economic decision making and for investors. Finally, the detailed requirements for feasibility studies should facilitate compliance, while increasing consistency in disclosures where feasibility studies are used to determine mineral reserves.

A pre-feasibility study is typically associated with a lower confidence level than a feasibility study. Therefore, allowing the use of pre-feasibility studies may lead to higher uncertainty associated with mineral reserve disclosures. The greater uncertainty associated with the lower level of rigor of a pre-feasibility study vis-à-vis a feasibility study may lead to less accurate or less complete information being disclosed to investors, thus decreasing investors' ability to make efficient investment decisions. However, we note that the registrant has incentives to choose the level of rigor that is appropriate for its own economic

[1351] *See* the definition of modifying factors in 17 CFR 229.1300.

[1352] *See supra* Section II.E.4.

[1353] *See supra* Section II.F.2.

[1354] *See supra* Section IV.B.6.iv.

[1355] *See* letters from AIPG, Alliance, Amec, AngloGold, BHP, CBRR, CRIRSCO, Eggleston, MMSA, Rio Tinto, SAMCODES 1, SME 1, SRK 1, Vale, and Willis.

[1356] *See supra* Section II.F.2.

[1357] *See supra* note 845 and accompanying text.

[1358] *See* Richard L. Bullock, ''Mineral Property Feasibility Studies,'' in 1 *SME Mining Engineering Handbook,* at 227–261.

[1359] *See* letter from SRK 1.

[1360] These cost estimates are from a single comment letter, and we lack other data by which we can evaluate or verify these estimates. However, we use these cost estimates to generally illustrate the potential magnitude of the aggregate cost savings to all mining registrants from the permitted use of pre-feasibility studies. For example, assuming the 267 current mining registrants on average determines reserves on one property per year, if they use a feasibility study, the aggregate cost would be $267 million at the mid-range value of the estimated cost of a feasibility study (267 × $1,000,000). If they instead use a pre-feasibility study, the aggregate cost would be $97.5 million at the mid-range value of the estimated cost of a pre-feasibility study (267 × $350,000), which would represent aggregate cost savings of approximately $170 million relative to completing a feasibility study.

[1361] *See* letter from Rio Tinto.

decision making, and that is needed to attract investors and lower its cost of capital. We expect that registrants will balance the benefits (including the reduced costs of capital) of a feasibility study against the incremental cost of producing such a study (vis-à-vis a pre-feasibility study). Therefore, we expect some registrants will still find it beneficial to conduct feasibility studies in support of determination of mineral reserves, just as mining companies in other jurisdictions using CRIRSCO-based disclosure rules sometimes choose feasibility studies to support mineral reserve determination.

Moreover, several aspects of the final rules mitigate the risk resulting from permitting the use of a pre-feasibility study to support the determination and disclosure of mineral reserves.[1362] For example, a qualified person cannot convert an inferred mineral resource to a mineral reserve without first obtaining new evidence that justifies converting it to an indicated or measured mineral resource. This will help limit the uncertainty of mineral reserve estimates based on a pre-feasibility study. Another example is the provision that requires that the pre-feasibility study identify sources of uncertainty that require further refinement in a final feasibility study. The disclosure of these sources of uncertainty will help investors assess the risk of the mineral reserve estimates based on a pre-feasibility study. A third example is the requirement that the qualified person will have to perform additional evaluative work in high-risk situations to meet the level of certainty required for a pre-feasibility study.[1363]

Similar to the proposal, the final rules provide that a pre-feasibility or feasibility study must define, analyze, or otherwise address in detail, to the extent material, various factors such as environmental regulatory compliance, the ability to obtain necessary permits, and other legal challenges that can directly impact the economic viability of a mining project. Some commenters objected to this aspect of the proposed rules, with one commenter urging the Commission to remove these factors due to the potential for duplication or imposition of new, burdensome requirements.[1364] Another commenter noted that there are other regulatory agencies for such concerns,[1365] while other commenters observed that the factors are outside of the expertise of most qualified persons.[1366] Because registrants may already incorporate some of these concerns into the permitting process with state, federal, and other regulators, analyzing such items would, as noted above, impose a duplication cost. However, as suggested by commenters concerned with duplication, consideration of these factors is already part of industry practice. Moreover, investors may benefit from the discussion and analysis of these factors, as they become better informed about relevant constraints that face the registrant and that may decrease or eliminate the value of a registrant's project. This, in turn, would allow investors to incorporate this non-operational, but value-relevant, information into their decision making, thereby reducing information asymmetries between investors and registrants. In addition, modifications to this requirement, such as adding a materiality qualifier and simplifying and clarifying the description of the factors, will help mitigate any additional costs for registrants.

As noted by several commenters,[1367] some mining sectors are not as complex as others, allowing them to make reserve (or resource) determinations with more focus on modifying factors that ''may be significantly more critical than geoscientific knowledge of the deposit in determining mineral resources and mineral reserves.'' [1368] One coal mining company, in particular, objected to the requirement for either a pre-feasibility or feasibility study for reserve determination on the grounds that it would cost ''several million dollars'' without providing a benefit [1369] and also asserted that public disclosure of information contained in those studies would likely cause it competitive harm.[1370] To address concerns that certain registrants' practices do not meet industry standards for mineral reserves determination, one alternative to the final rules, as suggested by one commenter [1371] would be to allow reliance on on-going operations or other internally developed analyses, which may be less rigorous than the final rules' requirements to support a mineral reserves determination for certain less complex operations (*e.g.,* coal and certain industrial minerals such as aggregates). Such an alternative would impose no additional costs on these registrants. To the extent that such an accommodation would not diminish the value of information that investors receive vis-à-vis the requirements of the final rules, investors will not experience a reduction in benefits compared to the baseline. However, this alternative could come at a cost of the decreased rigor relative to that contained in a pre-feasibility or feasibility study that meets the requirements of the final rules. This lack of rigor may deprive investors of information that would better inform their investment decisions. Moreover, any such accommodations would dilute the harmonization efforts of the new rules.

8. Specific Disclosure Requirements

i. Requirements for Summary Disclosure

Guide 7 does not explicitly address what disclosure should be provided when a registrant has multiple mining properties. The final rules require that registrants that own or otherwise have economic interest in multiple mining properties provide summary disclosure of their mining operations.[1372]

We expect that, for registrants with material mining operations, requiring an overview of their mining operations, regardless of whether they have material individual properties, will be useful to investors and help foster more efficient and effective disclosure. The information required to be disclosed aligns with what most registrants already provide in their SEC filings, but the requirement will ensure that the summary information is provided by all registrants, thereby incrementally improving comparability across registrants. We believe the summary disclosure requirement will in particular be beneficial to investors in the cases where no individual mining property is material to the registrants but the mining operations in aggregate are material. In these cases, the summary disclosure requirement will

[1362] *See supra* II.F.2.iii.

[1363] *See supra* II.F.2.iii.

[1364] *See* letter from NMA 2.

[1365] *See* letter from SME 1.

[1366] See letters from AIPG, Amec, CIM, Davis Polk, Energy Fuels, FCX, NMA 2, SASB, SME 1, and Ur-Energy.

[1367] *See* letters from AIPG, Alliance, NSSGA 1, and NSSGA 2.

[1368] *See* letter from AIPG.

[1369] *See supra* note 851 and accompanying text.

[1370] *See supra* note 852 and accompanying text.

[1371] *See* letter from Alliance. The commenter states that ''coal companies operating in well-defined coal fields'' do not conduct ''formal studies'' because ''on-going operations provide all the feasibility information that is required.'' In such cases, it appears that the information required for a feasibility study (not to mention a pre-feasibility study) is already available. Moreover, the commenter acknowledges that ''coal companies have sufficient technical expertise on staff,'' ''the majority of reserve estimate reports prepared for the coal industry meet all the qualifications outlined in the proposal to define a qualified person,'' and ''A very large number of qualified persons are available to perform this work [resource and reserve determination under USGS Circulars 831 and 891],'' suggesting that coal companies already employ qualified persons who could readily prepare a pre-feasibility or feasibility study with extant information.

[1372] *See supra* Section II.G.1.

help ensure that investors are provided with at least an overview of the registrant's mining operations that can help them make investment decisions.

More specifically, we believe that the summary disclosure of mineral resources and mineral reserves operations at fiscal year's end will provide investors with information that is relevant for their valuation of registrants' mining operations.[1373] For example, the required breakdown of the mineral resources and reserves by category and source (geographic area and property) will provide investors with information helpful for assessing the risk of mining operations. In a change from the proposed rules, and consistent with some commenters' suggestion,[1374] the final rules require registrants to use separate tables when reporting mineral resources and reserves. This change will increase the clarity of the presented information about mineral resources and reserves while reducing the potential for confusion among investors.

The summary disclosure requirement will increase costs for registrants, albeit to a varying degree. Given that the requirement for summary disclosure in the final rules largely aligns with what most registrants already provide in their SEC filings, we expect any increase in costs to be limited for such registrants. For registrants that do not already provide summary disclosure, whether reporting pursuant to Guide 7 or under any of the CRIRSCO-based codes, there could be additional costs to comply with the summary disclosure requirements.

Based on the concern of some commenters that the proposed summary disclosure requirements were too prescriptive,[1375] the final rules have been revised to be more flexible and provide for discretion in choice of format for disclosure. For example, instead of requiring a presentation in tabular form of certain specified information about the 20 properties with the largest asset values, the final rules will permit a registrant to present an overview of its mining properties and operations in either narrative or tabular format.[1376] The less prescriptive nature of this requirement should reduce the reporting burden for registrants and could also result in more useful information being disclosed to investors as registrants can tailor the disclosure more to their own specific circumstances. This change will also align the summary disclosure requirements in the final rules more closely with the CRIRSCO-based disclosure standards.[1377]

A more prescriptive approach, such as in the proposed rules, which may have relatively increased comparability, would have reduced each registrant's ability to capture the specific circumstances of their operations in the disclosure, and could have imposed additional costs to registrants in preparing supplemental clarifying disclosure. As several commenters indicated, due to the diversity of operations in the mining industry, much of the required data will be specific to each registrant.[1378]

An alternative to the proposed summary requirements would be to also require the disclosure required in Tables 1 and 2 to paragraph (b) of Item 1303 to be made available in a structured data format, such as XBRL. When registrants provide disclosure items in a structured data format, investors and other data users (*e.g.,* analysts) can easily retrieve and use the information reported by registrants and perform comparisons. Because the final rules permit tailoring of the disclosures in Tables 1 and 2 to paragraph (b) of Item 1303 to registrants' unique facts and circumstances and provide filers with some flexibility in how to report the required information, the usefulness of requiring the data in these tables to be made available in the XBRL format will be decreased. As discussed above, several commenters indicated that much of the required data would be specific to each registrant.[1379] For these reasons we believe such a requirement would provide limited benefit to investors while increasing the compliance burden on registrants.

ii. Requirements for Individual Property Disclosure

We are adopting, with some modifications, the proposed requirement that a registrant with material mining operations must disclose certain information about each property that is material to its business or financial condition.[1380] The items required to be disclosed for material individual properties are substantially similar to items called for by Item 102 of Regulation S–K and Guide 7.[1381] Also, these disclosures are substantially similar to what is called for under CRIRSCO-based disclosure standards.[1382] However, we expect the individual disclosure requirements in the final rules will increase the amount and type of individual property information that registrants disclose. Much of this new information will be a direct consequence of the requirements in the final rules to disclose material exploration results and mineral resources. Another new item of information will be the required comparison of a registrant's mineral resources and mineral reserves as of the end of the last fiscal year against the mineral resources and mineral reserves as of the end of the preceding fiscal year, with an explanation of any change between the two.[1383]

The requirement for individual property disclosure in the final rules will benefit investors by providing more consistency in mining registrants' disclosures and increasing the amount of information about registrants' material mining properties available to investors, thereby improving their ability to assess the value and risk of these properties. By helping investors gain a more comprehensive understanding of a registrant's mining operations beyond the information provided in the summary disclosure, investors should be able to better assess the value and the risk associated with a registrant's material mining properties. In a change from the proposed rules, and for the same reasons as the corresponding change to the summary disclosure requirement, the final rules require registrants to use separate tables when reporting mineral resources and mineral reserves for material properties. As in the case of summary disclosure, we believe this change will reduce the potential for confusion among investors.

We expect that the individual property disclosure requirement will result in additional compliance costs for registrants to the extent they do not currently disclose substantially similar information. In particular, because the required year-over-year comparison of a registrant's mineral resources and reserves is not required by Guide 7, we expect registrants that are not currently complying with foreign codes requiring such disclosure to incur additional compliance costs related to this requirement. We expect the incremental compliance costs associated with property disclosure in Commission filings will be the largest the first time registrants prepare the disclosure and then may decline over time because companies should only incur the costs

[1373] *See supra* note 955 and accompanying discussion.

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[1374] *See supra* note 931 and accompanying text.

[1375] *See, e.g., supra* note 923 and accompanying text.

[1376] *See supra* Section II.G.1.iii.

[1377] *See id.*

[1378] *See supra* note 925 and accompanying text.

[1379] *Id.*

[1380] *See supra* Section I.G.2

[1381] *See supra* note 1033

[1382] *See supra* note 1034.

[1383] *See supra* Section II.G.2.iii.

to update their systems and procedures to collect and format the required information once, and thereafter will only have to update the reported information.

Based on the concern of some commenters that the proposed individual property disclosure requirements were too prescriptive,[1384] the final rules have been revised to be more flexible and provide for discretion in choice of format for disclosure. In particular, the removal of the requirement for tabular formats for several of the required disclosures, including the year-over-year comparison of mineral resources and mineral reserves, will reduce compliance costs for registrants relative to the proposed rules, while still eliciting useful information for investors.[1385] The individual property disclosure requirement in the final rules is also more closely aligned with the CRIRSCO-based disclosure standards than the proposed rules, which should help limit the burden for registrants that are subject to one or more of the other CRIRSCO-based mining disclosure codes. For example, as with the summary disclosure requirement, the final rules provide that a qualified person must base each mineral resource and mineral reserve estimate on a reasonable and justifiable price, which will allow registrants to use the same prices for disclosing mineral resources and mineral reserves in Commission filings as they do for their own internal management purposes and when reporting in CRIRSCO-based jurisdictions.

In a change from the proposed rule, and as a result of comments received, a provision relating to the individual property disclosure requirement permits a registrant to include historical estimates of the quantity, grade, or metal or mineral content of a deposit or exploration results that a registrant has not verified as a current mineral resource, a current mineral reserve, or current exploration results, in a filing pertaining to mergers, acquisitions, or business combinations if the registrant is unable to update the estimate prior to completion of the relevant transaction.[1386] In such an instance, the registrant must disclose the source and date of the estimate, state that a qualified person has not done sufficient work to classify the estimate as a current estimate of mineral resources or mineral reserves, and state that the registrant is not treating the estimate as a current estimate of mineral resources or mineral reserves.[1387] Without this provision, certain value increasing acquisitions or other similar business transactions will be more difficult to complete, which could hamper the growth opportunities of registrants and impose an undue burden. However, permitting the use of historical estimates may increase the potential risk to investors because they will have to rely on information that is not current. To mitigate this risk, in the event historical estimates are permitted, the adopted provision will require that investors receive additional information to help them evaluate an investment in a registrant that has engaged in a merger or similar business transaction involving the use of a historical estimate.[1388]

Similar to the summary disclosure requirement, we could have, as an alternative, required the disclosures in Tables 1 and 2 to paragraph (d)(1) of Item 1304 to be made available in XBRL format. In light of the flexibility provided in the final rules for the disclosures in Tables 1 and 2 to paragraph (d)(1) of Item 1304, for similar reasons as those discussed above in the case of the summary disclosure requirement, we believe requiring this data to be presented in a structured format would provide limited benefits to investors while increasing the compliance burden on registrants. Several commenters opposed an XBRL requirement due to the cost burden and limited benefits for users of the information.[1389]

iii. Requirements for Technical Report Summaries

The final rules require a registrant disclosing information concerning its mineral resources or mineral reserves determined to be on a material property to file a technical report summary by one or more qualified persons to support such disclosure of mineral resources or mineral reserves.[1390] However, as previously discussed, unlike the proposed rules, the final rules permit, but do not require, a registrant to file a technical report summary to support the disclosure of material exploration results.[1391]

Requiring registrants to file a technical report summary in support of disclosure of mineral resources or mineral reserves will enhance the transparency and credibility of the disclosures and also provide investors and analysts with technical details to allow them to improve their own individual assessments of the value of the mining properties.[1392] These benefits should be especially pronounced in conjunction with the disclosure of mineral resources, which are typically associated with a higher degree of uncertainty compared to estimates of mineral reserves.

We expect that registrants will experience an increase in compliance costs related to the preparation of the technical report summaries for material mining properties. Even registrants that currently produce technical documentation and reports in compliance with similar requirements in other jurisdictions will likely incur additional costs to conform the reports to the specific requirements in the final rules. In this regard, the final rules seek to limit the additional compliance costs by requiring that a registrant only has to file a technical report for material properties, rather than for all its properties, and only when the registrant is first reporting, or reporting a material change in, mineral resources or mineral reserves. We also note that the technical report summary requirement may be relatively more burdensome for smaller registrants, as suggested by commenters,[1393] due to the fixed cost in preparing a technical report summary and because smaller registrants are likely to have a higher fraction of mining properties classified as material to the extent they have fewer mining properties than larger registrants. However, in response to such concerns, the final rules do not require the filing of technical report summaries when disclosing material exploration results. To the extent that smaller registrants are more likely to be engaged in exploration activities, this change in the final rules will help limit the regulatory burden for smaller registrants in particular. Nevertheless, smaller registrants conducting mining operations beyond exploration may still incur relatively larger compliance costs.

The technical report summary requirement is similar to the corresponding requirements in CRIRSCO-based disclosure standards, which generally should mitigate the incremental impact of the final rules on registrants currently reporting in jurisdictions that use these codes. However, some of the differences may

[1384] *See supra* note 982 and accompanying text.

[1385] *See supra* Section II.G.2.iii.

[1386] *See* Item 1304(h) of Regulation S–K

[1387] *See id.*

[1388] *See supra* note 1069 and accompanying text.

[1389] *See supra* notes 1015–1017 and accompanying text.

[1390] *See supra* Section II.G.3.

[1391] *See id.*

[1392] *See supra* notes 445, 959, and 1262 along with the accompanying discussions. *See* also, Kenneth A. Fox, ''The usefulness of NI 43–101 technical reports for financial analysts'' (2017), Resources Policy, Volume 51, pp. 225–233.

[1393] *See supra* note 205 and accompanying text.

be economically important. For example, although jurisdictions adopting CRIRSCO-based disclosure standards require that a company's mineral resources and mineral reserves be based on and fairly reflect information and supporting documentation prepared by a ''competent'' or ''qualified'' person, only some jurisdictions require the filing of a technical report to support such disclosure.[1394] Accordingly, we expect that the final technical report summary requirement will impose incremental compliance costs for registrants currently reporting in foreign jurisdictions without requirements to file technical reports that may approach the magnitude of the incremental costs for registrants not reporting in foreign jurisdictions. At the same time, these registrants may experience higher incremental benefits (as identified above) in connection with the requirement to file technical report summaries, since that information will not necessarily be disclosed elsewhere.

One commenter estimated that the cost of hiring a third-party qualified person to prepare a technical report in support of resource estimates would range from $40,000 to $80,000.[1395] Another commenter estimated that the cost of preparing a technical report summary will typically require 300 to 500 hours at a cost of over $100,000 ''when all the information is already available to the QP.'' [1396] This suggests the estimate is the incremental cost associated with the reporting requirement alone. It is not clear to what extent this estimate varies with property or company size, type of mining operations, or whether a company is already providing similar disclosures, for example on NI 43–101F1.

As an alternative to the final rule, and in line with some commenters' views,[1397] we could have omitted the requirement to file a technical report summary, which would reduce expected compliance costs and be consistent with the majority of CRIRSCO-based disclosure codes, although it would not be consistent with major markets for mining companies such as Canada, Australia, and South Africa. Under this alternative, the potential benefits discussed above that come from investors having access to the information in the technical report summary would be foregone. Any benefit from the increased accountability that comes with liability for filing the information with the Commission also would be foregone under this alternative. Another alternative would be not to require the preparation of a technical report summary to support disclosure of mineral reserve and mineral resource estimates in Commission filings. This alternative would further reduce compliance costs relative to the proposed rules. However, it also could reduce consistency in the required disclosures and increase the uncertainty about the quality of mineral resources estimates, given that the level of confidence is lower for mineral resource estimates than for mineral reserves estimates.

iv. Requirements for Internal Controls Disclosure

The final rules require a registrant to describe the internal controls that it uses in the disclosure of its exploration results and in its estimates of mineral resources and mineral reserves.[1398] This requirement aligns the Commission's disclosure regime with the requirements of CRIRSCO-based disclosure standards.

We expect disclosure of the internal controls that a registrant uses to improve investors' understanding of the risks related to the quality and reliability of a registrant's disclosure of exploration results and estimates of mineral resources and mineral reserves, which may help improve investment decisions. We also expect the requirement will increase compliance costs for registrants. However, registrants already disclosing internal controls in jurisdictions using CRIRSCO-based disclosure standards or currently voluntarily providing similar disclosures in their SEC filings should not face substantial additional compliance burdens.

9. Conforming Changes to Certain Forms Not Subject to Regulation S–K

i. Form 20–F

We are adopting conforming changes to Form 20–F that are intended to ensure consistency in mining disclosures across both domestic registrants and foreign private issuers (excluding Canadian Form 40–F filers).[1399] The changes may affect Canadian registrants that report pursuant to Form 20–F and are currently permitted to provide additional mining disclosure under NI 43–101 pursuant to the ''foreign or state law'' exception under Industry Guide 7.[1400] The final rules eliminate this exception, which may benefit investors by increasing comparability across all registrants.

Compliance costs for affected registrants may increase to the extent that, as discussed previously, the final disclosure requirements differ from NI 43–101. We do not generally expect these costs to be significant given that the adopted disclosure requirements are based on the NI 43-101 requirements.

ii. Form 1–A

We are adopting conforming changes to Form 1–A that will require Regulation A issuers with material mining operations to comply with the mining disclosure requirements in subpart 1300 of Regulation S–K.[1401] Thus, these issuers will incur the benefits and costs of these requirements, as previously discussed. Because Regulation A issuers are typically smaller companies, the economic considerations discussed above with respect to smaller companies may apply to this group of issuers. In general, we expect that the final rules may benefit Regulation A issuers, given that smaller companies typically experience a higher degree of information asymmetry between the company and investors, which may increase capital costs and reduce access to financing. In particular, we believe the new ability to disclose mineral resources provided by the requirements in the final rules may be beneficial to Regulation A issuers, given that smaller companies are more likely to be exploration stage issuers.

Nevertheless, the expected increase in compliance costs from the adopted mining disclosure requirements may be of particular importance for mining issuers that are likely to consider Regulation A offerings. If these costs are perceived to be too high, such issuers may choose to pursue alternative methods of financing, such as raising capital in private offerings pursuant to Regulation D or another exemption

[1394] *See supra* Section IV.A.1. We estimate that 99 out of the 267 identified mining registrants (approximately 37%) also report in foreign jurisdictions that require the filing of a technical report as of December 31, 2017.

[1396] *See* letter from MMSA. This estimate was provided in response to a question about the costs associated with producing and filing technical reports in Canada or Australia, and may not include the costs of a study like the initial assessment required under the final rules. As discussed above, to the extent these costs are also representative of the costs of a qualified person preparing a technical report summary in support of disclosure of mineral resource estimates under the final rules, we expect registrants that are reporting consistent with CRIRSCO-based disclosure standards to already incur these costs, and therefore will only incur limited additional costs in terms of conforming the reports to the specific requirements in the final rules.

[1397] *See supra* note 1090 and accompanying text.

[1398] *See supra* Section II.G.4.

[1399] *See supra* Section II.H.1.

[1400] As previously mentioned, Instruction 1 to Item 4 of Form 20–F directs a registrant to furnish the information specified in Industry Guide 7. *See supra* note 1200 and accompanying text.

[1401] *See supra* Section II.H.2.

under the Securities Act. To the extent these alternative methods of financing are less efficient or provide fewer investor protections than Regulation A offerings, there could be adverse consequences for both issuers and investors. Under the final rules, mining issuers may avoid the costs associated with the prescribed technical reports by forgoing disclosure of exploration results, mineral resources, and mineral reserves, as defined, which may mitigate any negative effect of increased compliance costs on the propensity to use a Regulation A offering. However, foregoing these disclosures may put such issuers at a competitive disadvantage relative to their peers that are raising capital with the benefit of these disclosures. In addition, in response to concerns about compliance costs, we have adopted several provisions that we believe will help limit the overall compliance burden for all issuers, including smaller companies.[1402] Overall, considering that we have identified only one Regulation A issuer that currently provides disclosure about its mining operations, we do not expect the Form 1–A conforming amendments to have a significant economic impact on Regulation A offering practices.

One alternative to the conforming amendments to Form 1–A would be to require the proposed mining disclosures for Tier 2 offerings only. Because Tier 2 offerings may be larger than Tier 1 offerings, the relative importance of fixed compliance costs could be lower for Tier 2 issuers, and thus the net benefit to Tier 2 issuers from the disclosure requirements could potentially be larger. However, under this alternative, the benefits from providing mining disclosure, as discussed above, would be foregone for Tier 1 issuers. We note that the sole Regulation A issuer that currently provides disclosure about its mining operations conducted a Tier 2 offering and would not be affected by this alternative. Another alternative would be to require disclosure only of the information in the summary disclosure requirement discussed in Section II.G.1., above, including for issuers that only own one material mining property. This would lower compliance costs, but would also reduce the information available to investors about material mining properties.

[1402] *See infra* Section VI.F. for examples of adopted provisions that we expect will help limit the overall compliance burden for registrants.

V. Paperwork Reduction Act

A. Background

Certain provisions of the proposed rules contain ''collection of information'' requirements within the meaning of the Paperwork Reduction Act of 1995 (''PRA'').[1403] The Commission published a notice requesting comment on the collection of information requirements in the Proposing Release, and submitted the proposed rules to the Office of Management and Budget (''OMB'') for review in accordance with the PRA.[1404] While several commenters provided comments on the possible costs of the proposed rules, only a few commenters specifically addressed our PRA analysis and provided their own compliance estimates.[1405] We discuss these comments below. Where appropriate, we have revised our burden estimates in part after considering these comments as well as differences between the proposed and final rules.

An agency may not conduct or sponsor, and a person is not required to comply with, a collection of information unless it displays a currently valid control number. The titles for the collections of information are:

- ''Regulation S–K'' (OMB Control No. 3235–007); [1406]
- ''Form S–1'' (OMB Control No. 3235–0065);
- ''Form S–4'' (OMB Control No. 3235–0324);
- ''Form F–1'' (OMB Control No. 3235–0258);
- ''Form F–4'' (OMB Control No. 3235–0325);
- ''Form 10'' (OMB Control No. 3235–0064);
- ''Form 10–K'' (OMB Control No. 3235–0063);
- ''Form 20–F'' (OMB Control No. 3235–0063);
- Regulation A (Form 1–A) (OMB Control No. 3235–0286); and
- Industry Guide 7 (OMB Control No. 3235–0069).

We adopted Regulation S–K and these forms pursuant to the Securities Act and/or the Exchange Act. Regulation S–K and the forms, other than Form 1–A, set forth the disclosure requirements for registration statements and annual reports that are prepared by registrants to provide investors with the information they need to make informed investment decisions in registered offerings and in secondary market transactions. We adopted Regulation A to provide an exemption from registration under the Securities Act for offerings that satisfy certain conditions, such as filing an offering statement with the Commission on Form 1–A, limiting the dollar amount of the offering and, in certain instances, filing ongoing reports with the Commission.

The hours and costs associated with preparing and filing the forms constitute reporting and cost burdens imposed by each collection of information. Compliance with the final rules is mandatory. Responses to the information collections will not be kept confidential, and there will be no mandatory retention period for the information disclosed.

B. Summary of Collection of Information Requirements

Similar to the proposed rules, a principal purpose of the final rules is to modernize the Commission's disclosure requirements and policies for mining properties by more closely aligning them with current industry and global regulatory requirements under the CRIRSCO standards. Like the proposed rules, the final rules require a registrant with material mining operations to:

- Disclose its determined mineral resources, mineral reserves and exploration results in Securities Act registration statements filed on Forms S–1, S–4, F–1 and F–4, in Exchange Act registration statements on Forms 10 and 20–F, in Exchange Act annual reports on Forms 10–K and 20–F,[1407] and in Regulation A offering statements filed on Form 1–A;
- base its disclosure regarding mineral resources, mineral reserves and exploration results in Commission filings on information and supporting documentation by a qualified person; and
- file as an exhibit to its Securities Act registration statement, Exchange Act registration statement or report, or Form 1–A offering statement, in certain circumstances, a technical report summary prepared by the qualified person for each material property that summarizes the information and supporting documentation forming the basis of the registrant's disclosure in the Commission form.[1408]

[1403] 44 U.S.C. 3501 *et seq.*

[1404] 44 U.S.C. 3507(d) and 5 CFR 1320.11.

[1405] *See, e.g.,* letters from BHP and SRK 1.

[1406] The paperwork burden from Regulation S–K is imposed through the forms that are subject to the requirements in that regulation and is reflected in the analysis of those forms. To avoid a Paperwork Reduction Act inventory reflecting duplicative burdens and for administrative convenience, we assign a one hour burden to Regulation S–K. For similar reasons, we assign a one hour burden to the Industry Guides.

[1407] Form 20–F is the form used by a foreign private issuer to file either a registration statement or annual report under the Exchange Act. Because the rule amendments will impose the same substantive requirements for a registration statement and annual report filed under Form 20–F, we have not separately allocated the estimated reporting and cost burdens for a Form 20–F registration statement and Form 20–F annual report.

[1408] A registrant with one or more material mining properties must file the technical report summary when it first reports mineral resources or

The Commission's existing disclosure regime for mining registrants precludes the disclosure of non-reserves, such as mineral resources, unless such disclosure is required by foreign or state law.[1409] In addition, the existing regime permits, but does not require, the disclosure of exploration results. The existing regime also does not currently require a registrant to base its mining disclosure on information and supporting documentation of a qualified person or to file a technical report.

Accordingly, we expect the final rules to increase the reporting and cost burdens for each collection of information. Because the additional requirements imposed by the final rules will be similar to requirements under the CRIRSCO-based mining codes, we expect the increase in reporting and cost burdens to be less for those registrants that are already subject to the CRIRSCO standards. Nevertheless, because there are differences between the final rules' requirements and those under the CRIRSCO-based codes, we expect there will be some increase in reporting and cost burdens even for those registrants already subject to foreign mining code requirements.[1410]

C. Estimate of Potentially Affected Registrants

We estimate the number of registrants potentially affected by the final rules to be 267.[1411] Of these registrants, we estimate that 107 are already subject to the disclosure requirements under one or more of the CRIRSCO-based codes and 160 are subject to only the Commission's disclosure requirements. We therefore expect that 107 registrants will likely incur a smaller increase in reporting and cost burdens to comply with the final rules' requirements [1412] compared with the 160 registrants that will bear the full paperwork burden of the final rules.

The following table summarizes the number of potentially affected registrants by the particular form expected to be filed and whether the registrant is subject to CRIRSCO-based code requirements in addition to the final rules.

PRA TABLE 1—ESTIMATED NUMBER OF AFFECTED REGISTRANTS PER FORM

Form	S–1	S–4	F–1	F–4	10	10–K	20–F	1–A	All forms
Number of Affected Registrants Subject to CRIRSCO Requirements	4	2	1	1	0	40	58	1	107
Number of Affected Registrants Not Subject to CRIRSCO Requirements	14	3	1	0	4	129	9	0	160
Total Number of Affected Registrants	18	5	2	1	4	169	67	1	267

D. Estimate of Reporting and Cost Burdens

After considering the comments received, as discussed below, we have estimated the reporting and cost burdens of the final rules by estimating the average number of hours it will take a registrant to prepare, review and file the disclosure required by the final rules for each collection of information. In deriving our estimates, we recognize that the burdens will likely vary among individual registrants based on a number of factors, including the size and complexity of their mining operations. The estimates represent the average burden for all registrants, both large and small.

We believe that the resulting increase in reporting and cost burdens will be substantially the same for each collection of information since the final rules will require substantially the same disclosure for a Securities Act registration statement or Regulation A offering statement as they will for an Exchange Act registration statement or report. The sole difference between the final rules' effect on Securities Act registrants and Form 1–A issuers, on the one hand, and Exchange Act registrants, on the other, is that a Securities Act registrant and a Regulation A issuer will be required to obtain and file as an exhibit the written consent of each qualified person whose information and supporting documentation provides the basis for the disclosure required under the final rules.[1413] To account for this difference, we have allocated one additional hour to the reporting burdens estimated for the Securities Act registration statement forms and Regulation A's Form 1–A.

We have based our estimated burden hours and costs under the final rules on an assessment by the Commission's staff mining engineers of the work required to prepare the required information for disclosure. In particular, our estimates have been based on the staff engineers' assessment of similar reporting requirements under CRIRSCO standards (especially Canada's NI 43–101 and Australia's JORC).

mineral reserves or when it reports a material change in a prior disclosure of resources or reserves. When disclosing exploration results, a registrant may elect, but is not required, to file a supporting technical report summary.

[1409] Because only Canada has adopted its mining code as a matter of law, the disclosure of non-reserves in Commission filings has been limited to Canadian registrants.

[1410] For example, unlike most of the CRIRSCO-based codes, the final rules require a particular type of technical study, an ''initial assessment,'' to support the disclosure of mineral resources in Commission filings. Only Canada's NI 43–101 and Australia's JORC impose a technical report requirement. *See supra* Section II.E.4. In addition, unlike the CRIRSCO-based codes, the final rules prohibit a qualified person from disclaiming liability for work performed by other experts upon whom the qualified person has relied. *See supra* Section II.C.1.

[1411] We have based this estimate on the number of registrants with mining operations that filed the above described Securities Act and Exchange Act forms from January 2016 through December 2017. In contrast, we estimated that 345 registrants would be affected by the proposed rules based on the number of registrants with mining operations that filed Commission forms from January 2014 through December 2015.

[1412] Most of these registrants are subject to the disclosure requirements in Canada's NI 43–101.

[1413] A Securities Act registrant must file the written consent of an expert upon which it has relied pursuant to Securities Act Rule 436. A Regulation A issuer's obligation to file the written consent of an expert is based on Item 17(11)(a) of Form 1–A.

In addition, we have considered the views of commenters that addressed our PRA estimates for the proposed rules. One commenter is a global mining consulting firm that provides disclosure support for a wide range of mining companies reporting under Canada's NI 43–101 and Australia's JORC.[1414] That commenter indicated that, while our PRA estimates may be appropriate for larger registrants and those registrants that already follow the CRIRSCO standards, they are likely to be low for registrants that do not follow the CRIRSCO standards. The commenter estimated that the latter group of registrants would likely incur a compliance burden that is two to four times the PRA burden estimated for the proposed rules.[1415]

The second commenter is a large global mining company with mineral assets that encompass over 200 individual mineral resource and mineral reserve models, which are currently summarized into supporting technical documentation of approximately 20 separate qualified persons' reports.[1416] That commenter stated that we had significantly underestimated the incremental burden for the Form 20–F annual report, which we estimated would increase by 40 burden hours for registrants subject to the CRIRSCO standards. According to the commenter, the proposed rules would likely result in an increase of 12 FTE [1417] in the first year of compliance, which would eventually diminish to 7 FTE in subsequent years.

When estimating the incremental effects of the proposed rules, the second commenter focused primarily on how the proposed rules' 24-month trailing average pricing standard would affect its mineral resource and mineral reserve estimates.[1418] As previously discussed, we are not adopting the proposed pricing requirement and instead have substituted a pricing requirement that is substantially similar to the ''any reasonable and justifiable'' pricing standard under the CRIRSCO-based codes.[1419] We also note that, in several other respects, the final rules are more closely aligned to the CRIRSCO standards than were the proposed rules.[1420]

Because of the differences between the proposed and final rules, and because the second commenter's incremental burden estimates are those of a registrant that is significantly larger than many of the Commission's current mining registrants,[1421] we are adopting the same incremental burden and cost estimates for CRIRSCO-compliant issuers under the final rules as under the proposed rules, which as noted by the first commenter, may be appropriate for these issuers.[1422] We have not reduced the incremental burden and cost estimates of the final rules for such issuers, despite the increased symmetry between the final rules and the CRIRSCO standards, because we recognize that there are still differences between our rules and those standards, the impact of which will be experienced differently by various registrants, depending on their size and type of mining operation. We believe that, on average, the incremental burden and cost estimates of the final rules will be sufficient to account, for example, for a CRIRSCO-compliant issuer's adjustment to the general prohibition against disclaimers of liability by a qualified person in a technical report summary.

For registrants that are not currently subject to the CRIRSCO standards, we are following the suggestion of the first commenter and increasing our incremental burden and cost estimates.[1423] As commenters have noted,[1424] many registrants in this second category may already be adhering to some of the CRIRSCO standards because they have become accepted industry practice, such as by hiring a qualified person to determine mineral resources in order to eventually be able to determine mineral reserves. However, other registrants, such as those in the industrial minerals and aggregates industry,[1425] may not be complying with any of CRIRSCO's requirements. To the extent that registrants in this latter group intend to engage in public capital-raising, they will incur additional compliance costs and burdens. We believe that our increased incremental burden and cost estimates will on average account for these additional compliance costs and burdens.

We estimate that the final rules will cause a registrant that is not already subject to the CRIRSCO standards to incur an increase of 191 hours in the reporting burden for each Securities Act registration statement (Forms S–1, S–4, F–1, and F–4) and Form 1–A offering statement, and an increase of 190 hours in the reporting burden for each Exchange Act registration statement or annual report (Forms 10, 10–K and 20–F).[1426] For a registrant that is subject to the CRIRSCO standard, we estimate that the final rules will cause an increase of 41 hours in the reporting burden for Securities Act registration statements and Form 1–A offering statements, and an increase of 40 hours in the reporting burden for Exchange Act registration statements and annual reports.[1427]

The following tables summarize, respectively, the estimated incremental and total reporting costs and burdens resulting from the final rules. When determining these estimates, for all forms other than Form 10–K and Form 1–A, we have assumed that 25% of the burden of preparation is carried by the registrant internally and 75% of the burden of preparation is carried by outside professionals retained by the registrant at an average cost of $400 per hour.[1428] For Form 10–K and Form 1–A, we have assumed that 75% of the burden of preparation is carried by the registrant internally and 25% of the

[1414] *See* letter from SRK 1.

[1415] *See id.* Another commenter more generally indicated that we had significantly underestimated the PRA burdens for the proposed rules but did not provide alternative estimates of its own. *See* letter from NSSGA.

[1416] *See* letter from BHP.

[1417] FTE stands for ''full-time equivalent,'' which is the number of hours worked by one employee on a full-time basis.

[1418] *See id.*

[1419] *See, e.g., supra* Sections II.E.4., II.F.2., II.G.1.–2.

[1420] For example, similar to the CRIRSCO-based codes, the final rules permit: The inclusion of inferred mineral resources in a quantitative assessment of a deposit's potential economic viability (*see supra* Section II.E.4.); the use of historical estimates in the context of a merger, acquisition or business combination if certain conditions are met (*see supra* Section II.G.2.); the inclusion of diluting materials and allowances for losses when disclosing mineral reserve estimates (*see supra* Section II.F.1.); and the use of a pre-feasibility study, rather than a feasibility study, without requiring a justification for such use, even in high risk situations (*see supra* Section II.F.2.).

[1421] In this regard, based on the staff's review of Securities Act and Exchange Act filings made by registrants with mining operations from January 2016 through December 2017, we estimate that approximately 114 of the 267 registrants may be considered small entities.

[1422] *See* letter from SRK 1.

[1423] We are doubling our previous incremental burden and cost estimates, which is within the range suggested by the first commenter. *See* letter from SRK 1.

[1424] *See, e.g.,* letters from Eggleston and SRK 1.

[1425] The staff has estimated that 33 of the 267 registrants potentially affected by the final rules operate in the industrial minerals/aggregates industry. Five of those registrants may already be subject to the CRIRSCO standards.

[1426] This is in comparison to the proposed estimates of an increase of 96 and 95 reporting burdens, respectively.

[1427] For purposes of this PRA analysis, we estimate that registrants subject to the CRIRSCO standards would each incur 11 hours, and registrants not subject to those standards would each incur 100 hours, to prepare the required technical report summary.

[1428] We recognize that the costs of retaining outside professionals may vary depending on the nature of the professional services, but for purposes of this PRA analysis, we estimate that such costs would be an average of $400 per hour. This is the rate we typically estimate for outside services used in connection with public company reporting.

burden of preparation is carried by outside professionals at an average cost of $400 per hour. The portion of the burden carried by outside professionals is reflected as a cost, while the portion of the burden carried by the registrant internally is reflected in hours.

We have determined the estimated total incremental burden hours for each form under the final rules by first determining the hour burden per registrant response estimated as a weighted average of the burden hours of registrants subject to, and those not subject to, the CRIRSCO standards.[1429] We then multiplied this average burden hour per response by the total number of responses for each form estimated to occur annually. We similarly estimated the incremental professional costs for each form by first estimating the incremental professional costs as a weighted average of the incremental professional costs estimated to be incurred by registrants subject to, and not subject to, the CRIRSCO requirements. We then multiplied the average incremental professional costs by the total number of annual responses estimated to occur for each form.[1430]

Based on these calculations, as set forth below, we estimate that the total number of incremental burden hours for all forms resulting from complying with the final rules is 21,753 burden hours. We further estimate that the resulting total incremental professional costs for all forms under the final rules is $5,181,900.[1431]

PRA Table 2—Estimated Incremental Burden and Costs Under the Final Rules

	Number of annual responses (A)	Hour burden per response (B)	Total incremental registrant burden hours * (C) = (A) × (B)	Incremental professional costs (D)	Total incremental professional costs * (E) = (A) × (D)
Form S–1	18	39.42	710	$47,300	$851,400
Form S–4	5	32.75	164	39,300	196,500
Form F–1	2	29	58	34,800	69,600
Form F–4	1	10.25	10	12,300	12,300
Form 10	4	47.5	190	57,000	228,000
Form 10–K	169	115.87	19,582	15,449.704	2,611,000
Form 20–F	67	15.04	1,008	18,044.78	1,209,000
Regulation A (Form 1–A)	1	30.75	31	4,100	4,100
Total	267	.....	21,753	.....	5,181,900

* Rounded to nearest whole number.

We have determined the estimated total burden of complying with the final rules for each form by adding the above described estimated incremental company burden hours to the current burden hours estimated for each form. We have similarly determined the estimated total professional costs for each form by adding the estimated total incremental professional costs to the current professional costs estimated for each form. Based on these calculations, as summarized below, we estimate that, as a result of the final rules, the estimated annual burden for all forms will increase to 15,551,483 hours, compared to the current annual estimate of 15,529,730 hours. We further estimate that the final rules will result in estimated annual professional costs for all forms of $3,409,023,661, compared to the current annual estimate of $3,403,841,761.

PRA Table 3—Estimated Total Burden and Costs Under the Final Rules

	Current annual responses	Revised annual responses	Current burden hours	Increase in burden hours	Revised burden hours	Current professional costs	Increase in professional costs	Revised professional costs
Form S–1	901	901	150,998	710	151,708	$181,197,300	$851,400	$182,048,700
Form S–4	551	551	565,079	164	565,243	678,094,704	196,500	678,291,204
Form F–1	63	63	26,980	58	27,038	$32,375,700	$69,600	$32,445,300
Form F–4	39	39	14,245	10	14,255	17,093,700	12,300	17,106,000
Form 10	216	216	11,774	190	11,964	14,128,888	228,000	14,356,888
Form 10–K	8,137	8,137	14,217,344	19,582	14,236,926	1,896,280,869	2,611,000	1,898,891,869
Form 20–F	725	725	480,226	1,008	481,234	576,270,600	1,209,000	577,479,600
Reg. A (Form 1–A)	112	112	63,084	31	63,115	8,400,000	4,100	8,404,100
Total	10,744	10,744	15,529,730	21,753	15,551,483	3,403,841,761	5,181,900	3,409,023,661

[1429] For example, we determined the estimated incremental burden hours for Form S–1 as follows: 41 hours × 0.25 = 10.25 internal burden hours for CRIRSCO filers; 10.25 hours × 4 = 41 total incremental hours for CRIRSCO filers. 191 hours × 0.25 = 47.75 internal burden hours for non-CRIRSCO filers; 47.75 hours × 14 = 668.5 total incremental burden hours for non-CRIRSCO filers. 41 hours + 668.5 hours = 709.5 total internal hours. 709.5 hours/18 = 39.42 avg. incremental burden hours.

[1430] For example, we determined the estimated incremental professional costs for Form S–1 as follows: 41 hours × 0.75 = 30.75 outside hours for CRIRSCO filers; 30.75 hours × 4 = 123 total outside hours for CRIRSCO filers. 191 hours × 0.75 = 143.25 outside hours for non-CRIRSCO filers; 143.25 hours × 14 = 2,005.5 total outside hours for non-CRIRSCO filers. 123 hours + 2005.5 hours = 2,128.5 total outside hours. 2128.5 hours × $400 = $851,400 total incremental professional costs.

[1431] The total incremental burden hours and total incremental professional costs are rounded to the nearest whole number.

VI. Final Regulatory Flexibility Act Analysis

This Final Regulatory Flexibility Act Analysis (''FRFA'') has been prepared in accordance with the Regulatory Flexibility Act.[1432] It relates to rule and form amendments that we are adopting today to revise the mining property disclosure requirements for registrants engaged in mining operations. An Initial Regulatory Flexibility Analysis (''IRFA'') was prepared in accordance with the Regulatory Flexibility Act and included in the Proposing Release.

A. Need for, and Objectives of, the Final Rules

The Commission's mining property disclosure requirements and policies have not been updated since 1982. In the ensuing decades, mining has become an increasingly globalized industry, and several foreign mining disclosure codes have been adopted based on the CRIRSCO standards that significantly differ from the Commission's mining disclosure requirements and guidance. The rule and form amendments that we are adopting are intended to modernize the Commission's mining property disclosure requirements and policies by more closely aligning them with current industry and global regulatory practices and disclosure requirements, as embodied in the CRIRSCO standards. In so doing, the final amendments will provide investors with a more comprehensive understanding of a registrant's mining operations, which should help them make more informed investment decisions.[1433]

B. Significant Issues Raised by Public Comments

In the Proposing Release, we requested comment on every aspect of the IRFA. We received one comment letter that specifically addressed the IRFA.[1434] That commenter stated that it would be a disservice to investors if the Commission were to reduce or streamline the disclosure requirements for small entities that are funded entirely by outside investment. That commenter also stated that, because there are only a few small mining companies that currently use U.S. exchanges for their primary listing, the impact on small entities from the proposed amendments would be limited, but could vary depending on the final disclosure requirements. According to the commenter, if the Commission adopted the amendments as proposed, small entities would have little interest in listing on U.S. exchanges as they would find more attractive the current disclosure requirements under foreign jurisdictions, such as Canada's NI 43–101 or Australia's JORC. However, the commenter also indicated that, if the Commission were to adopt amendments that aligned with Canada's NI 43–101, there would be a significant number of small entities that would choose to list in the United States. We have considered these comments when revising the proposed amendments to more closely align with CRIRSCO's standards, including Canada's NI 43–101.

Although not specifically addressing the IRFA, other commenters indicated that the proposed rules would impose the greatest proportionate compliance burden on small entities. For example, one commenter stated that, because the proposed rules would require the disclosure of voluminous amounts of information, they would discourage many companies from seeking or maintaining a public listing, and that this effect would be most acute for smaller companies that lack the internal resources to compile and report on all the proposed required information.[1435] This commenter further stated that smaller companies would be placed at a significant competitive disadvantage if they were required to disclose sensitive operational information to larger competitors.[1436]

Other commenters stated that the proposed requirement to obtain a technical report summary for material mining properties would be especially burdensome for smaller entities, but that the Commission could alleviate this burden by adopting certain measures, such as by not requiring the filing of the technical report summary more frequently than under the CRIRSCO-based codes, not requiring the disclosure of exploration results, or minimizing the required use of an independent qualified person.[1437] Another commenter maintained that the proposed requirement to quantify the percentage of inferred mineral resources that would likely be converted to indicated mineral resources would be difficult for smaller entities to meet.[1438] As discussed below, we have considered all of these comments when evaluating alternatives to, and revising, the proposed rules.[1439]

C. Small Entities Subject to the Final Rules

The final rules will affect small entities that have material mining operations, and which file registration statements under Section 6 of the Securities Act [1440] or Section 12 of the Exchange Act, and reports under Section 13(a) or 15(d) of the Exchange Act. For purposes of the RFA, under our rules, an issuer, other than an investment company, is a ''small business'' or ''small organization'' if it has total assets of $5 million or less as of the end of its most recent fiscal year and is engaged or proposing to engage in an offering of securities that does not exceed $5 million.[1441] From staff review of Securities Act and Exchange Act filings made by registrants with mining operations from January 2016 through December 2017, we estimate that there are approximately 114 issuers that may be considered small entities.[1442] One of those small entities was a filer of a Form 1–A offering statement.

D. Reporting, Recordkeeping, and Other Compliance Requirements

As described in greater detail above, the final rules will enhance the Securities Act and Exchange Act disclosure requirements of registrants, including small entities, with material mining operations by requiring:

- The disclosure of estimates and other information about determined mineral resources and exploration results that are material to investors in addition to mineral reserves;
- the disclosure of exploration results, mineral resources and mineral reserves in Commission filings to be based on and accurately reflect information and supporting documentation prepared by a qualified person; and
- the filing of a technical report summary prepared by a qualified person for each material property for certain Commission filings.

The final rules also will codify certain existing disclosure policies for registrants with material mining operations, including small entities. The same mining disclosure requirements will apply to both U.S. and foreign registrants.[1443] The professional skills

[1432] 5 U.S.C. 603.

[1433] The need for, and objectives of, the final rules are discussed in more detail throughout this release, particularly in Sections I and II, *supra.*

[1434] *See* letter from SRK 1.

[1435] *See, e.g.* letter from NSSGA.

[1436] *See id.*

[1437] *See, e.g.,* letters from AngloGold, Eggleston and Gold Resource.

[1438] *See* letter from MMSA.

[1439] *See infra* Section VI.F.

[1440] 15 U.S.C. 77f.

[1441] *See* 17 CFR 230.157 [Securities Act Rule 157]; and 17 CFR 240.0–10(a) [Exchange Act Rule 0–10(a)].

[1442] *See supra* Section IV.A.1. for a discussion of how the staff estimated the number of registrants, including small entities, that will be subject to the final rules.

[1443] The final rules are discussed in detail in Section II, *supra.* We discuss the economic impact,

necessary to comply with the final rules include legal, accounting, and information technology skills. In addition, the final rules require the involvement of qualified persons with certain specified credentials and relevant experience.[1444]

E. Duplicative, Overlapping or Conflicting Federal Rules

As noted above, the final rules will generally establish new mining disclosure requirements that we believe will not duplicate or overlap with other federal rules. The final rules will consolidate and codify all of the Commission's mining property disclosure requirements and policies, which currently exist in Item 102 of Regulation S–K and in Guide 7, the status and overlapping structure of which has caused some uncertainty for mining registrants.[1445] We believe that this consolidation and codification will help a mining registrant, including a small entity, comply with its disclosure obligations under the Securities Act and Exchange Act, which could mitigate its reporting burden. The final rules also will more closely align our mining property disclosure requirements with global industry practices and standards, which should also mitigate a registrant's, including a small entity's, reporting burden to the extent that it is already subject to one or more of the CRIRSCO-based codes. We do not believe that the final rules will conflict with other federal rules.

F. Agency Action To Minimize Effect on Small Entities

The Regulatory Flexibility Act directs us to consider significant alternatives that would accomplish the stated objectives, while minimizing any significant adverse impact on small entities. In connection with adopting the final rules, we considered, as alternatives: Establishing different compliance or reporting requirements that take into account the resources available to smaller entities; exempting smaller entities from coverage of the disclosure requirements, or any part thereof; clarifying, consolidating, or simplifying the disclosure requirements for small entities; and using performance standards rather than design standards.

Neither the current mining disclosure requirements nor the final rules exempt or treat differently a small entity with material mining operations. Providing an exemption for, or imposing less extensive disclosure requirements on, small entities with material mining operations would likely increase the risk of inaccurate or incomplete disclosure concerning those entities' mineral resources, mineral reserves and exploration results, to the detriment of investors.[1446] Moreover, as noted above, a primary goal of the final rules is generally to align the Commission's mining disclosure regime with the standards that have developed under the CRIRSCO-based codes so that investors will have a more complete understanding of a registrant's mining operations and be able to make more informed investment decisions. The CRIRSCO-based codes do not provide an exemption for small entities or otherwise treat such entities differently. Therefore, we believe it would be inappropriate for our rules to provide an exemption for, or otherwise treat differently, small entities with material mining operations.

We also note that, because a significant percentage of mining registrants (approximately 43% based on the staff's most recent review of Commission filings) [1447] are small entities, exempting them from the final rules will effectively disapply the Commission's mining disclosure regime to a large segment of the companies for which such disclosure would be potentially beneficial. By exempting small entities from the final rules, we would be creating a significant gap in the transparency of registrants' disclosure concerning their mining properties, which would defeat one of the primary purposes of the final rules.

In accordance with the Regulatory Flexibility Act, and in response to commenters' concerns described above, we have considered and adopted alternatives to several of the proposed disclosure requirements, which we believe will limit the compliance burden for registrants, including small entities. For example, the final rules:

- Clarify that a registrant is not required to disclose exploration results until they become material to investors;
- do not require the filing of a technical report summary to support the disclosure of exploration results;
- limit the required filing of a technical report summary that supports the disclosure of determined mineral resources and reserves to when the registrant first discloses resource or reserve estimates, or when it discloses a material change in the previously disclosed estimates;
- eliminate the proposed requirement to quantify the level of risk concerning mineral resources, including inferred mineral resources;
- reduce the number of required tables from seven to two, and permit most of the required disclosure concerning material mining properties and mineral resources, mineral reserves, and exploration results to be disclosed in either narrative or tabular format;
- permit the use of a pre-feasibility study instead of a final feasibility study without requiring justification for such use, and even when used for high-risk situations; and
- align our mining property disclosure requirements with the CRIRSCO standards in many significant respects, such as by adopting a reasonable and justifiable price standard for the determination and disclosure of mineral resources and mineral reserves, which could include a forward-looking price, instead of the proposed 24-month trailing average price requirement.

We believe that all of the above revisions to the proposed rules will limit the final rules' compliance burden for registrants, including small entities.[1448] We also believe that certain of these changes, in particular those regarding the disclosure of exploration results, will reduce the final rules' potential for the disclosure of proprietary, commercially sensitive information for registrants, including small entities.

As noted above, the final rules will consolidate and codify the Commission's mining property disclosure rules and policies and thereby facilitate compliance for all registrants, including small entities. We have used design rather than performance standards in connection with the final rules because, based on our past experience, we believe the final rules will be more beneficial to investors if there are specific disclosure requirements that are uniform for all registrants with material mining operations. Nevertheless, we have made revisions to the proposed rules to make the disclosure requirements less prescriptive and provide more flexibility in how the required information is presented, which should help ease the compliance burden associated with these requirements.

including the estimated compliance costs and burdens, of the final rules in Section IV (Economic Analysis) and Section V (Paperwork Reduction Act), *supra*.

[1444] *See supra* Section II.C.

[1445] *See supra* note 28 and accompanying text.

[1446] In this regard, only one commenter directly addressed the IRFA and whether we should adopt alternatives to the proposed rules, including exempting or treating differently small entities. That commenter opposed such alternative treatment for small entities, stating that such alternative treatment would be a disservice to investors. *See* letter from SRK 1.

[1447] *See supra* Section IV.A.1.

[1448] Under the final rules, the qualified person is not required to be independent of the registrant. As commenters noted, this approach should also help to limit the compliance burden for registrants, including small entities. *See supra* note 1437 and accompanying text.

VII. Statutory Authority

We are adopting the amendments contained in this document pursuant to Sections 3(b), 7, 10, 19(a), and 28 of the Securities Act and Sections 3(b), 12, 13, 15(d), 23(a), and 36(a) of the Exchange Act.

List of Subjects

17 CFR Part 229, 17 CFR Part 230, 17 CFR Part 239

Reporting and recordkeeping requirements, Securities.

17 CFR Part 249

Brokers, Reporting and recordkeeping requirements, Securities.

In accordance with the foregoing, title 17, chapter II of the Code of Federal Regulations is amended as follows:

PART 229—STANDARD INSTRUCTIONS FOR FILING FORMS UNDER SECURITIES ACT OF 1933, SECURITIES EXCHANGE ACT OF 1934 AND ENERGY POLICY AND CONSERVATION ACT OF 1975—REGULATION S–K

■ 1. The authority citation for part 229 continues to read as follows:

Authority: 15 U.S.C. 77e, 77f, 77g, 77h, 77j, 77k, 77s, 77z–2, 77z–3, 77aa(25), 77aa(26), 77ddd, 77eee, 77ggg, 77hhh, 77iii, 77jjj, 77nnn, 77sss, 78c, 78i, 78j, 78j–3, 78*l,* 78m, 78n, 78n–1, 78*o,* 78u–5, 78w, 78*ll,* 78mm, 80a–8, 80a–9, 80a–20, 80a–29, 80a–30, 80a–31(c), 80a–37, 80a–38(a), 80a–39, 80b–11 and 7201 *et seq.;* 18 U.S.C. 1350; sec. 953(b), Pub. L. 111–203, 124 Stat. 1904 (2010); and sec. 102(c), Pub. L. 112–106, 126 Stat. 310 (2012).

■ 2. Amend § 229.102 by:
■ a. Removing ‘‘, mines’’ in the introductory text;
■ b. Removing the heading ‘‘Instructions to Item 102:’’;
■ c. Redesignating Instructions 1, 2, 3, and 4 as ‘‘Instruction 1 to Item 102:’’, ‘‘Instruction 2 to Item 102:’’, ‘‘Instruction 3 to Item 102:’’, and ‘‘Instruction 4 to Item 102:’’;
■ d. Revising newly redesignated Instruction 3 to Item 102;
■ e. Removing Instructions 5 and 7 to Item 102; and
■ f. Redesignating instruction 6 as ‘‘Instruction 5 to Item 102:’’ and Instructions 8 and 9 as ‘‘Instruction 6 to Item 102:’’ and ‘‘Instruction 7 to Item 102:’’, respectively.

The revision reads as follows:

§ 229.102 (Item 102) Description of property.

* * * * *

Instruction 3 to Item 102: Registrants engaged in mining operations must refer to and, if required, provide the disclosure under §§ 229.1300 through 229.1305 (subpart 1300 of Regulation S–K), in addition to any disclosure required by this section.

* * * * *

■ 3. Amend § 229.601 by:
■ a. In the exhibit table in paragraph (a), adding entry (96) and footnote 7; and
■ b. Adding paragraph (b)(96).

The additions read as follows:

§ 229.601 (Item 601) Exhibits.

(a) * * *

EXHIBIT TABLE

	Securities Act Forms										Exchange Act Forms					
	S–1	S–3	SF–1	SF–3	S–4[1]	S–8	S–11	F–1	F–3	F–4[1]	10	8–K[2]	10–D	10–Q	10–K	ABS–EE
*																
(96) Technical report summary[7].	X	X			X			X	X	X	X				X	
*																

* * * * * * * * * * *

[7] If required pursuant to § 229.1302 (Item 1302 of Regulation S–K).

(b) * * *

(96) *Technical report summary.* (i) A registrant that, pursuant to §§ 229.1300 through 229.1305 (subpart 229.1300 of Regulation S–K), discloses information concerning its mineral resources or mineral reserves must file a technical report summary by one or more qualified persons that, for each material property, identifies and summarizes the scientific and technical information and conclusions reached concerning an initial assessment used to support disclosure of mineral resources, or concerning a preliminary or final feasibility study used to support disclosure of mineral reserves. At its election, a registrant may also file a technical report summary from a qualified person that identifies and summarizes the information reviewed and conclusions reached by the qualified person about the registrant's exploration results. Please refer to § 229.1302(b) (Item 1302(b) of Regulation S–K) for when a registrant must file the technical report summary as an exhibit to its Securities Act registration statement or Exchange Act registration statement or report.

(ii) The technical report summary must not include large amounts of technical or other project data, either in the report or as appendices to the report. The qualified person must draft the summary to conform, to the extent practicable, with the plain English principles set forth in § 230.421 or § 240.13a–20 of this chapter.

(iii)(A) A technical report summary that reports the results of a preliminary or final feasibility study must provide all of the information specified in paragraph (b)(96)(iii)(B) of this section. A technical report summary that reports the results of an initial assessment must, at a minimum, provide the information specified in paragraphs (b)(96)(iii)(B)(*1*) through (*11*) and (*20*) through (*25*) of this section, and may also include the information specified in paragraph (b)(96)(iii)(B)(*19*) of this section. A technical report summary that reports exploration results must, at a minimum, provide the information specified in paragraphs (b)(96)(iii)(B)(*1*) through (*9*) and (*20*) through (*25*) of this section.

(B) A qualified person must include the following information in the technical report summary, as required by paragraph (b)(96)(iii)(A) of this section, to the extent the information is material.

(*1*) *Executive summary.* Briefly summarize the most significant information in the technical report

summary, including property description (including mineral rights) and ownership, geology and mineralization, the status of exploration, development and operations, mineral resource and mineral reserve estimates, summary capital and operating cost estimates, permitting requirements, and the qualified person's conclusions and recommendations. The executive summary must be brief and should not contain all of the detailed information in the technical support summary.

(*2*) *Introduction.* Disclose:

(*i*) The registrant for whom the technical report summary was prepared;

(*ii*) The terms of reference and purpose for which the technical report summary was prepared, including whether the technical report summary's purpose was to report mineral resources, mineral reserves, or exploration results;

(*iii*) The sources of information and data contained in the technical report summary or used in its preparation, with citations if applicable;

(*iv*) The details of the personal inspection on the property by each qualified person or, if applicable, the reason why a personal inspection has not been completed; and

(*v*) That the technical report summary updates a previously filed technical report summary, identified by name and date, when applicable.

(*3*) *Property description.* (*i*) Describe the location of the property, accurate to within one mile, using an easily recognizable coordinate system. The qualified person must provide appropriate maps, with proper engineering detail (such as scale, orientation, and titles) to portray the location of the property. Such maps must be legible on the page when printed.

(*ii*) Disclose the area of the property.

(*iii*) Disclose the name or number of each title, claim, mineral right, lease, or option under which the registrant and its subsidiaries have or will have the right to hold or operate the property. If held by leases or options, the registrant must provide the expiration dates of such leases or options and associated payments.

(*iv*) Describe the mineral rights, and how such rights have been obtained at this location, indicating any conditions that the registrant must meet in order to obtain or retain the property.

(*v*) Describe any significant encumbrances to the property, including current and future permitting requirements and associated timelines, permit conditions, and violations and fines.

(*vi*) Disclose any other significant factors and risks that may affect access, title, or the right or ability to perform work on the property.

(*vii*) If the registrant holds a royalty or similar interest in the property, except as provided under §§ 229.1303(a)(3) and 229.1304(a)(2), the information in paragraph (b)(96)(iii)(B)(*3*) of this section must be provided for the property that is owned or operated by a party other than the registrant. In this event, for example, the report must address the documents under which the owner or operator holds or operates the property, the mineral rights held by the owner or operator, conditions required to be met by the owner or operator, significant encumbrances, and significant factors and risks relating to the property or work on the property.

(*4*) *Accessibility, climate, local resources, infrastructure and physiography.* Describe:

(*i*) The topography, elevation, and vegetation;

(*ii*) The means of access to the property, including highways, towns, rivers, railroads, and airports;

(*iii*) The climate and the length of the operating season, as applicable; and

(*iv*) The availability of and required infrastructure, including sources of water, electricity, personnel, and supplies.

(*5*) *History.* Describe:

(*i*) Previous operations, including the names of previous operators, insofar as known; and

(*ii*) The type, amount, quantity, and general results of exploration and development work undertaken by any previous owners or operators.

(*6*) *Geological setting, mineralization, and deposit.* (*i*) Describe briefly the regional, local, and property geology and the significant mineralized zones encountered on the property, including a summary of the surrounding rock types, relevant geological controls, and the length, width, depth, and continuity of the mineralization, together with a description of the type, character, and distribution of the mineralization.

(*ii*) Each mineral deposit type that is the subject of investigation or exploration together with the geological model or concepts being applied in the investigation or forming the basis of the exploration program.

(*iii*) The qualified person must include at least one stratigraphic column and one cross-section of the local geology to meet the requirements of paragraph (b)(96)(iii)(B)(*6*) of this section.

(*7*) *Exploration.* Describe the nature and extent of all relevant exploration work, conducted by or on behalf of, the registrant.

(*i*) For all exploration work other than drilling, describe: The procedures and parameters relating to the surveys and investigations; the sampling methods and sample quality, including whether the samples are representative, and any factors that may have resulted in sample biases; the location, number, type, nature, and spacing or density of samples collected, and the size of the area covered; and the significant results of and the qualified person's interpretation of the exploration information.

(*ii*) For drilling, describe: The type and extent of drilling including the procedures followed; any drilling, sampling, or recovery factors that could materially affect the accuracy and reliability of the results; and the material results and interpretation of the drilling results. For a technical report summary to support disclosure of exploration results, the qualified person must provide information on all samples or drill holes to meet the requirements of this paragraph. If some information is excluded, the qualified person must identify the omitted information and explain why that information is not material.

(*iii*) For characterization of hydrogeology, describe: The nature and quality of the sampling methods used to acquire data on surface and groundwater parameters; the type and appropriateness of laboratory techniques used to test for groundwater flow parameters such as permeability, and include discussions of the quality control and quality assurance procedures; results of laboratory testing and the qualified person's interpretation, including any material assumptions, which must include descriptions of permeable zones or aquifers, flow rates, in-situ saturation, recharge rates and water balance; and the groundwater models used to characterize aquifers, including material assumptions used in the modeling.

(*iv*) For geotechnical data, testing and analysis, describe: The nature and quality of the sampling methods used to acquire geotechnical data; the type and appropriateness of laboratory techniques used to test for soil and rock strength parameters, including discussions of the quality control and quality assurance procedures; and results of laboratory testing and the qualified person's interpretation, including any material assumptions.

(*v*) Reports must include a plan view of the property showing locations of all drill holes and other samples.

(*vi*) The technical report summary must include a description of data concerning drilling, hydrogeology, or geotechnical data only to the extent such data is relevant and available.

Instruction 1 to paragraph (b)(96)(iii)(B)(7): The technical report summary must comply with all disclosure standards for exploration results under §§ 229.1300 through 229.1305 (subpart 229.1300 of Regulation S–K).

Instruction 2 to paragraph (b)(96)(iii)(B)(*7*): For a technical report summary to support disclosure of mineral resources or mineral reserves, the qualified person can meet the requirements of paragraph (b)(96)(iii)(B)(*7*)(*ii*) of this section by providing sampling (including drilling) plans, representative plans, and cross-sections of results.

Instruction 3 to paragraph (b)(96)(iii)(B)(*7*): If disclosing an exploration target, provide such disclosure in a subsection of the *Exploration* section of the technical report summary that is clearly captioned as a discussion of an exploration target. That section must include all of the disclosure required under § 229.1302(c).

(*8*) *Sample preparation, analyses, and security.* Describe:

(*i*) Sample preparation methods and quality control measures employed prior to sending samples to an analytical or testing laboratory, sample splitting and reduction methods, and the security measures taken to ensure the validity and integrity of samples;

(*ii*) Sample preparation, assaying and analytical procedures used, the name and location of the analytical or testing laboratories, the relationship of the laboratory to the registrant, and whether the laboratories are certified by any standards association and the particulars of such certification;

(*iii*) The nature, extent, and results of quality control procedures and quality assurance actions taken or recommended to provide adequate confidence in the data collection and estimation process;

(*iv*) The adequacy of sample preparation, security, and analytical procedures, in the opinion of the qualified person; and

(*v*) If the analytical procedures used are not part of conventional industry practice, a justification by the qualified person for why he or she believes the procedure is appropriate in this instance.

(*9*) *Data verification.* Describe the steps taken by the qualified person to verify the data being reported on or which is the basis of this technical report summary, including:

(*i*) Data verification procedures applied by the qualified person;

(*ii*) Any limitations on or failure to conduct such verification, and the reasons for any such limitations or failure; and

(*iii*) The qualified person's opinion on the adequacy of the data for the purposes used in the technical report summary.

(*10*) *Mineral processing and metallurgical testing.* Describe:

(*i*) The nature and extent of the mineral processing or metallurgical testing and analytical procedures;

(*ii*) The degree to which the test samples are representative of the various types and styles of mineralization and the mineral deposit as a whole;

(*iii*) The name and location of the analytical or testing laboratories, the relationship of the laboratory to the registrant, whether the laboratories are certified by any standards association and the particulars of such certification;

(*iv*) The relevant results including the basis for any assumptions or predictions about recovery estimates. Discuss any processing factors or deleterious elements that could have a significant effect on potential economic extraction; and

(*v*) The adequacy of the data for the purposes used in the technical report summary, in the opinion of the qualified person. If the analytical procedures used in the analysis are not part of conventional industry practice, the qualified person must state so and provide a justification for why he or she believes the procedure is appropriate in this instance.

(*11*) *Mineral resource estimates.* If this item is included, the technical report summary must:

(*i*) Describe the key assumptions, parameters, and methods used to estimate the mineral resources, in sufficient detail for a reasonably informed person to understand the basis for and how the qualified person estimated the mineral resources. The technical report summary must include mineral resource estimates at a specific point of reference selected by the qualified person. The selected point of reference must be disclosed in the technical report summary;

(*ii*) Provide the qualified person's estimates of mineral resources for all commodities, including estimates of quantities, grade or quality, cut-off grades, and metallurgical or processing recoveries. Unless otherwise stated, cut-off grades also refer to net smelter returns, pay limits, and other similar terms. The qualified person preparing the mineral resource estimates must round off, to appropriate significant figures chosen to reflect order of accuracy, any estimates of quantity and grade or quality. If the qualified person chooses to disclose mineral resources inclusive of mineral reserves, he or she must also clearly state the mineral resources exclusive of mineral reserves in the technical report summary;

(*iii*) Include the qualified person's estimates of cut-off grades based on assumed costs for surface or underground operations and commodity prices that provide a reasonable basis for establishing the prospects of economic extraction for mineral resources. The qualified person must disclose the price used for each commodity and explain, with particularity, his or her reasons for using the selected price, including the material assumptions underlying the selection. This explanation must include disclosure of the time frame used to estimate the commodity price and unit costs for cut-off grade estimation and the reasons justifying the selection of that time frame. The qualified person may use a price set by contractual arrangement, provided that such price is reasonable, and the qualified person discloses that he or she is using a contractual price when disclosing the price used;

(*iv*) Provide the qualified person's classification of mineral resources into inferred, indicated, and measured mineral resources in accordance with § 229.1302(d)(1)(iii)(A) (Item 1302(d)(1)(iii)(A) of Regulation S–K). The qualified person must disclose the criteria used to classify a resource as inferred, indicated, or measured and must justify the classification;

(*v*) Discuss the uncertainty in the estimates of inferred, indicated, and measured mineral resources, and explain the sources of uncertainty and how they were considered in the uncertainty estimates. The qualified person must consider all sources of uncertainty associated with each class of mineral resources. Sources of uncertainty that affect such reporting of uncertainty include sampling or drilling methods, data processing and handling, geologic modeling, and estimation. The qualified person must support the disclosure of uncertainty associated with each class of mineral resources with a list of all factors considered and explain how those factors contributed to the final conclusion about the level of uncertainty underlying the resource estimates. The qualified person is not required to use estimates of confidence limits derived from geostatistics or other numerical methods to support the disclosure of uncertainty surrounding

mineral resource classification. If the qualified person chooses to use confidence limit estimates from geostatistics or other numerical methods, he or she should consider the limitations of these methods and adjust the estimates appropriately to reflect sources of uncertainty that are not accounted for by these methods;

(*vi*) When reporting the grade or quality for a multiple commodity mineral resource as metal or mineral equivalent, disclose the individual grade of each metal or mineral and the commodity prices, recoveries, and any other relevant conversion factors used to estimate the metal or mineral equivalent grade; and

(*vii*) Provide the qualified person's opinion on whether all issues relating to all relevant technical and economic factors likely to influence the prospect of economic extraction can be resolved with further work.

Instruction 1 to paragraph (b)(96)(iii)(B)(11): The technical report summary must comply with all disclosure standards for mineral resources under §§ 229.1300 through 229.1305 (subpart 229.1300 of Regulation S–K).

Instruction 2 to paragraph(b)(96)(iii)(B)(11): Sections 229.1303 and 229.1304 (Items 1303 and 1304 of Regulation S–K) notwithstanding, in this technical report summary, mineral resource estimates may be inclusive of mineral reserves so long as this is clearly stated with equal prominence to the rest of the item.

(*12*) *Mineral reserve estimates.* If this item is included, the technical report summary must:

(*i*) Describe the key assumptions, parameters, and methods used to estimate the mineral reserves, in sufficient detail for a reasonably informed person to understand the basis for converting, and how the qualified person converted, indicated and measured mineral resources into the mineral reserves. The technical report summary must include mineral reserve estimates at a specific point of reference selected by the qualified person. The qualified person must disclose the selected point of reference in the technical report summary;

(*ii*) Provide the qualified person's estimates of mineral reserves for all commodities, including estimates of quantities, grade or quality, cut-off grades, and metallurgical or processing recoveries. The qualified person preparing the mineral resource estimates must round off, to appropriate significant figures chosen to reflect order of accuracy, any estimates of quantity and grade or quality;

(*iii*) Include the qualified person's estimates of cut-off grades based on detailed cut-off grade analysis that includes a long term price that provides a reasonable basis for establishing that the project is economically viable. The qualified person must disclose the price used for each commodity and explain, with particularity, his or her reasons for using the selected price, including the material assumptions underlying the selection. This explanation must include disclosure of the time frame used to estimate the price and costs and the reasons justifying the selection of that time frame. The qualified person may use a price set by contractual arrangement, provided that such price is reasonable, and the qualified person discloses that he or she is using a contractual price when disclosing the price used;

(*iv*) Provide the qualified person's classification of mineral reserves into probable and proven mineral reserves in accordance with § 229.1302(e)(2) (Item 1302(e)(2) of Regulation S–K);

(*v*) When reporting the grade or quality for a multiple commodity mineral reserve as metal or mineral equivalent, disclose the individual grade of each metal or mineral and the commodity prices, recoveries, and any other relevant conversion factors used to estimate the metal or mineral equivalent grade; and

(*vi*) Provide the qualified person's opinion on how the mineral reserve estimates could be materially affected by risk factors associated with or changes to any aspect of the modifying factors.

Instruction 1 to paragraph (b)(96)(iii)(B)(12): The technical report summary must comply with all disclosure standards for mineral reserves under §§ 229.1300 through 1305 (subpart 229.1300 of Regulation S–K).

(*13*) *Mining methods.* Describe the current or proposed mining methods and the reasons for selecting these methods as the most suitable for the mineral reserves under consideration. Include:

(*i*) Geotechnical and hydrological models, and other parameters relevant to mine designs and plans;

(*ii*) Production rates, expected mine life, mining unit dimensions, and mining dilution and recovery factors;

(*iii*) Requirements for stripping, underground development, and backfilling;

(*iv*) Required mining equipment fleet and machinery, and personnel; and

(*v*) At least one map of the final mine outline.

(*14*) *Processing and recovery methods.* Describe the current or proposed mineral processing methods and the reasons for selecting these methods as the most suitable for extracting the valuable products from the mineralization under consideration. Include:

(*i*) A description or flow sheet of any current or proposed process plant;

(*ii*) Plant throughput and design, equipment characteristics and specifications;

(*iii*) Current or projected requirements for energy, water, process materials, and personnel; and

(*iv*) If the processing method, plant design, or other parameter has never been used to commercially extract the valuable product from such mineralization, a justification by the qualified person for why he or she believes the approach will be successful in this instance.

Instruction 1 to paragraph (b)(96)(iii)(B)(14): If the processing method, plant design, or other parameter has never been used to commercially extract the valuable product from such mineralization and is still under development, then no mineral resources or reserves can be disclosed on the basis of that method, design, or other parameter.

(*15*) *Infrastructure.* Describe the required infrastructure for the project, including roads, rail, port facilities, dams, dumps and leach pads, tailings disposal, power, water, and pipelines, as applicable. Include at least one map showing the layout of the infrastructure.

(*16*) *Market studies.* Describe the market for the products of the mine, including justification for demand or sales over the life of the mine (or length of cash flow projections). Include:

(*i*) Information concerning markets for the property's production, including the nature and material terms of any agency relationships and the results of any relevant market studies, commodity price projections, product valuation, market entry strategies, and product specification requirements; and

(*ii*) Descriptions of all material contracts required for the issuer to develop the property, including mining, concentrating, smelting, refining, transportation, handling, hedging arrangements, and forward sales contracts. State which contracts have been executed and which are still under negotiation. For all contracts with affiliated parties, discuss whether the registrant obtained the same terms, rates or charges as could be obtained had the contract been negotiated at arm's length with an unaffiliated third party.

(*17*) *Environmental studies, permitting, and plans, negotiations, or agreements with local individuals or groups.* Describe the factors pertaining to environmental compliance, permitting, and local individuals or groups, which are related to the project. Include:

(*i*) The results of environmental studies (*e.g.,* environmental baseline studies or impact assessments);

(*ii*) Requirements and plans for waste and tailings disposal, site monitoring, and water management during operations and after mine closure;

(*iii*) Project permitting requirements, the status of any permit applications, and any known requirements to post performance or reclamation bonds;

(*iv*) Plans, negotiations, or agreements with local individuals or groups;

(*v*) Mine closure plans, including remediation and reclamation plans, and the associated costs;

(*vi*) The qualified person's opinion on the adequacy of current plans to address any issues related to environmental compliance, permitting, and local individuals or groups; and

(*vii*) Descriptions of any commitments to ensure local procurement and hiring.

(*18*) *Capital and operating costs.* (*i*) Provide estimates of capital and operating costs, with the major components set out in tabular form. Explain and justify the basis for the cost estimates including any contingency budget estimates. State the accuracy level of the capital and operating cost estimates.

(*ii*) To assess the accuracy of the capital and operating cost estimates, the qualified person must take into account the risks associated with the specific engineering estimation methods used to arrive at the estimates. As part of this analysis, the qualified person must take into consideration the accuracy of the estimation methods in prior similar environments. The accuracy of capital and operating cost estimates must comply with § 229.1302 (Item 1302 of Regulation S–K).

(*19*) *Economic analysis.* (*i*) Describe the key assumptions, parameters, and methods used to demonstrate economic viability, and provide all material assumptions including discount rates, exchange rates, commodity prices, and taxes, royalties, and other government levies or interests applicable to the mineral project or to production, and to revenues or income from the mineral project.

(*ii*) Disclose the results of the economic analysis, including annual cash flow forecasts based on an annual production schedule for the life of project, and measures of economic viability such as net present value (NPV), internal rate of return (IRR), and payback period of capital.

(*iii*) Include sensitivity analysis results using variants in commodity price, grade, capital and operating costs, or other significant input parameters, as appropriate, and discuss the impact on the results of the economic analysis.

(*iv*) The qualified person may, but is not required to, include an economic analysis in an initial assessment. If the qualified person includes an economic analysis in an initial assessment, the qualified person must also include a statement, of equal prominence to the rest of this section, that, unlike mineral reserves, mineral resources do not have demonstrated economic viability. The qualified person may include inferred mineral resources in the economic analysis only if he or she satisfies the conditions set forth in § 229.1302(d)(4)(ii) (Item 1302(d)(4)(ii) of Regulation S–K).

(*20*) *Adjacent properties.* Where applicable, a qualified person may include relevant information concerning an adjacent property if:

(*i*) Such information was publicly disclosed by the owner or operator of the adjacent property;

(*ii*) The source of the information is identified;

(*iii*) The qualified person states that he or she has been unable to verify the information and that the information is not necessarily indicative of the mineralization on the property that is the subject of the technical report summary; and

(*iv*) The technical report summary clearly distinguishes between the information from the adjacent property and the information from the property that is the subject of the technical report summary.

(*21*) *Other relevant data and information.* Include any additional information or explanation necessary to provide a complete and balanced presentation of the value of the property to the registrant. Information included in this item must comply with §§ 229.1300 through 229.1305 (subpart 229.1300 of Regulation S–K).

(*22*) *Interpretation and conclusions.* The qualified person must summarize the interpretations of and conclusions based on the data and analysis in the technical report summary. He or she must also discuss any significant risks and uncertainties that could reasonably be expected to affect the reliability or confidence in the exploration results, mineral resource or mineral reserve estimates, or projected economic outcomes.

(*23*) *Recommendations.* If applicable, the qualified person must describe the recommendations for additional work with associated costs. If the additional work program is divided into phases, the costs for each phase must be provided along with decision points at the end of each phase.

(*24*) *References.* Include a list of all references cited in the technical report summary in sufficient detail so that a reader can locate each reference.

(*25*) *Reliance on information provided by the registrant.* If relying on information provided by the registrant for matters discussed in the technical report summary, as permitted under § 229.1302(f), provide the disclosure required pursuant to § 229.1302(f)(2).

* * * * *

§ 229.801 [Amended]

■ 4. Amend § 229.801 by removing paragraph (g).

§ 229.802 [Amended]

■ 5. Amend § 229.802 by removing paragraph (g).

■ 6. Add subpart 229.1300 to read as follows:

Subpart 229.1300—Disclosure by Registrants Engaged in Mining Operations

Sec.

Subpart 229.1300—Disclosure by Registrants Engaged in Mining Operations

§ 229.1300 (Item 1300) Definitions.

As used in this subpart, these terms have the following meanings:

Adequate geological evidence, when used in the context of mineral resource determination, means evidence that is sufficient to establish geological and grade or quality continuity with reasonable certainty.

Conclusive geological evidence, when used in the context of mineral resource determination, means evidence that is sufficient to test and confirm geological and grade or quality continuity.

Cut-off grade is the grade (*i.e.,* the concentration of metal or mineral in rock) that determines the destination of the material during mining. For purposes of establishing ''prospects of economic extraction,'' the cut-off grade is the grade that distinguishes material

deemed to have no economic value (it will not be mined in underground mining or if mined in surface mining, its destination will be the waste dump) from material deemed to have economic value (its ultimate destination during mining will be a processing facility). Other terms used in similar fashion as cut-off grade include net smelter return, pay limit, and break-even stripping ratio.

Development stage issuer is an issuer that is engaged in the preparation of mineral reserves for extraction on at least one material property.

Development stage property is a property that has mineral reserves disclosed, pursuant to this subpart, but no material extraction.

Economically viable, when used in the context of mineral reserve determination, means that the qualified person has determined, using a discounted cash flow analysis, or has otherwise analytically determined, that extraction of the mineral reserve is economically viable under reasonable investment and market assumptions.

Exploration results are data and information generated by mineral exploration programs (*i.e.,* programs consisting of sampling, drilling, trenching, analytical testing, assaying, and other similar activities undertaken to locate, investigate, define or delineate a mineral prospect or mineral deposit) that are not part of a disclosure of mineral resources or reserves. A registrant must not use exploration results alone to derive estimates of tonnage, grade, and production rates, or in an assessment of economic viability.

Exploration stage issuer is an issuer that has no material property with mineral reserves disclosed.

Exploration stage property is a property that has no mineral reserves disclosed.

Exploration target is a statement or estimate of the exploration potential of a mineral deposit in a defined geological setting where the statement or estimate, quoted as a range of tonnage and a range of grade (or quality), relates to mineralization for which there has been insufficient exploration to estimate a mineral resource.

Feasibility study is a comprehensive technical and economic study of the selected development option for a mineral project, which includes detailed assessments of all applicable modifying factors, as defined by this section, together with any other relevant operational factors, and detailed financial analysis that are necessary to demonstrate, at the time of reporting, that extraction is economically viable. The results of the study may serve as the basis for a final decision by a proponent or financial institution to proceed with, or finance, the development of the project.

(1) A feasibility study is more comprehensive, and with a higher degree of accuracy, than a pre-feasibility study. It must contain mining, infrastructure, and process designs completed with sufficient rigor to serve as the basis for an investment decision or to support project financing.

(2) The confidence level in the results of a feasibility study is higher than the confidence level in the results of a pre-feasibility study. Terms such as *full, final, comprehensive, bankable,* or *definitive* feasibility study are equivalent to a feasibility study.

Final market study is a comprehensive study to determine and support the existence of a readily accessible market for the mineral. It must, at a minimum, include product specifications based on final geologic and metallurgical testing, supply and demand forecasts, historical prices for the preceding five or more years, estimated long term prices, evaluation of competitors (including products and estimates of production volumes, sales, and prices), customer evaluation of product specifications, and market entry strategies or sales contracts. The study must provide justification for all assumptions, which must include assumptions concerning the material contracts required to develop and sell the mineral reserves.

Indicated mineral resource is that part of a mineral resource for which quantity and grade or quality are estimated on the basis of adequate geological evidence and sampling. The level of geological certainty associated with an indicated mineral resource is sufficient to allow a qualified person to apply modifying factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit. Because an indicated mineral resource has a lower level of confidence than the level of confidence of a measured mineral resource, an indicated mineral resource may only be converted to a probable mineral reserve.

Inferred mineral resource is that part of a mineral resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. The level of geological uncertainty associated with an inferred mineral resource is too high to apply relevant technical and economic factors likely to influence the prospects of economic extraction in a manner useful for evaluation of economic viability. Because an inferred mineral resource has the lowest level of geological confidence of all mineral resources, which prevents the application of the modifying factors in a manner useful for evaluation of economic viability, an inferred mineral resource may not be considered when assessing the economic viability of a mining project, and may not be converted to a mineral reserve.

Initial assessment is a preliminary technical and economic study of the economic potential of all or parts of mineralization to support the disclosure of mineral resources. The initial assessment must be prepared by a qualified person and must include appropriate assessments of reasonably assumed technical and economic factors, together with any other relevant operational factors, that are necessary to demonstrate at the time of reporting that there are reasonable prospects for economic extraction. An initial assessment is required for disclosure of mineral resources but cannot be used as the basis for disclosure of mineral reserves.

Investment and market assumptions, when used in the context of mineral reserve determination, includes all assumptions made about the prices, exchange rates, interest and discount rates, sales volumes, and costs that are necessary to determine the economic viability of the mineral reserves. The qualified person must use a price for each commodity that provides a reasonable basis for establishing that the project is economically viable.

Limited geological evidence, when used in the context of mineral resource determination, means evidence that is only sufficient to establish that geological and grade or quality continuity are more likely than not.

Material has the same meaning as under § 230.405 or § 240.12b–2 of this chapter.

Material of economic interest, when used in the context of mineral resource determination, includes mineralization, including dumps and tailings, mineral brines, and other resources extracted on or within the earth's crust. It does not include oil and gas resources resulting from oil and gas producing activities, as defined in § 210.4–10(a)(16)(i) of this chapter, gases (*e.g.,* helium and carbon dioxide), geothermal fields, and water.

Measured mineral resource is that part of a mineral resource for which quantity and grade or quality are estimated on the basis of conclusive geological evidence and sampling. The level of geological certainty associated with a measured mineral resource is sufficient to allow a qualified person to apply modifying factors, as defined in this section, in sufficient detail to

support detailed mine planning and final evaluation of the economic viability of the deposit. Because a measured mineral resource has a higher level of confidence than the level of confidence of either an indicated mineral resource or an inferred mineral resource, a measured mineral resource may be converted to a proven mineral reserve or to a probable mineral reserve.

Mineral reserve is an estimate of tonnage and grade or quality of indicated and measured mineral resources that, in the opinion of the qualified person, can be the basis of an economically viable project. More specifically, it is the economically mineable part of a measured or indicated mineral resource, which includes diluting materials and allowances for losses that may occur when the material is mined or extracted.

Mineral resource is a concentration or occurrence of material of economic interest in or on the Earth's crust in such form, grade or quality, and quantity that there are reasonable prospects for economic extraction. A mineral resource is a reasonable estimate of mineralization, taking into account relevant factors such as cut-off grade, likely mining dimensions, location or continuity, that, with the assumed and justifiable technical and economic conditions, is likely to, in whole or in part, become economically extractable. It is not merely an inventory of all mineralization drilled or sampled.

Modifying factors are the factors that a qualified person must apply to indicated and measured mineral resources and then evaluate in order to establish the economic viability of mineral reserves. A qualified person must apply and evaluate modifying factors to convert measured and indicated mineral resources to proven and probable mineral reserves. These factors include, but are not restricted to: Mining; processing; metallurgical; infrastructure; economic; marketing; legal; environmental compliance; plans, negotiations, or agreements with local individuals or groups; and governmental factors. The number, type and specific characteristics of the modifying factors applied will necessarily be a function of and depend upon the mineral, mine, property, or project.

Preliminary feasibility study (or *pre-feasibility study*) is a comprehensive study of a range of options for the technical and economic viability of a mineral project that has advanced to a stage where a qualified person has determined (in the case of underground mining) a preferred mining method, or (in the case of surface mining) a pit configuration, and in all cases has determined an effective method of mineral processing and an effective plan to sell the product.

(1) A pre-feasibility study includes a financial analysis based on reasonable assumptions, based on appropriate testing, about the modifying factors and the evaluation of any other relevant factors that are sufficient for a qualified person to determine if all or part of the indicated and measured mineral resources may be converted to mineral reserves at the time of reporting. The financial analysis must have the level of detail necessary to demonstrate, at the time of reporting, that extraction is economically viable.

(2) A pre-feasibility study is less comprehensive and results in a lower confidence level than a feasibility study. A pre-feasibility study is more comprehensive and results in a higher confidence level than an initial assessment.

Preliminary market study is a study that is sufficiently rigorous and comprehensive to determine and support the existence of a readily accessible market for the mineral. It must, at a minimum, include product specifications based on preliminary geologic and metallurgical testing, supply and demand forecasts, historical prices for the preceding five or more years, estimated long term prices, evaluation of competitors (including products and estimates of production volumes, sales, and prices), customer evaluation of product specifications, and market entry strategies. The study must provide justification for all assumptions. It can, however, be less rigorous and comprehensive than a final market study, which is required for a full feasibility study.

Probable mineral reserve is the economically mineable part of an indicated and, in some cases, a measured mineral resource.

Production stage issuer is an issuer that is engaged in material extraction of mineral reserves on at least one material property.

Production stage property is a property with material extraction of mineral reserves.

Proven mineral reserve is the economically mineable part of a measured mineral resource and can only result from conversion of a measured mineral resource.

Qualified person is an individual who is:

(1) A mineral industry professional with at least five years of relevant experience in the type of mineralization and type of deposit under consideration and in the specific type of activity that person is undertaking on behalf of the registrant; and

(2) An eligible member or licensee in good standing of a recognized professional organization at the time the technical report is prepared. For an organization to be a recognized professional organization, it must:

(i) Be either:

(A) An organization recognized within the mining industry as a reputable professional association; or

(B) A board authorized by U.S. federal, state or foreign statute to regulate professionals in the mining, geoscience or related field;

(ii) Admit eligible members primarily on the basis of their academic qualifications and experience;

(iii) Establish and require compliance with professional standards of competence and ethics;

(iv) Require or encourage continuing professional development;

(v) Have and apply disciplinary powers, including the power to suspend or expel a member regardless of where the member practices or resides; and

(vi) Provide a public list of members in good standing.

Relevant experience means, for purposes of determining whether a party is a qualified person, that the party has experience in the specific type of activity that the person is undertaking on behalf of the registrant. If the qualified person is preparing or supervising the preparation of a technical report concerning exploration results, the relevant experience must be in exploration. If the qualified person is estimating, or supervising the estimation of mineral resources, the relevant experience must be in the estimation, assessment and evaluation of mineral resources and associated technical and economic factors likely to influence the prospect of economic extraction. If the qualified person is estimating, or supervising the estimation of mineral reserves, the relevant experience must be in engineering and other disciplines required for the estimation, assessment, evaluation and economic extraction of mineral reserves.

(1) Relevant experience also means, for purposes of determining whether a party is a qualified person, that the party has experience evaluating the specific type of mineral deposit under consideration (*e.g.,* coal, metal, base metal, industrial mineral, or mineral brine). The type of experience necessary to qualify as relevant is a facts and circumstances determination. For example, experience in a high-nugget, vein-type mineralization such as tin or tungsten would likely be relevant

experience for estimating mineral resources for vein-gold mineralization, whereas experience in a low grade disseminated gold deposit likely would not be relevant.

Note 1 to paragraph (1) of the definition of relevant experience: It is not always necessary for a person to have five years' experience in each and every type of deposit in order to be an eligible qualified person if that person has relevant experience in similar deposit types. For example, a person with 20 years' experience in estimating mineral resources for a variety of metalliferous hard-rock deposit types may not require as much as five years of specific experience in porphyry-copper deposits to act as a qualified person. Relevant experience in the other deposit types could count towards the experience in relation to porphyry-copper deposits.

(2) For a qualified person providing a technical report for exploration results or mineral resource estimates, relevant experience also requires, in addition to experience in the type of mineralization, sufficient experience with the sampling and analytical techniques, as well as extraction and processing techniques, relevant to the mineral deposit under consideration. Sufficient experience means that level of experience necessary to be able to identify, with substantial confidence, problems that could affect the reliability of data and issues associated with processing.

(3) For a qualified person applying the modifying factors, as defined by this section, to convert mineral resources to mineral reserves, relevant experience also requires:

(i) Sufficient knowledge and experience in the application of these factors to the mineral deposit under consideration; and

(ii) Experience with the geology, geostatistics, mining, extraction and processing that is applicable to the type of mineral and mining under consideration.

§ 229.1301 (Item 1301) General instructions.

(a) As used in this section, the term *mining operations* includes operations on all mining properties that a registrant:

(1) Owns or in which it has, or it is probable that it will have, a direct or indirect economic interest;

(2) Operates, or it is probable that it will operate, under a lease or other legal agreement that grants the registrant ownership or similar rights that authorize it, as principal, to sell or otherwise dispose of the mineral; or

(3) Has, or it is probable that it will have, an associated royalty or similar right.

(b) A registrant must provide the disclosure specified in this subpart if its mining operations are material to its business or financial condition.

(c) When determining whether its mining operations are material, a registrant must:

(1) Consider both quantitative and qualitative factors, assessed in the context of the registrant's overall business and financial condition;

(2) Aggregate mining operations on all of its mining properties, regardless of the stage of the mining property, and size or type of commodity produced, including coal, metalliferous minerals, industrial materials, and mineral brines; and

(3) Include, for each property, as applicable, all related activities from exploration through extraction to the first point of material external sale, including processing, transportation, and warehousing.

(d) Upon a determination that its mining operations are material, a registrant must provide summary disclosure concerning all of its mining activities, as specified in § 229.1303, as well as individual property disclosure concerning each of its mining properties that is material to its business or financial condition, as specified in § 229.1304. When providing either summary or individual property disclosure, the registrant:

(1) Should provide an appropriate glossary if the disclosure requires the use of technical terms relating to geology, mining or related matters, which cannot readily be found in conventional dictionaries;

(2) Should not include detailed illustrations and technical reports, full feasibility studies or other highly technical data. The registrant shall, however, furnish such reports and other material supplementally to the staff upon request; and

(3) Should use plain English principles, to the extent practicable, such as those provided in §§ 230.421 and 240.13a–20 of this chapter, to enhance the readability of the disclosure for investors.

§ 229.1302 (Item 1302) Qualified person, technical report summary, and technical studies.

(a)(1) A registrant's disclosure of exploration results, mineral resources, or mineral reserves, as required by §§ 229.1303 and 229.1304, must be based on and accurately reflect information and supporting documentation prepared by a qualified person, as defined in § 229.1300. As used in this section, the term *information* includes the findings and conclusions of a qualified person relating to exploration results or estimates of mineral resources or mineral reserves.

(2) The registrant is responsible for determining that the person meets the qualifications specified under the definition of qualified person in § 229.1300, and that the disclosure in the registrant's filing accurately reflects the information provided by the qualified person.

(3) If a registrant has relied on more than one qualified person to prepare the information and documentation supporting its disclosure of exploration results, mineral resources, or mineral reserves, the registrant's responsibilities as specified in this paragraph (a) pertain to each qualified person.

(b)(1) The registrant must obtain a dated and signed technical report summary from the qualified person that, pursuant to § 229.601(b)(96), identifies and summarizes the information reviewed and conclusions reached by the qualified person about the registrant's mineral resources or mineral reserves determined to be on each material property. At its election, the registrant may also obtain a dated and signed technical report summary from the qualified person that, pursuant to § 229.601(b)(96), identifies and summarizes the information reviewed and conclusions reached by the qualified person about the registrant's exploration results.

(i) Except as provided in paragraph (b)(1)(ii) of this section, if more than one qualified person has prepared the technical report summary, each qualified person must date and sign the technical report summary. The qualified person's signature must comply with § 230.402(e) or § 240.12b–11(d) of this chapter. The technical report summary must also clearly delineate the section or sections of the summary prepared by each qualified person.

(ii) A third-party firm comprising mining experts, such as professional geologists or mining engineers, may date and sign the technical report summary instead of, and without naming, its employee, member or other affiliated person who prepared the technical report summary.

(2)(i) The registrant must file the technical report summary as an exhibit to the relevant registration statement or other Commission filing when disclosing for the first time mineral reserves or mineral resources or when there is a material change in the mineral reserves or mineral resources from the

last technical report summary filed for the property.

(ii) If a registrant files a technical report summary to support the disclosure of exploration results, it must also file a technical report summary when there is a material change in the exploration results from the last technical report summary filed for the property. In each instance, the registrant must file the technical report summary as an exhibit to the relevant Commission filing.

(3)(i) A registrant that has a royalty, streaming, or other similar right is not required to submit a separate technical report summary for a property that is covered by a current technical report summary filed by the producing mining registrant. In that situation, the registrant holding the royalty, streaming, or other similar right should refer to the producing registrant's previously filed technical report summary in its filing with the Commission. Such a reference will not be deemed to incorporate by reference, pursuant to § 230.411 or § 240.12b–23 of this chapter, the previously filed technical report summary into the royalty company's or other similar company's filing absent an express statement to so incorporate by reference the previously filed technical report summary.

(ii) A registrant that has a royalty, streaming, or other similar right is not required to file a technical report summary for an underlying property if the registrant lacks access to the technical report summary because:

(A) Obtaining the information would result in an unreasonable burden or expense; or

(B) It requested the technical report summary from the owner, operator, or other person possessing the technical report summary, who is not affiliated with the registrant, and who denied the request.

(4)(i) The registrant must obtain the written consent of the qualified person to the use of the qualified person's name, or any quotation from, or summarization of, the technical report summary in the relevant registration statement or report, and to the filing of the technical report summary as an exhibit to the registration statement or report.

(ii) Except as provided in paragraph (b)(4)(iii) of this section, if more than one qualified person has prepared the technical report summary, the registrant must obtain the written consent required by this section from each qualified person pertaining to the particular section or sections of the technical report summary prepared by each qualified person.

(iii) If, pursuant to paragraph (b)(1)(ii) of this section, a third-party firm has signed the technical report summary, the third-party firm must provide the written consent. If a qualified person is an employee or person affiliated with the registrant, the qualified person must provide the written consent on an individual basis.

(iv) For Securities Act filings, the registrant must file the written consent as an exhibit to the registration statement pursuant to §§ 230.436 and 230.601(b)(23) of this chapter. For Exchange Act reports, the registrant is not required to file the written consent obtained from the qualified person, but should retain the written consent for as long as it is relying on the qualified person's information and supporting documentation for its current estimates regarding mineral resources, mineral reserves, or exploration results.

(5) The registrant must state in the filed registration statement or report whether each qualified person who prepared the technical report summary is an employee of the registrant. If the qualified person is not an employee of the registrant, the registrant must name the qualified person's employer, disclose whether the qualified person or the qualified person's employer is affiliated with the registrant or another entity that has an ownership, royalty, or other interest in the property that is the subject of the technical report summary, and if affiliated, describe the nature of the affiliation. As used in this section, *affiliate* or *affiliated* has the same meaning as in § 230.405 or § 240.12b–2 of this chapter.

(6)(i) A qualified person may include in the technical report summary information and documentation provided by a third-party specialist who is not a qualified person, as defined in § 229.1300, such as an attorney, appraiser, and economic or environmental consultant, upon which the qualified person has relied in preparing the technical report summary.

(ii) The qualified person may not disclaim responsibility for any information or documentation prepared by a third-party specialist upon which the qualified person has relied, or any part of the technical report summary based upon or related to that information and documentation.

(iii) A registrant is not required to file a written consent of any third-party specialist upon which a qualified person has relied pursuant to paragraph (b)(6)(i) of this section.

(c)(1) A registrant may disclose an exploration target, as defined in § 229.1300, for one or more of its properties that is based upon and accurately reflects information and supporting documentation of a qualified person. The qualified person may include a discussion of an exploration target in a technical report summary.

(2) Any disclosure of an exploration target must appear in a separate section of the Commission filing or technical report summary that is clearly captioned as a discussion of an exploration target. That section must include a clear and prominent statement that:

(i) The ranges of potential tonnage and grade (or quality) of the exploration target are conceptual in nature;

(ii) There has been insufficient exploration of the relevant property or properties to estimate a mineral resource;

(iii) It is uncertain if further exploration will result in the estimation of a mineral resource; and

(iv) The exploration target therefore does not represent, and should not be construed to be, an estimate of a mineral resource or mineral reserve.

(3) Any disclosure of an exploration target must also include:

(i) A detailed explanation of the basis for the exploration target, such as the conceptual geological model used to develop the target;

(ii) An explanation of the process used to determine the ranges of tonnage and grade, which must be expressed as approximations;

(iii) A statement clarifying whether the exploration target is based on actual exploration results or on one or more proposed exploration programs, which should include a description of the level of exploration activity already completed, the proposed exploration activities designed to test the validity of the exploration target, and the time frame in which those activities are expected to be completed; and

(iv) A statement that the ranges of tonnage and grade (or quality) of the exploration target could change as the proposed exploration activities are completed.

(d)(1) A registrant's disclosure of mineral resources under this subpart must be based upon a qualified person's initial assessment, as defined in § 229.1300, which includes and supports the qualified person's determination of mineral resources.

(i) When determining the existence of a mineral resource, a qualified person must:

(A) Be able to estimate or interpret the location, quantity, grade or quality continuity, and other geological characteristics of the mineral resource

from specific geological evidence and knowledge, including sampling; and

(B) Conclude that there are reasonable prospects for economic extraction of the mineral resource based on his or her initial assessment. At a minimum, the initial assessment must include the qualified person's qualitative evaluation of relevant technical and economic factors likely to influence the prospect of economic extraction to establish the economic potential of the mining property or project.

(ii) For a material property, the technical report summary submitted by the qualified person to support a determination of mineral resources must describe the procedures, findings and conclusions reached for the initial assessment, as required by § 229.601(b)(96).

(iii)(A) When determining mineral resources, a qualified person must subdivide mineral resources, in order of increasing geological confidence, into inferred, indicated, and measured mineral resources.

(B) For inferred mineral resources, a qualified person:

(*1*) Must have a reasonable expectation that the majority of inferred mineral resources could be upgraded to indicated or measured mineral resources with continued exploration; and

(*2*) Should be able to defend the basis of this expectation before his or her peers.

(iv) The qualified person should refer to Table 1 to paragraph (d) of this section for the assumptions permitted to be made when preparing the initial assessment.

(2) A qualified person must include cut-off grade estimation, based on assumed unit costs for surface or underground operations and estimated mineral prices, in the initial assessment. To estimate mineral prices, the qualified person must use a price for each commodity that provides a reasonable basis for establishing the prospects of economic extraction for mineral resources. The qualified person must disclose the price used and explain, with particularity, his or her reasons for using the selected price, including the material assumptions underlying the selection. This explanation must include disclosure of the time frame used to estimate the commodity price and unit costs for cut-off grade estimation and the reasons justifying the selection of that time frame. The qualified person may use a price set by contractual arrangement, provided that such price is reasonable, and the qualified person discloses that he or she is using a contractual price when disclosing the price used. The selected price required by this section and all material assumptions underlying it must be current as of the end of the registrant's most recently completed fiscal year.

(3) The qualified person must provide a qualitative assessment of all relevant technical and economic factors likely to influence the prospect of economic extraction to establish economic potential and justify why he or she believes that all issues can be resolved with further exploration and analysis. As provided by Table 1 to paragraph (d) of this section, those factors include, but are not limited to, to the extent material:

(i) Site infrastructure (*e.g.,* whether access to power and site is possible);

(ii) Mine design and planning (*e.g.,* what is the broadly defined mining method);

(iii) Processing plant (*e.g.,* whether all products used in assessing prospects of economic extraction can be processed with methods consistent with each other);

(iv) Environmental compliance and permitting (*e.g.,* what are the required permits and corresponding agencies and whether significant obstacles exist to obtaining those permits); and

(v) Any other reasonably assumed technical and economic factors, including plans, negotiations, or agreements with local individuals or groups, which are necessary to demonstrate reasonable prospects for economic extraction.

(4)(i) A qualified person may include cash flow analysis in an initial assessment to demonstrate economic potential. If the qualified person includes cash flow analysis in the initial assessment, then operating and capital cost estimates must have an accuracy level of at least approximately ±50% and a contingency level of no greater than 25%, as provided by Table 1 to paragraph (d) of this section. The qualified person must state the accuracy and contingency levels in the initial assessment.

(ii) If providing an economic analysis in the initial assessment, a qualified person may include inferred mineral resources in the economic analysis, provided that the qualified person:

(A) States with equal prominence to the disclosure of mineral resource estimates that the assessment is preliminary in nature, it includes inferred mineral resources that are considered too speculative geologically to have modifying factors applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that this economic assessment will be realized;

(B) Discloses the percentage of the mineral resources used in the cash flow analysis that was classified as inferred mineral resources; and

(C) Discloses, with equal prominence, the results of the economic analysis excluding inferred mineral resources in addition to the results that include inferred mineral resources.

TABLE 1 TO PARAGRAPH (d)—SUMMARY DESCRIPTION OF RELEVANT FACTORS EVALUATED IN TECHNICAL STUDIES

Factors [1]	Initial assessment	Preliminary feasibility study	Feasibility study
Site infrastructure	Establish whether or not access to power and site is possible. Assume infrastructure location, plant area required, type of power supply, site access roads, and camp/town site, if required.	Required access roads, infrastructure location and plant area defined. Source of all utilities (power, water, etc.) required for development and production defined with initial designs suitable for cost estimates. Camp/Town site finalized.	Required access roads, infrastructure location and plant area finalized. Source of all required utilities (power, water, etc.) for development and production finalized. Camp/Town site finalized.
Mine design & planning.	Mining method defined broadly as surface or underground. Production rates assumed.	Preferred underground mining method or the pit configuration for surface mine defined. Detailed mine layouts drawn for each alternative. Development and production plan defined for each alternative with required equipment fleet specified.	Mining method finalized. Detailed mine layouts finalized for preferred alternative. Development and production plan finalized for preferred alternative with required equipment fleet specified.

TABLE 1 TO PARAGRAPH (d)—SUMMARY DESCRIPTION OF RELEVANT FACTORS EVALUATED IN TECHNICAL STUDIES—Continued

Factors [1]	Initial assessment	Preliminary feasibility study	Feasibility study
Processing plant	Establish that all products used in assessing prospects of economic extraction can be processed with methods consistent with each other. Processing method and plant throughput assumed.	Detailed bench lab tests conducted. Detailed process flow sheet, equipment sizes, and general arrangement completed. Detailed plant throughput specified.	Detailed bench lab tests conducted. Pilot plant test completed, if required, based on risk. Process flow sheet, equipment sizes, and general arrangement finalized. Final plant throughput specified.
Environmental compliance & permitting.	List of required permits & agencies drawn. Determine if significant obstacles exist to obtaining permits. Identify pre-mining land uses. Assess requirements for baseline studies. Assume post-mining land uses. Assume tailings disposal, reclamation, and mitigation plans.	Identification and detailed analysis of environmental compliance and permitting requirements. Detailed baseline studies with preliminary impact assessment (internal). Detailed tailings disposal, reclamation, and mitigation plans.	Identification and detailed analysis of environmental compliance and permitting requirements finalized. Completed baseline studies with final impact assessment (internal). Tailings disposal, reclamation, and mitigation plans finalized.
Other relevant factors [2].	Appropriate assessments of other reasonably assumed technical and economic factors necessary to demonstrate reasonable prospects for economic extraction.	Reasonable assumptions, based on appropriate testing, on the modifying factors sufficient to demonstrate that extraction is economically viable.	Detailed assessments of modifying factors necessary to demonstrate that extraction is economically viable.
Capital costs	Optional.[3] If included: ..... Accuracy: ±50%. Contingency: ≤25%.	Accuracy: ±25% ..... Contingency: ≤15%.	Accuracy: ±15%. Contingency: ≤10%.
Operating costs	Optional.[3] If included: ..... Accuracy: ±50%. Contingency: ≤25%.	Accuracy: ±25% ..... Contingency: ≤15%.	Accuracy: ±15%. Contingency: ≤10%.
Economic analysis [4]	Optional. If included: Taxes and revenues are assumed. Discounted cash flow analysis based on assumed production rates and revenues from available measured and indicated mineral resources.	Taxes described in detail; revenues are estimated based on at least a preliminary market study; economic viability assessed by detailed discounted cash flow analysis.	Taxes described in detail; revenues are estimated based on at least a final market study or possible letters of intent to purchase; economic viability assessed by detailed discounted cash flow analysis.

[1] When applied in an initial assessment, these factors pertain to the relevant technical and economic factors likely to influence the prospect of economic extraction. When applied in a preliminary or final feasibility study, these factors pertain to the modifying factors, as defined in this subpart.

[2] The relevant technical and economic factors to be applied in an initial assessment, and the modifying factors to be applied in a pre-feasibility or final feasibility study, include, but are not limited to, the factors listed in this table. The number, type, and specific characteristics of the applicable factors will be a function of and depend upon the particular mineral, mine, property, or project.

[3] Initial assessment, as defined in this subpart, does not require a cash flow analysis or operating and capital cost estimates. The qualified person may include a cash flow analysis at his or her discretion.

[4] An initial assessment does not require capital and operating cost estimates or economic analysis, although it requires unit cost assumptions based on an assumption that the resource will be exploited with surface or underground mining methods. An economic analysis, if included, may be based only on measured and indicated mineral resources, or also may include inferred resources if additional conditions are met.

(e)(1) A registrant's disclosure of mineral reserves under this subpart must be based upon a qualified person's preliminary feasibility (pre-feasibility) study or feasibility study, each as defined in § 229.1300, which includes and supports the qualified person's determination of mineral reserves. The pre-feasibility or feasibility study must include the qualified person's detailed evaluation of all applicable modifying factors to demonstrate the economic viability of the mining property or project. For a material property, the technical report summary submitted by the qualified person to support a determination of mineral reserves must describe the procedures, findings and conclusions reached for the pre-feasibility or feasibility study, as required by § 229.601(b)(96).

(2) When determining mineral reserves, a qualified person must subdivide mineral reserves, in order of increasing confidence, into probable mineral reserves and proven mineral reserves, as defined in § 229.1300. The determination of probable or proven mineral reserves must be based on a qualified person's application of the modifying factors to indicated or measured mineral resources, which results in the qualified person's determination that part of the indicated or measured mineral resource is economically mineable.

(i) For a probable mineral reserve, the qualified person's confidence in the results obtained from the application of the modifying factors and in the estimates of tonnage and grade or quality is lower than what is sufficient for a classification as a proven mineral reserve, but is still sufficient to demonstrate that, at the time of reporting, extraction of the mineral reserve is economically viable under reasonable investment and market assumptions. The lower level of confidence is due to higher geologic uncertainty when the qualified person converts an indicated mineral resource to a probable reserve or higher risk in the results of the application of modifying factors at the time when the qualified person converts a measured mineral resource to a probable mineral reserve. A qualified person must classify a measured mineral resource as a probable mineral reserve when his or her confidence in the results obtained from the application of the modifying factors to the measured mineral resource is lower than what is sufficient for a proven mineral reserve.

(ii) For a proven mineral reserve, the qualified person must have a high degree of confidence in the results obtained from the application of the modifying factors and in the estimates of tonnage and grade or quality.

(3) The pre-feasibility study or feasibility study, which supports the qualified person's determination of mineral reserves, must demonstrate that, at the time of reporting, extraction of the mineral reserve is economically viable under reasonable investment and market assumptions. The study must establish a life of mine plan that is technically achievable and economically viable, which will be the basis of determining the mineral reserve.

(i) The term *mineral reserves* does not necessarily require that extraction facilities are in place or operational, that the company has obtained all necessary permits or that the company has entered into sales contracts for the sale of mined products. It does require, however, that the qualified person has, after reasonable investigation, not identified any obstacles to obtaining permits and entering into the necessary sales contracts, and reasonably believes that the chances of obtaining such approvals and contracts in a timely manner are highly likely.

(ii) In certain circumstances, the determination of mineral reserves may require the completion of at least a preliminary market study, as defined in § 229.1300, in the context of a pre-feasibility study, or a final market study, as defined in § 229.1300, in the context of a feasibility study, to support the qualified person's conclusions about the chances of obtaining revenues from sales. For example, a preliminary or final market study would be required where the mine's product cannot be traded on an exchange, there is no other established market for the product, and no sales contract exists. When assessing mineral reserves, the qualified person must take into account the potential adverse impacts, if any, from any unresolved material matter on which extraction is contingent and which is dependent on a third party.

(4) For both a pre-feasibility and feasibility study, a qualified person must use a price for each commodity that provides a reasonable basis for establishing that the project is economically viable. The qualified person must disclose the price used and explain, with particularity, his or her reasons for using the selected price, including the material assumptions underlying the selection. This explanation must include disclosure of the time frame used to estimate the price and costs and the reasons justifying the selection of that time frame. The qualified person may use a price set by contractual arrangement, provided that such price is reasonable, and the qualified person discloses that he or she is using a contractual price when disclosing the price used. The selected price required by this section and all material assumptions underlying it must be current as of the end of the registrant's most recently completed fiscal year.

(5) A pre-feasibility study must include an economic analysis that supports the property's economic viability as assessed by a detailed discounted cash flow analysis or other similar financial analysis. The economic analysis must describe in detail applicable taxes and provide an estimate of revenues. The qualified person must use a price for each commodity in the economic analysis that meets the requirements of paragraph (e)(4) of this section. As discussed in paragraph (e)(3) of this section, in certain situations, estimates of revenues must be based on at least a preliminary market study.

(6) The qualified person must exclude inferred mineral resources from the pre-feasibility study's demonstration of economic viability in support of a disclosure of a mineral reserve.

(7) Factors to be considered in a pre-feasibility study are typically the same as those required for a final feasibility study, but considered at a lower level of detail or at an earlier stage of development. The list of factors is not exclusive. For example, as provided in Table 1 to paragraph (d) of this section, a pre-feasibility study must define, analyze or otherwise address in detail, to the extent material:

(i) The required access roads, infrastructure location and plant area, and the source of all utilities (*e.g.,* power and water) required for development and production;

(ii) The preferred underground mining method or surface mine pit configuration, with detailed mine layouts drawn for each alternative;

(iii) The bench lab tests that have been conducted, the process flow sheet, equipment sizes, and general arrangement that have been completed, and the plant throughput;

(iv) The environmental compliance and permitting requirements, the baseline studies, and the plans for tailings disposal, reclamation, and mitigation, together with an analysis establishing that permitting is possible; and

(v) Any other reasonable assumptions, based on appropriate testing, on the modifying factors sufficient to demonstrate that extraction is economically viable.

(8) A pre-feasibility study must also identify sources of uncertainty that require further refinement in a final feasibility study.

(9) Operating and capital cost estimates in a pre-feasibility study must, at a minimum, have an accuracy level of approximately ±25% and a contingency range not exceeding 15%, as provided in Table 1 of this section. The qualified person must state the accuracy level and contingency range in the pre-feasibility study.

(10) A feasibility study must contain the application and description of all relevant modifying factors in a more detailed form and with more certainty than a pre-feasibility study. The list of factors is not exclusive. For example, as provided in Table 1 to paragraph (d) of this section, a feasibility study must define, analyze, or otherwise address in detail, to the extent material:

(i) Final requirements for site infrastructure, including well-defined access roads, finalized plans for infrastructure location, plant area, and camp or town site, and the established source of all required utilities (*e.g.,* power and water) for development and production;

(ii) Finalized mining method, including detailed mine layouts and final development and production plan for the preferred alternative with the required equipment fleet specified. The feasibility study must address detailed mining schedules, construction and production ramp up, and project execution plans;

(iii) Completed detailed bench lab tests and a pilot plant test, if required, based on risk. The feasibility study must further address final requirements for process flow sheet, equipment sizes, and general arrangement and specify the final plant throughput;

(iv) The final identification and detailed analysis of environmental compliance and permitting requirements, and the completion of baseline studies and finalized plans for tailings disposal, reclamation, and mitigation; and

(v) The final assessments of other modifying factors necessary to demonstrate that extraction is economically viable.

(11) A feasibility study must also include an economic analysis that describes taxes in detail, estimates revenues, and assesses economic viability by a detailed discounted cash flow analysis. The qualified person must use a price for each commodity in the economic analysis that meets the requirements of paragraph (e)(4) of this section. As discussed in paragraph (e)(3) of this section, in certain situations, estimates of revenues must be based on

a final market study or letters of intent to purchase.

(12) Operating and capital cost estimates in a feasibility study must, at a minimum, have an accuracy level of approximately ±15% and a contingency range not exceeding 10%, as provided by Table 1 of this section. The qualified person must state the accuracy level and contingency range in the feasibility study.

(13) If the uncertainties in the results obtained from the application of the modifying factors that prevented a measured mineral resource from being converted to a proven mineral reserve no longer exist, then the qualified person may convert the measured mineral resource to a proven mineral reserve.

(14) The qualified person cannot convert an indicated mineral resource to a proven mineral reserve unless new evidence first justifies conversion to a measured mineral resource.

(15) The qualified person cannot convert an inferred mineral resource to a mineral reserve without first obtaining new evidence that justifies converting it to an indicated or measured mineral resource.

(f)(1) The qualified person may indicate in the technical report summary that the qualified person has relied on information provided by the registrant in preparing its findings and conclusions regarding the following aspects of modifying factors:

(i) Macroeconomic trends, data, and assumptions, and interest rates;

(ii) Marketing information and plans within the control of the registrant;

(iii) Legal matters outside the expertise of the qualified person, such as statutory and regulatory interpretations affecting the mine plan;

(iv) Environmental matters outside the expertise of the qualified person;

(v) Accommodations the registrant commits or plans to provide to local individuals or groups in connection with its mine plans; and

(vi) Governmental factors outside the expertise of the qualified person.

(2) In a separately captioned section of the technical report summary entitled ''Reliance on Information Provided by the Registrant,'' the qualified person must:

(i) Identify the categories of information provided by the registrant;

(ii) Identify the particular portions of the technical report summary that were prepared in reliance on information provided by the registrant pursuant to paragraph (f)(1) of this section, and the extent of that reliance; and

(iii) Disclose why the qualified person considers it reasonable to rely upon the registrant for any of the information specified in paragraph (f)(1) of this section.

(3) Notwithstanding the provisions of § 230.436(a) and (b) of this chapter, any description in the technical report summary or other part of the registration statement of the procedures, findings, and conclusions reached about matters identified by the qualified person as having been based on information provided by the registrant pursuant to this section shall not be considered a part of the registration statement prepared or certified by the qualified person within the meaning of Sections 7 and 11 of the Securities Act.

§ 229.1303 (Item 1303) Summary disclosure.

(a)(1) A registrant that has material mining operations, as determined pursuant to § 229.1301, and two or more mining properties, must provide the information specified in paragraph (b) of this section for all properties that the registrant:

(i) Owns or in which it has, or it is probable that it will have, a direct or indirect economic interest;

(ii) Operates, or it is probable that it will operate, under a lease or other legal agreement that grants the registrant ownership or similar rights that authorize it, as principal, to sell or otherwise dispose of the mineral; or

(iii) Has, or it is probable that it will have, an associated royalty or similar right.

(2) A registrant that has material mining operations but only one mining property is not required to provide the information specified in paragraph (b) of this section. That registrant need only provide the disclosure required by § 229.1304 for the mining property that is material to its business.

(3) A registrant that has a royalty, streaming or other similar right, but which lacks access to any of the information specified in paragraph (b) of this section about the underlying properties, may omit such information, provided that the registrant:

(i) Specifies the information to which it lacks access;

(ii) Explains that it does not have access to the required information because:

(A) Obtaining the information would result in an unreasonable burden or expense; or

(B) It requested the information from a person possessing knowledge of the information, who is not affiliated with the royalty company or similar registrant, and who denied the request; and

(iii) Provides all required information that it does possess or which it can acquire without incurring an unreasonable burden or expense.

(b) Disclose the following information for all properties specified in paragraph (a) of this section:

(1) A map or maps, of appropriate scale, showing the locations of all properties. Such maps should be legible on the page when printed.

(2) An overview of the registrant's mining properties and operations. This overview may be presented in narrative or tabular format.

(i) The overview must include aggregate annual production for the properties during each of the three most recently completed fiscal years preceding the filing.

(ii) The overview should include, as relevant, the following items of information for the mining properties considered in the aggregate:

(A) The location of the properties;

(B) The type and amount of ownership interests;

(C) The identity of the operator or operators;

(D) Titles, mineral rights, leases or options and acreage involved;

(E) The stages of the properties (exploration, development or production);

(F) Key permit conditions;

(G) Mine types and mineralization styles; and

(H) Processing plants and other available facilities.

(iii) When presenting the overview, the registrant should include the amount and type of disclosure concerning its mining properties that is material to an investor's understanding of the registrant's properties and mining operations in the aggregate. This disclosure will depend upon a registrant's specific facts and circumstances and may vary from registrant to registrant. A registrant should refer to, rather than duplicate, any disclosure concerning individually material properties provided in response to § 229.1304.

(iv) A registrant with only a royalty or similar economic interest should provide only the portion of the production that led to royalty or other incomes for each of the three most recently completed fiscal years.

(3) A summary of all mineral resources and mineral reserves, as determined by the qualified person, at the end of the most recently completed fiscal year by commodity and geographic area and for each property containing 10% or more of the registrant's combined measured and indicated mineral resources or containing 10% or more of the registrant's mineral reserves. This

summary must be provided for each class of mineral resources (inferred, indicated, and measured), together with total measured and indicated mineral resources, and each class of mineral reserves (probable and proven), together with total mineral reserves, using the format in Table 1 to paragraph (b) of this section for mineral resources, and the format in Table 2 to paragraph (b) of this section for mineral reserves.

(i) The term *by geographic area* means by individual country, regions of a country, state, groups of states, mining district, or other political units, to the extent material to and necessary for an investor's understanding of a registrant's mining operations.

(ii) All disclosure of mineral resources by the registrant must be exclusive of mineral reserves.

(iii) All disclosure of mineral resources and reserves must be only for the portion of the resources or reserves attributable to the registrant's interest in the property.

(iv) Each mineral resource and reserve estimate must be based on a reasonable and justifiable price selected by a qualified person pursuant to § 229.1302(d) or (e), which provides a reasonable basis for establishing the prospects of economic extraction for mineral resources, and is the expected price for mineral reserves.

(v) Each mineral resource and reserve estimate called for in Tables 1 and 2 to paragraph (b) of this section must be based on a specific point of reference selected by a qualified person. The registrant must disclose the selected point of reference for each of Tables 1 and 2 to paragraph (b) of this section.

(vi) The registrant may modify the tabular formats in Tables 1 and 2 to paragraph (b) of this section for ease of presentation or to add information.

(vii) All material assumptions and information pertaining to the summary disclosure of a registrant's mineral resources and mineral reserves required by this section, including material assumptions related to price estimates, must be current as of the end of the registrant's most recently completed fiscal year.

TABLE 1 TO PARAGRAPH (b)—SUMMARY MINERAL RESOURCES AT END OF THE FISCAL YEAR ENDED [DATE] BASED ON [PRICE] [1]

	Measured mineral resources		Indicated mineral resources		Measured + indicated mineral resources		Inferred mineral resources	
	Amount	Grades/ qualities	Amount	Grades/ qualities	Amount	Grades/ qualities	Amount	Grades/ qualities
Commodity A:								
Geographic area A								
Geographic area B								
Mine/Property A								
Mine/Property B								
Other mines/properties								
Other geographic areas								
Total								
Commodity B:								
Geographic area A								
Geographic area B								
Mine/Property A								
Mine/Property B								
Other mines/properties								
Other geographic areas								
Total								

[1] The registrant must use a reasonable and justifiable price for each commodity, which it must disclose, together with the time frame and point of reference used, when estimating mineral resources for this Table 1.

TABLE 2 TO PARAGRAPH (b)—SUMMARY MINERAL RESERVES AT END OF THE FISCAL YEAR ENDED [DATE] BASED ON [PRICE] [1]

	Proven mineral reserves		Probable mineral reserves		Total mineral reserves	
	Amount	Grades/ qualities	Amount	Grades/ qualities	Amount	Grades/ qualities
Commodity A:						

TABLE 2 TO PARAGRAPH (b)—SUMMARY MINERAL RESERVES AT END OF THE FISCAL YEAR ENDED [DATE] BASED ON [PRICE] [1]—Continued

	Proven mineral reserves		Probable mineral reserves		Total mineral reserves	
	Amount	Grades/ qualities	Amount	Grades/ qualities	Amount	Grades/ qualities
Geographic area A						
Geographic area B						
Mine/Property A						
Mine/Property B						
Other mines/properties						
Other geographic areas						
Total						
Commodity B:						
Geographic area A						
Geographic area B						
Mine/Property A						
Mine/Property B						
Other mines/properties						
Other geographic areas						
Total						

[1] The registrant must use a reasonable and justifiable price for each commodity, which it must disclose, together with the time frame and point of reference used, when estimating mineral reserves for this Table 2.

§ 229.1304 (Item 1304) Individual property disclosure.

(a)(1) A registrant must disclose the information specified in this section for each property that is material to its business or financial condition. When determining the materiality of a property relative to its business or financial condition, a registrant must apply the standards and other considerations specified in § 229.1301(c) to each individual property that it:

(i) Owns or in which it has, or it is probable that it will have, a direct or indirect economic interest;

(ii) Operates, or it is probable that it will operate, under a lease or other legal agreement that grants the registrant ownership or similar rights that authorize it, as principal, to sell or otherwise dispose of the mineral; or

(iii) Has, or it is probable that it will have, an associated royalty or similar right.

(2) A registrant that has a royalty, streaming or other similar right, but which lacks access to any of the information specified in this section about the underlying property or properties, may omit such information, provided that the registrant:

(i) Specifies the information to which it lacks access;

(ii) Explains that it does not have access to the required information because:

(A) Obtaining the information would result in an unreasonable burden or expense; or

(B) It requested the information from a person possessing knowledge of the information, who is not affiliated with the with the royalty company or similar registrant, and who denied the request; and

(iii) Provides all required information that it does possess or which it can acquire without incurring an unreasonable burden or expense.

(b) Disclose the following information for each material property specified in paragraph (a) of this section:

(1) A brief description of the property including:

(i) The location, accurate to within one mile, using an easily recognizable coordinate system. The registrant must provide appropriate maps, with proper engineering detail (such as scale, orientation, and titles). Such maps must be legible on the page when printed;

(ii) Existing infrastructure including roads, railroads, airports, towns, ports, sources of water, electricity, and personnel; and

(iii) A brief description, including the name or number and size (acreage), of the titles, claims, concessions, mineral rights, leases or options under which the registrant and its subsidiaries have or will have the right to hold or operate the property, and how such rights are obtained at this location, indicating any conditions that the registrant must meet in order to obtain or retain the property. If held by leases or options or if the mineral rights otherwise have termination provisions, the registrant must provide the expiration dates of such leases, options or mineral rights and associated payments.

(iv) Except as provided in paragraph (a)(2) of this section, if the registrant holds a royalty or similar interest or will have an associated royalty or similar right, the disclosure must describe all of the information in paragraph (b)(1) of this section, including, for example, the documents under which the owner or operator holds or operates the property,

the mineral rights held by the owner or operator, conditions required to be met by the owner or operator, and the expiration dates of leases, options and mineral rights. The registrant must also briefly describe the agreement under which the registrant and its subsidiaries have or will have the right to a royalty or similar interest in the property, indicating any conditions that the registrant must meet in order to obtain or retain the royalty or similar interest, and indicating the expiration date.

(2) The following information, as relevant to the particular property:

(i) A brief description of the present condition of the property, the work completed by the registrant on the property, the registrant's proposed program of exploration or development, the current stage of the property as exploration, development or production, the current state of exploration or development of the property, and the current production activities. Mines should be identified as either surface or underground, with a brief description of the mining method and processing operations. If the property is without known reserves and the proposed program is exploratory in nature or the registrant has started extraction without determining mineral reserves, the registrant must provide a statement to that effect;

(ii) The age, details as to modernization and physical condition of the equipment, facilities, infrastructure, and underground development;

(iii) The total cost for or book value of the property and its associated plant and equipment;

(iv) A brief history of previous operations, including the names of previous operators, insofar as known; and

(v) A brief description of any significant encumbrances to the property, including current and future permitting requirements and associated timelines, permit conditions, and violations and fines.

(c) When providing the disclosure required by paragraph (b) of this section:

(1) A registrant must identify an individual property with no mineral reserves as an exploration stage property, even if it has other properties in development or production. Similarly, a registrant that does not have reserves on any of its properties cannot characterize itself as a development or production stage company, even if it has mineral resources or exploration results, or even if it is engaged in extraction without first disclosing mineral reserves.

(2) A registrant should not include extensive description of regional geology. Rather, it should include geological information that is brief and relevant to property disclosure.

(d)(1) If mineral resources or reserves have been determined, the registrant must provide a summary of all mineral resources or reserves as of the end of the most recently completed fiscal year, which, for each property, discloses in tabular form, as provided in Table 1 to paragraph (d)(1) of this section for each class of mineral resources (measured, indicated, and inferred), together with total measured and indicated mineral resources, the estimated tonnages and grades (or quality, where appropriate), and as provided in Table 2 to paragraph (d)(1) of this section for each class of mineral reserves (proven and probable), together with total mineral reserves, the estimated tonnages, grades (or quality, where appropriate), cut-off grades, and metallurgical recovery, based on a specific point of reference selected by a qualified person pursuant to § 229.601(b)(96). The registrant must disclose the selected point of reference for each of Tables 1 and 2 to paragraph (d)(1) of this section.

TABLE 1 TO PARAGRAPH (D)(1)—[INDIVIDUAL PROPERTY NAME]—SUMMARY OF [COMMODITY/COMMODITIES] MINERAL RESOURCES AT THE END OF THE FISCAL YEAR ENDED [DATE] BASED ON [PRICE] [1]

	Resources		Cut-off grades	Metallurgical recovery
	Amount	Grades/ qualities		
Measured mineral resources				
Indicated mineral resources				
Measured + Indicated mineral resources				
Inferred mineral resources				

[1] The registrant must use a reasonable and justifiable price, which it must disclose, together with the time frame and point of reference used, when estimating mineral resources for this Table 1.

TABLE 2 TO PARAGRAPH (D)(1)—[INDIVIDUAL PROPERTY NAME]—SUMMARY OF [COMMODITY/COMMODITIES] MINERAL RESERVES AT THE END OF THE FISCAL YEAR ENDED [DATE] BASED ON [PRICE] [1]

	Amount	Grades/ qualities	Cut-off grades	Metallurgical recovery
Proven mineral reserves				
Probable mineral reserves				
Total mineral reserves				

[1] The registrant must use a reasonable and justifiable price for each commodity, which it must disclose, together with the time frame and point of reference used, when estimating mineral reserves for this Table 2.

Instruction 1 to paragraph (d)(1): The registrant may modify the tabular formats in Tables 1 and 2 to paragraph (d)(1) of this section for ease of presentation, to add information, or to combine two or more required tables. When combining tables, the registrant should not report mineral resources and reserves in the same table.

(2) All disclosure of mineral resources by the registrant must be exclusive of mineral reserves.

(3) A registrant with only a royalty or similar interest should provide only the portion of the resources or reserves that are subject to the royalty or similar agreement.

(e) Compare the property's mineral resources and reserves as of the end of the last fiscal year with the mineral resources and reserves as of the end of

the preceding fiscal year, and explain any material change between the two. The comparison, which may be in either narrative or tabular format, must disclose information concerning:

(1) The mineral resources or reserves at the end of the last two fiscal years;

(2) The net difference between the mineral resources or reserves at the end of the last completed fiscal year and the preceding fiscal year, as a percentage of the resources or reserves at the end of the fiscal year preceding the last completed one;

(3) An explanation of the causes of any discrepancy in mineral resources including depletion or production, changes in commodity prices, additional resources discovered through exploration, and changes due to the methods employed; and

(4) An explanation of the causes of any discrepancy in mineral reserves including depletion or production, changes in the resource model, changes in commodity prices and operating costs, changes due to the methods employed, and changes due to acquisition or disposal of properties.

(f)(1) If the registrant has not previously disclosed mineral reserve or resource estimates in a filing with the Commission or is disclosing material changes to its previously disclosed mineral reserve or resource estimates, provide a brief discussion of the material assumptions and criteria in the disclosure and cite corresponding sections of the technical report summary, which must be filed as an exhibit pursuant to § 229.1302(b).

(2) All material assumptions and information pertaining to the disclosure of a registrant's mineral resources and mineral reserves required by paragraphs (d), (e), and (f) of this section, including material assumptions relating to all modifying factors, price estimates, and scientific and technical information (*e.g.,* sampling data, estimation assumptions and methods), must be current as of the end of the registrant's most recently completed fiscal year. To the extent that the registrant is not filing a technical report summary but instead is basing the required disclosure upon a previously filed report, that report must also be current in these material respects. If the previously filed report is not current in these material respects, the registrant must file a revised or new technical report summary from a qualified person, in compliance with § 229.601(b)(96) (Item 601(b)(96) of Regulation S–K), that supports the registrant's mining property disclosures.

(3) Regarding the disclosure required by paragraphs (e) and (f) of this section, whether a change in mineral resources or mineral reserves is material is based on all facts and circumstances, both quantitative and qualitative.

(g)(1) If disclosing exploration activity for any material property specified in paragraph (a) of this section for the most recently completed fiscal year, provide a summary that describes the sampling methods used, and, for each sampling method used, disclose the number of samples, the total size or length of the samples, and the total number of assays.

(2) If disclosing exploration results for any material property specified in paragraph (a) of this section for the most recently completed fiscal year, provide a summary that, for each property, identifies the hole, trench or other sample that generated the exploration results, describes the length, lithology, and key geologic properties of the exploration results, and includes a brief discussion of the exploration results' context and relevance. If the summary only includes results from selected samples and intersections, it should be accompanied with a discussion of the context and justification for excluding other results.

(3) The information disclosed under this paragraph (g) may be presented in either narrative or tabular format.

(4) A registrant must disclose exploration results and related exploration activity for a material property under this section if they are material to investors. When determining whether exploration results and related exploration activity are material, the registrant should consider all relevant facts and circumstances, such as the importance of the exploration results in assessing the value of a material property or in deciding whether to develop the property, and the particular stage of the property.

(5) A registrant may disclose an exploration target when discussing exploration results or exploration activity related to a material property as long as the disclosure is in compliance with the requirements of § 229.1302(c).

(6)(i) If the registrant is disclosing exploration results, but has not previously disclosed such results in a filing with the Commission, or is disclosing material changes to its previously disclosed exploration results, it must provide sufficient information to allow for an accurate understanding of the significance of the exploration results. The registrant must include information such as exploration context, type and method of sampling, sampling intervals and methods, relevant sample locations, distribution, dimensions, and relative location of all relevant assay and physical data, data aggregation methods, land tenure status, and any additional material information that may be necessary to make the required disclosure concerning the registrant's exploration results not misleading. If electing to file a technical report summary, the registrant must cite corresponding sections of the technical report summary, which must be filed as an exhibit pursuant to § 229.1302(b).

(ii) Whether a change in exploration results is material is based on all facts and circumstances, both quantitative and qualitative.

(iii) A change in exploration results that significantly alters the potential of the subject deposit is considered material.

(h) A report containing one or more estimates of the quantity, grade, or metal or mineral content of a deposit or exploration results that a registrant has not verified as a current estimate of mineral resources, mineral reserves, or exploration results, and which was prepared before the registrant acquired, or entered into an agreement to acquire, an interest in the property that contains the deposit, is not considered current and cannot be filed in support of disclosure. Notwithstanding this prohibition, a registrant may include such an estimate in a Commission filing that pertains to a merger, acquisition, or business combination if the registrant is unable to update the estimate prior to the completion of the relevant transaction. In that event, when referring to the estimate, the registrant must disclose the source and date of the estimate, and state that a qualified person has not done sufficient work to classify the estimate as a current estimate of mineral resources, mineral reserves, or exploration results and that the registrant is not treating the estimate as a current estimate of mineral resources, mineral reserves, or exploration results.

§ 229.1305 (Item 1305) Internal controls disclosure.

(a) Describe the internal controls that the registrant uses in its exploration and mineral resource and reserve estimation efforts. This disclosure should include quality control and quality assurance (QC/QA) programs, verification of analytical procedures, and a discussion of comprehensive risk inherent in the estimation.

(b) A registrant must provide the internal controls disclosure required by this section whether it is providing the disclosure under § 229.1303, § 229.1304, or under both sections.

PART 230—GENERAL RULES AND REGULATIONS, SECURITIES ACT OF 1933

■ 7. The general authority citation for part 230 continues to read in part as follows:

Authority: 15 U.S.C. 77b, 77b note, 77c, 77d, 77f, 77g, 77h, 77j, 77r, 77s, 77z–3, 77sss, 78c, 78d, 78j, 78*l,* 78m, 78n, 78*o,* 78*o*–7 note, 78t, 78w, 78*ll*(d), 78mm, 80a–8, 80a–24, 80a–28, 80a–29, 80a–30, and 80a–37, and Public Law 112–106, sec. 201(a), sec. 401, 126 Stat. 313 (2012), unless otherwise noted.

* * * * *

■ 8. Amend § 230.436 by adding paragraph (h) to read as follows:

§ 230.436 Consents required in special cases.

* * * * *

(h) Notwithstanding the provisions of paragraphs (a) and (b) of this section, any description about matters identified by a qualified person pursuant to § 229.1302(f) of this chapter shall not be considered a part of the registration statement prepared or certified by the qualified person within the meaning of Sections 7 and 11 of the Securities Act.

PART 239—FORMS PRESCRIBED UNDER THE SECURITIES ACT OF 1933

■ 9. The general authority citation for part 239 continues to read in part as follows:

Authority: 15 U.S.C. 77c, 77f, 77g, 77h, 77j, 77s, 77z–2, 77z–3, 77sss, 78c, 78*l,* 78m, 78n, 78*o*(d), 78*o*–7 note, 78u–5, 78w(a), 78*ll,* 78mm, 80a–2(a), 80a–3, 80a–8, 80a–9, 80a–10, 80a–13, 80a–24, 80a–26, 80a–29, 80a–30, and 80a–37; and sec. 107, Public Law 112–106, 126 Stat. 312, unless otherwise noted.

* * * * *

■ 10. Amend Form 1–A (referenced in § 239.90) by:

■ a. Designating the introductory text of Item 8 under Part II as paragraph (a);

■ b. Adding paragraph (b) to Item 8 under Part II;

■ c. Revising the Instruction to Item 8 under Part II;

■ d. Redesignating paragraph (15) as paragraph (16) of Item 17 (Description of Exhibits) under Part III; and

■ e. Adding new paragraph (15) of Item 17 (Description of Exhibits) under Part III.

The additions and revision read as follows:

Note: The text of Form 1–A does not, and these amendments will not, appear in the Code of Federal Regulations.

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 1–A

REGULATION A OFFERING STATEMENT UNDER THE SECURITIES ACT OF 1933

* * * * *

PART II—INFORMATION REQUIRED IN OFFERING CIRCULAR

* * * * *

OFFERING CIRCULAR

* * * * *

Item 8. Description of Property

(a) State briefly the location and general character of any principal plants or other material physical properties of the issuer and its subsidiaries. If any such property is not held in fee or is held subject to any major encumbrance, so state and briefly describe how held. Include information regarding the suitability, adequacy, productive capacity and extent of utilization of the properties and facilities used in the issuer's business.

(b) Issuers engaged in mining operations must refer to and, if required, provide the disclosure under subpart 1300 of Regulation S–K (§§ 229.1300 through 1305), in addition to any disclosure required by this Item.

Instruction to Item 8:

Except as required by paragraph (b) of this Item, detailed descriptions of the physical characteristics of individual properties or legal descriptions by metes and bounds are not required and should not be given.

* * * * *

PART III—EXHIBITS

* * * * *

Item 17. Description of Exhibits

* * * * *

15. *The technical report summary under Item 601(b)(96) of Regulation S–K*—An issuer that is required to file a technical report summary pursuant to Item 1302(b)(2) of Regulation S–K must provide the information specified in Item 601(b)(96) of Regulation S–K as an exhibit to Form 1–A.

* * * * *

PART 249—FORMS, SECURITIES EXCHANGE ACT OF 1934

■ 11. The authority citation for part 249 continues to read in part as follows:

Authority: 15 U.S.C. 78a *et seq.* and 7201 *et seq.;* 12 U.S.C. 5461 *et seq.;* 18 U.S.C. 1350; Sec. 953(b), Public Law 111–203, 124 Stat. 1904; Sec. 102(a)(3), Public Law 112–106, 126 Stat. 309 (2012); Sec. 107, Public Law 112–106, 126 Stat. 313 (2012), and Sec. 72001, Public Law 114–94, 129 Stat. 1312 (2015), unless otherwise noted.

Section 249.220f is also issued under secs. 3(a), 202, 208, 302, 306(a), 401(a), 401(b), 406 and 407, Public Law 107–204, 116 Stat. 745.

* * * * *

■ 12. Amend Form 20–F (referenced in § 249.220f) by:

■ a. Revising the heading ''Instruction to Item 4:'';

■ b. Adding Instruction 3 to Item 4;

■ c. Removing the Instructions to Item 4.D;

■ d. Adding Instruction 17 to the Instructions as to Exhibits; and

■ e. Reserving paragraphs 18 through 99 under Instructions as to Exhibits.

The revision and additions read as follows:

Note: The text of Form 20–F does not, and these amendments will not, appear in the Code of Federal Regulations.

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 20–F

* * * * *

PART I

* * * * *

Instructions to Item 4:

* * * * *

3. Issuers engaged in mining operations must refer to and, if required, provide the disclosure under subpart 1300 of Regulation S–K (§§ 229.1300 through 1305 of this chapter).

* * * * *

INSTRUCTIONS AS TO EXHIBITS

* * * * *

17. The technical report summary under Item 601(b)(96) of Regulation S–K (§ 229.601 of this chapter).

A registrant that is required to file a technical report summary pursuant to Item 1302(b)(2) of Regulation S–K (§ 229.1302(b)(2) of this chapter) must provide the information specified in Item 601(b)(96) of Regulation S–K as an exhibit to its registration statement or annual report on Form 20–F.

18 through 99 [Reserved]

* * * * *

By the Commission.

Dated: October 31, 2018.

Brent J. Fields,

Secretary.

[FR Doc. 2018–26337 Filed 12–21–18; 8:45 am]

BILLING CODE 8011–01–P