

SECURITIES AND EXCHANGE COMMISSION

17 CFR Parts 229, 239 and 249

[Release Nos. 33-10098; 34-78086; File No. S7-10-16]

RIN 3235-AL81

Modernization of Property Disclosures for Mining Registrants

AGENCY: Securities and Exchange Commission.

ACTION: Proposed rule.

SUMMARY: We are proposing revisions to 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 proposed revisions 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 proposed revisions would also modernize the Commission's disclosure requirements and policies for mining properties by aligning them with current industry and global regulatory practices and standards. In addition, we are proposing to rescind Industry Guide 7 and include the Commission's mining property disclosure requirements in a new subpart of Regulation S-K.

DATES: Comments should be received on or before August 26, 2016.

ADDRESSES: Comments may be submitted by any of the following methods:

Electronic comments:

- Use the Commission's Internet comment form (<http://www.sec.gov/rules/proposed.shtml>); or

- Send an E-mail to rule-comments@sec.gov. Please include File Number S7-10-16 on the subject line; or
- Use the Federal eRulemaking Portal (<http://www.regulations.gov>). Follow the instructions for submitting comments.

Paper comments:

- Send paper comments to Brent J. Fields, Secretary, Securities and Exchange Commission, 100 F Street, NE, Washington, DC 20549-1090.

All submissions should refer to File Number S7-10-16. This file number should be included on the subject line if e-mail is used. To help us process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's website (<http://www.sec.gov/rules/proposed.shtml>). Comments are also available for website viewing and printing in the Commission's Public Reference Room, 100 F Street, NE, Washington, DC 20549, on official business days between the hours of 10:00 am and 3:00 pm. All comments received will be posted without change; we do not edit personal identifying information from submissions. You should submit only information that you wish to make available publicly.

Studies, memoranda or other substantive items may be added by the Commission or staff to the comment file during this rulemaking. A notification of the inclusion in the comment file of any such materials will be made available on the SEC's website. To ensure direct electronic receipt of such notifications, sign up through the "Stay Connected" option at www.sec.gov to receive notifications by e-mail.

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SUPPLEMENTARY INFORMATION: We are proposing to rescind Industry Guide 7¹ under the Securities Act² and the Exchange Act,³ amend section 102 of Regulation S-K,⁴ add new exhibit (96) to Item 601 of Regulation S-K,⁵ add new subpart 1300 of Regulation S-K,⁶ amend Form 1-A,⁷ and amend Form 20-F.⁸

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¹ 17 CFR 229.801(g) and 229.802(g).

² 15 U.S.C. 77a *et seq.*

³ 15 U.S.C. 78a *et seq.*

⁴ 17 CFR 229.102.

⁵ Proposed 17 CFR 229.601(b)(96).

⁶ Proposed 17 CFR 229.1301 *et seq.*

⁷ 17 CFR 239.90.

⁸ 17 CFR 249.220f.

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I. INTRODUCTION

The Commission’s disclosure requirements and related guidance for properties owned or operated by mining companies are contained in Item 102 of Regulation S-K and Industry Guide 7. Item 102 sets forth the basic disclosure requirements for a registrant’s “principal” mines that are “materially important.”⁹ Instruction 3 to Item 102 requires disclosure of “material information” concerning the “production, reserves, locations, development, and the nature of the registrant’s interest,” including additional disclosure requirements for individual properties that “are of major significance to an industry segment.” Instruction 7 to Item 102 states that “the attention of issuers engaged in significant mining operations is directed to the information called for in Guide 7,” which identifies disclosures beyond what is required by Item 102.

Guide 7 sets forth the views of the staff of the Division of Corporation Finance on how mining company registrants can comply with the Commission’s description of property

⁹ Instruction 2 to Item 102 refers registrants to Instruction 1 to Item 101 of Regulation S-K for the quantitative and qualitative factors they should take into account in determining whether properties should be described under Item 102.

disclosure requirements applicable to registrants.¹⁰ The centerpiece of Guide 7 is its disclosure guidance for mineral reserves, which are defined as “that part of a mineral deposit that can be economically and legally extracted or produced at the time of the reserve determination.”¹¹ Guide 7 further classifies mineral reserves into “proven” and “probable,” with proven mineral reserves having a higher degree of assurance than probable mineral reserves. The Guide does not define the term “mineral.”

Under both Item 102 and the Guide, a registrant may not disclose estimates for non-reserve deposits, such as mineral resources,¹² unless such information is required to be disclosed “by foreign or state law” or unless “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.”¹³ While there are numerous foreign mining disclosure codes, only Canada¹⁴ has adopted its code as a matter of law.¹⁵

¹⁰ When it published the first Industry Guides in 1968, the Commission stated that, “[t]hese guides are not rules of the Commission nor are they published as bearing the Commission's official approval. They represent policies and practices followed by the Commission's Division of Corporation Finance in the administration of the registration requirements of the Act, but do not purport to furnish complete criteria for the preparation of registration statements.” Release No. 33-4936 (December 9, 1968) [33 FR 18617] (December 17, 1968).

¹¹ See paragraph (a)(1) of Guide 7.

¹² Resources are generally defined in international mining codes, and generally understood in the industry, as mineral deposits having prospects for economic extraction that are less certain than those for reserves because economic viability has yet to be demonstrated. See, e.g., SME Guide for Reporting Exploration Results, Mineral Resources and Mineral Reserves (“SME Guide”) pt. 33 (2014), which is available at: http://www.smenet.org/docs/publications/2014_SME_Guide_Reporting_%20June_10_2014.pdf. See also section II.E, infra.

¹³ See Instruction 5 to Item 102 of Regulation S-K. Instruction 3 to paragraph (b)(5) of Guide 7 also includes the same provision limiting disclosure of estimates for deposits other than mineral reserves, as does Instruction 1 to Item 4.D of Form 20-F.

¹⁴ See Canada's National Instrument (“NI”) 43-101 (“Standards of Disclosure for Mineral Projects”) (2012), which is available at: http://web.cim.org/standards/documents/Block484_Doc111.pdf. Other foreign mining codes have been adopted as listing standards for foreign securities exchanges or as guidelines by

Guide 7 has not been updated for more than 30 years.¹⁶ During this period, mining has become an increasingly globalized industry and several foreign countries have adopted mining disclosure standards based on the Committee for Mineral Reserves International Reporting Standards (CRIRSCO)¹⁷ that significantly differ from the Guide. For example, the CRIRSCO standards¹⁸ require companies to disclose material mineral resources; require that any public report about a company's exploration results,¹⁹ mineral resources and mineral reserves be

foreign securities commissions. The staff in the Commission's Division of Corporation Finance has taken the view that these other codes are not covered by Item 102's "foreign or state law" exception. Therefore, in the staff's view, only the Canadian mining disclosure requirements serve as a basis for disclosure of mineral resource estimates in SEC filings, and only with respect to Canadian registrants.

¹⁵ We are not aware of any state mining disclosure laws that are applicable and have not observed a company providing mineral resource disclosure based on state law.

¹⁶ The disclosure requirements for companies engaged in mining activities were last updated in 1982 when the Commission amended Form S-18 to add certain disclosure requirements applicable to mining companies. See Release No. 33-6406 (June 4, 1982) [47 FR 25126] (June 10, 1982). The Commission later transferred its mining disclosure requirements from Form S-18 to Guide 7. See Release No. 33-6949 (July 30, 1992) [57 FR 36442] (August 13, 1992).

¹⁷ 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)), Canada (Canadian Institute of Mining Metallurgy and Petroleum (CIM)), Chile (Minera Comision), Europe (Pan-European Reserves and Resources Reporting Committee (PERC)), 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>.

¹⁸ The CRIRSCO-based codes, which are best practices of professional associations, have been incorporated into the listing rules of various foreign stock exchanges. All the codes (together with the listing rules that make them binding) require disclosure of exploration results, mineral resources, mineral reserves, and other information about mining properties as long as they are deemed material.

¹⁹ Exploration results 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. See, e.g., CRIRSCO's International Reporting Template pt. 18 (2013), which is available at: http://www.crirSCO.com/templates/international_reporting_template_november_2013.pdf.

prepared by a “Competent or Qualified Person;”²⁰ and permit disclosure of mineral reserves to be based on a preliminary feasibility (“pre-feasibility”) study or a final feasibility study.²¹

Over the years, as part of its filing review and comment process, the staff has provided supplemental guidance, including requesting clarifications or additional disclosure, to assist registrants in providing the appropriate disclosure about their mining operations and properties. For example, in contrast to the practice under the CRIRSCO standards, the staff historically has requested that a registrant obtain a specific type of feasibility study (i.e., a final feasibility study) in order to support a determination of mineral reserves.

Because of the widespread adoption of the CRIRSCO standards, industry participants have requested revisions to Guide 7.²² Among other matters,²³ these participants have urged the Commission to align its mining disclosure rules with the CRIRSCO-based codes by allowing a mining registrant to disclose both mineral resources and reserves.²⁴ These participants asserted

²⁰ In addition, the CRIRSCO-based codes require that the qualified person must consider and apply certain factors (“modifying factors”) in his/her evaluation of the economic prospects and economic viability of the minerals. See the discussion in Sections II.F.1 and II.F.2, *infra*.

²¹ A feasibility study is a technical and economic study of a mineral project necessary to demonstrate that extraction is economically viable. The two kinds of studies commonly used to demonstrate economic viability, in public disclosure, are preliminary feasibility (also called pre-feasibility) and final feasibility (also called feasibility) studies. A feasibility study is more comprehensive, and as a result more accurate, than a pre-feasibility study.

²² See, e.g., the petition for rulemaking by the Society for Mining, Metallurgy and Exploration, Inc. (“SME Petition for Rulemaking”) (October 1, 2012), which is available at: <http://www.sec.gov/rules/petitions/2012/petn4-654.pdf>.

²³ For example, the SME also specifically expressed concern regarding the limited guidance provided by the staff on when the disclosure of certain non-reserve deposits known as “mineralized material” would be appropriate.

²⁴ We also have received letters from members of the United States Congress requesting that the Commission update and harmonize Guide 7 with global reporting requirements. See the letter, dated July 7, 2014, from Representatives Shelley Moore Capito, Stevan Pearce, Blaine Luetkemeyer, Sean Duffy, Steve Stivers, Stephen Fincher, Mick Mulvaney, Randy Hultgren, Ann Wagner, Andy Barr, Tom Cotton, Keith Rothfus, and William Lacy Clay; and the letter, dated August 13, 2014, from Senators Dean Heller, Mike Crapo and

that this would provide investors with a more complete understanding of the economic potential of a registrant's properties.²⁵ Finally, these participants also requested that the Commission address what they characterize as the uncertainty caused by the fact that Guide 7 and staff comment letters are not rules of the Commission, but rather non-binding guidance provided by the Division of Corporation Finance ("Division").²⁶

In light of these global developments and industry participants' concerns, we are proposing to modernize our disclosure rules for properties owned or operated by mining companies by more closely aligning those rules with the CRIRSCO-based codes in several respects. For example, the proposed rules would require a registrant with material mining operations to disclose, in addition to its mineral reserves, mineral resources that have been determined based upon information and supporting documentation by one or more qualified persons. Industry participants assert that such an alignment should help place U.S. mining registrants on a more level playing field with non-U.S. mining companies that are subject to one or more of the CRIRSCO-based mining codes.²⁷ This release requests comment on all aspects of

John Testor. These letters are available at: <http://www.sec.gov/comments/disclosure-effectiveness/disclosureeffectiveness.shtml>.

²⁵ Unless otherwise stated, in this release the term "property" refers to mining properties, which are properties at which the registrant engages in mining activities. Mining activities include exploration, development and production of minerals. The term "mine" refers to a specific geographic location at which the registrant produces minerals. A property could include multiple mines.

²⁶ See SME Petition for Rulemaking at 9.

²⁷ In this regard, the SME has questioned the attractiveness of the U.S. capital markets for mining companies in light of the differences between Guide 7 and the CRIRSCO-based codes: "All of these factors decrease the attractiveness of the U.S. market to current and potential reporting companies. In light of increased globalization, companies have more choices as to which capital markets to access. Although the U.S. still presents one of the largest markets and thus will attract companies on that basis alone, there is a marked reluctance, particularly among exploration-stage mining companies, to pursue initial listings in the U.S. This harms our stock exchanges, as well as our financial markets." SME Petition for Rulemaking at 14.

our proposed rules, and we encourage all interested parties, including investors, companies, and other market participants, to submit comments.²⁸

II. PROPOSED MINING DISCLOSURE RULES

A. Consolidation of the Mining Disclosure Requirements

As noted above, the Commission’s current mining disclosure regime involves overlapping disclosure requirements and policies in different locations (Regulation S-K and Guide 7), with an instruction (Instruction 7 to Item 102) that registrants engaged in significant mining operations should “direct their attention” to Guide 7. The combination of the overlapping structure of the disclosure regime for mining registrants 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.

To help address this uncertainty, we propose to rescind Guide 7 and create new Regulation S-K subpart 1300²⁹ that would govern disclosure for registrants with mining operations.³⁰ In addition, we propose to amend Item 102 of Regulation S-K to replace the instruction that “the attention of issuers engaged in significant mining operations is directed to

²⁸ The Commission also has issued a concept release on Regulation S-K seeking input on updating and modernizing our business and financial disclosure requirements. See Release No. 33-10064 (April 13, 2016), [81 FR 23916] (April 22, 2016). The concept release requests comment on a range of topics that also may apply to mining companies, such as disclosure pertaining to risk factors, description of property and sustainability. We continue to encourage interested parties to submit comments on the concept release.

²⁹ Proposed 17 CFR 229.1301 *et seq.*

³⁰ Proposed Regulation S-K subpart 1300 would apply to registration statements under the Securities Act and the Exchange Act as well as to annual reports under the Exchange Act.

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 Regulation S-K subpart 1300.³¹

Foreign private issuers that use Form 20-F to file their Exchange Act registration statements and annual reports, or that refer to Form 20-F when filing their Securities Act registration statements on Forms F-1 and F-4, are generally not subject to Regulation S-K. Because we believe that the same property disclosure requirements should apply to both domestic and foreign mining registrants, the proposed rules would amend Form 20-F to instruct registrants to refer to, and if required, provide the disclosure under subpart 1300 of Regulation S-K.³² This proposed treatment would be consistent with current staff practice whereby foreign registrants are subject to the same Guide 7 and other disclosures as domestic mining registrants.

Having one source for mining disclosure obligations should facilitate mining registrants’ compliance with their disclosure requirements by eliminating the complexity resulting from the existing structure of Commission disclosure obligations in Regulation S-K and staff disclosure guidance in Industry Guide 7. Moreover, consolidating the disclosure requirements from Guide 7 into Regulation S-K would eliminate any uncertainty about their authority.³³

Request for Comment

1. The Commission’s current mining disclosure regime consists of disclosure requirements located in Item 102 of Regulation S-K and disclosure policies located in Guide 7. Has this disclosure regime caused uncertainty for mining registrants? If so, would

³¹ Registrants that have material non-mining operations would continue to provide non-mining property disclosures under Item 102 of Regulation S-K.

³² See section II.H., infra.

³³ See note 26, supra. We discuss the expected benefits and costs of the proposed rules in section IV, infra.

establishing a sole regulatory source for mining disclosure by rescinding Guide 7 and including the disclosure requirements for mining registrants in a new Regulation S-K subpart, as proposed, reduce this uncertainty?

2. Should we amend Item 102 of Regulation S-K by eliminating the instruction that refers mining registrants to the information called for in Guide 7 and instead instruct them to refer to, and if required, provide the disclosure under new Regulation S-K subpart 1300, as proposed? Should we instead retain Guide 7 and Item 102 of Regulation S-K as separate sources for mining disclosures? If so, how should they apply to registrants?

B. The Standard for Mining-Related Disclosure

1. Overview

Under Item 102 of Regulation S-K, registrants are required to disclose 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. When construed together, Item 102 and Guide 7 suggest that there are two levels of reporting under the Commission's current mining disclosure regime. 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. Although both Item 102 and Guide 7 refer to "significant" mining operations, the staff historically has advised registrants to apply materiality in determining what disclosures to provide.

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. In

the absence of specific guidance, the staff has historically used 10% of a registrant’s total assets as the benchmark for determining the materiality of a registrant’s mining operations.

We propose that a registrant be required to provide the disclosure under new subpart 1300 of Regulation S-K if its mining operations, as that term is defined in Instruction 1 to proposed Item 1301(b),³⁴ are material to its business or financial condition.³⁵ For purposes of the new subpart, the term “material” would have the same meaning as under Securities Act Rule 405 and Exchange Act Rule 12b-2.³⁶

Under proposed new subpart 1300, when determining the materiality of its mining operations, a registrant would have to:

- consider both quantitative and qualitative factors, assessed in the context of the registrant's overall business and financial condition;

³⁴ The term “mining operations” would include 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. It also would include operations on mining properties that a registrant 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. Finally, “mining operations” would include operations on mining properties that a registrant has, or it is probable that it will have, an associated royalty or similar right. See Instruction 1 to proposed Item 1301(b). For purposes of subpart 1300, the term “probable” would have the same meaning as the U.S. GAAP definition of that term. See ASC Section 450-20-20.

³⁵ See proposed Regulation S-K Item 1301(a). Because we are proposing to consolidate the revised mining disclosure rules under new Regulation S-K subpart 1300, the proposed rules would eliminate Instruction 3 to Item 102, which requires the disclosure of certain specified material information, including “more detailed information” about a mining registrant’s individual properties that “are of major significance.”

³⁶ See Id. Pursuant to Securities Act Rule 405 (17 CFR 230.405) and Exchange Act Rule 12b-2 (17 CFR 240.12b-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.

- aggregate mining operations on all of its mining properties, regardless of size or type of commodity produced, including coal, metalliferous minerals, industrial materials, geothermal energy, and mineral brines;³⁷ and
- include, for each property, as applicable, all related mining operations from exploration through extraction to the first point of material external sale, including processing, transportation, and warehousing.³⁸

Consistent with current staff guidance, we are proposing to define “mining operations” to include all related activities from exploration through extraction to the first point of material external sale.³⁹ We believe that including all activities up to the point of first material external sale is appropriate because all such activities are necessary to convert the mineral resource to saleable product, which generates the registrants’ revenues. This definition would, however, exclude all activities subsequent to the first point of sale. Although such activities may add value to the saleable mining product, they are not necessary to convert the resource into a saleable product. For example, an aluminum producer who has material bauxite mining operations and material external bauxite sales would not include any subsequent refinery activities (such as processing the bauxite into aluminum) in the scope of its mining property disclosure. We also note that, because this approach would be consistent with current staff guidance, it is not expected to significantly alter existing disclosure practices.

³⁷ For a discussion of the treatment of mineral brines and energy under proposed subpart 1300, see section II.E.1, infra.

³⁸ See proposed Item 1301(b) of Regulation S-K.

³⁹ See proposed Item 1301(b)(3) of Regulation S-K.

Proposed new subpart 1300 would instruct that a registrant's mining operations are presumed to be material if its mining assets constitute 10% or more of its total assets.⁴⁰ We believe it would be appropriate to presume materiality under the proposed rules when mining assets are at or above a threshold of 10 percent of total assets because at that level the mining assets are likely to contribute significantly to the registrant's business or financial condition. We further believe that the 10% asset threshold is appropriate because it is consistent with similar 10% thresholds that the Commission has used to determine disclosure requirements under a variety of forms and rules.⁴¹ Finally, the proposed asset test would provide registrants with an easily applied quantitative standard to use regarding whether they are subject to the new mining disclosure requirements.

The proposed new subpart would further instruct 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.⁴² Such factors could include:

- mining operations that constitute 10% or more of some other financial measure, such as the registrant's total revenues, net income or operating income;

⁴⁰ See Instruction 2 to proposed Item 1301(b) of Regulation S-K. The 10% test is a "rule of thumb" that the staff has historically applied in the mining context.

⁴¹ See, e.g., Item 2.01 of Form 8-K (17 CFR 249.308); sections 4-08 and 10-01 of Regulation S-X (17 CFR 210.4-08 and 210.10-01); and Items 101 and 911 of Regulation S-K (17 CFR 229.101 and 229.911); see also ASC Section 280-10-50-12.

⁴² See Instruction 3 to proposed Item 1301(b) of Regulation S-K. Similarly, because the 10% asset test is a presumption, a registrant with mining operations that constitute more than 10% of its total assets could evaluate all the relevant quantitative and qualitative factors and conclude that the mining operations are not required to be disclosed under the proposed standard.

- evidence that disclosure of a similar property or properties has had a significant impact on the price of a registrant’s securities;
- public disclosure by the registrant discussing the importance to its operations (e.g., from an operational or competitive standpoint) of a particular property or properties;
- the unique or rare nature of the particular mineral or the importance of the mineral to the registrant’s operations;
- the actual and projected expenditures on the registrant’s mining properties as compared to its expenditures on non-mining business activities; and
- the amount of capital raised or planned to be raised by the registrant for its mining properties.⁴³

The proposed standard is generally consistent with the existing disclosure requirements that registrants routinely apply throughout their required filings. It is also consistent with existing staff guidance relating to the disclosure requirements for companies with mining operations. Moreover, as discussed below, we are proposing rules and instructions to help registrants apply the proposed standard under a variety of circumstances, including situations that are not expressly addressed by the current mining disclosure rules.⁴⁴ We believe the proposed requirements could enhance disclosure to investors.

⁴³ Many of these factors are similar to factors enunciated in Canada’s Companion Policy 43-101CP to National Instrument 43-101, General Guidance, paragraph 5, which is available at: http://web.cim.org/standards/documents/Block484_Doc111.pdf. See also the Australian Stock Exchange (ASX) Listing Rules, Guidance Note 31, pt. 2.2, which is available at: http://www.asx.com.au/documents/rules/gn31_reporting_on_mining_activities.pdf.

⁴⁴ See section II.B.1.i-iii, *infra*.

Finally, because the proposed standard is generally consistent with the disclosure standard under the CRIRSCO-based mining codes, it should not alter the disclosure practices of the numerous mining companies that are listed and operate in multiple jurisdictions.

Request for Comment

3. Should the disclosure standard under the revised mining disclosure rules be whether a registrant's mining operations are material to its business or financial condition, as proposed? Why or why not? If not, what standard should we adopt for determining whether a registrant must provide the mining disclosure under the revised rules? Why?
4. Are the quantitative and qualitative factors described in this section relevant to the determination of the materiality of a registrant's mining operations? Why or why not? Are there other factors, such as those identified in Canada's Companion Policy 43-101CP to National Instrument 43-101, General Guidance, that a registrant should consider for the materiality determination instead of or in addition to the factors described in this section? Should we include these or other factors as part of the rule provision governing the materiality determination? If so, which factors should we include in the rule?
5. Should we adopt the proposed presumption that a registrant's mining operations are material if they consist of 10% or more of its total assets? Would a percentage higher or lower than 10% be better than the proposed threshold? Why or why not? Should it be a presumption, as proposed, or should it be a bright line requirement? If the former, how might the presumption be rebutted? Is there another quantitative factor, such as revenues, that a registrant should consider instead of or in addition to the proposed asset test?

6. When assessing the materiality of its mining operations, should we require a registrant to aggregate all of its mining properties, regardless of size or type of commodity produced, including coal, metalliferous minerals, industrial materials, geothermal energy, and mineral brines,⁴⁵ as proposed? Why or why not? Should we exclude any of the specified commodities from the proposed aggregation requirement? If so, which commodities and why?
7. When assessing the materiality of its mining operations, should we require a registrant to 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, as proposed? Why or why not? Is “the first point of material external sale” the appropriate cut-off or should we use some other measure? Are there certain activities that we should exclude from the materiality determination, even if they occur before the first point of material external sale? If so, which activities, for which minerals or companies, and why? Are there certain activities after the point of first material external sale that we should include? If so, which activities, for which minerals or companies, and why?
8. Are there specific qualitative or quantitative factors relating to the environmental or social impacts of a registrant’s properties or operations that a registrant should consider in making its materiality determination?

⁴⁵ As discussed in section II.E.1, we are proposing that the commodities covered by the definition of mineral resource include mineralization, including dumps and tailings, geothermal fields, mineral brines, and other resources extracted on or within the earth’s crust. See proposed Item 1301(d)(14)(ii) of Regulation S-K.

i. Treatment of vertically-integrated companies

Some companies have material mining operations that are secondary to or in support of their main non-mining business. For example, a metal manufacturer may operate iron ore or coal mines to supply raw material for its primary business. Neither Guide 7 nor Item 102 addresses whether or when a vertically-integrated manufacturer⁴⁶ is required to provide mining disclosure.

Proposed new subpart 1300 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.

For example, the bauxite mining operations of an aluminum manufacturer, whose primary business is manufacturing, not mining, could be material and require disclosure if its bauxite operations represent ten percent or more of the registrant's assets, even though they are not the registrant's primary operations, or the primary source of the registrant's revenues. In addition, even if the bauxite or other mining operations of such a vertically-integrated manufacturer constitute less than ten percent of its total assets, its mining operations could still be material and trigger disclosure obligations if, for example, the manufacturer derives a competitive advantage from, or substantially relies upon, its ability to source that particular mineral from its mining operations.

Requiring disclosure of mining operations in such circumstances would be consistent with the disclosure currently provided in SEC filings and should not significantly alter existing

⁴⁶ 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.

disclosure practices. In addition, subjecting vertically-integrated companies to the proposed rules would align the disclosure requirements for such companies with those of companies primarily engaged in mining activities. Also, we note that most of the foreign jurisdictions that have CRIRSCO-based rules require disclosure for material mining properties and provide no exemptions for vertically-integrated companies.⁴⁷

Request for Comment

9. Should we require vertically-integrated companies, such as manufacturers, to provide the disclosure required under new Regulation S-K subpart 1300, as proposed? Why or why not?

ii. Treatment of multiple property ownership

As discussed above, the primary focus of the current rules and guidance is on individually significant or material properties. It is, however, very common for registrants to own multiple mining properties. In some instances, the 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. Neither Item 102 nor Guide 7 provides guidance concerning when or what

⁴⁷ For example, ASX Listing Rules require disclosure of exploration results, mineral resources and mineral reserves for all "material mineral projects." In defining a "material mineral project," the ASX Listing Rules, Guidance Note 31, pt. 2.2, provides that "[i]n many cases, it will be readily apparent that a particular mining activity is a material mining project for the purposes of the Listing Rules and therefore the disclosure requirements in Listing Rules 5.7 - 5.19 will apply to any disclosures of exploration results, estimates of mineral resources or ore reserves, historical estimates or foreign estimates of mineralisation, or production targets for that project. Judgment however may need to be exercised where an entity has multiple mining projects or where it has a mix of mining projects and other business activities."

disclosure is required in these situations. To address this, the staff has provided interpretive guidance about what, if any, disclosure is required by multiple or ancillary property owners.

Under the proposed rules, a registrant with multiple properties would be required to consider all of its mining properties individually and in the aggregate, regardless of size or commodity produced, when assessing whether it must provide the mining disclosure required by new subpart 1300 of Regulation S-K.⁴⁸ 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 disclosure⁴⁹ concerning its combined mining activities rather than providing disclosure for individual properties.⁵⁰

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. 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.

⁴⁸ See proposed Item 1301(b)(2) of Regulation S-K.

⁴⁹ See section II.G.1, *infra* for a more detailed discussion of the summary disclosure requirements, which would include summary information about a registrant's 20 largest properties, by asset value. In the case of a registrant with material mining operations in the aggregate, but with no individual properties that are material, we believe that investors would benefit more from the proposed summary disclosure concerning the registrant's properties in the aggregate than from detailed disclosure concerning each individual property, some or all of which may not have mineral resources, mineral reserves or exploration results.

⁵⁰ To the extent that an individual property is material to a registrant's operations, the proposed rules would also require detailed disclosure about that property. See section II.G.2, *infra*, for a discussion of those disclosure requirements.

We believe the proposed rules would provide a clear and consistent standard for registrants to apply in determining the scope of their disclosure obligations, while helping to ensure that investors receive relevant information about the operations and risks associated with registrants' mining operations.

Request for Comment

10. Should we require a registrant with multiple properties to provide the disclosure required by proposed Regulation S-K subpart 1300, as proposed? Why or why not? Should we require a registrant with multiple properties, none of which is individually material, but which in the aggregate constitute material mining operations, to provide only summary disclosure concerning its combined mining activities, as proposed? Why or why not?
11. Are there difficulties that a registrant with multiple properties could face when determining if disclosure is required under the proposed rules? If so, how should our mining disclosure rules address such difficulties?
12. Should we require more detailed disclosure about individual properties that are material to a registrant's mining operations, as proposed? Why or why not?

iii. Treatment of royalty companies and other companies holding economic interests in mining properties

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.⁵¹ In addition, some registrants hold other economic interests, similar to

⁵¹ 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 land owners or mineral right holders; or (iii) converting a participating interest in a joint venture into a royalty right. Such payment

royalty rights, also without owning or operating a property.⁵² Neither Item 102 nor Guide 7 address whether royalty or similar companies must provide disclosure about the mining operations and properties underlying their economic interest. Consequently, the staff has provided guidance about whether and how such companies should provide mining disclosure.

Under the proposed rules, consistent with prior staff guidance, a royalty company or other registrant that holds a similar economic interest would have to provide all applicable mining disclosure if the mining operations that generate the royalty or other payment (the underlying mining operations) are material to the royalty or similar company's operations as a whole. 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.⁵³

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. 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 royalty companies and other companies holding similar economic interests should provide the same type and amount of disclosure as registrants with mining operations.

is most often based on a percentage of the minerals, revenues, or profits generated from the property.

⁵² 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.

⁵³ In this regard, 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.

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.⁵⁴ We do not believe that investors in a company holding royalty or similar rights need information relating to portions of the mining property that do not contribute to the registrant's royalty stream, as such portions do not impact the results of operations or overall value of the registrant. This proposed limitation on the scope of the disclosure required for royalty or other similar companies also recognizes the limitations of the company's rights. Specifically, the registrant may not have access to information about portions of the mining property that do not contribute to the registrant's revenue stream.⁵⁵

A royalty or similar company would need to describe the material properties that generate its royalties or similar payments and file a technical report summary for each such property.⁵⁶ Such a registrant would not, however, have 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 situation, the royalty or similar company may incorporate by reference the producing registrant's previously filed technical report summary.⁵⁷

⁵⁴ See Instruction 2 to proposed Item 1303(b)(2) of Regulation S-K and Instruction 4 to proposed Item 1304(b)(5) through (7) of Regulation S-K.

⁵⁵ This is consistent with the Commission's current rules providing that information required need be given only insofar as it is known or reasonably available to the registrant. See Securities Act Rule 409 (17 CFR 230.409) and Exchange Act Rule 12b-21 (17 CFR 240.12b-21).

⁵⁶ As discussed, in section II.C.1 *infra*, the proposed rules would require registrants to file technical report summaries, as exhibits, to support disclosure of mineral resources, mineral reserves, and material exploration results.

⁵⁷ See 17 CFR 230.411 and 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

Request for Comment

13. Should we 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, as proposed? Why or why not? Should disclosure for such companies be required under other circumstances?
14. Should we permit a royalty company, or other similar company holding an economic interest in another company's mining operations, to provide only the required disclosure for the reserves and production that generated its royalty payments, or other similar payments, in the reporting period, as proposed? Why or why not? If not, what additional disclosure should be required by such registrants?
15. Should we require a royalty company, or other similar company holding an economic interest in another company's mining operations, to describe its material properties and file a technical report summary for each such property, as proposed? Should we allow a royalty or other similar company to satisfy the technical report summary requirement by incorporating by reference a current technical report summary filed by the producing mining registrant for the underlying property, as proposed? Are there circumstances (e.g. when a royalty company purchases a royalty agreement and is not reasonably able to gain access to such information) in which a royalty or similar company should not be required to file a technical report summary concerning the underlying property?

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.

2. Definitions of exploration, development and production stage

Guide 7 defines the stages used to describe mining operations, “exploration stage,” “development stage,” and “production stage,” as follows:

- Exploration Stage — includes all registrants engaged in the search for mineral deposits (reserves) which are not in either the development or production stage.
- Development Stage — includes all registrants engaged in the preparation of a determined commercially minable deposit (reserves) for its extraction which are not in the production stage.
- Production Stage — includes all registrants engaged in the exploitation of a mineral deposit (reserve).⁵⁸

Guide 7 applies these definitions to the registrant as a whole, however, 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 are proposing to revise the Guide 7 definitions of exploration, development and production stage so that the definitions apply to individual properties, as follows:

- an exploration stage property is a property that has no mineral reserves disclosed;⁵⁹
- a development stage property is a property that has mineral reserves disclosed, but with no material extraction;⁶⁰ and

⁵⁸ Guide 7 paragraph (a)(4).

⁵⁹ See proposed Item 1301(d)(6) of Regulation S-K.

- a production stage property is a property with material extraction of mineral reserves.⁶¹

We also are proposing to revise the Guide 7 definitions as they apply to issuers in order 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;⁶²
- a development stage issuer is one that is engaged in the preparation of mineral reserves for extraction on at least one material property;⁶³ and
- a production stage issuer is one that is engaged in material extraction of mineral reserves on at least one material property.⁶⁴

Finally, we propose 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 without first disclosing mineral reserves,⁶⁵ cannot characterize itself as a development or production stage company.⁶⁶ The proposed rules would also 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.⁶⁷

⁶⁰ See proposed Item 1301(d)(3) of Regulation S-K.

⁶¹ See proposed Item 1301(d)(20) of Regulation S-K.

⁶² See proposed Item 1301(d)(5) of Regulation S-K.

⁶³ See proposed Item 1301(d)(2) of Regulation S-K.

⁶⁴ See proposed Item 1301(d)(19) of Regulation S-K.

⁶⁵ 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.

⁶⁶ See the Instruction to proposed Item 1304(b)(3) of Regulation S-K.

⁶⁷ Id.

We believe that these proposed changes would resolve the ambiguities in the Guide 7 definitions. They also would be consistent with prior staff guidance, which should minimize changes in disclosure practices for registrants and their investors. Under the proposed definitions, a registrant would be able to characterize its properties separately, but would be limited in when and how it can characterize its operational stage. Specifically, it would not be able to characterize itself as a development stage registrant unless it is engaged in the preparation of mineral reserves for extraction on at least one material property. We believe this would 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 company would help eliminate the possibility that such a registrant, by definition a higher risk company, would incorrectly characterize itself as being in a lower risk stage, thereby potentially misleading or confusing investors.

Further, providing definitions that apply to specific properties would align the disclosure requirements with current accounting practices under U.S. GAAP and International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB).⁶⁸ Conforming the definitions in the proposed requirements to the applicable accounting practice should benefit both registrants and investors by providing a consistent framework for the

⁶⁸ Although there is no authoritative guidance under U.S. GAAP that directly addresses accounting for mining activities, the accounting practice has typically been based on the definition of an asset in Statement of Financial Accounting Concepts Elements of Financial Statements (“Concept Statement 6”), with a focus on the operational stage of individual properties rather than on the stage of the registrant. Similarly, accounting for costs under IFRS also focuses on individual properties.

presentation of financial and property disclosures, thereby reducing compliance burdens and facilitating comparability.

Request for Comment

16. Should we define “exploration stage property,” “development stage property” and “production stage property,” as proposed? Why or why not? Would these definitions facilitate compliance by registrants with properties in more than one stage of operation?
17. Should we also revise the definitions of “exploration stage issuer,” “development stage issuer” and “production stage issuer,” as proposed? Why or why not? Should the definition of “development stage issuer” and “production stage issuer” depend on having “at least one material property”, as proposed? Should we instead base the definitions on consideration of the characteristics of all mining properties? For example, if a registrant has a single development-stage material property that constitutes 10% of its mining assets, with the remainder of the mining assets all constituting exploration stage properties, should the registrant be able to identify itself as a development stage issuer?
18. Would the two proposed sets of definitions appropriately classify the particular stage of a registrant’s mining operations? Should the definitions be property-based and dependent on whether mineral resources or reserves have been disclosed, are being prepared for extraction, or are being extracted, as applicable, on one or more material properties? Would having two proposed sets of definitions create unnecessary complexity or investor confusion?
19. Should the proposed rules specify that a registrant that does not have 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, as proposed? Why or why not?

C. Qualified Person and Responsibility for Disclosure

1. The “qualified person” requirement

All of the CRIRSCO-based codes require that any public report about a company’s exploration results, mineral resources and mineral reserves be based on and fairly reflect information and supporting documentation prepared by a “competent” or “qualified person.”⁶⁹ “Public report” as used in the CRIRSCO-based codes includes all communication by a company to investors on exploration results, mineral resources and mineral reserves.⁷⁰ The purpose of this requirement is to ensure that a registrant’s public declaration of exploration results, mineral resources and reserves is supported by the findings of a mineral industry professional having the relevant level of expertise.⁷¹ In contrast, neither Guide 7 nor Item 102 requires that a registrant’s disclosure of mineral reserves be based on the findings of an appropriately experienced professional.⁷² While an author of a study or technical report that forms the basis of mineral

⁶⁹ See, e.g., CRIRSCO’s International Reporting Template pt. 8; Canada’s NI 43-101 pt. 2.1; and JORC Code pt. 9.

⁷⁰ For example, Australia’s JORC Code defines public 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.” JORC Code pt. 6 (2012). The JORC Code is available at: http://www.jorc.org/docs/JORC_code_2012.pdf.

⁷¹ The CRIRSCO-based standards are built on three governing principles: transparency, materiality and competence. All these codes define competence to mean that technical work should be done by a professional with requisite expertise. See, e.g., CRIRSCO’s International Reporting Template pt. 3, which states: “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.” See also JORC Code pt. 9 and SME Guide pt. 3.

⁷² 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 paragraph (b)(5)(ii). In addition, if a registrant

reserves disclosure in a Securities Act registration statement must consent to the use of its name as an expert,⁷³ there is no requirement to use an expert for reserves disclosure and, if one is used, there are no substantive requirements for that expertise.

We are proposing 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,"⁷⁴ as defined by the proposed rules.⁷⁵ In addition, the proposed rules would require that the registrant:

- be responsible for determining that the person meets the qualifications specified under the new subpart's definition of "qualified person" and that the disclosure in the filing accurately reflects the information provided by the qualified person;⁷⁶
- 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;⁷⁷

supplementally provides a copy of a technical report to Division 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 paragraph (c)(2).

⁷³ See Securities Act Rule 436 (17 CFR 230.436); see also 17 CFR 229.601(b)(23)(i).

⁷⁴ See proposed Item 1302(a) of Regulation S-K. While we refer to the qualified person in the singular throughout this release, we note that it is common for a registrant to have more than one qualified person prepare a technical report for a mining property or project. As proposed, the registrant's responsibilities would apply to each qualified person so engaged.

⁷⁵ See section II.C.2, infra.

⁷⁶ See proposed Item 1302(a).

⁷⁷ See proposed Item 1302(b)(1) of Regulation S-K.

- 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;⁷⁸
- obtain the written consent of the qualified person to the use of the qualified person’s name and any quotation or other use of the technical report summary in the registration statement or report prior to filing the document publicly with the Commission;⁷⁹
- identify the qualified person who prepared the technical report summary in the filed registration statement or report;⁸⁰ 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 affiliate⁸¹ 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

⁷⁸ See proposed Item 1302(b)(2) of Regulation S-K and discussion in section II.G.2, infra.

⁷⁹ See proposed Item 1302(b)(3) of Regulation S-K.

⁸⁰ See proposed Item 1302(b)(4) of Regulation S-K.

⁸¹ As used in proposed Item 1302(b), the term “affiliate” has the same meaning as in § 230.405 or § 240.12b-2. See the Instruction to proposed Item 1302(b)(4) of Regulation S-K.

- if the qualified person or the qualified person’s employer is an affiliate, disclose the nature of the affiliation.⁸²

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 436.⁸³ In such situations, the qualified 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.⁸⁴

The Securities Act and the Exchange Act each 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 for the protection of investors.⁸⁵ We believe that the proposed requirement that a registrant’s disclosure of mineral resources, mineral reserves and material exploration results in SEC filings be based on and fairly reflect information and supporting documentation prepared by a “qualified person” would further the protection of investors for several reasons.

⁸² See proposed Item 1302(b)(4) of Regulation S-K.

⁸³ See 17 CFR 230.436 and 229.601(b)(23). A registrant would also have to file the written consent as an exhibit to an Exchange Act registration statement or report when the Exchange Act filing is automatically incorporated into a previously filed Securities Act registration statement.

⁸⁴ 15 U.S.C. 77k(a)(4).

⁸⁵ See Securities Act Section 7(a) (15 U.S.C. 77g(a)) and Exchange Act Sections 12(b)(1), 12(g)(1), and 13(a) (15 U.S.C. 78l(b)(1), 78l(g)(1), and 78m(a)).

First, this requirement could make the determination and reporting of material exploration results or estimates of mineral resources and reserves more reliable.⁸⁶ This is particularly important since we are proposing to require, for the first time, that a registrant with material mining operations disclose mineral resources and material exploration results in SEC filings. Second, we believe that the proposed requirement that a registrant file a copy of the technical report summary for each material property as an exhibit to the SEC filing would enhance investor understanding of a registrant's material properties. Specifically, it would 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 material exploration results, which should enable investors to assess better the value of the registrant's material properties. Third, the proposed qualified person requirement would help to mitigate any risks associated with our proposal to require disclosure of mineral resources or material 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.⁸⁷ Finally, the proposed qualified person requirement would strengthen the Commission's disclosure requirements in a manner consistent with most foreign mining jurisdictions, thus benefiting investors and promoting uniformity.

⁸⁶ To the extent that a registrant's determination of mineral resources, mineral reserves and material exploration results is currently based on information and supporting documentation prepared by persons who would be "qualified persons" under the proposed rules, the potential benefits of this requirement could be less. In addition, our proposal presumes that the standards that we have set forth for determining who is a "qualified person," which are consistent with CRIRSCO-based standards, are the appropriate standards. There may be situations when that presumption excludes a person with significant, relevant experience because that person has chosen not to be a member of a recognized professional organization. Despite the professional competency of such person, he or she will not be deemed to be a "qualified person" under the proposed rules.

⁸⁷ See sections II.D and E, *infra*.

We propose to 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.⁸⁸ We believe this would result in clearer and more accessible disclosure for investors, enabling them to understand the disclosure more effectively from both an operational and technical viewpoint.

The proposed requirement to obtain a signed and dated technical report summary would help establish the authenticity and relevance of the technical report summary. The proposed requirement to obtain the written consent of the qualified person to use his or her name and any quotation or other use of the technical report summary would help ensure that such information is not included in an SEC filing without the qualified person's actual knowledge. In addition, requiring the registrant to file the qualified person's written consent is consistent with the Commission's approach to the use of an expert's report in Securities Act filings⁸⁹ and would align the Commission's mining disclosure rules with the CRIRSCO-based codes, which impose a similar written consent requirement.⁹⁰

The proposed requirement that a registrant identify the qualified person that prepared the technical report summary and, if the qualified person is not an employee of the registrant,

⁸⁸ 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 Securities Act Rule 418 (17 CFR 230.418) and Exchange Act Rule 12b-4 (17 CFR 240.12b-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).

⁸⁹ See, e.g., Securities Act Rule 436.

⁹⁰ See, e.g., Canada's NI 43-101 pt. 8.3; the JORC Code pt. 9; South Africa's SAMREC Code pt. 8 (2009), which is available at: <http://www.samcode.co.za/downloads/SAMREC2009.pdf>; and the SME Guide pt. 8.

disclose whether the qualified person or the qualified person's employer is an affiliate would 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.⁹¹

We are not proposing that a qualified person must be independent from the registrant for several reasons. First, we believe that our approach would help to limit the compliance burdens on registrants. Second, we believe that other aspects of the recommended proposals, 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, as discussed above, our approach is consistent with most of the CRIRSCO-based codes,⁹² 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.

Request for Comment

20. Should we require, as proposed, that the determination of mineral resources, mineral reserves and material exploration results, as reported in a registrant's filed registration statements and reports, be based on and accurately reflect information and supporting

⁹¹ See, e.g., the JORC Code pt. 9; EU's PERC Reporting Standard pt. 9 (2013), which is available at: http://www.vmine.net/PERC/documents/PERC_REPORTING_STANDARD_2013_rev2.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 NI 43-101 pt. 5.3.

⁹² See Id.

documentation prepared by a qualified person? Why or why not? Would imposing a qualified person requirement help mitigate the risks associated with including disclosure about a registrant's mineral resources and exploration results in SEC filings, given that mineral resources and exploration results reflect a lower level of certainty about the economic value of mining properties? Why or why not?

21. Should the registrant be responsible for determining that the qualified person meets the qualifications specified under the new subpart's definition of "qualified person" as proposed? Why or why not? If not the registrant, who should be responsible for this determination?
22. Should we, as proposed, require a registrant to obtain a 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 exploration results, mineral resources or mineral reserves, before it can disclose those results, resources or reserves in SEC filings? Why or why not? Should we instead require a registrant to obtain an unabridged technical report, rather than a technical report summary, before it can disclose exploration results, mineral resources or mineral reserves in SEC filings? Should we require the technical report summary to be dated and signed, as proposed? Why or why not?
23. If we require, as proposed, that a registrant obtain a technical report summary from the qualified person, should we also, as proposed, require that the registrant file the technical report summary as an exhibit to the relevant registrant statement or other Commission filing when one is required? Why or why not?

24. Should we require, as proposed, a registrant to file the technical report summary when the registrant is disclosing mineral reserves, mineral resources or material exploration results for the first time 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? Why or why not? Should we instead require a registrant to file the technical report summary more frequently, such as with every Commission filing, or less frequently?
25. Should we require, as proposed, a registrant to obtain the written consent of the qualified person to the use of the qualified person's name and any quotation or other use of the technical report summary in the registration statement or report prior to filing the document publicly with the Commission? Why or why not?
26. Should we require that a registrant identify the qualified person that prepared the technical report summary and disclose whether the qualified person is an employee, as proposed? Why or why not? Should we also require a registrant to name 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, royalty or other interest in the property that is the subject of the technical report summary, as proposed? Why or why not?
27. Should we require a registrant to state whether the qualified person is independent of the registrant? Why or why not? If we were to require the registrant to state whether the qualified person is independent of the registrant, should we define "independent" for purposes of that requirement? If so, how? For example, should we base the definition

of independence on comparable provisions under Canada's NI 43-101?⁹³ Similar to the Canadian provisions, should we provide examples of when a qualified person would not be considered to be independent? If so, what examples should we provide?

Alternatively, similar to the Commission's rule regarding when an accountant is not independent,⁹⁴ should we provide that a qualified person is not independent if the qualified person is not capable of, or a reasonable investor with knowledge of all relevant facts and circumstances would conclude that the qualified person is not capable of, exercising objective and impartial judgment on all issues encompassed within the qualified person's engagement? Are there any other alternative standards on which we should base a definition of independence for the purpose of the qualified person requirement?

28. Should we require that a registrant's disclosure of exploration results, mineral resources or mineral reserves in a SEC filing be based on the determination of a qualified person that is independent of the registrant? If so, should we impose such a requirement only under certain circumstances, such as when the filing discloses resources or reserves by

⁹³ Pt. 1.5 of Canada's NI 43-101 provides that a "qualified person is independent of an issuer if there is no circumstance that, in the opinion of a reasonable person aware of all relevant facts, could interfere with the qualified person's judgment regarding the preparation of the technical report." Pt. 1.4 of NI 43-101 (CP) then provides guidance regarding when a qualified person would not be considered to be independent: "We consider a qualified person is not independent when the qualified person (a) is an employee, insider, or director of the issuer; (b) is an employee, insider, or director of a related party of the issuer; (c) is a partner of any person or company in paragraph (a) or (b); (d) holds or expects to hold securities, either directly or indirectly, of the issuer or a related party of the issuer; (e) holds or expects to hold securities, either directly or indirectly, in another issuer that has a direct or indirect interest in the property that is the subject of the technical report or in an adjacent property; (f) is an employee, insider, or director of another issuer that has a direct or indirect interest in the property that is the subject of the technical report or in an adjacent property; (g) has or expects to have, directly or indirectly, an ownership, royalty, or other interest in the property that is the subject of the technical report or an adjacent property; or (h) has received the majority of their income, either directly or indirectly, in the three years preceding the date of the technical report from the issuer or a related party of the issuer."

⁹⁴ See Rule 2.01(b) of Regulation S-X (17 CFR 210.2-01(b)).

the registrant for the first time; a material change in previously disclosed resources or reserves that has occurred or is likely to occur; or a 100% or greater change in the total mineral resources or reserves on a material property, when compared to the last disclosure? In each case, why or why not?

29. Alternatively, rather than requiring the qualified person to be independent, should we require, when the qualified person is affiliated with the registrant or another entity having an ownership or similar interest in the property, that a person independent of the registrant and qualified person review the qualified person's work? If so, what qualifications should the independent reviewer possess? If we require an independent review when the qualified person is affiliated with the registrant, should the review be for all disclosures of mineral resources, mineral reserves and material exploration results, or only those that are related to material properties? Should this review be required only in certain circumstances, such as when the filing discloses resources or reserves by the registrant for the first time; a material change in previously disclosed resources or reserves that has occurred or is likely to occur; or a 100% or greater change in the total mineral resources or reserves on a material property, when compared to the last disclosure? Should we instead adopt an independent review requirement for the work of an affiliated qualified person in all circumstances? In each case, why or why not?
30. Should we require the registrant to disclose any material conflicts of interest that could reasonably affect the judgment or decision making of the qualified person, such as material ongoing business relationships between the registrant and the qualified person or the qualified person's employer?

31. Would the proposed technical report summary filing requirement impose a significant burden on registrants? If so, which registrants and why? Are there changes that we could make to this proposed requirement to alleviate any such burden?

2. The definition of “qualified person”

We are proposing 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 undertaking on behalf of the registrant. In addition, in order to be a qualified person, a person must be an eligible member or licensee in good standing of a recognized professional organization at the time the technical report is prepared.⁹⁵

For an organization to be a “recognized professional organization,” it must be either recognized within the mining industry as a reputable professional association,⁹⁶ 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;

⁹⁵ See proposed Item 1301(d)(22) of Regulation S-K.

⁹⁶ This standard is also used in Canada’s NI 43-101, although that instrument does not provide factors to assess when determining which organizations are reputable. See the definition of “professional association” in NI 43-101 pt. 1.1.

- 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.⁹⁷

This proposed definition is similar to the definition of competent or qualified person under the CRIRSCO-based codes.⁹⁸ It differs, however, from those codes in at least one respect. Although CRIRSCO provides some guidance about what constitutes a “recognized professional organization,”⁹⁹ 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.¹⁰⁰ This list is updated periodically by the various code regulators.

In contrast, our proposed definition is more flexible while still providing assurance that the qualified person has the appropriate level of professional expertise to support disclosure of exploration results, mineral resources, or mineral reserves. Although this flexible approach would require registrants to exercise some judgment as to the qualified person’s credentials, we believe it is a better option than requiring the person to be a member of one of several specifically identified organizations, as is the case under most of the CRIRSCO-based codes.

⁹⁷ See proposed Item 1301(d)(22) of Regulation S-K.

⁹⁸ 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’s International Reporting Template pt. 11; see also the JORC Code pt. 11; the SAMREC Code pt. 10; the SME Guide pt. 9; and the PERC Reporting Standard pt. 10. The recognized professional organizations under CRIRSCO standards have and apply disciplinary powers to member classes eligible to serve as qualified persons and most require professional development to maintain such membership.

⁹⁹ See CRIRSCO’s International Reporting Template pt. 11.

¹⁰⁰ See, e.g., the JORC Code pt. 11; the SAMREC Code pt. 9; the SME Guide pt. 9; and the PERC Reporting Standard pt. 10.

Although the “approved organization” approach may be initially easier to apply, it could also become outdated as circumstances change. This could adversely impact the quality of disclosure. In contrast, our principles-based approach would provide flexibility to allow for ease of compliance and protection of investors.

As discussed above, an organization that is recognized “within the mining industry as a reputable professional association,” can be, if all the other conditions are satisfied, a “recognized professional organization.” We are not, however, proposing any specific factors that would indicate that a professional association is reputable. We are instead seeking comment on what factors we should consider, and whether such factors should be incorporated into the final rules. Examples could include the frequency and quality of an association’s peer-reviewed publications, the number and global distribution of its members, and whether and to what extent the association publishes guides or standards that are accepted and used in the industry.

Regarding the minimum experience requirement, we believe five years would be an appropriate time frame to use for purposes of the definition of a qualified person. It ensures a prolonged period of professional experience without unduly restricting the pool of qualified experts. Furthermore, it is an accepted industry standard found in the corresponding definitions under the CRIRSCO-based codes.¹⁰¹

To assist registrants in applying the “qualified person” definition, we are also proposing detailed instructions to the definition of “qualified person.”¹⁰² The instructions describe the specific types and amount of experience necessary for various types of mining activities and

¹⁰¹ See, e.g., NI 43-101 pt. 1.1, JORC pt. 11, CRIRSCO Template pt. 11, and SAMREC pt. 10.

¹⁰² See the proposed instructions to paragraph (d)(22) of Item 1301.

mineral deposits. 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 modifying factors.¹⁰³ 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.¹⁰⁴

Pursuant to the proposed instructions, 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, mineral brine, or geothermal fields). 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.¹⁰⁵

¹⁰³ The term “modifying factors” is defined in proposed Item 1301(d)(15) of Regulation S-K. They are the factors that a qualified person would be required to 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. These factors include, but are not restricted to, mining, energy recovery and conversion, processing, metallurgical, economic, marketing, legal, environmental, infrastructure, social and governmental factors. See section II.F.1, infra, for a discussion of the proposed definition of modifying factors. Under the proposed rules, a qualified person would have to evaluate qualitatively the modifying factors to demonstrate “reasonable prospects for economic extraction” when determining mineral resources, but need not undertake the quantitative assessment to establish “economic viability” required for mineral reserve determination.

¹⁰⁴ See Instruction 1 to proposed Item 1301(d)(22).

¹⁰⁵ See Instruction 2 to proposed Item 1301(d)(22).

The proposed instructions would further state 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 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.¹⁰⁶

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 proposed instructions would require the qualified person to have sufficient experience with the sampling and analytical techniques, as well as extraction and processing techniques, relevant to the mineral deposit under consideration. As proposed, sufficient experience would mean 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.¹⁰⁷

For a qualified person applying the modifying factors to convert mineral resources to mineral reserves, the proposed instructions would require that the person must have both sufficient knowledge and experience in the application of these factors to the mineral deposit under consideration and experience with the geology, geostatistics, mining, extraction and processing that is applicable to the type of mineral and mining under consideration.¹⁰⁸

¹⁰⁶ See Instruction 3 to proposed Item 1301(d)(22).

¹⁰⁷ See Instruction 4 to proposed Item 1301(d)(22).

¹⁰⁸ See Instruction 5 to proposed Item 1301(d)(22).

These detailed instructions would help ensure that the qualified person has the appropriate level of experience for both the type of activity involved and the type of mineral deposit under consideration to make accurate assessments about the registrant's exploration results, mineral resources and mineral reserves. At the same time, we believe that the proposed definition of "qualified person," taken together with the proposed instructions, would assist registrants in applying this definition and would 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 proposed definition should not significantly alter existing disclosure practices for registrants subject to those codes.¹⁰⁹

Request for Comment

32. Should we define a qualified person in part to be a mineral industry professional with at least five years of relevant experience in the type of mineralization, as described here and in the proposed rule, and type of deposit under consideration and in the specific type of activity that person is undertaking on behalf of the registrant, as proposed? Why or why not? Should we specify the particular type of professional, such as a geologist, geoscientist or engineer, required under the definition? The years of experience required under the proposed definition is consistent with the CRIRSCO-based codes. Is five years the appropriate number of years to constitute the minimum amount of

¹⁰⁹ See, e.g., the Canadian Institute of Mining, Metallurgy and Petroleum Definition Standards-For Mineral Resources and Mineral Reserves ("CIM Definition Standards") 2 (2010), which is available at: <http://web.cim.org/standards/MenuPage.cfm?sections=177&menu=178>; the JORC Code pt. 11; the SAMREC Code pt. 10; the PERC Reporting Standard pt. 10; and the SME Guide pt. 9.

relevant experience required under the definition in our rules? Should we require a lesser or greater number of years of relevant experience (e.g., 3, 7, or 10 years)?

33. Should we define a qualified person to be an individual, as proposed? Or should we expand the definition, in cases where the registrant engages an outside expert, to include legal entities, such as an engineering firm licensed by a board authorized by U.S. federal, state or foreign statute to regulate professionals in mining, geosciences or related fields? Why or why not? If we expand the definition in this manner, should the firm or the responsible individual sign the technical report summary and provide the required written consent? Similarly, what professional experience should be required and how would a firm satisfy the professional experience requirement? Should we adopt qualified person requirements for firms that are different than the proposed requirements for individual qualified persons? If so, what should these requirements be?
34. Do the proposed instructions provide the appropriate guidance for what may constitute the requisite relevant experience in the particular activity involved and in the particular type of mineralization and deposit under consideration? Is there different or additional guidance that we should provide in this regard?
35. Should we define a qualified person in part to be an eligible member or licensee in good standing of a recognized professional organization at the time the technical report is prepared, as proposed? Why or why not? Should we require an organization to meet the six criteria specified in the proposed definition in order to be a recognized professional organization, as proposed? Should the definition of a qualified person take into account whether, and the extent to which, a person has been disciplined by their professional organization? If so, how? Should the definition specify that the organization must

require, rather than require or encourage, continuing professional development? Are there different or additional criteria that we should require for an organization to be a recognized professional organization?

36. What factors should we consider in determining whether a professional association is recognized as reputable with regards to the definition of a recognized professional organization? Are the examples we provided appropriate factors for determining whether a professional association is recognized as reputable or are other factors more appropriate? Should any of these factors be incorporated into the final rules?
37. Instead of the proposed flexible approach, should we require that a qualified person be a member of an approved organization listed in an appendix to the mining disclosure rules or in a document posted on the Commission's website? If so, how should the Commission determine which organizations to approve and how frequently should the Commission update the approved organization list?
38. Should we, as proposed, require a registrant to disclose the recognized professional organization(s) that the qualified person is a member of, and confirm that the qualified person is a member in good standing of the organization(s)?
39. Are there different or additional conditions that a person should have to satisfy in order to meet the definition of qualified person? For example, should we require that a person have attained a particular level of formal education (bachelor's degree, master's degree, or doctorate) in order to be a qualified person? If so, what level of education would be appropriate? Would such a minimum education requirement disqualify a significant percentage of persons from being considered as qualified persons who otherwise possess the requisite relevant experience?

40. Is the definition of qualified person too restrictive, thus increasing the cost and difficulty associated with finding a qualified person? Alternatively, should the definition be more restrictive, to help ensure a qualified person has an appropriate level of training and expertise? In either case, why?
41. Instead of prescribing qualifications for the qualified person, should we instead require a registrant to provide detailed disclosure regarding the qualifications of the individual who prepared the technical report summary? Why or why not?

D. Treatment of Exploration Results

Neither Guide 7 nor Item 102 addresses the disclosure of exploration results in Commission filings.¹¹⁰ In contrast, the CRIRSCO-based codes require the disclosure of material 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.¹¹¹

We are proposing to require that a registrant disclose material exploration results for each of its material properties.¹¹² Similar to the CRIRSCO-based codes, we propose 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

¹¹⁰ Accordingly, the staff does not request disclosure of exploration results. If a registrant voluntarily provides exploration results, the staff will review, and if appropriate, issue comments on, such disclosure.

¹¹¹ See, e.g., the JORC Code pts. 17, 20 and 31; the SAMREC Code pts. 18-19; the PERC Reporting Standard pts. 16-18; and the SME Guide pts. 17, 20 and 31.

¹¹² See proposed Item 1304(b)(6) of Regulation S-K.

mineral deposit) that are not part of a disclosure of mineral resources or reserves.¹¹³ A proposed instruction would explain 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.¹¹⁴ This instruction is consistent with the purpose of exploration activity, which is to determine whether a mining property contains a deposit that is economically viable and worth developing or to reduce the uncertainty surrounding that determination.¹¹⁵ Prior to establishing the economic viability to an acceptable degree of certainty, exploration results are also used to assess the potential value of the property.¹¹⁶ Hence, we believe that when determining whether exploration results are material, registrants should consider how the exploration results affect the valuation of a property or the decision to develop the property.

The proposed rules would preclude the use of exploration results, by themselves, to derive estimates of tonnage, grade, and production rates, or in an assessment of economic

¹¹³ See proposed Item 1301(d)(4) of Regulation S-K.

¹¹⁴ See proposed Instruction to Item 1304(b)(6) of Regulation S-K.

¹¹⁵ See, e.g., José L. Lee-Moreno, “Mineral Prospecting and Exploration,” in 1 SME Mining Engineering Handbook 105 (P. Darling, ed., 2011), which states that “[t]he main objective of minerals exploration is to locate ore deposits, which are anomalous accumulations of one or more minerals that can be mined at a profit.”

¹¹⁶ It is accepted industry practice that the presence of mineralization and indications of exploration potential are factors in valuation of mining properties. See, e.g., Code for the Technical Assessment and Valuation of Mineral and Petroleum Assets and Securities for Independent Expert Reports (“the VALMIN Code”) pt. 74-79 (2005). Also, relevant accounting principles require valuation to include consideration of the so-called “value beyond proven and probable,” which includes exploration potential. See FASB ASC 930-360 and 930-805 (formerly Emerging Issues Task Force, Fin. Accounting Standards Bd.), EITF Abstracts: Mining Assets: Impairment and Business Combinations, Issue No. 04-3 (Mar. 17–18, 2004), which is available at: <http://www.fasb.org/pdf/abs04-3.pdf>.

viability¹¹⁷ because of the level of risk associated with exploration results. 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 believe exploration results are insufficient to support disclosure of estimates of tonnage, grade, or other quantitative estimates. Tonnage and grades should 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.¹¹⁸

Despite these limitations, we believe that disclosure of material exploration results would provide investors with a more comprehensive picture of a registrant's mining operations and help them make more informed investment decisions. 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. For example, exploration results that have significantly impacted the registrant's analysis or estimates of the life of a material mining project would be considered material, thus triggering a disclosure obligation.

¹¹⁷ See proposed Item 1301(d)(4) of Regulation S-K.

¹¹⁸ Similar restrictions on the use of exploration results exist in the CRIRSCO-based codes. See, e.g., CRIRSCO Template pt. 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.” See also SME Guide pt. 31 and JORC Code pt. 18.

Requiring the disclosure of material exploration results would align our disclosure rules with most foreign mining codes,¹¹⁹ which would help to provide for a consistent level of mining disclosure across relevant jurisdictions. We believe that the potential risk associated with the uncertainty inherent in exploration results would 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.

At this time, we are not proposing to require the disclosure of exploration results by a registrant that has material mining operations in the aggregate but no individual properties that are material.¹²⁰ 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.

Request for Comment

42. Should we require a registrant to disclose material exploration results for each of its material properties, as proposed? Why or why not? Alternatively, should we permit registrants to provide exploration results in a summary form?

¹¹⁹ See note 111, *supra*.

¹²⁰ 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 proposed rules, such a company would be required to provide summary disclosure concerning its mineral resources and mineral reserves. See section II.G.1, *infra*.

43. Should we 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 do not form part of a disclosure of mineral resources or reserves, as proposed? Why or why not? Are there other characteristics that we should include in the definition of exploration results? Are there other activities that we should include as examples of mineral exploration programs? Are there activities that we should exclude as examples of mineral exploration programs?
44. What are the risks that could result from requiring disclosure of material exploration results? Should we prohibit the use of exploration results to derive estimates of tonnage, grade, and production rates, or in an assessment of economic viability, as proposed? Why or why not? Would prohibiting the use of exploration results for these purposes, as proposed, adequately protect investors from the increased risk associated with including information having a lower level of certainty about the economic value of mining properties?
45. When determining whether exploration results are material, should a registrant consider their importance in assessing the value of a material property or in deciding whether to develop the property, as proposed? Why or why not? Are there other circumstances that would better define when exploration results are material? If so, what are those circumstances?
46. We are proposing to require the disclosure of material exploration results for each material property. Should we also require disclosure of material exploration results

when the registrant has determined that it has in the aggregate material mining operations but no individual properties are material? Would disclosure of material exploration results for its properties in the aggregate (when none is individually material) provide additional meaningful disclosure for investors? If so, how should a registrant disclose such exploration results? Should it provide such results in summary form? Or should it provide detailed disclosure about all material exploration results for all of its properties?

E. Treatment of Mineral Resources

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.¹²¹ Most foreign mining codes require the disclosure of material mineral resources.¹²² In contrast, Item 102 and Guide 7 preclude the disclosure of mineral resources in Commission filings (subject to the “foreign or state law” exception discussed above).¹²³ According to some industry groups,¹²⁴ this restriction has limited the completeness and relevance of SEC filings.

We are proposing 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

¹²¹ First, they use the exploration results to determine if a mineral deposit is present. Next, they estimate the 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.

¹²² See, e.g., the JORC Code pts. 4 and 14; the SAMREC Code pts. 4 and 14; the SME Guide pts. 3 and 20; and the PERC Reporting Standard pts. 4 and 13.

¹²³ See Instruction 3 to paragraph (b)(5) of Guide 7 and Instruction 5 to Item 102 of Regulation S-K.

¹²⁴ See the SME Petition for Rulemaking at 1.

supporting documentation from a qualified person. As proposed, a registrant with material mining operations that has multiple properties would have to provide both summary disclosure about its mineral resources and more detailed disclosure concerning its mineral resources for each material property.¹²⁵

Under the proposed rules, a registrant could not disclose that it has determined that a mineral deposit constitutes a “mineral resource” (or, for that matter, a “mineral reserve”) unless that determination is based upon information and supporting documentation¹²⁶ prepared by a qualified person. Nevertheless, 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.¹²⁷

¹²⁵ See sections II.G.1 and II.G.2, *infra*, respectively, for a discussion of the proposed summary and individual property disclosure requirements for mineral resources and reserves.

¹²⁶ As discussed in sections II.E.3 and II.F.2, *infra*, by “information and supporting documentation,” we mean an initial assessment for mineral resource determination and a preliminary or final feasibility study for mineral reserve determination.

¹²⁷ Similarly, the 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,

Requiring a mining registrant with material mining operations to disclose mineral resources in addition to mineral reserves would provide investors with additional 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, 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. Requiring the disclosure of mineral resources would also 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.

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 minimal as most mining companies already assess mineral resources in order to determine reserves.¹²⁸ 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. As explained below, however, we believe that this risk is limited

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., ASX Listing Rules 5.7, 5.8, and 5.9, which provide guidance for disclosure of exploration results, mineral resources and mineral reserves for “material mining projects,” and which are available at: <http://www.asx.com.au/documents/rules/Chapter05.pdf>.

¹²⁸ 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.”

by the proposed 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 potential benefits to investors from the disclosure of mineral resources, including more comprehensive and potentially more accurate disclosure of mineral reserves.¹²⁹

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. Since we are proposing 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 exception would no longer be necessary. Therefore, the proposed rules would eliminate this exception.

Request for Comment

47. Should we require a registrant with material mining operations to disclose mineral resources in addition to mineral reserves, as proposed? Why or why not?
48. What are the risks that could result from requiring a registrant with material mining operations to disclose its mineral resources? How could the Commission mitigate those risks?
49. Under the proposed rules, a registrant with material mining operations could choose not to engage a qualified person to determine whether a mineral deposit is a mineral resource, with the result that the registrant would not be required to disclose mineral

¹²⁹ Given that mineral reserves estimates are based on estimates of mineral resources, we believe that the rigor surrounding the disclosure of mineral resources as well as the attendant scrutiny from the qualified person, particularly with regards to mineral resource classification, is likely to lead to more reliable mineral reserves disclosure.

resources that may exist. Should the rules, as proposed, preclude a registrant from disclosing mineral resources in an SEC filing if it has elected not to engage a qualified person to make the resource determination? Alternatively, should the rules permit a registrant to disclose mineral resources in an SEC filing, despite not having engaged a qualified person to make the resource determination, in certain instances? If so, in what instances would it be appropriate to permit such disclosure?

1. Mineral Resource Definition

Because both Item 102 and Guide 7 prohibit the disclosure of non-reserve estimates except as required under foreign or state law, there currently is no Commission definition of “mineral resource.” The proposed rules would 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.¹³⁰ The proposed rules would define the term “material of economic interest,” as used in the definition of mineral resource, to include mineralization, including dumps and tailings,¹³¹ 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 as defined in Regulation S-X,¹³² gases (e.g. helium and carbon dioxide), or water.¹³³

¹³⁰ See proposed Item 1301(d)(14)(i) of Regulation S-K.

¹³¹ 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.

¹³² See 17 CFR 210.4-10(a)(16)(D).

¹³³ See proposed Item 1301(d)(14)(ii) of Regulation S-K.

The proposed rules would further specify 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.¹³⁴ 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 factors¹³⁵ likely to influence the prospect of economic extraction.¹³⁶

Similar to the CRIRSCO-based codes, the proposed definition of mineral resource would state that it is not to be merely an inventory¹³⁷ of all mineralization drilled or sampled.¹³⁸ A mineral resource is instead a reasonable estimate of mineralization, taking into account relevant factors such as cut-off grade,¹³⁹ likely mining dimensions, location or continuity, which, with the

¹³⁴ See proposed Item 1301(d)(14)(iii)(A) of Regulation S-K.

¹³⁵ See proposed Item 1301(d)(15) of Regulation S-K for the definition of modifying factors.

¹³⁶ See proposed Item 1301(d)(14)(iii)(B) of Regulation S-K.

¹³⁷ The term “inventory of mineralization” means an estimate of the total quantity of mineralization based on the available evidence.

¹³⁸ See, e.g., JORC Code pt. 20; CRIRSCO International Reporting Template pt. 21; and SAMREC Code pt. 21.

¹³⁹ 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 Proposed Item 1301(d)(1) of Regulation S-K.

assumed and justifiable technical and economic conditions, is likely to, in whole or in part, become economically extractable.¹⁴⁰

As proposed, the definition of mineral resource would include non-solid matter, such as geothermal fields and mineral brines, in addition to mineralization. We believe this is appropriate because the scientific and engineering principles used to characterize mineral brine and geothermal resources and reserves are substantially similar to those used to characterize solid mineral resources and reserves. By definition, extracting minerals from mineral brines is mining.¹⁴¹ Although extracting energy from geothermal fields in the earth's crust is not identical to extracting minerals, we believe there are sufficient similarities to justify including geothermal energy in the proposed rules. For example, the exploration and development techniques leading to geothermal extraction are similar to the techniques used for mineral extraction. Also, the extraction of fluid in geothermal fields is similar to in-situ solution mining.¹⁴² In addition, mineral resource classification frameworks are widely accepted as appropriate for geothermal resource disclosure.¹⁴³

¹⁴⁰ See Note to proposed Item 1301(d)(14)(i) of Regulation S-K.

¹⁴¹ Mining can be defined as the “[p]rocess of obtaining useful minerals from the earth’s crust.” Lewis & Clark, Elements of Mining 20 (1964). Although the CRIRSCO-based codes define a mineral resource as “solid material” (see, e.g., the CIM Definition Standards at 4 and the JORC code pt. 20), most of those codes regulate the mining of mineral brines under the same set of rules governing a mineral resource. See e.g., Ontario Securities Commission (OSC) Notice 43-704, Mineral Brine Projects and National Instrument 43-101 Standards of Disclosure for Mineral Projects (July 22, 2011).

¹⁴² In-situ solution mining is the selective dissolution and recovery of a target mineral by dissolving the mineral in its original location and pumping the mineral-laden solution to a processing plant located on the surface, where the desired metals are produced for market. The solution that dissolves the target mineral is pumped into the rock via injection wells and the mineral-laden solution is recovered via production wells. Similarly, extracting energy from geothermal fields involves pumping fluids in and out of geologic material.

¹⁴³ 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

As such, we believe that including these non-solid materials in the proposed definition of mineral resource would provide a workable and reasonable framework for disclosure related to these activities. Moreover, including minerals extracted from mineral brines and energy extracted from geothermal fields within the definition should provide clarity and consistency for the disclosure obligations of registrants engaged in these activities.

The proposed definition of “mineral resource” also would include dumps and tailings in recognition of the fact that, under certain circumstances, these byproducts from older mining operations possess value. We also note that the inclusion of dumps and tailings in the definition of mineral resource reflects industry practice and is consistent with the CRIRSCO-based codes.¹⁴⁴

We are proposing to exclude oil and gas resources as defined by Regulation S-X from the definition of mineral resource because the Commission has adopted separate rules for oil and gas disclosure.¹⁴⁵ We are proposing to exclude 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 noted above, we are proposing to require that 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

Engineers’ Resources Management System. See J.V. Lawless, M. Ward and G. Beardsmore, “The Australian Code for Geothermal Reserves and Resources Reporting: Practical Experience,” in Proceedings of the World Geothermal Congress (2010).

¹⁴⁴ See, e.g., the JORC Code pt. 20, the SAMREC Code pt. 21, and the SME Guide pt. 33.

¹⁴⁵ See subpart 1200 of Regulation S-K (17 CFR 230.1201 *et seq.*).

establish prospects of economic extraction would provide an appropriately exacting standard, and importantly, one that is more exacting than what we propose to require 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 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 proposed definition of mineral resources would significantly alter existing disclosure practices of registrants subject to these codes.

Request for Comment

50. Should we define the term “mineral resource,” as proposed? Why or why not? In order for material to be classified as a mineral resource, should there be reasonable prospects for its economic extraction, as proposed? Why or why not?
51. Should the definition of mineral resource include mineralization, including dumps and tailings, as proposed? Should the definition of mineral resource also include geothermal fields and mineral brines, as proposed? Why or why not? Is there any other material that should be explicitly included in the definition of mineral resource?
52. Should the definition of mineral resource exclude oil and gas resources as defined in Regulation S-X,¹⁴⁶ gases (e.g., helium and carbon dioxide), and water, as proposed?

¹⁴⁶ See 17 CFR 210.4-10(a)(16)(D).

Why or why not? Is there any other material that should be explicitly excluded from the definition of mineral resource?

53. Should the definition of mineral resource include the requirement 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, as proposed? Why or why not? Are there other geological characteristics that we should explicitly require a qualified person to estimate or interpret when determining the existence of mineral resources?

2. Mineral Resource Classification

The proposed rules would adopt the CRIRSCO-based classification of mineral resources¹⁴⁷ into inferred, indicated and measured mineral resources, in order of increasing geological confidence,¹⁴⁸ and define those terms. Further, the proposed rules would require a registrant 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. We believe this classification requirement would contribute to the accuracy of a registrant's mining disclosure in SEC 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 impacts 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

¹⁴⁷ See, e.g., JORC Code pt. 20; CRIRSCO International Reporting Template pt. 21; and SAMREC Code pt. 21.

¹⁴⁸ See Note to proposed Item 1301(d)(14)(ii) of Regulation S-K.

disclosure. We, therefore, believe that the proposed rules should require, and not merely allow, the classification of mineral resources.

Similar to the CRIRSCO-based codes,¹⁴⁹ we propose 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.¹⁵⁰ The proposed rules would explain that, as used in this proposed definition, “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 would further provide 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.¹⁵¹ 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.¹⁵²

The proposed rules would establish the level of certainty that a qualified person must strive to achieve when determining the existence of an inferred mineral resource. First, 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

¹⁴⁹ See, e.g., JORC Code pt. 21; CRIRSCO International Reporting Template pt. 22; and SAMREC Code pt. 22.

¹⁵⁰ See proposed Item 1301(d)(10)(i) of Regulation S-K.

¹⁵¹ See proposed Item 1301(d)(10)(ii) of Regulation S-K.

¹⁵² See Note to proposed Item 1301(d)(10) of Regulation S-K.

exploration. Second, the qualified person should be able to defend the basis of this expectation before his or her peers.¹⁵³

We understand that, because inferred mineral resources have the lowest level of geologic confidence, requiring their disclosure in a mining registrant's SEC filing could lead to investor misunderstanding about the nature of a registrant's mining operations (that would not be present absent such disclosure). We believe, however, that the proposed definition of inferred mineral resource¹⁵⁴ would reduce any potential misunderstanding by providing appropriate context for and limitations on such disclosure. First, the proposed definition would clearly highlight for investors that inferred mineral resources have the highest degree of uncertainty, allowing investors to take this into account when assessing a registrant's disclosure. Second, the proposed definition would prohibit a registrant from using inferred mineral resources as a basis to determine mineral reserves. Rather, inferred resources would first have to meet the definitional requirements of, and be converted into, measured or indicated mineral resources. Only then would such inferred resources be eligible to be considered as potential mineral reserves under the proposed rules. This should 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.

We note that our proposal differs from the CRIRSCO-based codes, which allow a qualified person to make limited use of inferred mineral resources in his or her technical and

¹⁵³ See proposed Item 1301(d)(10)(iii) of Regulation S-K.

¹⁵⁴ See proposed Item 1301(d)(10) of Regulation S-K.

economic studies as long as certain cautionary language is included in the disclosure.¹⁵⁵ We believe, however, that the significant uncertainty associated with estimates of inferred mineral resources could call into question the results of technical or economic studies based on inferred mineral resources. As such, we do not believe that any such disclosure would be useful for investors.¹⁵⁶ Consequently, our proposed rules would prohibit qualified persons from using inferred mineral resources in any economic analysis conducted to determine the economic viability of mineral projects or economic prospects of mineral deposits in support of SEC disclosures.

We propose 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.¹⁵⁷ The proposed rules would explain that, as used in this definition, “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

¹⁵⁵ See, e.g., CRIRSCO International Reporting Template pt. 22, which states that “[c]onfidence in the [inferred mineral resource] estimate is usually not sufficient to allow the results of the application of technical and economic parameters to be used for detailed planning. For this reason, there is no direct link from an Inferred Resource to any category of Mineral Reserves. Caution should be exercised if this category is considered in technical and economic studies.” Also, Canada’s NI 43-101 2.3(3) states, in part, that “[d]espite paragraph (1)(b), an issuer may disclose the results of a preliminary economic assessment that includes or is based on inferred mineral resources if the disclosure (a) states with equal prominence that the preliminary economic assessment is preliminary in nature, that it includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the preliminary economic assessment will be realized...” See also JORC Code pt. 21 and 38, SAMREC Code pt. 23, and SME Guide pt. 34, which contain similar cautionary language.

¹⁵⁶ The CRIRSCO-based codes may allow the use of inferred resources in lower level technical or economic studies, but not in higher level studies to support a determination of economic viability. See, e.g., CIM Definition Standards at 4 (2012) which states that “[c]onfidence in the [inferred mineral resource] estimate is insufficient to allow the meaningful application of technical and economic parameters or to enable an evaluation of economic viability worthy of public disclosure. Inferred Mineral Resources must be excluded from estimates forming the basis of feasibility or other economic studies.”

¹⁵⁷ See proposed Item 1301(d)(9)(i) of Regulation S-K.

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.¹⁵⁸ The proposed rules would further provide 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.¹⁵⁹

We propose 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.¹⁶⁰ The proposed rules would explain that, as used in this definition, “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.¹⁶¹ The proposed rules would further 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.¹⁶²

¹⁵⁸ See proposed Item 1301(d)(9)(ii) of Regulation S-K.

¹⁵⁹ See Note to proposed Item 1301(d)(9) of Regulation S-K. We define “probable mineral reserve” at proposed Item 1301(d)(18) of Regulation S-K.

¹⁶⁰ See proposed Item 1301(d)(12)(i) of Regulation S-K.

¹⁶¹ See proposed Item 1301(d)(12)(ii) of Regulation S-K.

¹⁶² See Note to proposed Item 1301(d)(12) of Regulation S-K.

The proposed definitions of “indicated mineral resource” and “measured mineral resource” are substantially similar to the corresponding CRIRSCO-based definitions. We believe aligning the U.S. definitions with the foreign mining code provisions would benefit 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 reduce any potential additional costs caused by the proposed requirement 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.¹⁶³

As noted above, geologic uncertainty directly affects the uncertainty associated with production quantities per period and related cash flows. As such, we believe that in addition to disclosure of resource estimates, it is appropriate to require disclosure of the level of geologic uncertainty associated with different classes of mineral resources. Specifically, we propose to require that the qualified person, as part of the initial assessment,¹⁶⁴ quantify and disclose the uncertainty associated with the production estimates derived from such resources. A qualified

¹⁶³ As explained in note 128, *supra*, 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. 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 pt. 24 and SAMREC pt. 26. This is consistent with our proposed definitions of mineral resource classifications.

¹⁶⁴ We propose 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. 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 proposed requirement that the qualified person must conduct at least an initial assessment in order to determine resources in section II.E.3, *infra*.

person would be permitted to develop mineral resource estimates using any generally accepted method, including geostatistics, simulation or inverse distance. Regardless of the method used to develop resource estimates, however, the qualified person would be required to estimate and disclose, in the prescribed format, the uncertainty associated with each class of mineral resource.¹⁶⁵ The appropriate methods for quantifying and disclosing this uncertainty will, as discussed below, depend upon the specific classification of the resource.

Specifically, for indicated and measured mineral resources, the qualified person would be required to provide the confidence limits of relative accuracy,¹⁶⁶ at a specific confidence level, of the preliminarily estimated production quantities per period from the resource.¹⁶⁷ 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 $\pm 15\%$ at 90% confidence for monthly, quarterly or annual production estimates, or $\pm 10\%$ or $\pm 15\%$ at 90% confidence for annual production estimates.

¹⁶⁵ See Instruction 3 to proposed Item 601(b)(96)(iv)(B)(13) of Regulation S-K.

¹⁶⁶ 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 $\pm 10\%$ 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.

¹⁶⁷ In this regard, 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 are proposing¹⁶⁸ that qualified persons report the level of uncertainty for indicated and measured mineral resources using this approach with the condition that the stated production period must be monthly, quarterly or annually.¹⁶⁹ This approach for reporting the level of uncertainty is consistent with what many have suggested in the mining engineering literature to be best practice.¹⁷⁰ We are not, however, proposing 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 recognize that the natural variability of geologic characteristics is different for different deposits.

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.¹⁷¹ If the qualified person uses numerical estimates of uncertainty¹⁷² obtained from geostatistical (e.g., kriging) or other

¹⁶⁸ See Instruction 3 to proposed Item 601(b)(96)(iv)(B)(13) of Regulation S-K.

¹⁶⁹ In this regard, we are of the view that the terms “mine planning” and “detailed mine planning,” as used in the definitions of indicated and measured mineral resources, must incorporate mine plans that include, respectively, production periods of one year and production periods of less than one year. We are not, however, proposing to require the qualified person to disclose the exact production quantity per period that is the basis for the uncertainty disclosure because we recognize that such quantities are preliminary at this stage and only reflect the qualified person’s judgment of the scale (or size) of the likely mining project.

¹⁷⁰ See, e.g., Rossi & Deutsch, supra, note 167 at 209-222; and Stephenson, supra, note 167 at 6-8.

¹⁷¹ See Instruction 4 to proposed Item 601(b)(96)(iv)(B)(13) of Regulation S-K.

¹⁷² Although the confidence limits of relative accuracy are expressed in a numeric format, the proposed rules do not require that a registrant derive such limits mathematically. We note in this regard that the CRIRSCO-based codes also anticipate that it is not always possible to estimate mathematically the confidence limits associated with a resource estimate. See, e.g., JORC Code pt. 25, which states “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.” Also, several authors have suggested alternative approaches for estimating uncertainty when mathematical estimates of confidence limits are not possible in the mining engineering literature. See generally, Stephenson, supra, note 167, and D. V. Snowden, Practical Interpretation of Mineral Resource and Ore Reserve Classification Guidelines (2001).

numerical methods (e.g., conditional simulation) when determining the required estimates of confidence in mineral resources, he or she should consider all the risk factors, including those risk factors external to such numerical estimation, that will need to be addressed to prevent the uncertainty disclosure from being materially misleading. Specifically, the qualified person should consider those risk factors (e.g. reliability of drilling, sampling, or assaying techniques, and validity of modeling assumptions such as assumptions about geologic structures and domains) that may raise the level of uncertainty associated with the mineral resource estimate above the level of uncertainty derived solely from the numerical estimation process. 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. Thus, the qualified person would need to take into account the impacts of these risk factors and make whatever adjustments are necessary so that the estimates of confidence limits disclosed are materially complete and accurate. This could be done, if appropriate, by either expanding the confidence limits or decreasing the confidence level.

For example, if a qualified person uses geostatistics or simulation to estimate the uncertainty associated with a particular mineral resource as “ $\pm 15\%$ 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 would have to adjust the confidence limits to be wider than $\pm 15\%$ 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., $\pm 25\%$) or confidence level (e.g. 80%) that would be appropriate depends 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).

We believe, therefore, that the qualified person should be required to justify, in the technical report summary, the final estimates of confidence limits he or she uses after adjusting for the external risk factors.¹⁷³ Specifically, whether the qualified person uses numerical estimates of uncertainty (obtained from geostatistics/simulation) or non-numerical (qualitative) methods, he or she would be required to support the description of this uncertainty with a list of all factors considered and explain how those factors contributed to the final conclusion about the level of risk (confidence limits) underlying the resource classification included in the technical report summary.

As noted above, a qualified person could use a method such as the inverse distance method to estimate mineral resources, determining that all the regions of the deposit that were estimated by means of drill holes with spacing of less than a certain distance are measured mineral resources.¹⁷⁴ If the qualified person can conclude, based on his or her experience in similar deposits with similar facts and circumstances, that annual production estimates generated from these resources will deviate $\pm 15\%$, nine out of ten times, he or she could then disclose his

¹⁷³ See Instructions 4 and 5 to proposed Item 601(b)(96)(iv)(B)(13) of Regulation S-K.

¹⁷⁴ For example, a qualified person using inverse distance could conclude that the portion of the resource that is estimated by drill holes 1,300 ft. apart is measured mineral resources.

or her confidence in the measured mineral resources of “±15% relative accuracy at 90% confidence level for annual production quantities.”¹⁷⁵

Unlike the proposed rules, the CRIRSCO-based codes do not require the qualified person to disclose numerical estimates of the uncertainty associated with the different classes of mineral resources. Instead, those codes only require the qualified person to report fully the assumptions and factors considered in classifying mineral resources.¹⁷⁶ The CRIRSCO-based codes do, however, encourage qualified persons (in some instances) to disclose the level of uncertainty surrounding estimates where possible.¹⁷⁷ We believe that this optional approach could lead to disparities in mineral resource classification and confusion for investors. Accordingly, we are proposing to require the disclosure of numerical estimates of uncertainty, as we believe it would promote transparency and comparability among registrants about mineral resource classification.

¹⁷⁵ See note 172, *supra*.

¹⁷⁶ See, e.g., JORC Code at 30, where the checklist provided for mineral resource classification requires the qualified person to provide “the basis for the classification of the Mineral Resources into varying confidence categories [and] whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).” See also CIM’s Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines 19 (2003), which states that “[t]he criteria used for classification should be described in sufficient detail so that the classification is reproducible by others.” We are also proposing to require the qualified person to discuss these assumptions in the technical report summary (see proposed Item 601(b)(96)(iv)(B)(13) of Regulation S-K) and to require the discussion of these assumptions for first time disclosure of mineral resources or material changes to mineral resource disclosure in SEC filings (see proposed Item 1304(b)(9) of Regulation S-K).

¹⁷⁷ See e.g., JORC Code pt. 25, which states “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.”

The disparity in practice in this area and the implications for investors have been discussed by many authors in the mining engineering literature.¹⁷⁸ In particular, the disparity in determining the boundary between inferred and indicated mineral resources could significantly affect a qualified person's conclusion on whether a project is economically viable or not, since inferred mineral resources cannot be used in economic analysis. We believe investors would benefit from greater transparency and more reliable disclosure of the risk associated with each class of resources by requiring what is now only recommended as best practice by the CRIRSCO-based codes.

Finally, as regards inferred mineral resources, we believe that they have such a low level of confidence that 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.¹⁷⁹ We are, therefore, proposing 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.¹⁸⁰

¹⁷⁸ 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).

¹⁷⁹ 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.

¹⁸⁰ See Instruction 3 to proposed Item 601(b)(96)(iv)(B)(13) of Regulation S-K. Uncertainty estimates for inferred mineral resources must 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."

Request for Comment

54. Should we require a registrant to classify its mineral resources into inferred, indicated and measured mineral resources, as proposed? Why or why not? If not, what classifications would be preferable and why?
55. Should we define “inferred mineral resource” as proposed? Why or why not? Should we require the disclosure of inferred mineral resources although quantity and grade or quality with respect to those mineral resources can be estimated only on the basis of limited geological evidence and sampling, as proposed? Should we 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, as proposed? Should we permit rather than require a registrant to disclose inferred mineral resources because of the high level of geologic uncertainty associated with that class of mineral resource? Should we prohibit the disclosure of inferred mineral resources for that reason?
56. Should we prohibit the use of inferred mineral resources to make a determination about the economic viability of extraction, and preclude the conversion of an inferred mineral resource into a mineral reserve, as proposed? Would these proposed prohibitions be sufficient to mitigate the added uncertainty that could result from the requirement to disclose inferred mineral resources? Are there circumstances that would justify a qualified person’s use of inferred mineral resources to make a determination about the economic viability of extraction, or that would allow the conversion of an inferred mineral resource into a mineral reserve? Should we permit the use of inferred mineral resources to make a determination about the economic viability of extraction as long as

the qualified person and registrant disclose the high level of risk associated with such mineral resources? If so, what would be the potential effects on registrants and investors?

57. Should the definition of “inferred mineral resource” provide that such 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, as proposed? Should we require a registrant, when disclosing inferred resources, to provide a legend or cautionary statement about the geological uncertainty associated with inferred resources? If so, what should such legend or cautionary statement say and where in the SEC filing should it be disclosed?
58. Should we define “indicated mineral resource,” as proposed? In particular, should the definition depend on a qualified person’s ability to estimate quantity and grade or quality using adequate geological evidence and sampling, as proposed? Should the definition of “adequate geologic evidence” 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, as proposed? Should we require a qualified person to describe the level of risk associated with indicated mineral resources based on the confidence limits of relative accuracy at a particular confidence level for production estimates for one-year periods, as proposed? Should we, instead, allow the qualified person to provide a qualitative discussion of the uncertainties in place of confidence limits if he or she so chooses? Why or why not?

59. Should the definition of “indicated mineral resource” include that such mineral resource has a lower level of confidence than what applies to a measured mineral resource and may only be converted to a probable mineral reserve, as proposed?
60. Should we define “measured mineral resource,” as proposed? In particular, should the definition depend on a qualified person’s ability to estimate quantity and grade or quality on the basis of conclusive geological evidence? Should we base the definition of “conclusive geologic evidence” on a qualified person’s ability to apply modifying factors in sufficient detail to support detailed mine planning and final evaluation of the economic viability of the deposit, as proposed? Should we require a qualified person to describe the level of risk associated with measured mineral resources based on the confidence limits of relative accuracy at a particular confidence level for production estimates for periods of less than one year, as proposed? Should we, instead, allow the qualified person to provide a qualitative discussion of the uncertainties in place of confidence limits if he or she so chooses? Why or why not? Are there particular challenges to complying with the proposed requirement to disclose numerical estimates of the level of confidence for each class of mineral resource?
61. Should the definition of “measured mineral resource” include that such mineral resource has a higher level of confidence than what applies 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, as proposed?
62. Should we require the disclosure of numerical estimates of the level of confidence associated with each class of mineral resource, as proposed? Why or why not? Should we instead follow the practice in the CRIRSCO-based codes and require only the

disclosure of all material assumptions and the factors considered in classifying mineral resources? Why or why not?

3. The initial assessment requirement

As proposed, a registrant's disclosure of mineral resources must be based upon a qualified person's initial assessment supporting the determination of mineral resources.¹⁸¹ 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.) We believe that 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.

In connection with the registrant's disclosure of mineral resources, the proposed rules would specify that the qualified person must provide the registrant with information and documentation of the initial assessment that supports a determination of mineral resources. If the property in question is material to the registrant, the qualified person must also provide the registrant with a technical report summary that supports the determination of mineral resources. As proposed, the summary must describe the procedures, findings and conclusions reached for the initial assessment.

We propose to define an "initial assessment" as a preliminary¹⁸² 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

¹⁸¹ See proposed Item 1302(c) of Regulation S-K.

¹⁸² The term "preliminary" as used in this context refers to a less rigorous study than what is required for feasibility studies, as defined and discussed in section II.F.2, infra.

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.¹⁸³ The proposed rules would explain that an initial assessment is required for disclosure of mineral resources but cannot be used as the basis for disclosure of mineral reserves.¹⁸⁴

An initial assessment, as proposed, is not a scoping¹⁸⁵ or conceptual study as defined in some of the CRIRSCO-based codes¹⁸⁶ or a preliminary economic assessment as defined in Canada's NI 43-101.¹⁸⁷ 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.

We are proposing instructions to the initial assessment requirement that are 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 is that an initial assessment must include cut-off grade estimation, based on assumed unit costs for surface or underground operations and estimated mineral prices.¹⁸⁸ Cut-off grade refers to the grade at

¹⁸³ See proposed Item 1301(d)(11)(i) of Regulation S-K.

¹⁸⁴ See proposed Item 1301(d)(11)(ii) of Regulation S-K.

¹⁸⁵ 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 demonstrate at the time of reporting that progress to a Pre-Feasibility Study can be reasonably justified." JORC Code pt. 19 and SME Guide pt. 48.

¹⁸⁶ See, e.g., the SME Guide, Table 2, at 62-63, which provides requirements for scoping, pre-feasibility and feasibility studies.

¹⁸⁷ See NI 43-101 pt. 1.1.

¹⁸⁸ See proposed Instruction 1 to Item 1302(c) of Regulation S-K.

which the destination of the material changes during mining. For purposes of the initial assessment, it distinguishes between material that is going to the waste dump and material that is going to the processing plant (in surface mining) or material that is not mined and material mined to be processed (in underground mining).

We 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.¹⁸⁹ 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.

As part of the initial assessment, the qualified person would need to assume the cost to mine a typical unit of the specific material involved. We are not proposing 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.¹⁹⁰ 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. Any cut-off grade estimation that is

¹⁸⁹ 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 the JORC Code 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 the SME Guide pt. 33 (“...a Mineral Resource is not an inventory of all mineralization drilled or sampled ...[but] rather it is a realistic estimate of mineralization which, under assumed and justifiable technical and economic conditions, might become economically extractable.”)

¹⁹⁰ If the qualified person decides to include economic analysis in the initial assessment, then he/she must include detailed cost estimates. See discussion in section II.E.3, infra.

not based upon, or does not disclose, these two assumptions may not fully meet the standard required to demonstrate reasonable prospects of economic extraction.

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.¹⁹¹ In addition, the qualified person must make and disclose an assumption about whether the deposit will be mined with underground or surface mining methods.¹⁹² 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 prospects of economic extraction.

When estimating mineral prices for the cut-off grade estimation, the qualified person would have 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.¹⁹³ For purposes of consistency, we are proposing that qualified persons use this same ceiling for all other commodity price estimates in the proposed mining disclosure for both mineral resources and reserves.¹⁹⁴

Commodity prices used to evaluate mineral resources and reserves should reflect the long term expectations of the qualified person conducting such analysis. The staff has provided

¹⁹¹ See Instruction 1 to proposed Item 1302(c) of Regulation S-K.

¹⁹² Id.

¹⁹³ Id.

¹⁹⁴ See, e.g., sections II.G.1 and II.G.2, infra.

guidance that commodity prices used in mineral reserve estimation should not exceed a 3-year trailing average. The use of a trailing average is also the Commission’s standard for oil and gas reserves (although oil and gas reserves use a 12-month trailing average).¹⁹⁵ By contrast, 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.¹⁹⁶

We believe the qualified person must use commodity price estimates that are reasonable and justifiable and represent long term¹⁹⁷ market trends in mineral resource and reserve estimation. Such commodity price estimates should account for the current prices and long term price fluctuations. Since no universal commodity price model exists for predicting long term prices, we also believe a reasonable ceiling is necessary to ensure mineral resource and reserve estimates are based on prices that are realistic. The mining engineering literature contains several models for predicting commodity prices that have varying strengths and weaknesses.

¹⁹⁵ See Regulation S-X 4-10(a)(22)(v) (17 CFR 210.4-10(a)(22)(v)).

¹⁹⁶ 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 price model. See, e.g., the JORC Code, 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...”) NI 43-101pt. 3.4(c) 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.” 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.” See CIM’s Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines 30 (2003).

¹⁹⁷ “Long term” in this context refers to the life of the mine. See, e.g., David Humphreys, “Pricing and Trading in Metals and Minerals,” in 1 SME Mining Engineering Handbook, supra note 128, 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.”)

Most of these models rely to some degree on historical market prices. There is, however, no universally agreed upon model for predicting long term commodity prices.

For the purpose of public disclosure, we believe a price model should be transparent, generally affordable, and promote comparability between mineral resources and reserves of different registrants. We also believe that the model should provide flexibility to registrants in selecting a price while helping to ensure that reserve estimates are based on prices that are realistic.

We believe that a pricing model using historical prices to prescribe a reasonable ceiling best meets all the stipulated criteria. For exchange-traded commodities, the qualified person would have to use a price based on the unweighted arithmetic average of the daily closing price for each trading day within the 24-month period preceding the last day of the fiscal year covered by the SEC filing. For commodities that are not traded on an exchange, the qualified person would have to use the 24-month average of prevailing prices in the region as the ceiling.

The sole exception to the 24-month trailing average ceiling price model would be when registrant has a sales contract in place that has defined the price of the commodity. In that case, the registrant may use the price stipulated by the sales contracts, provided that such price is reasonable¹⁹⁸ and the qualified person preparing the resource estimates discloses that he or she is using a contractual price and discloses the contractual price used. In all cases and regardless of

¹⁹⁸ In this context, reasonable means that the contractual price must be a reasonable estimate of the expected annual average price to be achieved for the mined product during each year of the project's life. For example, for a new mine with a 25-year mine life, it would not be reasonable to use a contractual price (higher than the 24 month trailing average) if the contract price is for only 25% of the mine's production for the first six months. In this situation, the contractual price would not be a reasonable estimate of the expected annual average price over the 25-year mine life.

what price is used, the qualified person would have to disclose both the price used and the justification for such use.

We are proposing an average over a 24-month period because we believe it is more responsive to price changes, compared to a 3-year average, based on the staff's experience with the 3-year average in SEC filings. In this regard, we believe the pricing time frame for mineral resource and reserve disclosure should be long enough to ensure the average reflects long term market trends but short enough to prevent the average from lagging behind market trends. On the one hand, a 3-year average lags farther behind market changes than, and is not as responsive as, a 2-year average. A 12-month average, on the other hand, could be too volatile and may not adequately reflect long term trends.

The second proposed instruction to the initial assessment requirement states that the qualified person must 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.¹⁹⁹ The relevant modifying factors would include, but not be limited to, those set forth in the following proposed Table 1.²⁰⁰

TABLE 1. SUMMARY DESCRIPTION OF MODIFYING FACTORS EVALUATED IN TECHNICAL STUDIES²⁰¹

¹⁹⁹ See proposed Instruction 2 to Item 1302(c) of Regulation S-K.

²⁰⁰ See Table 1 following Instruction 4 to proposed Item 1302(c) of Regulation S-K. The modifying factors and requirements in Table 1 are modeled on accepted industry practice and supported by the relevant mining engineering literature. See, e.g., Richard L. Bullock, "Mineral Property Feasibility Studies," in 1 SME Mining Engineering Handbook, supra, note 115 at 227–261.

²⁰¹ As proposed, an initial assessment would be used to support disclosure of mineral resources while a pre-feasibility or final feasibility study would be used to support disclosure of mineral reserves. We discuss feasibility studies in section II.F.2.

Factors	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 and 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.
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 and permitting	List of required permits and 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 requirements or interests of agencies, NGOs, communities and other stakeholders. Detailed baseline studies with preliminary impact assessment (internal). Detailed tailings disposal, reclamation and mitigation plans.	Identification and detailed analysis of requirements or interests of agencies, NGOs, communities and other stakeholders finalized. Completed baseline studies with final impact assessment (internal). Tailings disposal, reclamation and mitigation plans finalized.
Other modifying factors ¹	Appropriate assessments of other reasonably assumed modifying 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. ² If included: Accuracy: ±50%	Accuracy: ±25% Contingency: ≤15%	Accuracy: ±15% Contingency: ≤10%

Factors	Initial Assessment	Preliminary Feasibility Study	Feasibility Study
	Contingency: $\leq 25\%$		
Operating costs	Optional. ² If included: Accuracy: $\pm 50\%$ Contingency: $\leq 25\%$	Accuracy: $\pm 25\%$ Contingency: $\leq 15\%$	Accuracy: $\pm 15\%$ Contingency: $\leq 10\%$
Economic analysis	Optional. ³ 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.

¹The modifying factors, as defined in this section, include, but are not limited to, the factors listed in this table. 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.

²Initial assessment, as defined in this section, does not require cash flow analyses or operating and capital cost estimates. The qualified person may include such cash flow analyses at his or her discretion.

³Initial assessment does not require an economic analysis, although it requires unit cost assumptions based on an assumption that the resource will be exploited with surface or underground mining methods. Economic analyses, if included, must only be based on measured and indicated mineral resources.

This table sets forth the proposed minimum requirements for various factors that the qualified person must evaluate when preparing an initial assessment, pre-feasibility study, or feasibility study. We are presenting them all in this section, in one 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. As this presentation demonstrates, the proposed modifying factors evaluative process becomes more exacting as mining property assessment progresses from mineral resource estimation to mineral reserve estimation.

At the initial assessment stage, as proposed, a qualified person would be required to evaluate, at a minimum, the following modifying 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.

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 a thorough evaluation and discussion of infrastructure, mine design, processing and environmental issues that could pose obstacles to the material's extraction.

To demonstrate the economic feasibility of mining projects, 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 believe, however, that an initial assessment, the singular goal of which is to demonstrate reasonable prospects of economic extraction, not economic viability, need not contain such quantitative analysis.

Nevertheless, if the qualified person would like to demonstrate the economic potential of the mining property beyond the minimum requirements of an initial assessment²⁰² by including a cash flow analysis, we believe such analysis could benefit investors, subject to restrictions.

²⁰² As proposed, the minimum requirements of an initial assessment would consist of cut-off grade estimates, based on an assumed long term commodity price that is no higher than the 24 month spot price average and unit cost of production, and qualitative evaluation of other relevant modifying factors.

Thus, the third 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.²⁰³ 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 $\pm 50\%$ ²⁰⁴ and a contingency level of no greater than 25% of the direct estimate.²⁰⁵ The proposed instruction would provide that the qualified person must state the accuracy and contingency levels in the initial assessment.

We believe that the proposed prohibition against using inferred mineral resources in an initial assessment's cash flow analysis is reasonable because of the high level of geological risk associated with such mineral resources. We further believe that the proposed accuracy and contingency requirements²⁰⁶ for operating and capital costs are appropriate because they are generally consistent with those accepted for scoping studies.²⁰⁷

²⁰³ See Instruction 3 to proposed Item 1302(c) of Regulation S-K.

²⁰⁴ The phrase "accuracy level of at least approximately $\pm 50\%$ " 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.

²⁰⁵ 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," in 1 *SME Mining Engineering Handbook*, *supra*, note 115, at 270. Thus, a contingency level of $\leq 25\%$ means the contingency cannot be more than 25% of the direct cost estimate.

²⁰⁶ As proposed, Table 1 includes both accuracy and contingency requirements for operating and capital cost estimates.

²⁰⁷ See, e.g., the SME Guide, Table 2, at 62-63, which provides accuracy and contingency ranges for capital and operating cost estimates in scoping, pre-feasibility and feasibility studies. See also note 185, *supra*.

We do not believe that other quantitative measures of economic potential that omit cash flows are appropriate and are concerned that they potentially could be misleading. As explained above, 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, we are proposing that, 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.

The fourth proposed instruction to the initial assessment requirement refers the qualified person to 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. We believe that it is reasonable to permit assumptions to be made for these factors for the initial assessment. Allowing assumptions for a variety of factors at the resource determination stage is generally consistent with guidelines under the CRIRSCO-based codes.²⁰⁸ 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.

²⁰⁸ See, e.g., the SME Guide, Table 1, at 39-61.

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63. Should we 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, as proposed? Why or why not? Is there another form of analysis or means of disclosure that would be more appropriate for the determination and disclosure of mineral resources? Would disclosure of the material risks associated with mineral resource determination be an adequate substitute for the initial assessment requirement?
64. If we require an initial assessment to support the determination of mineral resources, should we define "initial assessment," as proposed, to require the consideration of applicable modifying factors and relevant operational factors for the purpose of determining (at the resource evaluation stage) whether there are reasonable prospects for economic extraction? Should we instead only require consideration of modifying and operational factors at the reserve determination stage?
65. Should we require an initial assessment to include cut-off grade estimation, as proposed? Why or why not?
66. Should we require a qualified person to base cut-off grade estimation on assumed unit costs for surface or underground operations, as proposed? Is it appropriate to allow the qualified person to make an assumption about unit costs, as proposed, or should we require a more detailed estimate of unit costs at the resource determination stage? Is it appropriate to require the qualified person to disclose whether the unit cost estimates are for surface or underground operations, as proposed?
67. Should we also require a qualified person to base cut-off grade estimation on estimated mineral prices, as proposed? In this regard, should we 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, as proposed? Does a ceiling model based on historical prices best meet the goals of transparency, cost efficiency and comparability? Why or why not? Is there another model that would better meet these goals? If another price model better meets these goals, what should be the basis of estimated mineral prices for purposes of the initial assessment? Whatever price model we adopt, should it be used to determine the commodity price itself? Or should it be used, as proposed, to determine the ceiling of the commodity prices?

68. Is the proposed 24-month period the most appropriate period for the estimated price requirement? Would a 12, 18, 30, or 36-month period, or some other duration, be more appropriate? Should the 24-month period, or other period be fixed and apply to all registrants, or should the period vary depending upon the type of commodity being mined and other factors?
69. Should we require, as proposed, the same ceiling price for mineral resource and reserve estimation? If not, how should the prices used for mineral resource and reserve estimation differ? Would such criteria meet the goals of transparency, cost efficiency and comparability?
70. Should we require that for purposes of the initial assessment a qualified person must provide at least a qualitative assessment of all 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, as proposed? Are the modifying factors provided

as examples in the proposed instruction and table the most appropriate factors to be included? Are there other factors that should be specified in the instruction and table in lieu of or in addition to the mentioned factors? Would presentation of the modifying factors in a table benefit investors, registrants and qualified persons?

71. Should we permit the qualified person to make assumptions about the modifying factors set forth in the proposed table at the resource determination stage, as proposed? Why or why not? Are there other assumptions that we should specify in lieu of or in addition to those already mentioned in the proposed table?
72. Should we permit a qualified person to include cash flow analysis in an initial assessment to demonstrate economic potential, as proposed? Why or why not? If we should permit cash flow analysis in an initial assessment, should we require that operating and capital cost estimates in the analysis have an accuracy level of at least $\pm 50\%$ and a contingency level of $\leq 25\%$, as proposed? If not, what should the accuracy and contingency levels be? Should we require the qualified person to state the accuracy and contingency levels in the initial assessment?
73. If we permit cash flow analysis in the initial assessment, should we prohibit the qualified person from using inferred mineral resources in the cash flow analysis, as proposed? Why or why not? Would there be disadvantages to registrants or investors if the use of inferred mineral resources in an initial assessment's cash flow analysis is prohibited? Would there be advantages to prohibiting the use of inferred resources in an initial assessment's cash flow analysis in the initial assessment?
74. Should we prohibit the use of an initial assessment to support a determination of mineral reserves, as proposed? Why or why not?

4. USGS Circular 831 and 891

In 1980, the US Geological Survey (“USGS”) published Circular 831 as an update to USGS Bulletin 1450-A — “Principles of the Mineral Resource Classification System of the U.S. Bureau of Mines and U.S. Geological Survey.” In 1983, the USGS published Circular 891 — “Coal Resource Classification System of the U.S. Geological Survey,” specifically for resource or reserve classification of coal.²⁰⁹ 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,²¹⁰ and were not intended to be the basis for public company disclosure to investors. Both circulars have been used by companies to classify coal and industrial minerals resources in the United States.²¹¹

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.²¹² We do not

²⁰⁹ See USGS Circular 891 1 (1983), which states that “In 1980, the [USGS and Bureau of Mines] published Circular 831... 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), which is available at: <http://pubs.usgs.gov/circ/1983/0891/report.pdf>.

²¹⁰ See, e.g., USGS Circular 831 1 (1980), which states, “The 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), which is available at: <http://pubs.usgs.gov/circ/1980/0831/report.pdf>.

²¹¹ Although Circular 831’s classification system has been largely phased out in metal mining, it is still commonly used in coal and some industrial minerals mining.

²¹² Guide 7 prohibits mineral resource disclosure and as such does not provide any guidance (or place any restrictions) on how to classify mineral resources.

believe the use of USGS Circulars 831 and 891 for resource classification in SEC filings would be consistent with the proposed rules. We believe that the CRIRSCO-based mineral resource classification scheme, upon which our proposed mineral resource disclosure rules are modeled, would provide a more appropriate basis for disclosure about a registrant's mineral resources.²¹³

In contrast to the Circular's classification system, the proposed definitions require that all disclosed mineral resources must have reasonable prospects of economic extraction. Moreover, the primary criterion for the required mineral resource classification in our proposed rules is the geologic confidence in the estimates based on the geologic evidence (limited, adequate or conclusive). This is in contrast to the primary criterion in the Circulars, which is essentially the extent to which tonnages fall within particular distances from a drill hole or outcrop. 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 do not believe it should be the sole factor.²¹⁴

Request for Comment

75. Are we correct in thinking that use of Circulars 831 and 891 to classify mineral resources would not be appropriate under the proposed rules? Why or why not?

²¹³ 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.

²¹⁴ 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," in USGS Scientific Investigations Report 2014-5196 1 (2014) (which concluded that an approach that involved establishing confidence limits, similar to the approach used in our proposal, "should be considered realistic improvements over distance methods used for quantitative classification of uncertainty in coal resource, such as U.S. Geological Survey Circular 891").

F. Treatment of Mineral Reserves

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.”²¹⁵ The Guide 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”²¹⁶ to indicated and measured mineral resources.²¹⁷

In addition, the CRIRSCO-based codes permit the use of either a preliminary feasibility study or feasibility study²¹⁸ to establish the economic viability of extraction.²¹⁹ Although Guide 7 does not address the issue, the staff has historically requested that registrants provide a final feasibility study to support the determination and disclosure of mineral reserves.

These differences between the staff’s guidance and the CRIRSCO standards, the latter of which have become widely-accepted in industry practice, may have been a source of confusion for registrants and investors.²²⁰ To address this situation, we propose to revise the definition of mineral reserves to align it generally with the definition under the CRIRSCO-based standards by:

²¹⁵ Paragraph (a)(1) of Guide 7.

²¹⁶ The modifying factors applied in this context are the same as the modifying factors applied in the context of the determination of mineral resources. See note 103, supra.

²¹⁷ See, e.g., the CIM Definition Standards at 5-6; the JORC Code pts. 30-31; the SME Guide pts. 40-41; the SAMREC Code pts. 33-34; and the PERC Reporting Standard pts. 30-31.

²¹⁸ A preliminary feasibility study is also called a pre-feasibility study. A feasibility study is also called a full, final, comprehensive, or bankable feasibility study.

²¹⁹ See, e.g., the CIM Definition Standards at p. 5; the JORC Code pt. 29; the SME Guide pt. 39; the SAMREC Code pt. 32; and the PERC Reporting Standard pt. 29.

²²⁰ See, e.g., the SME Petition for Rulemaking at 2, which states, “The SEC’s Industry Guide 7 is substantially different from these standards... [and] has caused much confusion among mining companies and their

- adopting the framework of applying modifying factors to indicated or measured mineral resources in order to convert them to mineral reserves; and
- permitting either a pre-feasibility or feasibility study to provide the basis for determining and reporting mineral reserves.

1. The framework for determining mineral reserves

We propose to establish a framework for mineral reserves determination and disclosure that is based on the following proposed definitions of “mineral reserves,” “probable mineral reserves,” “proven mineral reserves,” and “modifying factors.”

We propose 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.²²¹

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

investors.”

²²¹ See proposed Item 1301(d)(13)(i) of Regulation S-K.

plan that is technically achievable and economically viable, which would be the basis of determining the mineral reserve.²²²

The proposed rules would provide that, as used in the 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.²²³ The proposed rules would further explain that, as used in this definition, “investment and market assumptions” includes all 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.²²⁴

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 reasonable²²⁵ and the

²²² See proposed Item 1301(d)(13)(ii) of Regulation S-K.

²²³ See proposed Item 1301(d)(13)(iii) of Regulation S-K. Whether the investment and market assumptions are “reasonable” will necessarily be a facts and circumstances determination based upon the relevant economic and market factors.

²²⁴ See proposed Item 1301(d)(13)(iv) of Regulation S-K.

²²⁵ See note 198 for a discussion of when a contractual price may not be a reasonable estimate of the expected annual average price to be achieved for the mined product during each year of the project’s life.

qualified person discloses that he or she is using a contractual price and discloses the contractual price used.²²⁶

The proposed rules would adopt 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.²²⁷ Similar to the CRIRSCO classification scheme,²²⁸ we propose to define “probable mineral reserves” as the economically mineable part of an indicated and, in some cases, a measured mineral resource.²²⁹

The proposed rules would explain that, 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.²³⁰ 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. The proposed rules

²²⁶ See proposed Item 1301(d)(13)(iv) of Regulation S-K.

²²⁷ See Note to proposed Item 1301(d)(13) of Regulation S-K.

²²⁸ See, e.g., JORC Code pt. 30; CIM Definition Standards at p. 6; and SAMREC Code pt. 33.

²²⁹ See proposed Item 1301(d)(18)(i) of Regulation S-K.

²³⁰ See proposed Item 1301(d)(18)(ii) of Regulation S-K.

would further require that a qualified person 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.²³¹

Similar to the CRIRSCO classification scheme,²³² we propose to define “proven mineral reserves” as the economically mineable part of a measured mineral resource.²³³ The proposed rules would explain that, 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.²³⁴ In addition, as proposed, a proven mineral reserve can only result from conversion of a measured mineral resource.²³⁵

We propose 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.²³⁶ 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.²³⁷ These factors would include, but not be restricted to, mining, energy

²³¹ See proposed Item 1301(d)(18)(iii) of Regulation S-K.

²³² See, e.g., JORC Code pt. 31; CIM Definition Standards at p. 6; and SAMREC Code pt. 34.

²³³ See proposed Item 1301(d)(21)(i) of Regulation S-K.

²³⁴ See proposed Item 1301(d)(21)(ii) of Regulation S-K.

²³⁵ See proposed Item 1301(d)(21)(iii) of Regulation S-K.

²³⁶ See proposed Item 1301(d)(15) of Regulation S-K.

²³⁷ See, e.g., JORC Code pt. 12; CRIRSCO International Reporting Template pt. 12; and SAMREC Code pt.

recovery and conversion, processing, metallurgical, economic, marketing, legal, environmental, infrastructure, social and governmental factors. The number, type and specific characteristics of the modifying factors that are applied would be a function of and depend upon the mineral, mine, property, or project.²³⁸

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, environmental, reclamation and permitting regulations) that are relevant to operating a mineral project using existing technology. 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 such relevant factors have been evaluated, can be shown to be part of a viable mineral project.

We also are proposing several instructions about the conversion of mineral resources into mineral reserves.²³⁹ For example, one instruction would explain that, similar to the CRIRSCO framework,²⁴⁰ 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

12.

²³⁸ See proposed Item 1301(d)(15) of Regulation S-K.

²³⁹ We discuss additional instructions about the conversion of mineral resources into mineral reserves in the discussion of the requirements for pre-feasibility and feasibility studies below. See section II.F.2, *infra*.

²⁴⁰ See, e.g., JORC Code pt. 32; CRIRSCO International Reporting Template pt. 33; and SAMREC Code pt. 35.

reserve, no longer exist, then the qualified person may convert the measured mineral resource to a proven mineral reserve.²⁴¹

Another instruction would state 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.²⁴² A third instruction would explain 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.²⁴³ These instructions are consistent with the CRIRSCO framework for conversion of mineral resources into mineral reserves.²⁴⁴

The proposed framework would require 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.²⁴⁵ The proposed instructions would describe the relationship between the different classes of mineral resources and reserves and underscore the incremental nature of mineral resource and reserve determination. For example, a qualified person would not be able to use inferred mineral resources to support a determination of mineral reserves unless new evidence (e.g., data and analysis) has first caused an increased confidence in the geologic

²⁴¹ See Instruction 11 to proposed Item 1302(d) of Regulation S-K.

²⁴² See Instruction 12 to proposed Item 1302(d) of Regulation S-K.

²⁴³ See Instruction 13 to proposed Item 1302(d) of Regulation S-K.

²⁴⁴ See, e.g., JORC Code pt. 32; CRIRSCO International Reporting Template pt. 33; and SAMREC Code pt. 35.

²⁴⁵ See proposed Item 1302(d) of Regulation S-K.

evidence²⁴⁶ sufficient to reclassify those resources as indicated or measured mineral resources. Similarly, a qualified person would 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.

This proposed framework for mineral reserve determination and disclosure would be more detailed and structured than 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, the proposed framework would only permit estimates of mineral reserves that result from the conversion of indicated and measured mineral resources for which adequate and conclusive geologic evidence exist. It would also prohibit the use of inferred mineral resources, for which there is only limited geologic evidence, to support a determination of mineral reserves. Finally, the proposed framework would require the qualified person to disclose the specific mining, processing, metallurgical, environmental, economic, legal and other applicable factors, the detailed evaluation of which has led the qualified person to conclude that extraction of the mineral reserve is economically viable.

As a result, we believe that the proposed framework would result in clearer and more accurate disclosure about the economic viability of a registrant's mineral deposits, which would benefit investors. The proposed framework would also be substantially similar to the CRIRSCO framework. As such, its adoption should enhance consistency in mining disclosure across

²⁴⁶ See the definitions of limited, adequate and conclusive geologic evidence under the respective definitions of inferred, indicated and measure mineral resource in proposed Item 1301(d) of Regulation S-K.

jurisdictions, facilitating comparability for investors. It also would reduce reporting costs for the numerous mining registrants that are dual-listed and have been subject to different U.S. and CRIRSCO-based disclosure requirements. The main difference between the proposed framework for determining mineral reserves and the CRIRSCO framework is the requirement to use commodity prices that are no higher than the 24-month trailing average.

We are proposing 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. We are proposing a net estimate for reserves because our proposed rules would require disclosure of mineral reserves at three points of reference: in-situ,²⁴⁷ plant or mill feed, and saleable product.²⁴⁸ We believe estimates that are exclusive of diluting materials and mining losses would provide a clearer picture of the efficiency of the processing method, which we believe is important for investors.²⁴⁹ Because this difference is relatively minor (excluding diluting materials is a minor computational step in reserve estimation), we do not believe it would impose a significant additional compliance burden for registrants.

²⁴⁷ In-situ means “in its original place.” It is used in this context to refer to mineral reserves estimated as in-place tons.

²⁴⁸ See proposed Item 1304(b)(7) of Regulation S-K and Instruction 4 to proposed Item 601(b)(96)(iv)(B)(14) of Regulation S-K.

²⁴⁹ The efficiency of the processing method demonstrates how well the registrant converts the resource into saleable products.

As discussed in greater detail below,²⁵⁰ under the proposed rules, a qualified person's determination of mineral reserves would have to be based on either a preliminary (pre-feasibility) or feasibility study. In either case, the required technical study would have to include a technically and economically feasible life of mine plan that supports the study's demonstration that, at the time of reporting, extraction of the mineral reserve is economically viable under reasonable investment and market assumptions. We are including this life of mine requirement to provide clear guidance concerning the determination of mineral reserves to qualified persons and registrants. We do note, however, that many registrants already conduct life of mine plans to support their reserve disclosure.²⁵¹

As proposed, the qualified person must demonstrate economic viability by conducting a discounted cash flow analysis or other similar financial analysis using a commodity price that is no higher than the 24 month trailing average price model proposed for the determination of mineral resources.²⁵²

When discussing the analysis in the technical report summary, the qualified person must disclose the assumptions made about prices, exchange rates, discount rate, sales volumes and

²⁵⁰ See section II.F.2, *infra*.

²⁵¹ In this regard, we note that the SME Guide expressly requires a life of mine plan in its technical study. See the SME Guide, Table 1, at 49 ("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 JORC pt. 29, which states 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."

²⁵² Consistent with this proposed requirement, the proposed rules would not permit a registrant to provide a supplemental mineral reserve determination (i.e., an estimate based upon a price higher than the 24 month trailing average).

costs necessary to determine the economic viability of the reserves.²⁵³ The proposed requirement to conduct a discounted cash flow or other similar analysis is consistent with 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.²⁵⁴ In addition, the staff has historically requested such financial analysis to support disclosure of mineral reserves. As such, it should not significantly alter existing disclosure practices.

Request for Comment

76. Should we establish a framework for mineral reserves determination and disclosure, as proposed? Why or why not? Is there another framework that would be preferable to the proposed framework? If so, what would be the advantages and disadvantages of the alternative framework?
77. Should we define “mineral reserve,” as proposed? Are there conditions that we should include in the definition of mineral reserves instead of, or in addition to, those proposed to be included in the definition? Are there any conditions that we should exclude from the definition of mineral reserves? For example, should we modify the condition that mineral reserves be based on a pre-feasibility or feasibility study to only permit a feasibility study? Should we exclude in its entirety the condition that mineral reserves be based on a feasibility or pre-feasibility study? Are there terms that we should define

²⁵³ See Instruction 3 to proposed Item 601(b)(96)(iv)(B)(21).

²⁵⁴ See, e.g., the SME Guide pt. 39 (“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 the JORC Code pt. 29 (“The term ‘economically mineable’ implies that extraction of the Ore Reserves has been demonstrated to be viable under reasonable financial assumptions”).

differently? For example, should we define a mineral reserve as an estimate of tonnage and grade or quality that includes diluting materials and allowances for losses, instead of a net estimate, as proposed? Why or why not?

78. Should we explicitly include a life of mine plan disclosure requirement in the technical studies required to support a determination of mineral reserves, as proposed? Why or why not?
79. Should we require the use of a discounted cash flow analysis or other similar analysis to establish the economic viability of a mineral reserve's extraction, as proposed? Why or why not? If so, should we require the use of a price that is no higher than a trailing 24 month average spot price in the discounted cash flow analysis, except in cases where sales prices are determined by contractual agreements, as proposed? Is there some other period (e.g., 12 or 36 months) or measure that should determine the price used in the discounted cash flow analysis?
80. Should we allow registrants to use an alternate price in addition to a price that is no higher than a trailing 24 month average spot price, as long as they disclose the alternate price and their justification? Alternatively, should we require every registrant to use a fixed 24 month trailing average price with the option to use an alternate price(s) that is reasonably achieved? Are there other pricing methods (e.g., management's long term view or using spot, forward or futures prices at the end of the last fiscal year to determine the ceiling price allowed) that we should require or permit registrants to use in discounted cash flow analysis? Would such pricing methods be transparent, easy for registrants to apply and investors to understand, and to the extent practicable, provide some degree of comparability?

81. Should we define the terms “probable mineral reserve” and “proven mineral resource,” as proposed? Why or why not? If not, how should we modify these definitions?
82. Should we define “modifying factors,” as proposed? Are there any factors that we should include in the definition of modifying factors instead of or in addition to those already included in the definition? Are there any factors that we should exclude from the definition?
83. Should we adopt the above discussed instructions, as proposed? Why or why not?

2. The type of study required to support a reserve determination

i. Preliminary feasibility study

Like the CRIRSCO framework for mineral reserve determination the proposed rules would require either a preliminary feasibility study or a feasibility study in support of a determination of mineral reserves.²⁵⁵ We propose 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.²⁵⁶

The proposed rules would further provide that a pre-feasibility study must include a financial analysis based on reasonable assumptions, based on appropriate testing, about the

²⁵⁵ See proposed Item 1302(d) of Regulation S-K.

²⁵⁶ See proposed Item 1301(d)(16)(i) of Regulation S-K. This proposed definition is similar to the comparable definition under the CRIRSCO-based codes. See, e.g., JORC Code pt. 39; CRIRSCO International Reporting Template pt. 38; and SAMREC Code at p. 3.

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 study’s financial analysis must have the level of detail necessary to demonstrate, at the time of reporting, that extraction is economically viable.²⁵⁷ The proposed rules would also note that, 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.²⁵⁸

As discussed in greater detail below, we propose to define a “feasibility study”²⁵⁹ 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.²⁶⁰ The proposed rules would further provide that, similar to the CRIRSCO framework,²⁶¹ 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,

²⁵⁷ See proposed Item 1301(d)(16)(ii) of Regulation S-K.

²⁵⁸ See Note to proposed Item 1301(d)(16) of Regulation S-K.

²⁵⁹ As proposed, terms such as “full, final, comprehensive, bankable, or definitive” feasibility study are equivalent to a feasibility study. See Note to proposed Item 1301(d)(7) of Regulation S-K.

²⁶⁰ See proposed Item 1301(d)(7)(i) of Regulation S-K. This proposed definition is similar to the comparable definition under the CRIRSCO-based codes. See, e.g., JORC Code pt. 40; CRIRSCO International Reporting Template pt. 39; and SAMREC Code at p. 2.

²⁶¹ Id.

infrastructure, and process designs completed with sufficient rigor to serve as the basis for an investment decision or to support project financing.²⁶²

As proposed, the key differences between a pre-feasibility study and a final or bankable feasibility study are:

- a pre-feasibility study discusses a “range of options” for the technical and economic viability of a mineral project whereas a final 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 final 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 final 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 is appropriate because of the expected resulting benefits for 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

²⁶² See proposed Item 1301(d)(7)(ii) of Regulation S-K; see also Note to proposed Item 1301(d)(7)(ii) of Regulation S-K.

their investors. Permitting the use of a pre-feasibility study could also significantly reduce a mining registrant's costs in connection with the determination of mineral reserves.

Although the use of a pre-feasibility study could increase the uncertainty regarding a registrant's disclosure about mineral reserves, we believe that any such uncertainty would be reduced by the requirements included in the proposed definitions and corresponding proposed instructions.

First, as proposed, 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 would state 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.²⁶³ 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.²⁶⁴ We believe that this proposed level of detail for the economic analysis in a pre-feasibility study is consistent with current practice in the industry and comparable to the

²⁶³ See Instruction 4 to proposed Item 1302(d) of Regulation S-K.

²⁶⁴ As defined in proposed Item 1301(d)(17) of Regulation S-K, a 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.

requirements for mineral reserve disclosure based on a pre-feasibility study in the CRIRSCO-based jurisdictions.²⁶⁵

Second, the proposed rules would require a qualified person to include the justification for using a pre-feasibility study, if one is used, instead of a final feasibility study.²⁶⁶ This requirement would help ensure that investors are fully informed of the qualified person's basis for determining that a pre-feasibility study is adequate given the particular facts and circumstances. It also should encourage a qualified person to consider carefully his or her decision to use a pre-feasibility study to support the determination of mineral reserves.

Third, another proposed instruction would require the use of a final feasibility study in high risk situations.²⁶⁷ For example, 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, remoteness, and unique mineralization and recovery methods.²⁶⁸ In such cases, the qualified person would have to use a feasibility study in order to achieve the level of confidence necessary for disclosing mineral reserves because, as discussed above, a pre-feasibility study is less comprehensive and yields results with a lower level of confidence than a

²⁶⁵ For example, the CIM Definition Standards at 3 states that the standard “requires the completion of a Preliminary Feasibility Study as the minimum prerequisite for the conversion of Mineral Resources to Mineral Reserves.” Also, CIM’s Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines 45 (2003), in discussing work to determine economic merits of a deposit, states “[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.”

²⁶⁶ See proposed Item 1302(d) of Regulation S-K.

²⁶⁷ See Instruction 7 to proposed Item 1302(d) of Regulation S-K.

²⁶⁸ See Instruction 7 to proposed Item 1302(d) of Regulation S-K.

feasibility study. We are concerned that using a pre-feasibility study in such high risk situations would not sufficiently reduce the uncertainty surrounding the results of the application of modifying factors to support disclosure of mineral reserves. We note that the SME Guide reflects a similar concern.²⁶⁹

Moreover, similar to provisions in the CRIRSCO-based codes, an instruction to the proposed rules would prohibit a qualified person from using inferred mineral resources in the pre-feasibility study's financial analysis.²⁷⁰

Other proposed instructions are designed 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 would explain 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.²⁷¹ For example, a pre-feasibility study would have to define, analyze or otherwise address in detail:

- 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;

²⁶⁹ The SME Guide (2014) pt. 50 states: "The Guide does not require that a Feasibility Study has been undertaken to convert Mineral Resources to Mineral Reserves, but it does require that at least a Pre-feasibility Study will have determined that the mining project is technically and economically feasible, and that relevant Modifying Factors have been considered for such a conversion. However, there may be some projects for which the Competent Person determines that a Feasibility Study, instead of a Pre-Feasibility Study, is required before the Mineral Resources may be converted to Mineral Reserves due to uncertainties in the Modifying Factors."

²⁷⁰ See Instruction 2 to proposed Item 1302(d) of Regulation S-K.

²⁷¹ See Instruction 3 to proposed Item 1302(d) of Regulation S-K. These factors are also set forth in proposed Table 1, which is referenced in the instructions to proposed Items 1302(c) and (d) of Regulation S-K.

- the preferred underground mining method or surface mine pit configuration, with detailed mine layouts drawn for each alternative;
- the bench lab tests²⁷² 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 or interests of agencies, non-governmental organizations, communities and other stakeholders, 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, on the modifying factors sufficient to demonstrate that extraction is economically viable.²⁷³

Another proposed instruction would provide that 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. According to this instruction, operating and capital cost estimates in a pre-feasibility study must, at a minimum, have an accuracy level of approximately $\pm 25\%$ and a contingency range not

²⁷² 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) which defines 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), which defines 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.”

²⁷³ See Instruction 3 to proposed Item 1302(d) of Regulation S-K.

exceeding 15%.²⁷⁴ The instruction would require the qualified person to state the accuracy level and contingency range in the pre-feasibility study.

These latter two instructions (addressing the level at which the modifying factors are assessed and the appropriate accuracy level and contingency range for operating and capital costs) are consistent with current industry practice and comparable to requirements for the use of a pre-feasibility study in the CRIRSCO-based jurisdictions.²⁷⁵ As such, the proposed instructions would help ensure that a registrant's use of a pre-feasibility study in SEC filings meets the industry established minimum level of detail and rigor sufficient to determine reserves.

Another proposed instruction would address whether and when a registrant would be required to take additional steps to support its determination of mineral reserves. That instruction would explain that 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. The instruction would explain, however, that 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.²⁷⁶ The instruction would also state that, 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

²⁷⁴ See Instruction 6 to proposed Item 1302(d) of Regulation S-K. These accuracy level and contingency range requirements are also provided in proposed Table 1.

²⁷⁵ See, e.g., the SME Guide, Tables 1 and 2.

²⁷⁶ See Instruction 1 to proposed Item 1302(d) of Regulation S-K.

contingent and which is dependent on a third party. Under the proposed instruction, a determination of mineral reserves does not necessarily mean that extraction facilities have been built, permits have been obtained or that sales contracts have been entered into. Rather, for a determination that mineral reserves exist, it is sufficient for the qualified person to conclude, after reasonable investigation, that there are no obstacles to obtaining permits and revenues from the mine's products. This proposed instruction is consistent with similar guidance under the CRIRSCO-based codes.

Additionally, the proposed instructions would address 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. Specifically, proposed Instruction 1 to Item 1302(d) would explain that the determination of mineral reserves may, in certain circumstances, require the completion of a preliminary market study (in the context of a pre-feasibility study) or a final market study (in the context of a final feasibility study) to support the qualified person's conclusions about the chances of obtaining revenues from sales. As proposed, 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. We believe that this proposed instruction would 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.²⁷⁷

²⁷⁷ See Instruction 1 to proposed Item 1302(d) of Regulation S-K. Cf. Instruction 4 to proposed Item 1302(d) of Regulation S-K, which would otherwise permit a pre-feasibility study to be based on a preliminary market study, and Instruction 9 to proposed Item 1302(d) of Regulation S-K, which permits a feasibility study to be based on "a final market study or possible letters of intent to purchase."

Finally, another proposed instruction would require a pre-feasibility study to identify sources of uncertainty that require further refinement in a final feasibility study.²⁷⁸ This requirement is intended to elicit appropriate disclosure about the areas of risk present in the pre-feasibility study, which should help investors in assessing the reliability of the study.

We believe that the proposed rule and its related proposed instructions, taken as a whole, would sufficiently mitigate the level of risk resulting from permitting the use of a pre-feasibility study to support the determination and disclosure of mineral reserves. As such, we believe it would be appropriate to permit the use of a pre-feasibility study for reserve determination and disclosure.

ii. Feasibility Study

As proposed, a feasibility study is a comprehensive technical and economic study of the selected development option for a mineral project.²⁷⁹ Because of the comprehensiveness and level of detail required for a feasibility study, as provided under the proposed definition of feasibility study and similar to the comparable definition under the CRIRSCO-based codes,²⁸⁰ 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.²⁸¹

We are proposing several instructions regarding the use of a feasibility study to support the determination and disclosure of mineral reserves. One proposed instruction would require a

²⁷⁸ See Instruction 5 to proposed Item 1302(d) of Regulation S-K.

²⁷⁹ See proposed Item 1301(d)(7) of Regulation S-K.

²⁸⁰ See, e.g., JORC Code pt. 40; CRIRSCO International Reporting Template pt. 39; and SAMREC Code at p. 2.

²⁸¹ See proposed Item 1301(d)(7)(i) of Regulation S-K.

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.²⁸² Pursuant to that instruction, a feasibility study would have to define, analyze or otherwise address in detail:

- 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;
- completed detailed bench lab tests and a pilot plant test,²⁸³ 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, including the finalized interests of agencies, NGOs, communities and other stakeholders, 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.²⁸⁴

²⁸² See Instruction 8 to proposed Item 1302(d) of Regulation S-K.

²⁸³ See note 272, supra.

²⁸⁴ In addition to Instruction 8 of proposed Item 1302(d), proposed Table 1 also addresses these factors.

Another proposed instruction²⁸⁵ would require a feasibility study to include an economic analysis that, in addition to describing taxes in detail and assessing economic viability by a detailed discounted cash flow analysis, also estimates revenues based on at least a final market study²⁸⁶ or possible letters of intent to purchase.

A third proposed instruction would require operating and capital cost estimates in a feasibility study, at a minimum, to have an accuracy level of approximately $\pm 15\%$ and a contingency range not exceeding 10%.²⁸⁷ As proposed, the qualified person would have to state the accuracy level and contingency range in the feasibility study.

These proposed 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 SEC filings, which should benefit investors as well as registrants. As proposed, the requirements concerning the accuracy level and contingency range for operating and capital cost estimates, and level of detail or stage of development for the evaluation of modifying factors, are comparable to those required for the use of a feasibility study to support mineral reserve estimates under the CRIRSCO-based codes.²⁸⁸ We believe aligning the U.S. requirements with international standards would benefit investors and registrants by promoting uniformity in

²⁸⁵ See Instruction 9 to proposed Item 1502(d) of Regulation S-K.

²⁸⁶ As defined in proposed Item 1301(d)(8) of Regulation S-K, a 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 all material contracts required to develop and sell the reserves.

²⁸⁷ See Instruction 10 to proposed Item 1502(d) of Regulation S-K; see also proposed Table 1.

²⁸⁸ See, e.g., the SME Guide, Tables 1 and 2.

mining disclosure standards. In addition, the proposed instructions are generally consistent with staff guidance for the use of a feasibility study to support a determination and disclosure of mineral reserves. Accordingly, we do not believe that adoption of the proposed definition of feasibility study and the corresponding proposed instructions would significantly change existing disclosure practices of registrants.

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84. Should we define “preliminary feasibility study” and “feasibility study,” as proposed?
Are there any terms and conditions that we should include instead of or in addition to those included in the proposed definitions? Are there any terms or conditions under each definition that we should exclude?
85. Should we permit the use of either a pre-feasibility study or a feasibility study to support the determination and disclosure of mineral reserves, as proposed? Why or why not?
86. Should we require qualified persons to use a feasibility study in situations where the risk is high, as proposed? Why or why not? Are there other conditions, in addition to or in lieu of high risk situations, where we should require a feasibility study in support of mineral reserve disclosure?
87. Should we adopt the proposed instructions about the use of a pre-feasibility study to support the determination and disclosure of mineral reserves? Are there any instructions that we should provide instead of or in addition to the proposed instructions for such use of a pre-feasibility study? Are there any instructions that we should exclude? Would the proposed instructions mitigate the risk of less certain disclosure that could result from the

use of a pre-feasibility study to support the determination and disclosure of mineral reserves? If not, why not?

88. Should we adopt the proposed instructions for the use of a feasibility study to support the determination and disclosure of mineral reserves? Are there any instructions that we should provide instead of or in addition to the proposed instructions for such use of a feasibility study? Are there any instructions that we should exclude?
89. As part of the instructions for pre-feasibility and feasibility studies, should we define preliminary and final market studies as proposed?

G. Specific Disclosure Requirements

Item 102 refers issuers “engaged in significant mining operations” to Guide 7. Guide 7 in turn calls for the disclosure of certain items for each “mine, plant or other significant property” in which the registrant has an economic interest.²⁸⁹ As written, the current rules and guidance presume that if a registrant’s mining operations are “significant,” investors need and registrants should provide disclosure on every property. Neither Item 102 nor Guide 7 contemplates the situation where a registrant has significant mining operations with multiple mining properties, some or all of which may not be individually significant. As such, neither addresses the disclosure required in that situation. In practice, however, there are registrants that have a large number of properties, such that providing disclosure on all properties may not be practicable or provide any meaningful benefit to investors. In such circumstances, on a case by case basis as part of the filing review process, and when appropriate under the specific facts and circumstances, the staff has not objected if a registrant with multiple mining properties provides

²⁸⁹ See paragraph (b) of Guide 7.

summary disclosure that encompasses all of its properties instead of on a property by property basis. There is, however, no Commission rule that registrants can use to determine when summary disclosure would be appropriate. In addition, this informal approach can lead to inconsistent disclosure as Guide 7 does not address whether and to what extent its disclosure items for each individual property also apply for summary disclosure purposes.

1. Requirements for Summary Disclosure

We believe that, for registrants with economic interests in multiple mining properties, investors would benefit from an overview of the mining operations in addition to a property by property description. We believe that this would also result in more efficient and more effective disclosure, as registrants would be able to provide summary disclosure about all properties where some or all are not individually material. As such, we are proposing that registrants that own two or more mining properties must provide summary disclosure of their mining operations.²⁹⁰

The summary disclosure would include a map or maps showing the locations of all mining properties.²⁹¹ We believe the proposed requirement for a map showing the location of all mining properties would provide investors a point of reference to assess the geographic and socio-political risks associated with the registrant's mining operations.²⁹²

²⁹⁰ See proposed Item 1303(a) of Regulation S-K. The registrant would be required to 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 would have to 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 would have to provide summary disclosure for properties for which it has, or it is probable that it will have, an associated royalty or similar right.

²⁹¹ See proposed Item 1303(b)(1) of Regulation S-K.

²⁹² 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 proposed requirement, which is consistent with current staff guidance, would provide investors with

The proposed summary disclosure would also include a presentation, in tabular form, 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),²⁹³ and a summary, in tabular form, of all mineral resources and reserves at the end of the most recently completed fiscal year.²⁹⁴ We believe that the proposed requirement to disclose property-specific information for a registrant's 20 largest properties based on asset value would provide investors with an appropriately comprehensive and thorough understanding of a registrant's mining operations. In this regard, we think it is likely that, for registrants having a relatively small number of properties (e.g., 20-30), the proposed requirement would capture all or most of their mining properties. For those registrants with a higher number of properties, we believe the 20 largest properties based on asset value are likely to capture most of their material properties and as such provide an appropriately comprehensive overview of the registrants' mining operations.

As proposed, for each of the properties required to be included in the summary disclosure, a registrant would have to identify the property, report the total production from the property for the three most recently completed fiscal years,²⁹⁵ and disclose the following information:

- the location of the property;
- the type and amount of ownership interest;

beneficial information but not significantly impact current disclosure practices.

²⁹³ See proposed Item 1303(b)(2) of Regulation S-K.

²⁹⁴ See proposed Item 1303(b)(3) of Regulation S-K.

²⁹⁵ As proposed, a registrant with only a royalty interest would have to provide only the portion of the production that led to royalty income for each of the three most recently completed fiscal years. See proposed Instruction 2 to proposed Item 1303(b)(2) of Regulation S-K.

- 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.

For the purpose of determining the registrant’s 20 largest properties, a registrant would be permitted to treat multiple mines with interrelated mining operations²⁹⁶ as one mining property.²⁹⁷ For example, multiple mines that share the same processing plant or other facilities, prior to the first point of material external sale, could be considered a single property.²⁹⁸

Guide 7 currently calls for the disclosure of all of the above items of information. We continue to believe that these items are important to the description of, and necessary to an understanding of, a mining property. The summary information required about each of the 20 largest properties, by asset value, however, would be less than what we are proposing to require for individual material properties. For example, we are not proposing to require summary information on the exploration work carried out and material exploration results in the reporting period.²⁹⁹ Nevertheless, we believe that, for these 20 properties, the proposed disclosure is

²⁹⁶ See the definition of mining operations in Instruction 1 to proposed Item 1301(b) of Regulation S-K.

²⁹⁷ See Instruction 1 to proposed Item 1303(b)(2) of Regulation S-K.

²⁹⁸ Registrants could take a similar approach when determining what is “a property” for the purposes of determining an “individual property” under proposed Item 1304 of Regulation S-K, as discussed in section II.G.2, infra.

²⁹⁹ See section II.G.2, infra, for a discussion of the required disclosure for individual material properties.

sufficient to present a reasonably comprehensive summary of the registrant’s mining operations.

In order to standardize the disclosure, facilitate a registrant’s compliance with the disclosure requirements, and enhance an investor’s understanding of this information, we are proposing that a registrant must provide this information in tabular form using the format of the following table, designated as Table 2:³⁰⁰

TABLE 2. BRIEF DESCRIPTION OF THE 20 MINING PROPERTIES WITH THE HIGHEST ASSET VALUES

Mine or Property	Location	Type and amount of ownership	Operator	Title, mineral rights, leases or options and acreage	Stage ¹	Key permit conditions	Mine type and mineralization style	Processing plant and other facilities	Production for fiscal year ending mm/dd/yy ²	Production for fiscal year ending mm/dd/yy ²	Production for fiscal year ending mm/dd/yy ²
Property 1											
Property 2											
⋮											
Property 20											
All other properties ³											

¹ Exploration, development or production

² Use these columns to disclose production for the last three fiscal years

³ State the number of properties that make up the other properties.

In addition, under the proposed rules, a registrant would have 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, and for each property containing 10% or more of the registrant's mineral reserves or 10% or more of the registrant’s combined measured and indicated mineral resources. The registrant would have to provide this summary for each class of mineral

³⁰⁰ See proposed Table 2, which follows Instruction 2 to proposed Item 1303(b)(2) of Regulation S-K.

reserves (probable and proven) and resources (inferred, indicated and measured), together with total mineral reserves and total measured and indicated mineral resources.³⁰¹ 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.

We believe that this proposed requirement would provide investors with information necessary to understand a registrant's material mining operations at fiscal year's end.³⁰² Such information would, for example, enable investors to understand and evaluate the registrant's ability to replenish depleting mineral reserves, a well-established measure of financial performance in mining.³⁰³ The breakdown of the mineral resources and reserves by category and source (geographic area and property) also would provide investors with a measure of the associated risk. In order to standardize the disclosure, facilitate a registrant's compliance with the disclosure requirements, and enhance an investor's understanding of this information, we are proposing that a registrant must provide this information in tabular form using the format of the following table, designated as Table 3:³⁰⁴

³⁰¹ See proposed Item 1303(b)(3) of Regulation S-K.

³⁰² See, e.g., SME Petition for Rulemaking at 1 ("Mining companies and investors around the world consider Mineral Resource estimates as material and fundamental information about a company and its projects.")

³⁰³ 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).

³⁰⁴ See proposed Table 3, which follows Instruction 5 to proposed Item 1303(b)(3) of Regulation S-K.

TABLE 3. SUMMARY MINERAL RESOURCES AND RESERVES FOR THE FISCAL YEAR ENDING [DATE] BASED ON [PRICE]¹

	Proven mineral reserves	Probable mineral reserves	Total mineral reserves	Measured mineral resources	Indicated mineral resources	Measured + Indicated mineral resources	Inferred mineral resources
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 Unless prices are defined by contractual arrangements, the registrant 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 and must disclose the price used. When prices are defined by contractual agreements, the registrant may use the price set by the contractual arrangement, provided that such price is reasonable, and the registrant discloses that it is using a contractual price and discloses the contractual price used.

We also are proposing several instructions to this summary disclosure requirement. The proposed instructions would:

- define the term “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;³⁰⁵

- explain that all disclosure of mineral resources must be exclusive of mineral reserves;³⁰⁶
- require 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;³⁰⁷
- require 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;³⁰⁸ and
- require that the mineral resource and reserve estimates called for in proposed Table 3 must be in terms of saleable product.³⁰⁹

We believe that these instructions would facilitate the clear and consistent presentation of information concerning a registrant’s mineral reserves and resources for investors while providing flexibility to the registrant regarding the basis of the information presented. For example, the requirement to use any price below the 24-month trailing average provides

³⁰⁵ See Instruction 1 to proposed Item 1303(b)(3) of Regulation S-K.

³⁰⁶ See Instruction 2 to proposed Item 1303(b)(3) of Regulation S-K.

³⁰⁷ See Instruction 3 to proposed Item 1303(b)(3) of Regulation S-K.

³⁰⁸ See Instruction 4 to proposed Item 1303(b)(3) of Regulation S-K.

³⁰⁹ See Instruction 5 to proposed Item 1303(b)(3) of Regulation S-K.

registrants some flexibility on the price used in its reserve estimation. Also, the definition of “by geographic area” provides registrants flexibility on how to organize the information requested in Table 2.

For registrants with mining operations that are, in the aggregate, material but for which no individual property is material, this summary disclosure under proposed Item 1303 would be the only mining disclosure required in the registrant’s filings. For registrants with individual properties that are material, we are proposing additional, more detailed, disclosure about such properties.³¹⁰ In addition, the proposed rules would exclude registrants with only one mining property from the summary disclosure requirement³¹¹ because we do not see any benefit to requiring summary disclosure, in addition to individual disclosure, for a single material property.

We believe the proposed requirement for summary disclosure would be beneficial for both registrants and investors. We believe it would provide more efficient and effective disclosure and would better accommodate the diversity among registrants in terms of the number and relative size of their mining properties. Registrants would be required to disclose an appropriate level of information based on their particular facts and circumstances, specifically taking into account whether they own individually material properties. Under this approach, investors would be provided with information necessary to understand the registrant’s mining operations even if it owns no individually material property. For those registrants with individually material properties, investors would obtain aggregate information about the registrant’s mining operations as well as more detailed information about individually material

³¹⁰ See section II.G.2, infra, for a discussion of the requirements for individual property disclosure.

³¹¹ See proposed Item 1303(a)(2) of Regulation S-K.

properties.

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90. Should we require summary disclosure, as proposed, for all registrants with material mining operations? Why or why not? Should such summary disclosure require maps showing the locations of all mining properties, a presentation of the proposed information about the 20 properties with the largest asset values, and a summary of all mineral resources and reserves at the end of the most recently completed fiscal year, as proposed?
91. Should we permit registrants to treat multiple mines with interrelated mining operations as one mining property, as proposed? Should we instead require registrants to treat such mines as separate properties? Why or why not?
92. Should we exclude registrants with only one mining property from the summary disclosure requirements, as proposed? Why or why not? Alternatively, should we use a different threshold than the proposed “only one” threshold for excluding a registrant from the summary disclosure requirements? If so, what threshold should we use and why would this threshold be more appropriate?
93. Regarding the proposed summary disclosure requirement for the 20 largest properties, should we require other information, in addition to or in lieu of the proposed items? Why or why not? For example, should we require the registrant to disclose the asset value of each property included in its summary disclosure? Should we revise the proposed form and content of Table 2? If so, how should we revise the table’s form or content?

94. Should the presentation of information about the mining properties with the largest asset values include the 20 largest properties, as proposed? Should this number be higher or lower? If so, what number is appropriate? Why? Should the summary disclosure include only those properties that represent 5% or more in asset value? Should we permit the summary disclosure to omit any property that represents 1% or less in asset value? Alternatively, should we require the specified information based on some criteria (e.g. revenues) other than asset value?
95. Should we require summary disclosure to include information on mineral resources and reserves, as proposed? Why or why not? If mineral resources and reserves are required in summary disclosure, should we require their disclosure by 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, as proposed? Should we require the summary disclosure by commodity and geographic area or property containing 10% or more of mineral reserves or sum of measured and indicated mineral resources, as proposed? Why or why not? In particular, is the proposed instruction to Table 3 regarding the scope of geographic area to be disclosed sufficiently clear, and if not, how should it be clarified? Should we require disclosure of mineral reserves and resources by some other attribute (e.g., segments), in addition to or in lieu of commodity and geographic area? If so, which attributes should we use and why? Should we revise the proposed form and content of Table 3? If so, how should we revise the table's form or content?
96. Should we require the disclosure in Tables 2 and 3 to be made available in the eXtensible Business Reporting Language (XBRL) format? Why or why not?

97. If we require the disclosure in Tables 2 and 3 to be made available in XBRL, are the current requirements for the format and elements of the tables suitable for tagging? If not, how should they be revised? In particular, are the proposed instructions for Tables 2 and 3 sufficiently specific to make the data reported in the tables suitable for direct comparative analysis? If not, how should the instructions be revised to increase the usefulness of having the data made available in XBRL, including the comparability and quality of XBRL data?
98. If we require Tables 2 and 3 to be made available in XBRL, is there a particular existing taxonomy that should be used? Alternatively, what features should a suitable taxonomy have in this case?

2. Requirements for Individual Property Disclosure

We believe that summary property disclosure alone would not provide all relevant information about the properties and assets that generate a mining registrant's revenues. Therefore, we are proposing that a registrant provide more detailed information for each of its individual properties that is material to its business or financial condition. When determining whether an individual property is material to its business or financial condition, a registrant would have to apply the same standards and consider the same factors as required when determining whether its mining operations as a whole are material.³¹²

³¹² See proposed Item 1304(a) of Regulation S-K, which references proposed Item 1301(b). A 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; 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; or that it has, or it is probable that it will have, an associated royalty or similar right.

As proposed, for each material individual property, a registrant would have to provide a brief description of the property,³¹³ including:

- the property’s location, accurate to within one mile, using an easily recognizable coordinate system, including appropriate maps, with proper engineering detail (such as scale, orientation, and titles), which must be legible on the page when printed;³¹⁴
- existing infrastructure, including roads, railroads, airports, towns, ports, sources of water, electricity, and personnel;³¹⁵ 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.³¹⁶

³¹³ See proposed Item 1304(b)(1).

³¹⁴ See proposed Item 1304(b)(1)(i). We believe the level of accuracy that would be required by the proposed rule is similar to the level of detail required by the CRIRSCO-based codes. See, e.g., PERC 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.” Similarly, SAMREC Table 1 also calls for a “detailed topo-cadastral map.”

³¹⁵ See proposed Item 1304(b)(1)(ii).

³¹⁶ See proposed Item 1304(b)(1)(iii) of Regulation S-K.

For each material property, the proposed rules also would require a registrant to disclose a history of previous operations,³¹⁷ a description of the condition and status of the property,³¹⁸ 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.³¹⁹

In addition to providing a brief description of the present condition of the property, a registrant would have to disclose 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 would have to 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 would have to provide a statement to that effect.³²⁰

The proposed rules would also require a registrant to disclose, for each material property, the age, details as to modernization and physical condition of the equipment, facilities, infrastructure, and underground development.³²¹ In addition, the registrant would have to

³¹⁷ See proposed Item 1304(b)(2) of Regulation S-K.

³¹⁸ See proposed Item 1304(b)(3) of Regulation S-K.

³¹⁹ See proposed Item 1304(b)(4) of Regulation S-K.

³²⁰ See proposed Item 1304(b)(3)(i) of Regulation S-K.

³²¹ See proposed Item 1304(b)(3)(ii) of Regulation S-K.

disclose the total cost for or book value of the property and its associated plant and equipment.³²²

Regarding significant encumbrances to the property, a registrant would have to describe current and future permitting requirements and associated timelines, permit conditions, and violations and fines.³²³

The above proposed items of disclosure are substantially similar to items called for by Item 102 of Regulation S-K and Guide 7.³²⁴ We continue to believe that these items are necessary to enable an investor to have an informed understanding of a registrant's material mining properties. In particular, property location is frequently used to assess socio-political and geographic risk, level of infrastructure, significance of adjacent properties and regional geology. In light of this, we believe that the required level of accuracy in the proposed rules is necessary. For example, the distance between a property and other (developing or producing) properties or in relation to major geologic structures can significantly impact the assessment of a property's value, especially in the exploration stage.³²⁵

³²² See proposed Item 1304(b)(3)(iii) of Regulation S-K. An instruction to this Item would reiterate 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; and 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.

³²³ See proposed Item 1304(b)(4) of Regulation S-K.

³²⁴ 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.

³²⁵ Location of a mineral prospect relative to known deposits or geologic structures is an attribute used to determine the mineral potential (i.e., the probability that mineral deposits of the type sought can be found at the prospect). See, e.g., E. J. M. Carranza, "Geocomputation of mineral exploration targets," Computers &

To increase the quality and usefulness of the disclosure provided pursuant to the existing mining disclosure regime, the proposed rules would include several additional items of individual property disclosure. For example, unlike Guide 7, which does not address the issue, the proposed rules would apply to the disclosure obligations of a registrant holding a royalty interest or other similar economic interest in a property. Under the proposed rules, such a registrant would be required to describe all of the above information that an owner or operator of the property would have to provide, 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 would also have to describe briefly 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.³²⁶ We believe this information would help investors understand a royalty holder's property interest. We also believe that including individual property disclosure requirements in the rules for holders of royalty and other economic interests would help to elicit more complete and consistent disclosure in this regard to the benefit of those holders and their investors.

In addition, we are proposing to require several of the disclosure items in tabular form because we believe this would standardize the disclosure, facilitate a registrant's compliance

Geosciences, 1907–1916 (2011); and A. Porwal and E. J. M. Carranza, “Introduction to the Special Issue: GIS-based mineral potential modelling and geological data analyses for mineral exploration,” Ore Geology Reviews 477-483 (2015).

³²⁶ See proposed Item 1304(b)(1)(iv) of Regulation S-K.

with the disclosure requirements, and enhance an investor’s understanding of the registrant’s material mining properties.³²⁷ Specifically, we are proposing that a registrant, for each material property, would provide the tabular information required by Tables 4, 5, and 6 as set forth below. While we are proposing general guidelines for the tabular presentations, we would permit registrants to modify the tables for ease of presentation, to add information, or to combine two or more required tables throughout their disclosure.³²⁸

As proposed, Table 4 would require a summary of the exploration activity for the most recently completed fiscal year, which, for each sampling method used, discloses the number of samples, the total size or length of the samples, and the total number of assays.³²⁹ A registrant would have to provide this information in tabular form using the format of the following table, designated as Table 4:

TABLE 4. [INDIVIDUAL PROPERTY NAME]-SUMMARY EXPLORATION ACTIVITY FOR THE FISCAL YEAR ENDING [DATE]

Sampling methods	No. of samples¹	Total size or length²	Total no. of assays
Method 1			
Method 2			

¹This refers to number of drill holes, trenches, geophysical survey lines, etc.

²This refers to the total length of drill holes, trenches, and geophysical survey lines or total amount of material in bulk sampling.

As proposed, Table 5 would require a registrant to provide a summary of material exploration results for the most recently completed fiscal year, which, for each material property, identifies the hole that generated the exploration results, and describes the length, lithology³³⁰

³²⁷ See, e.g., proposed Items 1304(b)(5) through (7) of Regulation S-K.

³²⁸ See Instruction 2 to proposed Items 1304(b)(5) through (7) of Regulation S-K.

³²⁹ See proposed Table 4 and proposed Item 1304(b)(5) of Regulation S-K.

³³⁰ Lithology, as used in this context, refers to the description of a particular rock unit. Generally, it refers to

and key geologic properties (e.g., grades, contaminants, and energy content) of the exploration results. A registrant would have to provide this information in tabular form using the format of the following table, designated as Table 5, accompanied by a brief discussion of the exploration results' context and relevance:³³¹

TABLE 5. [INDIVIDUAL PROPERTY NAME]-SUMMARY EXPLORATION RESULTS FOR THE FISCAL YEAR ENDING [DATE].¹

Hole ID	From	To	Length	Lithology	Geologic Property 1	Geologic Property 2	...	Geologic Property n

¹ If only results from selected holes and intersections are included, they should be accompanied by a discussion of the context and justification for excluding other results.

Neither Guide 7 nor Item 102 calls for disclosure of exploration results, although Guide 7 does call for the disclosure of the registrant's exploration program.³³² As discussed above, we are proposing to require disclosure of a registrant's material exploration results because we believe such disclosure would provide investors with a more comprehensive view of a registrant's mining operations and help them make more informed investment decisions.³³³

Table 6, as proposed, would require a registrant to disclose, if mineral resources or reserves have been determined, a summary of all mineral resources and reserves, which, for each material property, provides the estimated tonnages, grades (or quality, where appropriate), cut-

the characteristics of a rock formation.

³³¹ See proposed Table 5 and proposed Item 1304(b)(6) of Regulation S-K.

³³² See paragraph (b)(4)(i) of Guide 7.

³³³ See section II.D, *supra*, for a more detailed discussion of our reasons for requiring disclosure of material exploration results.

off grades and metallurgical recovery, by class of mineral resource and reserve, occurring in-situ, as plant/mill feed, and as saleable product.³³⁴ A registrant would have to provide this

information in tabular form using the format of the following table, designated as Table 6:

TABLE 6. [INDIVIDUAL PROPERTY NAME]- SUMMARY OF [COMMODITY/COMMODITIES] MINERAL RESERVES AND RESOURCES AT THE END OF THE FISCAL YEAR ENDED [DATE] BASED ON [PRICE]¹

	<u>In-situ</u>		<u>Plant/Mill feed</u>		<u>Saleable product</u>	<u>Cut-off grades</u>	<u>Metallurgical recovery</u>
	<u>Amount</u>	<u>Grades/Qualities</u>	<u>Amount</u>	<u>Grades/Qualities</u>			
Proven mineral reserves							
Probable mineral reserves							
Total mineral reserves							
Measured mineral resources							
Indicated mineral resources							
Measured + Indicated mineral resources							
Inferred mineral resources							

¹ Unless prices are defined by contractual arrangements, the registrant 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 and must disclose the price used. When prices are defined by contractual agreements, the registrant may use the price set by the contractual arrangement, provided that such price is reasonable, and the registrant discloses that it is using a contractual price and discloses the contractual price used.

We also are proposing a few instructions to the provisions requiring a registrant to disclose its exploration activity, material exploration results, and mineral resource and reserve estimates for each material property. One instruction would advise a registrant not to include an extensive description of regional geology, but, rather, to include geological information that is brief and relevant to property disclosure.³³⁵ Another proposed instruction would explain that all disclosure of mineral resources must be exclusive of mineral reserves.³³⁶ A third proposed

³³⁴ See proposed Table 6 and proposed Item 1304(b)(7) of Regulation S-K.

³³⁵ See Instruction 1 to proposed Items 1304(b)(5) through (7).

³³⁶ See Instruction 3 to proposed Items 1304(b)(5) through (7).

instruction would state 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.³³⁷ We believe that these proposed instructions would facilitate a registrant's compliance with the individual property disclosure requirements while providing investors with focused and consistent disclosure.

The proposed rules would further require a registrant to provide, in proposed Tables 7 and 8, a comparison of its 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 change between the two.³³⁸ The comparison would have to 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

³³⁷ See Instruction 4 to proposed Items 1304(b)(5) through (7).

³³⁸ See proposed Tables 7 and 8 and proposed Item 1304(b)(8) of Regulation S-K.

costs, changes due to the methods employed, and changes due to acquisition or disposal of properties.³³⁹

A registrant would have to provide this comparison in tabular form in the following format:

TABLE 7. MINERAL RESOURCE RECONCILIATION. Only the sum of Measured and Indicated Resources should be used in reconciliation disclosure.

	Resource at the end of fiscal year ending mm/dd/y ¹	Resource at the end of fiscal year ending mm/dd/y ¹	Net Diff. (%)	Depletion or production	Causes of Discrepancies in Resources						Comments
					Price	Cost	Exploration	Methodology	Acquisition / disposal	Others	
Ore type 1											
Ore type 2											

¹ Use these two columns to disclose resources at the end of each of the last two fiscal years.

TABLE 8. MINERAL RESERVE RECONCILIATION.

	Reserves at the end of fiscal year ending mm/dd/y ¹	Reserves at the end of fiscal year ending mm/dd/y ¹	Net Diff. (%)	Depletion or production	Causes of Discrepancies in Reserves						Comments
					Resource model	Price	Cost	Methodology	Acquisition/ disposal	Others	
Ore type 1											
Ore type 2											

¹ Use these two columns to disclose reserves at the end of each of the last two fiscal years.

³³⁹ See proposed Item 1304(b)(8)(i)-(iv) of Regulation S-K.

We believe that this comparative disclosure requirement would help investors understand the reasons for the year to year changes in a registrant's mineral resources and reserves, which should help investors 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. Thus, this proposed comparative disclosure requirement could increase reporting costs for registrants. We believe, however, that much of the disclosure that would be required under the proposed comparative disclosure requirement is often provided by registrants pursuant to current disclosure practices. We believe that in most cases this disclosure is sufficiently important to an investor's understanding of the registrant's material properties that it would be appropriate to have a separate, stand-alone requirement set forth in our rules.

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, we are proposing that it provide a brief discussion of the material assumptions and criteria in the disclosure. The material assumptions and criteria would depend on the specific facts and circumstances surrounding the particular property and the mineral resource and reserve estimates. The disclosure of these assumptions and criteria, however, would need to include all of the material information necessary for investors to understand the disclosed mineral resources or reserves. In addition, the registrant would have to cite to corresponding sections of the technical report summary, which would be filed as an exhibit pursuant to proposed Item 1302(b).³⁴⁰

³⁴⁰ See proposed Item 1304(b)(9) of Regulation S-K.

Similarly, 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, we are proposing that it must provide sufficient information to allow for an accurate understanding of the significance of the exploration results. 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 required disclosure concerning the registrant's exploration results not misleading. In addition, the registrant would have to cite to corresponding sections of the summary technical report, which would be filed as an exhibit pursuant to proposed Item 1302(b).³⁴¹

Finally, we are proposing some 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 these proposed instructions are 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, one key proposed instruction would explain 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.³⁴² Another proposed instruction would provide that a change in

³⁴¹ See proposed Item 1304(b)(10) of Regulation S-K.

³⁴² See Instruction 1 to proposed Items 1304(b)(9) and (10).

exploration results that significantly alters the potential of the exploration target is considered material.³⁴³

Other proposed instructions would establish quantitative thresholds for presumed materiality of a change in estimates of mineral resources or reserves. For example, one proposed instruction would state that an annual change in total resources or reserves of 10% or more, excluding production as reported in proposed Tables 7 and 8, is presumed to be material, and thus would need to be disclosed.³⁴⁴ Another proposed instruction would establish that a cumulative change in total resources or reserves of 30% or more in absolute terms, excluding production as reported in Tables 7 and 8, from the current filed technical report summary is presumed to be material.³⁴⁵ 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.³⁴⁶

Another proposed instruction would require a registrant to consider carefully 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

³⁴³ See Instruction 2 to proposed Items 1304(b)(9) and (10).

³⁴⁴ See Instruction 3 to proposed Items 1304(b)(9) and (10).

³⁴⁵ See Instruction 4 to proposed Items 1304(b)(9) and (10).

³⁴⁶ See Instruction 5 to proposed Items 1304(b)(9) and (10).

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, in compliance with Item 601(b)(96) of Regulation S-K, which supports the registrant's mining property disclosures.³⁴⁷

Finally, a proposed instruction would explain 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.³⁴⁸

We believe these instructions would 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 material exploration results. At the same time, the proposed instructions would help to ensure that investors are provided with current information about their mineral resources and reserves and material exploration results.

Request for Comment

99. Should we require disclosure on individually material properties, as proposed? Why or why not? Should such disclosure require a description of the property, a history of previous operations, a description of the condition and status of the property, a description of any significant encumbrances to the property, a summary of the exploration activity for the most recently completed fiscal year, a summary of material

³⁴⁷ See Instruction 6 to proposed Items 1304(b)(9) and (10).

³⁴⁸ See Instruction 7 to proposed Items 1304(b)(9) and (10).

exploration results for the most recently completed fiscal year, and a summary of all mineral resources and reserves, if mineral resources or reserves have been determined, as proposed?

100. Should we require that a registrant provide the property's location, including in maps, accurate within one mile? Why or why not? If not, should we use a standard for degree of accuracy similar to that used in the CRIRSCO-based codes, such as PERC or SAMREC? Why or why not? If not, what level of accuracy should we require?
101. Should we require that a registrant provide in tabular format each of the summaries required for its exploration activity, material explorations results, and mineral resources and reserves, as proposed? Why or why not? Should we require all of the information specified in Tables 4-8 to be in tabular form? Why or why not? Should we revise the proposed form and content of these tables? If so, how should we revise the tables' form or content?
102. Should we permit registrants to disclose estimates of mineral resources and reserves based on different price criteria, which may reasonably be achieved, in lieu of, or in addition to, the price which is no higher than the 24-month trailing average? Why or why not? What factors should we use to determine what may reasonably be achieved? Should we require all registrants to use the 24-month average spot price (or average over a different period) as the commodity price instead of as a ceiling? Why or why not?
103. Should we require the registrant to provide a comparison of the 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, as proposed? Why or why not? Are there items of information that we should include in the comparison instead of or in addition to the proposed items of information? Are there any proposed items of information that we should exclude from the comparison?

104. If the registrant has not previously disclosed material exploration results, mineral reserve or resource estimates in a filing with the Commission or is disclosing material changes to its previously disclosed exploration results, mineral reserve or mineral resource estimates, should we require it to provide a brief discussion of the material assumptions and criteria in the disclosure and cite to any sections of the technical report summary, as proposed? Should we require registrants to file updated summary technical reports to support disclosure of material exploration results, mineral resources or mineral reserves when the registrant is relying on a previously filed technical report summary that is no longer current with respect to all material scientific and technical information, as proposed? Why or why not?
105. Regarding the proposed requirement to disclose a material change in mineral resources or reserves, should we adopt an instruction that an annual change in total resources or reserves of 10% or more, or a cumulative change in total resources or reserves of 30% or more in absolute terms, excluding production as reported in Tables 7 and 8, is presumed to be material, as proposed? Why or why not? If not, should we remove the materiality presumptions altogether or use different quantitative thresholds from those proposed? If the latter, what alternative thresholds or measure(s) should replace the proposed presumptions of materiality?

106. Should we require the disclosure in Tables 4 through 8 to be made available in the XBRL format? Why or why not?
107. If we require the disclosure in Tables 4 through 8 to be made available in XBRL, are the current requirements regarding for the format and elements of the tables suitable for tagging? If not, how should they be revised? In particular, are the proposed instructions for Tables 4 through 8 sufficiently specific to make the data reported in the tables suitable for direct comparative analysis? If not, how should the instructions be revised to increase the usefulness of having the data made available in XBRL, including the comparability and quality of XBRL data?
108. If we require Tables 4 through 8 to be made available in XBRL, is there a particular existing taxonomy that should be used? Alternatively, what features should a suitable taxonomy have in this case?

3. Requirements for Technical Report Summaries

As previously discussed, the proposed rules 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. We believe that requiring disclosure of the important scientific and technical information that forms the basis for disclosure of exploration results, mineral resources and mineral reserves in SEC filings would benefit investors. In this regard, a registrant's estimates of its mineral reserves, resources and exploration results are entirely dependent on the scientific and technical information considered by the qualified person. There is always a level of uncertainty associated with estimates of mineral deposits under the ground. As such, the report would provide investors with important contextual information with which to evaluate the reliability of the registrant's disclosure.

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.³⁴⁹ The qualified person would also have to sign and date the technical report summary.³⁵⁰ This requirement should help to ensure the reliability of the technical report summary.

The proposed 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 material exploration results. These proposed requirements, as discussed below, are similar in most respects to the items of information required for the summary report under the Canadian mining disclosure provisions in NI 43-101.³⁵¹ They are also similar to the contents suggested in the mining engineering literature.³⁵² 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.

³⁴⁹ See proposed Item 601(b)(96)(i) of Regulation S-K.

³⁵⁰ See proposed Item 601(b)(96)(ii) of Regulation S-K.

³⁵¹ See Form 43-101F1, which prescribes 27 sections for the technical report summary required for each material property pursuant to Part 4 of NI 43-101, and which is available at: http://web.cim.org/standards/documents/Block484_Doc111.pdf.

³⁵² 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).

As proposed, 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.³⁵³ This requirement would prohibit the current practice, by some registrants, of providing large amounts of drill hole data³⁵⁴ and other technical information as appendices to technical report summaries. In addition, the qualified person must draft the summary to conform, to the extent practicable, with plain English principles under the Securities Act and Exchange Act.³⁵⁵ These proposed requirements should help improve the readability of the technical report summary for the benefit of those investors who do not have a technical engineering background. They also are consistent with similar Canadian mining disclosure standards.³⁵⁶

We are proposing that the technical report summary consist of some or all of the following 26 sections,³⁵⁷ depending upon the specific scope of the summary:

- an executive summary that briefly summarizes the most significant information in the technical report summary, including property description and ownership, geology and mineralization, the status of exploration, development and operations, mineral resource

³⁵³ See proposed Item 601(b)(96)(iii) of Regulation S-K.

³⁵⁴ Drill hole data, as used in this context, refers to information obtained from drilling that includes results of laboratory analysis of samples obtained from drilling and rock types.

³⁵⁵ See Securities Act Rule 421 (17 CFR 230.421) and Securities Exchange Act Rule 13a-20 (17 CFR 240.13a-20).

³⁵⁶ See Instruction 3 to Form 43-101F1, which states: “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.”

³⁵⁷ See proposed Item 601(b)(96)(iv)(B), which is set forth in its entirety in section VIII, *infra*, for a complete list and description of the contents of the technical report summary. The description of these sections that follows is not intended to be comprehensive.

and mineral reserve estimates, summary capital and operating cost estimates, permitting requirements, and the qualified person's conclusions and recommendations;³⁵⁸

- an introduction, which, among other matters, must identify the registrant for whom the technical report summary was prepared, disclose the terms of reference and purpose for which the technical report summary was prepared, and briefly describe any personal inspection of the property by each qualified person³⁵⁹ or, if none was made, the reason why a personal inspection was not completed;³⁶⁰
- a description of the property, including the location of the property, accurate to within one mile, using an easily recognizable coordinate system, together with appropriate maps, with proper engineering detail (such as scale, orientation, and titles) to portray the location of the property;³⁶¹
- a description of the property's accessibility, climate, local resources, infrastructure and physiography;³⁶²

³⁵⁸ See proposed Item 601(b)(96)(iv)(B)(1) of Regulation S-K.

³⁵⁹ As indicated in note 74, supra, a registrant may have more than one qualified person prepare a technical report summary for a mining property or project.

³⁶⁰ See proposed Item 601(b)(96)(iv)(B)(2) of Regulation S-K.

³⁶¹ The property description must include the area of the property, 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, 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, any significant encumbrances to the property, including current and future permitting requirements and associated timelines, permit conditions, and violations and fines, and any other significant factors and risks that may affect access, title, or the right or ability to perform work on the property. See proposed Item 601(b)(96)(iv)(B)(3) of Regulation S-K.

³⁶² Physiography refers to physical geography. This section requires a description of the property's topography, elevation, and vegetation, means of access to the property, the climate and length of the operating season, as applicable, and the availability of and required infrastructure, including sources of water, electricity, personnel, and supplies. See proposed Item 601(b)(96)(iv)(B)(4) of Regulation S-K.

- a history of the property, which must include a description of previous operations, together with the names of previous operators if known, and the type, amount, quantity, and general results of exploration and development work undertaken by any previous owners or operators;³⁶³
- a brief description of the regional, local, and property geology, the significant mineralized zones encountered on the property, and 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 exploration program;³⁶⁴
- a description of the property’s hydrogeology;³⁶⁵
- a description of geotechnical data, testing and analysis;³⁶⁶
- a description of the nature and extent of all relevant exploration work conducted by or on behalf of the registrant;³⁶⁷

³⁶³ See proposed Item 601(b)(96)(iv)(B)(5) of Regulation S-K.

³⁶⁴ The qualified person must include at least one stratigraphic column and one cross-section of the local geology to meet these requirements. “Stratigraphic column” refers to the vertical order, by age, of rocks units (strata). Typically, the oldest rocks are located at the bottom and youngest at the top of the column. See proposed Item 601(b)(96)(iv)(B)(6) of Regulation S-K.

³⁶⁵ Hydrogeology is the branch of geology concerned with the study of the occurrence, distribution, movement and geological interaction of water. This section requires, among other matters, a description of the nature and quality of the sampling methods used to acquire data on surface and groundwater parameters, and the type and appropriateness of laboratory techniques used to test for groundwater flow parameters such as permeability. See proposed Item 601(b)(96)(iv)(B)(7) of Regulation S-K.

³⁶⁶ This section requires a description of 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, and the results of laboratory testing, including the qualified person’s interpretation and material assumptions made. See proposed Item 601(b)(96)(iv)(B)(8) of Regulation S-K.

³⁶⁷ This description must include drilling and all other exploration work, such as geophysical and geochemical surveys and analysis. See proposed Item 601(b)(96)(iv)(B)(9) of Regulation S-K.

- a description of 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;³⁶⁸
- a description of the steps taken by the qualified person to verify the data being reported on or which is the basis of the technical report summary;³⁶⁹
- a description of the nature and extent of the mineral processing or metallurgical testing and analytical procedures;³⁷⁰
- if mineral resource estimates are being reported, a description of the key assumptions, parameters, and methods used to estimate the mineral resources, in sufficient detail for a

³⁶⁸ This description must include 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. This description must also include 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. This section must further include the qualified person's opinion on the adequacy of sample preparation, security, and analytical procedures. If the analytical procedures used in the analysis are not part of conventional industry practice, the qualified person must so state and provide a justification for why he or she believes the procedure is appropriate in this instance. See proposed Item 601(b)(96)(iv)(B)(10) of Regulation S-K.

³⁶⁹ This section must include, among other matters, the qualified person's opinion on the adequacy of the data for the purposes used in the technical report summary. See proposed Item 601(b)(96)(iv)(B)(11) of Regulation S-K.

³⁷⁰ This description must include the degree to which the test samples are representative of the various types and styles of mineralization and the mineral deposit as a whole, and the relevant results, including the basis for any assumptions or predictions about recovery estimates. The description must also identify 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. In addition, this section requires the qualified person's opinion on the adequacy of the data for the purposes used in the technical report summary. If the analytical procedures used in the analysis are not part of conventional industry practice, the qualified person must so state and provide a justification for why he or she believes the procedure is appropriate in this instance. See proposed Item 601(b)(96)(iv)(B)(12) of Regulation S-K.

reasonably informed person to understand the basis for and how the qualified person estimated the mineral resources;³⁷¹

- if mineral reserves are being reported, a description of 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;³⁷²
- a description of the current or proposed mining methods and the reasons for selecting these methods as the most suitable for the mineral reserves under consideration;³⁷³
- a description of the current or proposed processing and recovery methods and the reasons for selecting those methods as the most suitable for extracting the valuable products from the mineralization under consideration;³⁷⁴

³⁷¹ This section must provide estimates of mineral resources for all commodities, including estimates of quantities, grade or quality, cut-off grades, and metallurgical or processing recoveries. It must also provide the qualified person's opinion on whether all issues relating to all relevant modifying factors can be resolved with further work. See proposed Item 601(b)(96)(iv)(B)(13) of Regulation S-K.

³⁷² This section must provide estimates of mineral reserves for all commodities, including estimates of quantities, grade or quality, cut-off grades, and metallurgical or processing recoveries. It must also 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. If a pre-feasibility study is used to support mineral reserve disclosure, the qualified person must provide a justification for using a pre-feasibility study instead of a feasibility study. See proposed Item 601(b)(96)(iv)(B)(14) of Regulation S-K.

³⁷³ This description must include, among other matters, geotechnical and hydrological models, and other parameters relevant to mine designs and plans. As used in this context, a "hydrological model" refers to a conceptual model of surface and ground water at the mine site, which impacts the selection and design of mining methods. See proposed Item 601(b)(96)(iv)(B)(15) of Regulation S-K.

³⁷⁴ This section must include a description or flow sheet of any current or proposed process plant, plant throughput and design, equipment characteristics and specifications, and current or projected requirements for energy, water, process materials, and personnel. If the processing method, plant design or other parameters have never been used to successfully 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. In addition, as proposed, if the processing method has never been used to successfully extract product from such mineralization and it is still under development, no mineral resources or reserves can be disclosed on the basis of that method. See proposed Item 601(b)(96)

- a description of the required infrastructure for the project, including roads, rail, port facilities, dams, dumps and leach pads, tailings disposal, power, water and pipelines, as applicable;³⁷⁵
- a description of 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);³⁷⁶
- a description of the environmental, permitting, and social or community factors related to the project;³⁷⁷
- an estimate of capital and operating costs, with the major components set out in tabular form;³⁷⁸
- an economic analysis, which, among other matters, describes the key assumptions, parameters, and methods used to demonstrate economic viability, and includes the results of the economic analysis presented as annual cash flow forecasts based on an annual

(iv)(B)(16) of Regulation S-K.

³⁷⁵ See proposed Item 601(b)(96)(iv)(B)(17) of Regulation S-K.

³⁷⁶ This section must include 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 descriptions of all material contracts required for the registrant to develop the property, including mining, concentrating, smelting, refining, transportation, handling, hedging arrangements, and forward sales contracts. See proposed Item 601(b)(96)(iv)(B)(18) of Regulation S-K.

³⁷⁷ This description must 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 for social or community engagement and the status of any negotiations or agreements with local communities; and mine closure plans, including remediation and reclamation plans, and the associated costs. This section must also include the qualified person's opinion on the adequacy of current plans to address any issues related to environmental, permitting and social or community factors. See proposed Item 601(b)(96)(iv)(B)(19) of Regulation S-K.

³⁷⁸ This section requires the qualified person to explain and justify the basis for the cost estimates, including any contingency budget estimates, and state the accuracy level of the capital and operating cost estimates. The accuracy of capital and operating cost estimates must comply with proposed Item 1302 of Regulation S-K. See proposed Item 601(b)(96)(iv)(B)(20) of Regulation S-K.

production schedule for the life of the project, and measures of economic viability such as net present value, internal rate of return, and payback period of capital;³⁷⁹

- a discussion of relevant information concerning an adjacent property provided that certain conditions have been met;³⁸⁰
- a discussion of any other relevant data or information necessary to provide a complete and balanced presentation of the value of the property to the registrant;³⁸¹
- a summary of the qualified person's interpretations and conclusions based on the data and analysis in the technical report summary;³⁸²
- a description of the qualified person's recommendations for additional work with associated costs, if applicable;³⁸³ and
- a list of all references cited in the technical report summary in sufficient detail so that a reader can locate each reference.³⁸⁴

³⁷⁹ See proposed Item 601(b)(96)(iv)(B)(21) of Regulation S-K.

³⁸⁰ As proposed, the qualified person may provide a discussion of relevant information concerning an adjacent property only if such information has been publicly disclosed by the owner or operator of the adjacent property, the source of the information is identified, and 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. In addition, the technical report must clearly distinguish between the information from the adjacent property and the information from the property that is the subject of the technical report summary. See proposed Item 601(b)(96)(iv)(B)(22) of Regulation S-K.

³⁸¹ If provided, the additional information or explanation must comply with proposed subpart 1300 of Regulation S-K. See proposed Item 601(b)(96)(iv)(B)(23) of Regulation S-K.

³⁸² The qualified person must also discuss in this section 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. See proposed Item 601(b)(96)(iv)(B)(24) of Regulation S-K.

³⁸³ See proposed Item 601(b)(96)(iv)(B)(25) of Regulation S-K.

³⁸⁴ See proposed Item 601(b)(96)(iv)(B)(26) of Regulation S-K.

A technical report summary that reports the results of a preliminary or final feasibility study would have to include all of the information specified in the above proposed 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.³⁸⁵

As noted above, these proposed sections are similar in most respects to the items of information required for the summary report under Canada's NI 43-101.³⁸⁶ There are, however, some notable differences. First, the proposed rules do 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.³⁸⁷ We believe such a disclaimer would be inappropriate since the qualified person, as the professional expert, has prepared and is responsible for the information contained in the technical report summary.³⁸⁸ We recognize that in preparing complex reports of this nature, the responsible person(s) would, when necessary, rely on information and input from others. Nonetheless, we believe the qualified person, as the consenting expert, must take responsibility for any report, opinion or statement provided by

³⁸⁵ A technical report summary that reports the results of an initial assessment would have to include, at a minimum, the information specified in proposed Items 601(b)(96)(iv)(B)(1) through (13) and (22) through (26), and may also include the information specified in proposed Item 601(b)(96)(iv)(B)(21). A technical report summary that reports material exploration results would have to include, at a minimum, the information specified in proposed Items 601(b)(96)(iv)(B)(1) through (11) and (22) through (26). See proposed Item 601(b)(96)(iv)(A) of Regulation S-K.

³⁸⁶ See Form 43-101F1 and note 351, supra.

³⁸⁷ 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.

³⁸⁸ As previously noted, if the technical report summary is filed as an exhibit to a Securities Act registration statement, the qualified person will 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.

another person upon which the qualified person has relied. This would help to ensure that the qualified person has taken the necessary steps to verify any information provided by other experts that are included in the report. We believe that this standard is both appropriate and reasonable, as evidenced by its similarity to standards found in the code of ethics of engineering professionals.³⁸⁹

In addition, we are proposing to include sections about hydrogeology and geotechnical data, including testing and analysis, which are not included in NI 43-101. We believe that these two items are sufficiently important that investors would benefit from having them as separate requirements, rather than subsumed under other requirements, because they can directly impact the economic viability of a mining project. Hydrogeology and geotechnical data are the basis for determining several design parameters that directly impact the safety of the designed mine. Moreover, these design parameters can affect the operating and capital costs and can, therefore, directly impact the economics of the mine (i.e., the determination of reserves). Detailed hydrogeology and geotechnical data would therefore provide insight into the adequacy and appropriateness of the mine's design parameters, which would allow investors and their advisors to evaluate fully the disclosed economic viability of the mine.

³⁸⁹ See, the National Society of Professional Engineers (NSPE) Code of Ethics for Engineers, section II.2, which states: "Engineers shall perform services only in the areas of their competence. (a) Engineers shall undertake assignments only when qualified by education or experience in the specific technical fields involved. (b) Engineers shall not affix their signatures to any plans or documents dealing with subject matter in which they lack competence, nor to any plan or document not prepared under their direction and control. (c) Engineers may accept assignments and assume responsibility for coordination of an entire project and sign and seal the engineering documents for the entire project, provided that each technical segment is signed and sealed only by the qualified engineers who prepared the segment."

Request for Comment:

109. Should we require the qualified person to include in a technical report summary the 26 items, as proposed? Are there any items of information that we should include instead of or in addition to the proposed 26 sections of the technical report summary? Are there any items of information that we should exclude from the proposed technical report summary?

110. As previously noted, the qualified person would have to apply and evaluate relevant modifying factors to assess prospects of economic extraction or to convert measured and indicated mineral resources to proven or probable mineral reserves. These would include a variety of factors such as economic, legal, and environmental as discussed more fully above. For example, to apply and evaluate legal factors 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; environmental, including regulations governing water use and impacts, waste management, and biodiversity impacts; reclamation; and permitting regulations) that are relevant to operating a mineral project using existing technology. Should we expand proposed Item 601(b)(96)(iv)(B)(19)(vi) to provide additional specific examples, in addition to those set forth in Items 601(b)(96)(iv)(B)(19)(i)-(iv), of “issues related to environmental, permitting and social or community factors” that the qualified person must include in the technical report summary? For example, should we expressly require that the qualified person include a discussion of other sustainability issues such as how he or she considered issues related to managing greenhouse gas emissions or workforce health, safety and well-being? Are there other items for which it would be appropriate to

require the qualified person to include a discussion in the technical report summary? If so, please provide examples and explain why.

111. Should we require, as proposed, a qualified person who prepares a technical report summary that reports the results of a preliminary or final feasibility study to provide information for all 26 items? If not, which items should not be required? Should we require, as proposed, a qualified person who prepares a technical report summary that reports the results of an initial assessment to provide, at a minimum, the information specified in paragraphs (iv)(B)(1) through (13) and (iv)(B)(22) through (26) of proposed Item 601(b)(96)?
112. The proposed rules would permit a qualified person who prepares a technical report summary that reports the results of an initial assessment to use mineral resources in economic analysis (and provide the information specified in paragraph (iv)(B)(21) of proposed Item 601(b)(96)). Should we permit a qualified person to do so if he or she wishes?
113. Should we require a qualified person who prepares a technical report summary that reports material exploration results to provide, at least, the information specified in paragraphs (iv)(B)(1) through (11) and (iv)(B)(22) through (26) of proposed Item 601(b)(96), as proposed?
114. Should we preclude a qualified person from disclaiming 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, as proposed? Why or why not?
115. Should we require 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, as

proposed? Why or why not? Should we require a qualified person to draft the technical report summary to conform, to the extent practicable, with plain English principles under the Securities Act and Exchange Act, as proposed?

4. Requirements for Internal Controls Disclosure

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.

We believe that disclosure about the internal controls that a registrant uses to help ensure the reliability of its disclosure of exploration results and estimates of mineral resources and mineral reserves would benefit investors. Accordingly, we are proposing to require that a registrant describe the internal controls³⁹⁰ that it uses in its exploration and mineral resource and reserve estimation efforts. As specified in the proposed rules, such disclosure should address quality control and quality assurance programs, verification of analytical procedures, and comprehensive risk inherent in the estimation.³⁹¹ Such disclosure would help investors evaluate whether the registrant has established acceptable levels of certainty and precision during

³⁹⁰ 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 Item 1202(a)(7) of Regulation S-K. (17 CFR 229.1202(a)(7)).

³⁹¹ See proposed Item 1305 of Regulation S-K.

exploration and whether and how it has verified and validated the quality of the data used in its analysis. In addition, we note that this requirement is consistent with disclosure requirements in most foreign mining jurisdictions.³⁹²

A proposed instruction would state 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.³⁹³ 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.³⁹⁴ We believe this same practice should apply when preparing and analyzing data for the purpose of individual property disclosure. We also believe an internal controls disclosure requirement is particularly important for a company with multiple properties in order to ensure that best practice is followed across all properties.

Moreover, all 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.³⁹⁵ In addition, the

³⁹² See JORC Table 1 checklist and NI 43-101 pt. 3.3, which call for disclosure of quality control and quality assurance programs. The SME Petition also recognizes the need for and importance of appropriate internal and disclosure controls in the estimation of mineral reserves. See SME Petition for Rulemaking at 17.

³⁹³ See the Instruction to proposed Item 1305 of Regulation S-K.

³⁹⁴ See S. C. Kazmierczak, "Laboratory Quality Control: Using Patient Data to Assess Analytical Performance," in Clinical Chemistry and Laboratory Medicine 617-627 (2003); see generally M. J. Chandra, Statistical Quality Control (2001).

³⁹⁵ See, e.g., Canada's NI 43-101 pt. 3.3 and 43-101F1 Item 11. See also JORC Table 1 and SAMREC Table

listing rules of several of these jurisdictions specifically call for disclosure of the internal controls relating to estimates of mineral resources and reserves.³⁹⁶ Our proposal is substantially similar to these internal control disclosure requirements and therefore 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, we believe investors would benefit from such disclosure, though we recognize that registrants may incur additional costs.

Request for Comment

116. Should we 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, as proposed? Should we require that such internal controls disclosure address quality control and quality assurance programs, verification of analytical procedures, and comprehensive risk inherent in the estimation, as proposed? Are there other items, in addition to or in lieu of those proposed items, that should be included in such disclosure? Are there items that should be excluded from the proposed internal controls disclosure requirement? In each case, why or why not?
117. Should we 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, as proposed? Should we require that such internal

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³⁹⁶ See, e.g., ASX Listing Rule 5.21.5 which requires 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.”

controls disclosure address quality control and quality assurance programs, verification of analytical procedures, and comprehensive risk inherent in the estimation, as proposed? Are there other items, in addition to or in lieu of those proposed items, that should be included in such disclosure? Are there items that should be excluded from the proposed internal controls disclosure requirement? In each case, why or why not?

H. Conforming Changes to Certain Forms Not Subject to Regulation S-K

1. Form 20-F

Foreign private issuers³⁹⁷ use Form 20-F³⁹⁸ as a registration statement under Section 12 of the Exchange Act³⁹⁹ or as an annual or transition report filed under Section 13(a)⁴⁰⁰ or 15(d) of the Exchange Act.⁴⁰¹ Form 20-F also provides much of the substantive disclosure requirements for foreign private issuers filing Securities Act registration statements on Forms F-1,⁴⁰² F-3⁴⁰³ and F-4.⁴⁰⁴

³⁹⁷ 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 (17 CFR 230.405) and Exchange Act Rule 3b-4(c) (17 CFR 240.3b-4(c)).

³⁹⁸ 17 CFR 249.220f.

³⁹⁹ 15 U.S.C. 78l.

⁴⁰⁰ 15 U.S.C. 78m(a).

⁴⁰¹ 15 U.S.C. 78o(d).

⁴⁰² 17 CFR 239.31.

⁴⁰³ 17 CFR 239.33.

⁴⁰⁴ 17 CFR 239.34.

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 1998.⁴⁰⁵ 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 property⁴⁰⁶ rather than Item 102 of Regulation S-K.

We believe that the proposed rules should apply equally to foreign private issuers and domestic registrants. This treatment would be consistent with the current requirements for foreign private issuers and domestic registrants under Form 20-F⁴⁰⁷ and Item 102 of Regulation S-K whereby both foreign private issuers and domestic registrants provide the disclosures set forth in Guide 7.⁴⁰⁸

⁴⁰⁵ See Release No. 33-7745 (September 28, 1999), [64 FR 53900] (October 5, 1999).

⁴⁰⁶ 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.

⁴⁰⁷ Instruction 1 to Item 4 of Form 20-F directs the registrant to “[f]urnish the information specified in any industry guide listed in Subpart 229.800 of Regulation S-K.”

⁴⁰⁸ As discussed in section I, supra, Canadian registrants are currently able to provide disclosure pursuant to NI 43-101 under the foreign law exception included in Item 102, Guide 7 and Form 20-F. Accordingly, the staff has not objected to disclosure by such registrants of resources as well as reserves calculated in accordance with Canadian law.

Accordingly, in order to make foreign private issuers filing on Form 20-F subject to the new mining disclosure regime, we propose 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.⁴⁰⁹ We further propose to remove in their entirety the current instructions to Item 4.D of Form 20-F, which, among other matters, limit the disclosure of estimates to proven and probable reserves.⁴¹⁰ Because the proposed rules would require the disclosure of determined mineral resources, mineral reserves and material exploration results by a registrant with material mining operations, the Item 4.D instructions would be inconsistent with the proposed new disclosure requirements.

In addition, we propose 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.⁴¹¹ This would make the same technical report summary filing requirements applicable to domestic registrants apply as well to foreign private issuers registering securities or reporting pursuant to Form 20-F.

⁴⁰⁹ See proposed Instruction 3 to Item 4 of Form 20-F.

⁴¹⁰ 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.

⁴¹¹ See proposed Instruction 17 to Form 20-F. 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 have to file a technical report summary as an exhibit pursuant to proposed Item 601(b)(96).

Thus, following adoption of these proposed revisions to Form 20-F, 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, would have to comply with the mining disclosure requirements of new Regulation S-K subpart 1300. This would include Canadian registrants that report pursuant to Form 20-F and that currently are permitted to provide mining disclosure under NI 43-101 pursuant to the “foreign or state law” exception under Item 102 and Guide 7. We note that the proposed disclosure requirements would be substantially similar to Canada’s NI 43-101. As previously noted, the proposed rules would eliminate this “foreign or state law” exception.⁴¹² Thus, 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”).⁴¹³ We are not proposing to subject MJDS registrants to new subpart 1300 because the ability of 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.

Request for Comment

118. Should we amend Form 20-F to conform it to the disclosure requirements of subpart 1300 of Regulation S-K and Item 601(b)(96), as proposed?

⁴¹² See section II.E.1, *supra*.

⁴¹³ 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.

119. Should foreign private issuers that use or refer to Form 20-F for their SEC filings be subject to the same mining disclosure requirements as domestic mining registrants, as proposed? Why or why not?

120. Should we continue to permit Canadian issuers to provide disclosure under NI 43-101, as they are currently allowed to do pursuant to the foreign or state law exception, as an alternative to providing disclosure under the proposed rules? If so, what would be the justification for such differential treatment?

2. Form 1-A

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,⁴¹⁴ limiting the dollar amount of the offering⁴¹⁵ and, in certain instances, filing ongoing reports with the Commission.⁴¹⁶ Form 1-A is the offering statement used by issuers that are eligible to engage in securities offerings under Regulation A.⁴¹⁷

The Commission amended Regulation A in March of 2015 to permit two tiers of offerings: Tier 1, for offerings of up to \$20 million of securities within a 12-month period; and

⁴¹⁴ See Securities Act Rule 251(d) (17 CFR 230.251(d)).

⁴¹⁵ See Securities Act Rule 251(a) (17 CFR 230.251(a)).

⁴¹⁶ See Securities Act Rule 257 (17 CFR 230.257).

⁴¹⁷ 17 CFR 230.251 through 230.263. To be eligible to offer securities under Regulation A, at a minimum, an issuer must be organized and have its principal place of business in the United States or Canada. Excluded from Regulation A eligibility are: Exchange Act reporting companies; blank check companies; investment companies registered or required to be registered under the Investment Company Act of 1940 (15 U.S.C. 80a-1 *et seq.*) or business development companies as defined under that Act; issuers of fractional undivided interests in oil, gas or mineral rights; issuers that have been subject to a Commission order under Exchange Act Section 12(j) within 5 years preceding the filing of the offering statement; issuers that have failed to file the reports required by Regulation A (under 17 CFR 230.257) during the two years preceding the filing of the offering statement; and issuers that have been disqualified under Securities Act Rule 262. See Securities Act Rule 251(b) (17 CFR 230.251(b)).

Tier 2, for offerings of up to \$50 million of securities within a 12-month period.⁴¹⁸ The amendments require the filing and qualification of Form 1-A for both Tier 1 and Tier 2 offerings and impose ongoing disclosure obligations for Tier 2 offerings.⁴¹⁹ The Commission further amended Part II of Form 1-A by eliminating the Model A (Question and Answer) disclosure format and updating the Model B (Narrative) disclosure format allowed for both tier offerings.⁴²⁰

When updating Item 7 of Part II of Form 1-A concerning the required “Description of Business” disclosure, the Commission added 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.⁴²¹

The purpose of this provision was to incorporate into Form 1-A the disclosure guidance in all of the Securities Act Industry Guides.⁴²² Moreover, because Regulation S-K does not directly apply to Form 1-A, the Commission sought to require Form 1-A issuers to follow the

⁴¹⁸ See Release No. 33-9741 (March 25, 2015) [80 FR 21806 (April 20, 2015)] (the “2015 Regulation A Adopting Release”).

⁴¹⁹ The Commission adopted new Forms 1-K (annual report), 1-SA (semi-annual report) and 1-U (current report) for the Tier 2 ongoing reporting regime. The Commission also adopted Form 1-Z, an exit form, which must be filed by Tier 1 issuers upon termination or completion of the offering and by most Tier 2 issuers when eligible to suspend ongoing reporting.

⁴²⁰ Issuers also have the option of providing disclosure under Part II of Form 1-A that meets the requirements of Part I of either Form S-1 or Form S-11.

⁴²¹ See Form 1-A, Part II, Item 7(c).

⁴²² See Release No. 33-9497 (December 18, 2013) [79 FR 3926 (January 23, 2014)] (“Updates to the Offering Circular would also incorporate the disclosure guidelines in the Securities Act Industry Guides. . .”); see also the 2015 Regulation A Adopting Release (“As adopted, the Offering Circular includes disclosure based on disclosure guidelines set forth in the Securities Act Industry Guides. . .”).

disclosure guidelines in any industry guides that have been codified as disclosure items under Regulation S-K.

Because this provision, however, only appears in Item 7(c) of Part II, which governs “business” disclosure, we are proposing 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.⁴²³ 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 propose 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 propose 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 of Regulation S-K would require detailed descriptions of mining properties, the proposed rules would amend this instruction by excepting from its scope the disclosure required under these rules, as referenced in paragraph (b) of Item 8.

Thus, Regulation A issuers with material mining operations would be subject to all of the disclosure requirements in subpart 1300 of Regulation S-K. In order to require those Regulation A issuers to be subject to the new subpart’s technical report summary filing requirement, we

⁴²³ See proposed Item 8(b) of Form 1-A. Item 8 (Description of Property) currently requires 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.” The proposed rules would designate this current provision as paragraph (a) of Item 8.

propose 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.⁴²⁴

Request for Comment

121. Should we amend Form 1-A to require Regulation A issuers engaged in mining operations to refer to, and if required, provide the disclosure under subpart 1300 of Regulation S-K, in addition to any disclosure required by Item 8 of that Form, as proposed? Why or why not? Alternatively, should the disclosure requirements in proposed subpart 1300 apply to only some Regulation A issuers (e.g., Regulation A issuers in Tier 2 offerings)? Should we instead exempt all Regulation A issuers from the proposed subpart 1300 disclosure requirements?
122. In lieu of imposing full subpart 1300 disclosure requirements on Regulation A issuers, should we limit, in whole or in part, the proposed subpart 1300 disclosure requirements for issuers in Regulation A offerings? If so, should these requirements be limited only for issuers in Tier 1 offerings? Why or why not? Further, which provisions of proposed subpart 1300 should, and should not, apply to issuers in Regulation A offerings? For example, should we require compliance with Item 1302's requirement to file the technical report summary as an exhibit only in Tier 2 offerings?

⁴²⁴ See proposed paragraph (15) under Item 17 of Part III under Form 1-A.

123. Would limiting disclosure of the information required under proposed subpart 1300 for issuers in Regulation A offerings increase the risk of inaccurate disclosure in such offerings or otherwise increase risks to investors?

III. GENERAL REQUEST FOR COMMENTS

We request and encourage any interested person to submit comments on any aspect of our proposals, other matters that might have an impact on the amendments, and any suggestions for additional changes. With respect to any comments, we note that they are of greatest assistance to our rulemaking initiative if accompanied by supporting data and analysis of the issues addressed in those comments and by alternatives to our proposals where appropriate.

IV. ECONOMIC ANALYSIS

As discussed above, we are proposing revisions to the property disclosure requirements for mining registrants under the Securities Act of 1933 and the Securities Exchange Act of 1934. The proposed revisions are intended to modernize the Commission's mining disclosure requirements and policies by aligning them with industry practices and global regulatory practices and standards. Overall, we believe that the proposed revisions would increase the amount and quality of information about a registrant's mining operations available to investors as well as provide a single source in Regulation S-K for these disclosure obligations. We further believe that this will facilitate compliance by eliminating the complexity resulting from the existing structure of Commission disclosure obligations in Regulation S-K and staff disclosure guidance in Industry Guide 7.⁴²⁵

⁴²⁵ See SME Petition for Rulemaking at 9.

We are mindful of the costs imposed by, and the benefits obtained from, our proposed revisions. In this section we analyze the expected economic effects of the proposed revisions relative to the current baseline, which consists of the current regulatory framework and market practices. We consider the potential economic impact of the proposed revisions on the main affected parties, including registrants, investors and other financial statement users, and mining professionals, such as geologists and engineers, who provide services to registrants in support of mineral exploration and estimation of mineral resources and reserves. Our analysis considers the anticipated benefits and costs of the proposed revisions as well as the likely impact on efficiency, competition, and capital formation.⁴²⁶

We also analyze the potential benefits and costs of reasonable alternatives to the proposed revisions. The alternatives we consider below represent different approaches to achieving the goal of modernizing the Commission's mining 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 proposed disclosure requirements, rather than against the baseline.

A. Baseline

To assess the economic impact of the proposed revisions, our baseline consists of the current disclosure requirements and policies in Item 102 of Regulation S-K, Guide 7 and Form 20-F and current market practices. We also consider the CRIRSCO-based disclosure codes

⁴²⁶ Securities Act Section 2(a) and Exchange Act 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. Further, Exchange Act Section 23(a)(2) requires us, when proposing 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.

because mining registrants compete in the international commodities and capital markets, making international disclosure standards an important benchmark for 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 proposed revisions align the Commission's requirements with the CRIRSCO-based disclosure codes, we expect their economic impact to be lower for these registrants.

1. Affected Parties

The proposed revisions would primarily affect current and future registrants with mining activities that are, or would be, 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 proposed revisions would 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 would include mining companies filing Form 1-A offering statements under Regulation A. Investors, analysts, and other users of the information in the registrants' annual reports and registration statements filed with the Commission would also be affected by the proposed revisions. Finally, mining professionals, such as geologists and mining engineers, who provide services to registrants related to exploration and estimation of mineral resources and reserves would be potentially affected due to the proposed qualified person requirement and related provisions.

To estimate the number of current registrants that would be potentially affected by the proposed revisions, we first consider the active registrants as of December 2015 that filed annual reports or relevant registration statements at least once from January 2014 through December 2015. We then identify registrants with mining primary Standard Industrial Classification (“SIC”) codes.⁴²⁷ 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 345 (50 of which are registrants that do not have mining primary SIC codes).

Among these registrants, we anticipate that the proposed revisions would have a more significant effect on those mining registrants that are not currently reporting based on CRIRSCO standards. To estimate the number of registrants reporting based on CRIRSCO standards, we identify those registrants incorporated 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 345 registrants, we identify 129 registrants—85 foreign private issuers and 44 U.S. registrants—that are potentially reporting mining operations according to CRIRSCO-based disclosure standards. Accordingly, we estimate that there are 216 identified registrants that solely report to the Commission and would therefore be more significantly affected by the proposed revisions than registrants that report elsewhere.

Included among the 129 registrants that are potentially reporting mining operations according to CRIRSCO-based disclosure standards are 63 Canadian registrants. As discussed

⁴²⁷ 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, 3300, 3334, and 6795.

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 proposed revisions would more closely align our disclosure requirements with those in NI 43-101. As such, we estimate that the Canadian registrants that are currently providing disclosure pursuant to NI 43-101 likely would be less significantly affected by the proposed revisions than the 66 non-Canadian registrants that are potentially reporting mining operations according to CRIRSCO-based disclosure standards.⁴²⁸

2. Current Regulatory Framework and Market Practices

As discussed in Sections I and II above, we evaluate the economic effects of the proposed revisions against the Commission's current disclosure requirements and policies. Below we discuss 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.

i. Structure and Detail of Current Disclosure Framework

The following aspects of the current disclosure regime may give rise to compliance challenges 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,⁴²⁹ and Industry Guide 7,

⁴²⁸ For example, the technical report summary requirement in our proposed rule is very similar to the NI 43-101 requirement to file a technical report summary. That requirement is not, however, part of the other CRIRSCO-based codes, so only Canadian filers would not incur an additional cost to prepare the summary report.

⁴²⁹ See 17 CFR 249.220f.

which represents the disclosure policies and practices followed by the Division of Corporation Finance. This overlapping structure may give rise to unnecessary compliance burdens for mining registrants.⁴³⁰

- *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 only 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 rely on 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 required, such as the modifying factors the registrant should consider, to convert existing mineral deposits to reserves. By contrast, the CRIRSCO 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 may have rendered it unnecessarily complex and confusing for mining registrants, especially new registrants. In this regard, industry

⁴³⁰ See section II.A and note 26, *supra*.

participants have raised concerns regarding the need to rely on informal staff guidance to ensure compliance.⁴³¹ Reliance on staff guidance also may affect the consistency of the disclosures, which can impact comparability across registrants and over time for investors.

ii. Scope of the Current Disclosure Requirements and Policies

The technological process for evaluating the value of a mineral property starts with mineral exploration, then continues with estimation of mineral resources (i.e., the quantity and quality of the material of interest that has economic prospects of extraction), which in turn forms the basis for the estimation of mineral reserves (i.e., the amount of material that can be extracted economically). 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. 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.⁴³² In addition, none of Guide 7, Item 102 of Regulation S-K or Form 20-F calls for or requires disclosure of mineral exploration results. By contrast, CRIRSCO-based codes require disclosure of material exploration results and material mineral resources in addition to material mineral reserves.

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 their mineral resources they possess but are not allowed to disclose. Omitting such information may increase the information asymmetries

⁴³¹ Id.

⁴³² See note 14, supra.

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.⁴³³ Moreover, because mining companies providing disclosure in foreign jurisdictions based on CRIRSCO standards are required to disclose material exploration results and 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.⁴³⁴

Currently, registrants can supplement, to some extent, the limited scope of the current disclosure regime in two ways. First, although there is no requirement to disclose material exploration results, registrants can voluntarily disclose such information in their SEC filings. However, the value of such voluntary disclosures to investors may be reduced in the absence of a requirement that ensures consistency and quality of the disclosures. Second, regarding the disclosure of mineral resources, Commission staff has, on a case-by-case basis, not objected to disclosure of non-reserve mineral deposits in the form of “mineralized material.” In practice, although the mineral resources covered by the definition of “mineralized material” generally correspond with the indicated and measured mineral resource categories defined in the CRIRSCO standards, they are not completely consistent with CRIRSCO resource categories. For example, Commission staff historically has advised registrants that they should not disclose

⁴³³ 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.

⁴³⁴ See note 27, *supra*.

as mineralized material in their SEC filings non-reserve mineral deposits that would be equivalent to inferred resources. Moreover, 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 the disclosures.

As discussed above, disclosure of mineral resources is currently prohibited unless required by foreign or state law.⁴³⁵ Under this exception, Canadian registrants 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 U.S. registrants and non-Canadian foreign registrants,⁴³⁶ which in our estimates represent about 82% of the registrants potentially affected by the proposed revisions. 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 the CRIRSCO 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 such disclosures. First, 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 antifraud provisions of the federal securities laws), are not subject to staff review and comment, and may not be reported using commonly recognized standards.

⁴³⁵ See note 14, supra.

⁴³⁶ See SME Petition for Rulemaking at 14.

iii. Role of Experts in Support of Disclosures of Mineral Reserves

As discussed above, Guide 7 provides, and Form 20-F requires that a registrant disclose the name of the person estimating the 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 the CRIRSCO-based codes, which all require that disclosures of mineral reserves—as well as exploration results and mineral resources—be based on information and supporting documentation prepared by a “competent” or “qualified person.”⁴³⁷

In the absence of an expertise requirement, disclosures of exploration results, mineral resources and mineral reserves may be viewed as less credible. 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 mineral resources and reserves based on CRIRSCO-based codes.⁴³⁸

B. Analysis of Potential Economic Effects

In this section, we analyze the anticipated costs and benefits associated with the proposed

⁴³⁷ 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 is therefore subject to expert liability under Section 11 of the Securities Act. See also 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.

⁴³⁸ Under the current disclosure regime, registrants can choose to hire an expert with similar qualifications as those required by the CRIRSCO standards and voluntarily disclose this fact to mitigate any competitive disadvantage. However, investors may discount such disclosures if they are not derived from a formal regulatory requirement. Moreover, investors that tend to diversify their investments across companies in the mining sector, rather than in any specific mining company, may discount the sector as a whole in jurisdictions that are perceived to have less robust disclosure standards in this regard.

revisions to the mining disclosure requirements.

1. Consolidation and Harmonization of the Mining Disclosure Requirements

As discussed above, the proposed revisions would consolidate the mining disclosure requirements and policies of Regulation S-K and Guide 7 into new subpart 1300 of Regulation S-K, and rescind Guide 7. Codifying the current mining disclosure requirements in Regulation S-K would provide a single source for a mining registrant's disclosure obligations, eliminating the complexity associated with the fact that Guide 7 provides staff guidance and is not incorporated in the Commission rules, such as in Regulation S-K, thus facilitating compliance and promoting more consistent disclosures to investors.

As described in Section II.A.1, the proposed revisions would replace the current multiple standards for disclosure (i.e., "principal" mines, "other materially important" physical properties, and "significant" mining operations) included in Item 102 of Regulation S-K with a single materiality standard for when a registrant must provide disclosure about its mining properties or operations. The definition of "material" in the proposed rule would be the same as under Securities Act Rule 405 and Exchange Act Rule 12b-2. This single standard should reduce any confusion or compliance uncertainty that arises from the current multiple standards. In addition, the proposed rules would provide more detailed guidance to registrants about how to apply the proposed standard under varied circumstances,⁴³⁹ which should further reduce compliance uncertainty and help ensure consistency in the disclosures. Finally, given that the proposed standard is similar to the disclosure standard under the CRIRSCO-based mining codes,

⁴³⁹ See, e.g., section II.B.1.i-iii, *supra*.

the proposed revision would harmonize the U.S. standard with global practice.⁴⁴⁰

The proposed standard would generally be consistent with current staff guidance for applying the existing disclosure thresholds. To the extent that registrants currently follow this guidance in determining which disclosures to make concerning their mining operations, the proposed new threshold would not significantly alter existing disclosure practices.

As discussed above, the proposed rules would redefine the classifications of “exploration,” “development” and “production” stage so that they apply to individual properties as well as the totality of a registrant’s mining activities, the latter of which is the case in Guide 7. This individual property classification would in turn guide the classification of the registrant as a whole, as described above in Section II.A.2. Applying the classification of the technological stages at the property level should have several potential benefits. First, by providing the classification at the property level, the proposed rules would provide more precise information to investors about the nature and risk of registrants’ mining operations. In addition, because the classification at registrant level would be derived from the individual property classifications, the proposed rules would prevent a registrant without material reserves from characterizing itself as a development stage or production stage company, which is possible under the current classification scheme.⁴⁴¹ Second, since many registrants have mining properties in different stages, the proposed rules would instruct how registrants should apply the definitions to their operations, thereby reducing compliance uncertainty. Third, the proposed rules would align the disclosure requirements with current accounting practice under U.S. GAAP and IFRS (as issued

⁴⁴⁰ See section II.B.1, supra.

⁴⁴¹ See note 65, supra.

by the IASB),⁴⁴² facilitating consistency among the disclosures. Because registrants already possess the information necessary to be able to classify properties at the individual property level, and the proposed classifications are consistent with current accounting practice, we do not expect a significant increase in compliance costs for registrants.

2. Qualified Person and Technical Report Summary Requirements

As discussed above, we propose to require that every disclosure of mineral resources, mineral reserves and material exploration results be based on and accurately reflect information and supporting documentation prepared by an identified qualified person. Moreover, we propose to require that, for each material mining property, registrants obtain and file a signed and dated technical report summary prepared by this qualified person.

We anticipate that the qualified person requirement paired with the technical report summary requirement would enhance the accuracy, transparency, and credibility of the proposed disclosures for investors. 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 should ensure that the estimates provided in the disclosures are based on work consistent with current professional best practice. This should in turn increase the reliability and informational value of the disclosures. Moreover, the technical report summaries for material mining properties would provide investors and analysts with technical details to allow them to improve their own individual assessments of the value of the mining properties, including better estimates for their own forecasting models. These anticipated benefits should be especially pronounced in conjunction with the proposed disclosures of mineral

⁴⁴² See note 68, *supra*.

resources and material exploration results, since estimates of mineral resources and material exploration results are typically associated, for technological reasons, with a higher degree of uncertainty compared to estimates of mineral reserves.

These potential benefits from the proposed qualified person requirement are not without associated costs.⁴⁴³ Regarding the proposed qualified person requirement, we expect any increase in compliance costs to be related to an increase in search and hiring costs of qualified persons. Registrants that are not currently employing or contracting with professionals meeting the proposed definition of qualified person would incur costs, including expenses for identifying a pool of professionals that would meet the definition of qualified person and be willing to provide their services. The costs for services of a qualified person may also increase for such registrants due to the level of expertise required under the proposed rules. Because the required disclosures derive from activities mining registrants are already performing 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 proposed level of expertise, either as employees or as contractors. In particular, this should be the case for registrants reporting based on CRIRSCO standards, as those disclosure codes already require a similarly defined “qualified” or “competent” person to support the disclosures. To the extent registrants already engage professionals meeting the proposed qualified person requirement, the incremental compliance costs of the proposed requirement would be minimal or

⁴⁴³ Quantifying these cost are 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.” We also do not have access to readily available data sources of comprehensive compensation data for geologists and mining engineers (in the United States or other countries), which would help us estimate the marginal cost of hiring a qualified person with the minimum level of expertise versus professionals that do not qualify as qualified persons.

none.

Registrants that are currently employing or contracting with professionals meeting the proposed definition of a qualified person would not incur costs associated with hiring such a person but may nevertheless experience an increase in compensation costs. One reason for such an increase is that qualified persons would provide, sign and consent to the filing of more extensive documentation in support of the disclosures, which potentially would expose them to greater legal liability. Moreover, if the qualified person requirement reduces the pool of eligible mining professionals, compensation costs could increase due to increased competition among registrants for the services of these eligible professionals. However, we anticipate this competitive effect on compensation costs to be minor as there is currently a large pool of professionals both in the United States and around the world that would meet the definition of qualified person. For example, the Society for Mining, Metallurgy, and Exploration currently has 15,000 members around the world.⁴⁴⁴ More than 800 of these members are registered with the organization and already meet the definition of a qualified person.⁴⁴⁵ 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.⁴⁴⁶ A significant fraction of these professionals would likely meet the

⁴⁴⁴ See the SME website at: <https://www.smenet.org/about-sme/overview>.

⁴⁴⁵ See the SME website at: <http://www.smenet.org/membership/registered-member-directory>.

⁴⁴⁶ 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>).

definition of qualified person, or could meet it after some professional development.⁴⁴⁷ For example, California alone had more than 5,000 recorded licensed professional geologists as of November 2014.⁴⁴⁸ We note that these estimates largely exclude professionals who are active in foreign markets and who could also qualify.

Regarding the proposed technical report summary requirement, we expect that registrants would experience an increase in compliance costs related to the preparation of the report summaries for material mining properties.⁴⁴⁹ Even registrants that currently produce technical documentation and reports in compliance with requirements in other jurisdictions would likely incur additional costs to conform the reports to the specific requirements in the proposed rule. In this regard, the proposal seeks 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, exploration results, resources and reserves.

The proposed qualified person and technical report summary requirements are similar to

⁴⁴⁷ The increased demand for qualified persons' services is likely to incentivize more professionals to become qualified.

⁴⁴⁸ 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 they have five years' relevant experience in mining with respect to the type of mineralization under consideration, would likely meet the proposed definition of a qualified person.

⁴⁴⁹ It is challenging to estimate reliably the compliance costs associated with the requirement to prepare a technical report summary because of the diversity in the scope and complexity of the reports that are to be summarized and the labor costs (by sector of the industry and geographic location). Also, we could not find any studies that have examined this question. For purposes of the Paperwork Reduction Act, based on staff analysis of similar reporting requirements in other jurisdictions, we estimate that registrants would each incur between 11 and 50 burden hours to prepare the required technical report summary, depending on whether they are subject to CRIRSCO standards. These estimates assume that all the information required to prepare a technical report summary is already available to the qualified person as part of the scientific and engineering assessment required to support disclosure of exploration results, mineral resources, and mineral reserves. See Section V, *infra*.

the corresponding requirements in the CRIRSCO-based disclosure codes, which generally should mitigate the incremental impact of the proposed requirements on registrants currently reporting in jurisdictions that use these codes. However, some of the differences may be economically important. For example, although the CRIRSCO jurisdictions require that a company's exploration results, mineral resources and mineral reserves be based on and fairly reflect information and supporting documentation prepared by a "competent" or "qualified" person, only Canada and Australia require the filing of a technical report summary to support such disclosure.⁴⁵⁰ Accordingly, we expect that the proposed technical report summary requirement would increase the costs of compliance for registrants currently reporting in foreign jurisdictions other than Canada and Australia. On the other hand, these registrants would receive the incremental benefits (identified above) associated with the filing of such report summaries.

The proposed rules do not require the qualified person to be independent of the registrant. The absence of an independence requirement is consistent with the CRIRSCO-based codes, with the exception of Canada where the qualified person supporting the registrant's mining disclosures must be independent of the company for new registrants or, in cases of significant changes to existing disclosures, for established registrants.⁴⁵¹ Although there is some evidence that outside experts reduce information asymmetries about companies' valuations in related

⁴⁵⁰ Canada's NI 43-101 requires a registrant to file a technical report summary, substantially similar to what we are proposing, for each material mining property. See NI 43-101 pt. 4. That Instrument also prescribes the form of the technical report summary. See Form 43-101F1. Australia's ASX requires all public disclosure of exploration results, mineral resources and mineral reserves to be accompanied by an appendix that reports pursuant to JORC Table 1. See ASX Listing Rules 5.7.1, 5.8.2 and 5.9.2. This requirement is equivalent to requiring an abbreviated version of the technical report summary.

⁴⁵¹ See NI 43-101 pt. 5.3.

circumstances,⁴⁵² we believe this benefit should 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. We also believe that the expert liability incurred under Section 11 of the Securities Act would mitigate the potential for misleading or fraudulent disclosures by all qualified persons, whether or not the person is affiliated with the company or an independent expert.

We have considered reasonable alternatives to the proposed qualified person and technical report summary requirements. One alternative would be not to require or define the professional requirements of the expert producing information and supporting documents for the disclosures, but to require that registrants disclose the relevant qualifications and professional background of the expert as well as any affiliation with the registrant. Investors could use this information to decide for themselves if the expert is likely to be competent and reliable. Compared to the proposed rule, this alternative would potentially lower costs for the services provided by qualified persons since registrants could hire from a broader population of experts. Moreover, registrants that already use experts not meeting the definition of a qualified person under the proposed rule would avoid switching costs. However, this alternative would potentially lead to less consistency in the type of expertise and quality of reports across firms. Moreover, this alternative would significantly differ from the approach in the CRIRSCO standards of requiring a minimum level of expertise in support of the disclosures. As a result,

⁴⁵² 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.

even when keeping the actual level of competence of experts constant across jurisdictions, this alternative could lead to a perception among investors that disclosures of mineral resources and reserves within SEC filings are not as well supported as disclosures in the CRIRSCO jurisdictions, which could discourage investors from investing in securities of mining companies listed in the U.S. markets.

Another alternative would be not to require the filing of a technical report summary to reduce expected compliance costs and be consistent with the majority of CRIRSCO-based codes. 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.

3. Treatment of Exploration Results

The proposed rules would require a registrant to disclose material exploration results (as and if determined by a qualified person) for each of its material mining properties. This proposed disclosure requirement would align the Commission's disclosure requirements for exploration results with those in CRIRSCO-based codes. The proposed rules also would provide guidance for registrants when exploration results are considered material.

Although the Commission's current disclosure requirements and policies do not provide for the disclosure of exploration results, some registrants disclose exploration results on a voluntary basis. Presumably, registrants currently providing such voluntary disclosures benefit from doing so. From an individual mining registrant's perspective, the proposed requirements would be beneficial if the associated incremental economic benefits exceed the incremental costs of complying with the disclosure requirements, as proposed. From an investor's perspective, the proposed rule would be incrementally beneficial if the expected benefit in terms of more efficient investment decisions due to the additional information exceeds the cost of processing the same

information.

Because a new mining project inevitably starts from some form of exploration activity, disclosure of material exploration results would provide important information to investors about registrants' mining operations and potential growth opportunities. We expect the disclosure of exploration results by smaller mining registrants to be especially useful to investors as such registrants tend to have a narrower range of mining operations and fewer individual projects. We estimate that a majority of mining registrants are very small firms: 51% of mining registrants (176 out of the 345 registrants identified above) have \$5 million or less in total assets, suggesting they are mainly exploration stage registrants.

It is important to recognize that exploration results, by themselves, without the assessment of geologic and grade continuity required in resource estimation, are inherently speculative. Thus, it may be difficult for investors to value exploration results accurately and there is a risk that some investors would put too much weight on this information, which in turn could lead to inefficient investment decisions. The proposed requirements are intended to mitigate any potential costs related to the uncertainty associated with the disclosure of exploration results in a couple of ways. First, the proposed rules would preclude the use of exploration results, by themselves, to derive estimates of tonnage, grade, and production rates, or in an assessment of economic viability. This should reduce the potential for overvaluing the disclosed exploration results. Second, disclosure of material exploration results must be based on the analysis of a qualified person submitting a technical report summary that is filed as an exhibit with the Commission. The proposed qualified person and technical report summary requirements should increase the accuracy and reliability of the disclosed exploration results. In addition, the proposed requirements would also increase the usefulness of this information to

investors by aligning the disclosure of material exploration results with the requirements in CRIRSCO-based codes, which would improve the comparability of the disclosed information relative to similar disclosures by mining companies in jurisdictions such as Canada and Australia.

Quantifying the anticipated net benefit to investors from the proposed disclosure requirement is difficult. There is some academic evidence suggesting that investors respond favorably to the disclosures of exploration results. For example, an academic study of 1,260 exploration results announcements made by 307 unique Australian mining companies over the 2005–2008 time period documents an average abnormal stock return of 2.8% on the announcement day.⁴⁵³ 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 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 also 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 proposed requirements.⁴⁵⁴

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 would include the

⁴⁵³ 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.

⁴⁵⁴ See the JORC Code, 2004 Edition, pts. 16, 17, and 18.

assessment of materiality, the costs of preparing the required technical report summary, 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 rather than scaled to the size of the project, the cost burden would be relatively larger for smaller registrants.

We note that the proposed requirement to disclose material exploration results does not impose an affirmative obligation to hire a qualified person to make a determination about exploration results. Registrants who perceive that the compliance costs related to engaging a qualified person are prohibitive can refrain from engaging a qualified person to make a determination about the exploration results. In that situation, the registrant would not be required to disclose material exploration results because the required information and documentation by an expert necessary to support the public disclosure of material exploration results would not be present.

The compliance costs of the proposed disclosure requirement should be substantially mitigated for registrants that already report based on CRIRSCO standards, as those standards have similar disclosure requirements for material exploration results.

The proposed rules require disclosure of determined material exploration results only with respect to individually material properties.⁴⁵⁵ One alternative to the proposed requirement would be also to require disclosure of material exploration results when the registrant has determined that the aggregate mining operations are material but no individual property is material.⁴⁵⁶ Relative to the proposed rules, this alternative would provide investors with more

⁴⁵⁵ See Section II.D., supra.

⁴⁵⁶ See Section II.B.1, supra.

information concerning the prospects of the registrant's mining operations but it would be significantly costlier for affected registrants. The costs of this alternative could be mitigated by requiring the additional material exploration results to be presented in summary form.

4. Treatment of Mineral Resources

As discussed above, disclosure of mineral resources is currently precluded in SEC filings unless required pursuant to foreign or state law. Industry participants have raised concerns regarding the adverse competitive effects potentially stemming from the inability of U.S. registrants to disclose mineral resources.⁴⁵⁷ 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.⁴⁵⁸

The proposed rule would require a registrant with material mining operations to disclose specified information concerning any mineral resources that have been determined based on information and supporting documentation from a qualified person. In the absence of such information and supporting documentation, the registrant would not have mineral resources as defined in the proposed rules, and as such, would not be required or allowed to disclose mineral resources in a SEC filing.⁴⁵⁹

As proposed, a registrant with material mining operations that has multiple properties would be required to provide both summary disclosure about its mineral resources in addition to

⁴⁵⁷ See note 27, supra.

⁴⁵⁸ See SME Petition for Rulemaking at 1 and 13.

⁴⁵⁹ In other words, the disclosure requirement would not be triggered if the registrant chose not to hire a qualified person because it would lack the information and documentation to support the disclosure of mineral resources, as required by the proposed rule.

more detailed disclosure concerning its mineral resources for each material property.⁴⁶⁰ As discussed above, the proposed requirement would expand the scope of the current disclosure regime, while aligning the Commission’s mining disclosure rules with those in foreign jurisdictions based on the CRIRSCO standards.

We expect the proposed framework for disclosure of mineral resources to result in additional useful information concerning a registrant’s operations and prospects. Because mining registrants already assess mineral resources in the course of developing mining projects, requiring information about mineral resources to be disclosed would significantly reduce the information asymmetries between investors and registrants. Reducing information asymmetry relating to mineral resources should lower the cost of capital and improve capital formation.⁴⁶¹

Moreover, since the CRIRSCO-based codes already require similar disclosure of mineral resources, the proposed framework would improve competition among mining registrants by removing the competitive disadvantage that U.S. registrants currently experience relative to reporting firms in foreign jurisdictions. This also may improve the attractiveness of U.S. capital markets for mining companies. Similar to the case of the proposed requirement to disclose material exploration results, the proposed requirement to disclose mineral resources 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.

We note that for registrants that currently disclose “mineralized materials” there should

⁴⁶⁰ See the discussion in Section II.B, *supra*.

⁴⁶¹ Although we expect disclosures that reduce information asymmetries to reduce cost of capital for the typical mining company, we also expect there to be a reallocation of capital from relatively low quality companies to higher quality companies as better information on the companies’ prospects are revealed. This reallocation would help improve efficiency and capital formation overall, but also means that some poorer quality mining companies would likely experience a higher cost of capital.

be a comparatively lower incremental reduction in information asymmetries. Nonetheless, the proposed framework would 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 would be clear under the proposed rules since they will be distinct and not aggregated as mineralized material. The proposed requirement that the disclosures must be supported by information and documentation provided by a qualified person would also improve the quality and reliability of the disclosures compared to the current disclosures of mineralized material. To the extent the above expected incremental improvement in disclosure to investors reduces information asymmetries, the efficiency of investment decisions would increase and registrants that currently disclose mineralized material may still experience a reduction in cost of capital. Finally, relative to the current practice for disclosure of mineralized materials, requiring the disclosure of mineral resources by rule should reduce registrant uncertainty and facilitate compliance.

Estimates of mineral resources are typically associated with a greater uncertainty than estimates of mineral reserves. To help investors better assess the uncertainty surrounding mineral resource estimates, the proposed disclosure framework would mandate a classification of mineral resources into inferred, indicated and measured mineral resources, in order of increasing confidence based on the level of underlying geological evidence, with the estimates for inferred mineral resources being the most uncertain.⁴⁶² In addition, we are proposing that resource disclosures must be supported by an initial assessment by a qualified person and that this

⁴⁶² Because of the inherent uncertainty associated with inferred resources, we note that registrants may have an incentive to aggressively report such resources. However, this incentive would be mitigated by not allowing inferred resources to later be directly converted to mineral reserves. See section II.E.2, supra.

assessment, at a minimum, must include a qualitative evaluation of modifying factors to establish the economic potential of the mining property or project. We believe that requiring an initial assessment by a qualified person would reduce the uncertainty surrounding mineral resource estimates and increase the value of the information for investors. Specifically, we believe that a well-defined and specific technical study to support disclosure of mineral resources should improve the accuracy and reliability of the mineral resource estimates for investors. Since estimates of mineral reserves are based on estimates of mineral resources, the greater accuracy of the resource findings should lead to better mineral reserve determinations.

The proposed rule would generate compliance costs for registrants with material mining operations that disclose mineral resources. The increase in costs would be greater for registrants not currently disclosing mineralized material. The costs would include the incremental costs (above the registrant's mineral resource assessment practices) of the initial assessment and the costs of preparing the technical report summary, in the case that one is required. As discussed above, if registrants are currently using a professional who would not meet the qualified person definition, search costs and potentially higher compensation costs may also be incurred. In deciding whether to disclose mineral resources, we expect companies would weigh the incremental compliance costs of producing reports that meet the required standards against the expected benefits stemming from such disclosure, based on their individual facts and circumstances.

The compliance costs associated with the proposed framework for disclosure of mineral resources would 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 our proposal. In this regard, however, although all CRIRSCO-based codes require

some type of study to support the determination and disclosure of mineral resources, most do not define a specific type of study. As such, the proposed initial assessment requirement could result in increased burdens for these mining registrants to the extent that our proposed initial assessment differs from registrants' practices for determining resources.

For example, although the CRIRSCO-based codes prohibit the use of inferred mineral resources to support a determination of mineral reserves, they typically permit the use of inferred mineral resources in a scoping study⁴⁶³ as long as the competent or qualified person provides appropriate cautionary language regarding the low level of geological confidence in those resources. Accordingly, a registrant may incur costs if it has obtained a scoping study that would not be in compliance with the proposed rules because it contains an economic analysis that includes inferred mineral resources.⁴⁶⁴

There is evidence suggesting that investors respond favorably to the 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.⁴⁶⁵ 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

⁴⁶³ A scoping study (called a preliminary economic analysis in NI 43-101) is used to determine whether to proceed with further work leading to preparing a pre-feasibility or feasibility study for mineral reserve determination. In contrast to our proposed rules, CRIRSCO-based codes allow registrants to disclose results of scoping studies that use some inferred mineral resources in the economic and technical assessment.

⁴⁶⁴ See note 155, supra.

⁴⁶⁵ See Ron Bird, Matthew Grosse, and Danny Yeung (2013), pp. 123-125.

announcements of exploration results, the authors find no relation between company size and the abnormal returns. However, abnormal returns are significantly greater when a mining company announces mineral resources for the first time. The authors suggest this may be the case because much of the existing information asymmetry is resolved at the time of the first announcement.

One alternative to the proposed disclosure requirement for mineral resources is not to require the qualified person to provide an assurance that all issues relating to the relevant modifying factors can be resolved with further exploration and analysis. Instead, as is required by the CRIRSCO-based codes, the qualified person could be guided by the definition of mineral resources provided in the proposed rules in determining that the mineral resources have “reasonable prospects of economic extraction.”⁴⁶⁶ The compliance cost related to preparing an initial assessment to support mineral resource disclosure associated with this alternative would likely be lower than the costs associated with the proposed requirement. First, the alternative would reduce the amount of work that the qualified person has to do to support his or her determination of resources. In addition, the absence of the requirement to provide the specified assurance could reduce the qualified person’s potential liability, and as a result, reduce the cost of engagement of the qualified person. At the same time, this alternative could increase the uncertainty surrounding the prospects of economic extraction of mineral resources and therefore reduce the value of the disclosure of such resources.

Another alternative we considered is not to require the preparation of a technical report summary, as in most CRIRSCO jurisdictions. This alternative would further lower compliance

⁴⁶⁶ See, e.g., CRIRSCO’s International Reporting Template pt. 21, which states “[t]he term ‘reasonable prospects for eventual economic extraction’ implies a judgment (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.”

costs but would also reduce consistency in the disclosures and increase the uncertainty about the quality of the mineral resources estimates.

5. Treatment of Mineral Reserves

As discussed above, we propose to revise the definition of mineral reserves to align it with the CRIRSCO standards by requiring that the qualified person apply defined modifying factors to the indicated and measured mineral resources in order to convert them to mineral reserves. The proposed rules would permit either a pre-feasibility or a feasibility study to provide the basis for determining and reporting mineral reserves. The proposed rules would also require that the reserve estimations and disclosures thereof be based on the work of a qualified person.⁴⁶⁷

We expect the proposed revisions to the disclosure of mineral reserves to have several economic benefits. First, the proposed revisions specify in more detail the process that is required for registrants to convert mineral resources to probable or proven mineral reserves, including, as noted above, requiring the application and description of relevant modifying factors that affect the conversion. The increased detail and clarity of the proposed requirements should lead to more reliable and consistent disclosures. Second, because the determination of mineral reserves would be based on the analysis and documentation provided by a qualified person, the disclosure would be associated with the incremental benefits potentially stemming from the qualified person requirement, as discussed above. Third, the staff currently requests that registrants obtain a full feasibility study to support the determination of mineral reserves, but the proposed rules would allow, under certain conditions, the use of a pre-feasibility study, thus

⁴⁶⁷ See section II.F, *supra*.

reducing compliance costs relative to current practice. This benefit is likely to be more significant for smaller, capital-constrained registrants since the cost of feasibility studies is positively related to the size of individual projects rather than the size of the registrant.

Pre-feasibility studies, while adequate for disclosure of mineral reserves, require less time 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.⁴⁶⁸ Thus, assuming the same cost per worker-hour, a pre-feasibility study will be around 33-40% less costly than a feasibility study. Allowing pre-feasibility studies would be especially beneficial for registrants that already have studies meeting the pre-feasibility standard, but not the feasibility standard.

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 codes already allow the use of pre-feasibility studies, allowing their use under the proposed rules would place U.S and non-Canadian foreign registrants on equal footing with Canadian registrants availing themselves of the “foreign or state law” exception and other mining companies reporting only in CRIRSCO jurisdictions. Finally, the proposed detailed requirements for feasibility studies should reduce compliance uncertainty, while increasing consistency in disclosures where feasibility studies are used to determine mineral reserves.

Because the proposed treatment of mineral reserves is consistent with established best practices in the mining industry, we do not expect a significant increase in compliance costs beyond the potential cost increases related to the qualified person requirement and the filing of

⁴⁶⁸ See Richard L. Bullock, “Mineral Property Feasibility Studies,” in 1 SME Mining Engineering Handbook, supra note 115, at 227–261.

the technical report summary, as discussed above. Given the potentially large compliance cost savings associated with allowing pre-feasibility studies, we expect most registrants to experience an overall reduction in compliance costs. However, because a pre-feasibility study is typically associated with a lower confidence level than a feasibility study, allowing the use of pre-feasibility studies would likely lead to higher uncertainty associated with the mineral reserve disclosures. This increased uncertainty should be mitigated by the proposed qualified person requirement and proposed requirement of a final feasibility study in certain specified high risk situations.

One reasonable alternative to the proposed rules would be to require feasibility studies by a qualified person and not allow pre-feasibility studies. This alternative could lead to less uncertainty surrounding mineral reserve estimates but would be associated with significantly higher compliance costs than the proposed revisions. Moreover, this alternative would continue to place U.S. and non-Canadian registrants at a competitive disadvantage.

6. The Pricing Model for Determination of Mineral Resources and Reserves

As discussed above, Guide 7 does not include a specific pricing model for the estimation of mineral reserves. Currently, registrants generally use a commodity price that is no higher than the trailing 3-year average price. The proposed disclosure requirements for mineral resources and mineral reserves would require registrants to use in their reserve and resource estimations a commodity price that is no higher than the average closing price during the 24-month period prior to the end of the last fiscal year, with the exception that registrants can use a higher price if set by contractual arrangements.

A key consideration when deciding on a pricing model is that a price is assigned to

mineral material that is in the ground and likely will not be extracted for many years. Ideally, our rules would use a pricing model that could accurately predict what prices will be at the time of future expected extraction. Given that commodity prices are volatile and generally difficult to predict, there is no established industry “best practice” model. Absent an established industry standard for the pricing model, we believe that, for the purpose of public disclosure, the pricing model should be transparent and cost effective, while producing unbiased estimates of future prices and promoting comparability of estimated resources and reserves across registrants. At the same time, given the inherent difficulty of forecasting future commodity prices and the segmented nature of the markets for some of the minerals involved, we also believe that the pricing model should provide registrants with some flexibility to draw on their knowledge and experience. However, we recognize that allowing firms to use their internal pricing models may hurt comparability and may create incentives to use unrealistically high prices that result in overestimated mineral resources and reserves.

A ceiling price model based on a trailing average, like the 3-year trailing average price used as a ceiling in the current staff guidance, strikes a balance between the objectives outlined above. First, the ceiling price itself is transparent, easy to calculate, and consistent for any given commodity and time, thus promoting comparability across registrants. Second, because the trailing average price is a ceiling, it gives registrants some flexibility to use their own preferred pricing model as long as it does not exceed the ceiling. Third, any tendency by registrants to select overly optimistic prices in an attempt to inflate estimates is mitigated by the ceiling price, which prevents registrants from assigning a price that is greater than what has been observed over the time period of the trailing average.

We believe that the proposed rules, which use a shorter time to calculate the historic

average price than current practice, would result in a ceiling price that is more sensitive to shifts in price trends and therefore would be more relevant for estimating the inherent value of mineral resources and reserves. We also believe that the 24-month time period is preferable to using a shorter time period. An average price determined over, for example, a one-year period could be affected by short-term price volatility in such a way that the value of the estimated resources and reserves could reflect more short-term market conditions than long-term fundamental market factors. The proposed 24-month period intends to strike a balance between the ceiling price being sensitive to recent changes in fundamental market conditions while avoiding introducing fluctuations in the ceiling price that may be driven more by short-term price volatility than by changes in fundamental market conditions.⁴⁶⁹

In practice, if the price that many mining registrants currently use to estimate resources and reserves is at or below the 24-month average closing price, the proposed rules would not significantly impact compliance costs for these registrants.⁴⁷⁰ To the extent that the price that management is using is above the 24-month average, however, there would be a potential significant cost to registrants to recalculate mineral resource and reserve estimates in compliance

⁴⁶⁹ To illustrate the differences in the volatility depending on the time horizon used for the ceiling price, staff analysis shows that for copper prices on the London Metal Exchange over the 1986-2015 time period, the standard deviation of the percentage change in year-over-year prices was 16.6%, 20.0%, and 25.9% for average prices calculated based on horizons of 36 months, 24 months, and 12 months, respectively. This can be compared to the standard deviation of the year-over-year change in daily prices, which was 34.1%. A qualitatively similar pattern was found for a wide variety of different minerals. (Note that for these calculations, end of the month prices were used to calculate the year-over-year changes for each of the different price alternatives, which means that the standard deviations are based on 360 observations of year-to-year percentage changes for each time horizon). The data used for the analysis was collected from Thomson Reuters Markets LLC's DataStream database.

⁴⁷⁰ The only costs would be to calculate the 24 month average price and determine whether the price that management currently uses to estimate its mineral resources and reserves is below that price.

with the proposed rules.⁴⁷¹

We recognize that because the proposed ceiling price model is a trailing average of historical prices, the ceiling price by design may be slow to incorporate recent price trends. Thus, to the extent that a recent significant trend in prices marks a true structural break towards higher (lower) commodity prices on the long run, the proposed ceiling price may result in underestimation (overestimation) of mineral reserves and resources. It is worth noting that, to mitigate the risk that the ceiling price does not appropriately reflect recent changes in the fundamental market conditions, the proposed rules would allow registrants that have contracts with prices that are higher than the ceiling to use such prices. Moreover, the proposed rules would require disclosure of the assumptions used in the economic analysis underlying the estimates of mineral resources and reserves, including the price chosen, 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.⁴⁷² The overall economic effects of the proposed pricing model are particularly difficult to quantify, and we request comment on these effects.

There are several reasonable alternatives to the proposed pricing model. One alternative would be the approach followed by several foreign jurisdictions with CRIRSCO-based codes, where the qualified person is allowed to use any reasonable and justifiable price based on that

⁴⁷¹ These costs would vary significantly depending on the facts and circumstances, including the type of deposit, mining methods, and magnitude of price change. In some instances, a price change may require very little additional engineering and economic analysis to determine the economic viability of the mineral resources in question. In other instances, a price change may lead to a significant change in the scale of the proposed mining project. The qualified person would then have to repeat almost all the engineering and economic analysis to determine mineral resources.

⁴⁷² See proposed Item 1304(b)(9) of Regulation S-K.

qualified person's or management's view of long-term market trends.⁴⁷³ Compared to the proposed price ceiling model, this alternative approach would reduce the risk of underestimation of mineral reserves and resources following a fundamental upward shift in the commodity price, but would also carry a higher risk of overestimation. A modified version of this alternative 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 risk associated with the estimated mineral resources and reserves and could, therefore, lead to more efficient investment decisions. However, because a sensitivity analysis would require registrants to calculate at least three estimates of resources and reserves (the base price, as well as one price each above and below the base price, respectively), compliance costs would be increased. 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.

A second alternative would be to 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. Moreover, to the extent the ceiling price calculated using this alternative is below the price that registrants use based upon their own internal calculations, the

⁴⁷³ See note 196, *supra*.

higher volatility of this alternative ceiling price may create 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.

A third alternative would be to require registrants to estimate mineral resources and reserves using a price no higher than the 24-month trailing average price and allow registrants to also disclose mineral resources and reserves based on a higher price of their own choosing, to the extent that they include a description of the model and assumptions used to select the price.⁴⁷⁴ This approach would present standardized estimates that are transparent and comparable across registrants, while letting managers present supplement estimates based on an alternative price if they, for example, believe that the 24-month average may lead to inaccurate estimates. Because reporting a second set of estimates based on prices higher than the ceiling price would be voluntary, presumably registrants only would provide such alternative estimates if they expect the benefits of doing so to outweigh the costs. The potential cost of this alternative is that the price ceiling mechanism would lose its ability to constrain disclosure of overestimated mineral resources and mineral reserves due to the use of overly optimistic prices, which is one of the objectives for the price model discussed above.

7. Specific Disclosure Requirements

i. Requirements for Summary Disclosure

Currently, Guide 7 does not explicitly address what disclosure should be provided when a registrant has multiple mining properties. Instead, on a filing-by-filing basis, staff has not objected to a registrant with multiple mining properties providing summary disclosure that

⁴⁷⁴ As currently proposed, a registrant would not be permitted to provide a supplemental mineral reserve determination (i.e., estimate based upon prices higher than the 24 month trailing average). See note 252, *supra*.

encompasses all of its properties instead of providing disclosure on a property by property basis. The proposed rules would require that registrants that own multiple mining properties provide summary disclosure of their mining operations. The summary disclosure would include maps of the locations of all mining properties, a tabular presentation of certain material information about the 20 properties with the largest asset values, and a summary of all mineral resources and reserves at the end of the most recently completed fiscal year.⁴⁷⁵

We expect that the proposed summary disclosure would help registrants to convey more effectively to investors information about their aggregate mining properties and operations. Because of the clarity and detail in the proposed summary requirement, it should also reduce compliance uncertainty and increase consistency of summary disclosures across registrants. These benefits should be particularly important for registrants with a diverse set of mining properties.⁴⁷⁶

Given that the proposed requirement for summary disclosure would align with what most registrants already provide in their SEC filings, we do not expect the requirement to impose significant additional costs on registrants with mining operations that are material in the aggregate, but have no individual property that is material. We also note that one CRIRSCO-based jurisdiction, Australia, through the ASX listing rules, requires summary disclosure similar to the proposed summary disclosure requirements.⁴⁷⁷ For registrants that do not already provide summary disclosure, whether reporting pursuant to Guide 7 or under any of the CRIRSCO-based codes, other than the ASX listing rules, there could be additional costs to comply with the

⁴⁷⁵ See the discussion in Section II.G.1., supra.

⁴⁷⁶ See section II.B. 2, supra.

⁴⁷⁷ See ASX Listing Rules 5.1.2 and 5.3.2.

summary disclosure requirements in addition to any individual property disclosure requirements.

One alternative to the proposed summary disclosure would be to limit the disclosure required by proposed Item 1303(b)(3) to only the mineral resources and reserves for the 20 largest properties, rather than for all mining operations. This would reduce compliance costs for registrants with greater than 20 mining properties. The cost of this alternative would be a potentially significant reduction in the information about mineral resources and reserves available to investors by excluding such information for many properties, which could be a significant portion or majority of the registrant's mineral resources and reserves. This reduction in information would be particularly significant for registrants with multiple properties where no individual property is material.

Another alternative would be to require summary information about the mining operations in aggregate but not for any individual property. Compared to the proposed requirements, this alternative would lower not only compliance costs but also the amount of information available to investors, especially when the registrant has material mining operations in aggregate but no individual mining property that is material.

The required summary disclosures would increase the accessibility of the information to investors and other data users. The proposed tabular formats (Tables 2 and 3), however, may not be readily machine-readable or directly comparable across filers without additional structure. An alternative to the proposed summary requirements would be also to require the disclosure required in Tables 2 and 3 to be made available in a structured data format, such as eXtensible Business Reporting Language (XBRL). When registrants provide disclosure items in a structured data format, investors and other data users (e.g., analysts) can more easily retrieve and use the information reported by registrants and perform comparisons of common disclosures

across registrants and reporting periods.⁴⁷⁸ Investors can download information directly into spreadsheets or statistical analysis software, which eliminates the need to enter the information manually and minimizes the time burden and risk of errors associated with data entry. The structuring of the data would require the development of a taxonomy (a standard list of tags necessary for reporting in XBRL), which in turn would require some level of standardization of the various data elements based on mining industry practices. To the extent that the proposed rules permit tailoring of the disclosures in Tables 2 and 3 to registrants' unique circumstances and provide filers with the flexibility in how to report the required information, the comparability of the data across registrants would be decreased, which in turn would decrease the usefulness of requiring the data in Tables 2 and 3 to be made available in the XBRL format.

A company may choose to tag its own disclosures in-house or to outsource the tagging process. Whether structured data filings are prepared in-house or by an outside service provider, registrants would incur additional costs to make the disclosure available in a structured data format, including initial set-up costs and ongoing costs. To the extent that such costs have a fixed component, they could impose a relatively greater burden on smaller registrants.

ii. Requirements for Individual Property Disclosure

As discussed above, the proposed requirements for individual property disclosure for material properties would standardize the current policies and requirements in Guide 7, Item 102 of Regulation S-K, and Form 20-F, including a requirement that registrants present most of the disclosure in tabular format. The proposed requirements would also increase the amount and type of individual property information that registrants disclose. Much of this new information

⁴⁷⁸ See Release No. 33-9002A (Apr. 1, 2009) [74 FR 15666] ("Financial Statement Information Adopting Release").

would be a direct consequence of the proposed new requirements to disclose material exploration results and mineral resources. Another new item of information would be the required comparison of a registrant'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 change between the two.

The standardizations of the proposed format for disclosures relative to the current disclosure regime should increase the effectiveness of the information conveyed to investors. The comparative year-to-year disclosure requirement should also help investors better understand the risk and prospects of the registrants' mining operations.

We expect that the tabular format of some of the individual property requirements could initially result in additional compliance costs. However, we expect that ultimately the costs for the disclosure of a registrant's mineral resources, mineral reserves and material exploration results may decline over time because companies should only have to incur the costs to update their systems and procedures to collect and structure the required information once, and thereafter will only have to update the reported information. The remainder of the individual property disclosure requirements should not increase costs to registrants since they are substantially similar to those currently provided under the existing disclosure regime.⁴⁷⁹

Similar to the above discussed requirement for summary disclosure, an alternative to the proposed requirements for individual property disclosure would be to require the disclosures in Tables 4 to 8 to be made available in XBRL format. This alternative would have the same

⁴⁷⁹ The costs we consider in this subsection are only the costs related to the format of the individual property disclosure requirements, as costs related to the proposed expansion of information required to be disclosed are discussed in preceding sections.

potential benefits and costs as those discussed above in Section IV.B.7.i.

iii. Requirements for Technical Report Summaries

We expect that the proposed technical report summary requirement would have the largest impact on registrants' compliance costs since currently only registrants from Canada and Australia are subject to a similar requirement.⁴⁸⁰ The proposed requirements for the technical report summaries are largely consistent with the items of information required under the Canadian NI 43-101 standards, with some relevant differences. One important difference is that NI 43-101 allows 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, while the proposed requirement would not allow such a disclaimer. The potential benefit of not allowing such a disclaimer is that it would give the qualified person, as a consenting expert, greater incentive to verify information included in the technical report that is provided by others. However, the resulting increase in legal liability could also raise the cost of hiring a qualified person.⁴⁸¹

iv. Requirements for Internal Controls Disclosure

The proposed requirement that a registrant describe the internal controls that it uses in the disclosure of its exploration results and in its estimates of mineral resources and mineral reserves would align the Commission's disclosure regime with the requirements of the CRIRSCO-based codes. Current rules and guidance do not address internal controls. Commission staff has, on a

⁴⁸⁰ We estimate that 113 out of the 345 existing mining registrants are currently also reporting in Canada or Australia.

⁴⁸¹ As discussed in Section II.F.3 above, other differences from NI 43-101 in the proposed requirement concern the structure of how certain types of information are presented, which we believe would enhance the presentation of the information without any significant impact on compliance costs relative to NI 43-101.

case-by-case basis when warranted by the specific facts and circumstances, requested a brief description of the quality control and quality assurance protocols used for exploration plans.

We expect disclosure of the internal controls that a registrant uses to improve significantly 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, and therefore also lead to more efficient investment decisions. We also expect the requirement to increase compliance costs for registrants. Registrants already disclosing internal controls in CRIRSCO jurisdictions or voluntarily providing such disclosures in their SEC filings should be largely unaffected by the proposed requirements.

8. Conforming Changes to Certain Forms Not Subject to Regulation S-K

i. Form 20-F

The proposed conforming changes to Form 20-F are intended to ensure consistency in the mining disclosures across both domestic registrants and foreign private issuers (excluding Canadian 40-F filers). The proposed changes would particularly 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 Guide 7 and the "foreign law" exception under Form 20-F. The proposed rules would eliminate this exception and may thus increase compliance costs for these registrants to the extent that, as discussed previously, the proposed disclosure requirements differ from NI 43-101.⁴⁸² That said, to the extent that these

⁴⁸² Although the disclosure requirements of the proposed rules are similar to those in NI 43-101, there are some differences that may impose additional costs. For example, the requirements in the proposed rules concerning how to determine prices for mineral reserve estimates are different from those in NI 43-101. In addition, the proposed rules require that the qualified person conduct a preliminary evaluation of the relevant modifying factors to establish the prospects of economic extraction in estimating resources, which NI 43-101 does not.

differences in disclosure requirements also provide expected incremental benefits, these benefits would mitigate any increase in compliance costs.

ii. Form 1-A

The proposed conforming changes to Form 1-A would subject Regulation A issuers with material mining operations to the full mining disclosure requirements in the proposed subpart 1300 of Regulation S-K. Thus, these issuers may incur the benefits and costs of these requirements, as previously discussed. Because Regulation A issuers are typically smaller companies, the economic considerations discussed above about smaller companies would apply to this group of issuers. In general, we expect that the proposed rules would benefit Regulation A issuers given that smaller companies typically suffer a higher degree of information asymmetry between the company and investors, which may increase capital costs and lower access to financing. Nevertheless, the expected increase in compliance costs from the proposed mining disclosures requirements may be of particular importance for mining issuers that are likely to consider Regulation A offerings. Under the proposed requirements, mining issuers would be able to avoid the costs associated with the prescribed technical reports by forgoing disclosure of exploration results, mineral resources, and reserves, as defined, which would mitigate any negative effect of increased compliance costs on the propensity to use a Regulation A offering. Mining issuers may also be able to avoid costs by choosing to offer securities under other exemptions under the Securities Act, such as Regulation D. However, this may put such issuers at a competitive disadvantage relative to their peers who are raising capital with the benefit of these disclosures.

One alternative to the proposed conforming changes 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. Another alternative we considered would be to require disclosure only of the information in the proposed summary disclosure requirement discussed in Section II.F, including for issuers that only own one material mining property. This would lower compliance costs, but would also reduce the information to investors about material mining properties.

9. Compliance Costs of Preparing and Filing Forms

The most significant compliance costs associated with the proposed rules for mining disclosure would likely be the costs associated with engaging qualified persons and the technical analyses and reports they prepare. Registrants would also incur direct compliance costs from the proposed rules related to preparing and incorporating the required information in relevant Commission forms. For purposes of the Paperwork Reduction Act, we analyze these costs in more detail in Section V, but for the average firm, we expect an increase of 44.64 internal company burden hours and an increase of costs for outside professionals equal to \$11,975.⁴⁸³ As we discuss in Section V, we expect the incremental company burden hours and professional costs would be lower than these estimates for registrants subject to CRIRSCO-based codes and larger for registrants not subject to such codes. Moreover, the incremental burden and costs would likely vary with the size and complexity of the registrant's mining operations.

C. Anticipated Impact on Efficiency, Competition, and Capital Formation

We expect the proposed disclosure requirements to increase the amount and quality of

⁴⁸³ The average increase in internal burden hours and outside professional costs are calculated using the estimates of total incremental company burden hours (15,400) and total incremental professional costs (\$4,131,200), as reported in Table 2 of Section V.D, *supra*, and dividing them by the estimated number of total annual responses (345).

disclosed information about registrants' mining operations, and thereby to have a positive effect on efficiency and capital formation. For example, the proposed rules would require registrants with material mining operations to disclose determined mineral reserves, mineral resources and material exploration results. These proposed requirements would 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 any uncertainty surrounding the disclosures. In turn, reduced information asymmetries and reduced uncertainty about the disclosures would help investors achieve a more efficient capital allocation, while reducing the cost of capital and enhancing capital formation for registrants.⁴⁸⁴

In particular, we believe that the proposed requirements for disclosure of material exploration results and mineral resources would 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 reported mineral reserves. As a result, we expect the anticipated positive effects on efficiency and capital formation to be relatively larger for smaller

⁴⁸⁴ 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 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.

registrants. However, these effects would only materialize to the extent smaller registrants make the required investment in the studies that are required to support disclosure in the first place. We anticipate that there likely are 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 proposed rules, there may be exceptions. As discussed previously, we expect that the proposed disclosure requirements would 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). Therefore, despite the anticipated benefits from the proposed disclosure requirements, some registrants may find that these benefits do not outweigh the compliance costs and reduce what they disclose currently.

The positive effects we expect on efficiency and capital formation from the proposed rules would be lower for the registrants that currently report in foreign jurisdictions with CRIRSCO-based disclosure codes. These registrants to a large degree already provide the proposed disclosures. This is particularly the case for Canadian registrants, who disclose the information pursuant to NI 43-101 standards in their Forms 20-F under the “foreign or state law” exception.

We expect the proposed rules to have some 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 the CRIRSCO-based codes, the proposed rules would 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.⁴⁸⁵ In particular the qualified person requirement and associated requirements for the supporting technical studies may improve the global competitiveness 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 proposed rules.

D. Request for Comment

We request comment on the costs and benefits described throughout this release. We seek estimates of these costs and benefits, as well as any costs and benefits not already identified, that may result from the adoption of the proposed rules. We also request qualitative feedback on the nature of the economic effects, including the benefits and costs, we have identified and any benefits and costs we may have overlooked. We request comment from the point of view of registrants, investors, mining professionals such as geologists and engineers, and other market participants. We further seek information that would help us quantify or otherwise qualitatively assess the impact of the proposed rules on efficiency, competition, and capital formation. In addition, we seek information on how any impact on efficiency, competition, and capital

⁴⁸⁵ There could be an opposite effect in some cases. Among foreign private issuers, the registrants not currently reporting in foreign jurisdictions based on CRIRSCO 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 seven (as of December 2015) foreign private issuers that are not subject to CRIRSCO 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 to list, none of whose markets are as developed or robust as the U.S. or other financial markets that have such standards.

formation would vary with company size.

In particular, we request comment on the following:

124. We seek comment and data on the magnitude of the costs and benefits identified as well as any other costs and benefits that may result from the adoption of the proposed rules. In addition, we are interested in views regarding these costs and benefits for particular types of covered registrants, such as smaller registrants or registrants currently reporting according to CRIRSCO-based disclosure codes.
125. We seek information that would help us quantify compliance costs. In particular, we invite comment from registrants or other mining companies that have had experience reporting under any of the CRIRSCO-based disclosure codes. For example, what are the costs associated with the qualified person requirement? If reporting in Canada or Australia, what are the costs associated with producing and filing the technical report summaries?
126. We invite comment on the structure of compliance costs. In particular, to what extent are the compliance costs fixed versus variable? Are there scale advantages or disadvantages in the compliance costs, both in terms of project size or company size?
127. Are our estimates of the difference in costs of a pre-feasibility study relative to a feasibility study reasonable? If not, what would be more reasonable estimates of the difference in costs?
128. We also seek comment on the alternatives to the proposed rules discussed in this section, and to the costs and benefits of each alternative. Are there any other alternatives that we should consider in lieu of the proposed rules? If so, what are those alternatives and what are their expected costs and benefits?

129. We are interested in comments and data related to any potential competitive effects from the proposed rules. In particular, we are interested in evidence and views on the current global competitive situation of U.S. mining registrants as well as the attractiveness of U.S. securities markets for foreign mining companies. To what extent does the current mining disclosure regime affect this competitive situation, if at all? Would the proposed rules improve the global competitiveness of U.S. mining registrants and securities markets? If so, how?

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”).⁴⁸⁶ The Commission is submitting the proposed rules to the Office of Management and Budget (“OMB”) for review in accordance with the PRA.⁴⁸⁷ The titles for the collections of information are:

- “Regulation S-K” (OMB Control No. 3235-007);⁴⁸⁸
- “Form S-1” (OMB Control No. 3235-0065);
- “Form S-4” (OMB Control Number 3235-0324);
- “Form F-1” (OMB Control Number 3235-0258);

⁴⁸⁶ 44 U.S.C. 3501 *et seq.*

⁴⁸⁷ 44 U.S.C. 3507(d) and 5 CFR 1320.11.

⁴⁸⁸ 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.

- “Form F-4” (OMB Control Number 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); and
- Regulation A (Form 1-A) (OMB Control Number 3235-0286).

We adopted Regulation S-K and these forms pursuant to the Securities Act or the Exchange Act. Regulation S-K and the forms, other than Form 1-A, set forth the disclosure requirements for annual reports and registration statements 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. 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. Compliance with the proposed rules would be mandatory. Responses to the information collections would not be kept confidential, and there would be no mandatory retention period for the information disclosed.

B. Summary of Collection of Information Requirements

The proposed rules would require a registrant with material mining operations to disclose its determined mineral resources, mineral reserves and material 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,⁴⁸⁹ and in Regulation A offering statements filed on Form 1-A. The proposed rules would further require that such a registrant base its disclosure regarding mineral resources, mineral reserves and material exploration results in SEC filings on information and supporting documentation by a qualified person. In addition, the proposed rules would require a registrant with material mining operations to file as an exhibit to its Securities Act registration statement, Exchange Act registration statement or report, or its Form 1-A offering statement, 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 SEC form. The proposed rules would require the filing of the technical report summary when the registrant first reports mineral resources, mineral reserves or material exploration results or when it reports a material change in a prior disclosure of resources, reserves or exploration results.

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.⁴⁹⁰ In addition, the existing regime permits, but does not require, the disclosure of material exploration results. The existing regime also does not currently require a

⁴⁸⁹ 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 proposed rule amendments would 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.

⁴⁹⁰ Because only Canada has adopted its mining code as a matter of law, the disclosure of non-reserves in SEC filings has been limited to Canadian registrants.

registrant to base its mining disclosure on information and supporting documentation of a qualified person.

Accordingly, we expect the proposed rules would cause an increase in the reporting and cost burdens for each collection of information. The additional requirements imposed by the proposed rules would, however, be similar to requirements under foreign (CRIRSCO-based) mining codes. As such, 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 proposed rules' requirements and those under the CRIRSCO-based codes, we expect there would be some increase in reporting and cost burdens even for those registrants already subject to foreign mining code requirements.⁴⁹¹

C. Estimate of Potentially Affected Registrants

We estimate the number of registrants potentially affected by the proposed rules to be 345.⁴⁹² Of these registrants, we estimate that 129 are already subject to the disclosure requirements under one or more CRIRSCO-based codes and, therefore, likely would incur a lesser increase in reporting and cost burdens to comply with the proposed rules' requirements.⁴⁹³ Accordingly, we estimate that 216 registrants would bear the full paperwork burden of the proposed rules.

⁴⁹¹ For example, unlike the CRIRSCO-based codes, the proposed rules would require a particular type of technical study, an "initial assessment," to support the disclosure of mineral resources in SEC filings. See section II.E.3, supra.

⁴⁹² 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 2014 through December 2015.

⁴⁹³ Most of these registrants are subject to the disclosure requirements in Canada's NI 43-101.

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 proposed 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
# Affected Registrants Subject to CRIRSCO Requirements	7	3	1	1	0	46	70	1	129
# Affected Registrants Not Subject to CRIRSCO Requirements	29	6	0	0	5	169	7	0	216
Total # Affected Registrants	36	9	1	1	5	215	77	1	345

D. Estimate of Reporting and Cost Burdens

We have estimated the reporting and cost burdens of the proposed rules by estimating the average number of hours it would take a registrant to prepare, review and file the disclosure required by the proposed rules for each collection of information. In deriving our estimates, we recognize that the burdens would 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 would be substantially the same for each collection of information since the proposed rules would require substantially the same disclosure for a Securities Act registration statement or Regulation A offering statement as they would for an Exchange Act registration statement or report. The sole

difference between the proposed 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 would be required to obtain and file as an exhibit the written consent of each qualified person whose information and supporting documentation as an expert provide the basis for the disclosure required under the amendments.⁴⁹⁴ To account for this difference, we have allocated one extra hour to the reporting burdens estimated for the Securities Act registration statement forms and Regulation A's Form 1-A.

We estimate that the proposed rules would cause a registrant that is not already subject to CRIRSCO requirements to incur an increase of 96 hours in the reporting burden for each Securities Act registration statement (Forms S-1, S-4, F-1, and F-4), and an increase of 95 hours in the reporting burden for each Exchange Act registration statement or annual report (Forms 10, 10-K and 20-F.) For a registrant that is subject to the CRIRSCO requirements, we estimate that the proposed rules would 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.

We have based our estimated burden hours and costs under the proposed 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

⁴⁹⁴ A Securities Act registrant must file the written consent of an expert upon which it has relied pursuant to Securities Act Rule 436 (17 CFR 230.436). 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.

Canada's NI 43-101 and Australia's JORC).⁴⁹⁵ The engineers' estimates of time and costs for NI 43-101 and JORC reporting were adjusted for the differences between the proposed rules and those standards.

The following tables summarize, respectively, the estimated incremental and total reporting costs and burdens resulting from the proposed 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.⁴⁹⁶ 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 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 registrant burden hours for each form under the proposed 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

⁴⁹⁵ These estimates include the burden associated with preparing a technical report summary to support the disclosure of mineral resources, mineral reserves and material exploration results. 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 50 hours, to prepare the required technical report summary.

⁴⁹⁶ 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.

subject to the CRIRSCO requirements.⁴⁹⁷ 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 under the proposed rules by first estimating the incremental professional costs as a weighted average of the incremental professional costs estimated to be incurred by registrants subject 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.⁴⁹⁸

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 proposed rules is 15,400 burden hours. We further estimate that the resulting total incremental professional costs for all forms under the proposed rules is \$4,131,200.⁴⁹⁹

PRA TABLE 2: ESTIMATED INCREMENTAL BURDEN AND COSTS UNDER THE PROPOSED RULES

⁴⁹⁷ For example, we determined the estimated incremental burden hours for Form S-1 as follows: 41 hours \times 0.25 = 10.25 internal burden hours for CRIRSCO filers; 10.25 hours \times 7 = 71.75 total incremental hours for CRIRSCO filers. 96 hours \times 0.25 = 24 internal burden hours for non-CRIRSCO filers; 24 hours \times 29 = 696 total incremental burden hours for non-CRIRSCO filers. 71.75 hours + 696 hours = 767.75 total internal hours (or 768 hours rounded to the nearest whole number). 768 hours/36 = 21.33 avg. incremental burden hours.

⁴⁹⁸ For example, we determined the estimated incremental professional costs for Form S-1 as follows: 41 hours \times 0.75 = 30.75 outside hours for CRIRSCO filers; 30.75 hours \times 7 = 215.25 total outside hours for CRIRSCO filers. 96 hours \times 0.75 = 72 outside hours for non-CRIRSCO filers; 72 hours \times 29 = 2088 total outside hours for non-CRIRSCO filers. 215.25 hours + 2088 hours = 2303.25 total outside hours. 2303.25 hours \times \$400 = \$921,300 total incremental professional costs.

⁴⁹⁹ The total incremental burden hours and total incremental professional costs are rounded to the nearest whole number.

	Number of Annual Responses (A)	Hour Burden Per Response (B)	Total Incremental Registrant Burden Hours* (C) = (A) x (B)	Incremental Professional Costs (D)	Total Incremental Professional Costs* (E) = (A) x (D)
Form S-1	36	21.33	768	\$25,591.67	\$921,300
Form S-4	9	19.42	175	\$23,300	\$209,700
Form F-1	1	10.25	10	\$12,300	\$12,300
Form F-4	1	10.25	10	\$12,300	\$12,300
Form 10	5	23.75	119	\$28,500	\$142,500
Form 10-K	215	62.42	13,421	\$8,323.26	\$1,789,500
Form 20-F	77	11.25	866	\$13,500	\$1,039,500
Regulation A (Form 1-A)	1	30.75	31	\$4,100	\$4,100
Total	345		15,400		\$4,131,200

*rounded to nearest whole number

We have determined the estimated total burden of complying with the proposed 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 under the proposed rules 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 proposed rules, the estimated annual burden for all forms would increase to 13,753,285 hours, compared to the current annual estimate of 13,737,885 hours. We further estimate that the proposed rules would result in estimated annual professional costs for all forms of \$3,329,079,082, compared to the current annual estimate of \$3,324,947,882.

PRA TABLE 3: ESTIMATED TOTAL BURDEN AND COSTS UNDER THE PROPOSED RULES

	Current Annual Responses	Proposed Annual Responses	Current Burden Hours	Increase in Burden Hours	Proposed Burden Hours	Current Professional Costs	Increase in Professional Costs	Proposed Professional Costs
Form S-1	901	901	219,015	768	219,783	\$262,818,096	\$921,300	\$263, 739,396
Form S-4	619	619	634,425	175	634,600	\$761,310,576	\$209,700	\$761,520,276
Form F-1	63	63	28,462	10	28,472	\$34,154,568	\$12,300	\$34,166,868
Form F-4	68	68	24,769	10	24,779	\$29,722,800	\$12,300	\$29,735,100
Form 10	238	238	12,805	119	12,924	\$15,366,042	\$142,500	\$15,508,542
Form 10-K	8,137	8,137	12,198,095	13,421	12,211,515	\$1,627,400,000	\$1,789,500	\$1,629,189,500
Form 20-F	725	725	479,501	866	480,367	\$575,400,600	\$1,039,500	\$576,440,100
Reg. A (Form 1-A)	250	250	140,813	31	140,844	\$18,775,200	\$4,100	\$18,779,400
Total	11,001	11,001	13,737,885	15,400	13,753,285	\$3,324,947,882	\$4,131,200	\$3,329,079,082

E. Request for Comments

We request comments in order to evaluate: (1) whether the proposed collections of information are necessary for the proper performance of the functions of the agency, including whether the information would have practical utility; (2) the accuracy of our estimate of the burden of each proposed collection of information; (3) whether there are ways to enhance the quality, utility, and clarity of the information to be collected; (4) whether there are ways to minimize the burden of the collections of information on those who are to respond, including through the use of automated collection techniques or other forms of information technology;

and (5) whether the proposed rules would have any effects on any other collections of information not previously identified in this section.⁵⁰⁰

Any member of the public may direct to us any comments about the accuracy of these burden estimates and any suggestions for reducing these burdens. Persons submitting comments on the collection of information requirements should direct the comments to the Office of Management and Budget, Attention: Desk Officer for the Securities and Exchange Commission, Office of Information and Regulatory Affairs, Washington, DC 20503, and should send a copy to Brent J. Fields, Secretary, Securities and Exchange Commission, 100 F Street, NE, Washington, DC 20549-1090, with reference to File No. S7-10-16. Requests for materials submitted to OMB by the Commission with regard to these collections of information should be in writing, refer to File No. S7-10-16, and be submitted to the Securities and Exchange Commission, Office of FOIA Services, 100 F Street NE, Washington, DC 20549-2736. OMB is required to make a decision concerning the collection of information between 30 and 60 days after publication of this release. Consequently, a comment to OMB is best assured of having its full effect if OMB receives it within 30 days of publication.

VI. INITIAL REGULATORY FLEXIBILITY ACT ANALYSIS

The Regulatory Flexibility Act (“RFA”)⁵⁰¹ requires the Commission, in promulgating rules under Section 553 of the Administrative Procedures Act,⁵⁰² to consider the impact of those

⁵⁰⁰ We request comment pursuant to 44 U.S.C. 3506(c)(2)(B).

⁵⁰¹ 5 U.S.C. 601 *et seq.*

⁵⁰² 5 U.S.C. 553.

rules on small entities. Section 603(a) of the RFA⁵⁰³ generally requires the Commission to undertake a regulatory flexibility analysis of all proposed rules.

A. Reasons For, and Objectives of, the Proposed Action

The proposed rules are intended to modernize the Commission’s mining disclosure requirements and policies by conforming them to current industry and global regulatory practices and standards. In so doing, the proposed rules seek to provide investors with a more comprehensive understanding of a registrant’s mining operations, which should help them make more informed investment decisions. As noted above, the proposed rules would:

- provide a clear and consistent standard for when registrants with mining operations are required to provide the applicable mining disclosures;
- consolidate current mining disclosure requirements and standards and related Commission and staff guidance;
- require the disclosure of determined mineral resources and material exploration results; and
- require that a registrant’s disclosure of exploration results, mineral resources or mineral reserves be based upon and fairly reflect information and supporting documentation prepared by a mining industry professional having the requisite level of expertise.

B. Legal Basis

We are proposing the rule amendments 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.

⁵⁰³ 5 U.S.C. 603(a).

C. Small Entities Subject to the Proposed Rule Amendments

The proposed rules would affect small entities that have, or for which it is probable that they will have, material mining operations, and which file registration statements under Section 6 of the Securities Act 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.⁵⁰⁴ From staff review of Securities Act and Exchange Act filings made by registrants with mining operations from January 2014 through December 2015, we estimate that there are approximately 176 issuers that may be considered small entities.

D. Reporting, Recordkeeping, and Other Compliance Requirements

As described in greater detail above, the proposed rules would add to the Securities Act and Exchange Act disclosure requirements of registrants, including small entities, with material mining operations by requiring:

- the disclosure of determined mineral resources and material exploration results in addition to mineral reserves;
- the disclosure of exploration results, mineral resources and mineral reserves in SEC filings to be based on and accurately reflect information and supporting documentation prepared by a qualified person; and

⁵⁰⁴ See Securities Act Rule 157 (17 CFR 230.157); and Exchange Act Rule 0-10(a) (17 CFR 240.0-10(a)).

- the filing of a technical report summary prepared by a qualified person for each material property for certain SEC filings.

The proposed rules would also codify certain existing disclosure policies for registrants with material mining operations, including small entities. The same mining disclosure requirements would apply to both U.S. and foreign registrants.

E. Duplicative, Overlapping or Conflicting Federal Rules

As noted above, the proposed rules would generally establish new mining disclosure requirements that we believe would not duplicate or overlap with other federal rules. The proposed rules would consolidate all of the Commission's mining disclosure requirements. The proposed rules would further harmonize certain existing disclosure requirements and policies, including the disclosure standard for mining disclosure. We believe that this consolidation would 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. We do not believe that the proposed rules would conflict with other federal rules.

F. Significant Alternatives

As noted above, we considered a number of alternatives to the proposed rules. In considering these alternatives, we sought to accomplish our stated objectives, while minimizing any significant economic impact on small entities. In connection with the proposed rules, we considered the following:

- Establishing different compliance or reporting requirements or timetables that take into account the resources available to small entities;
- Clarifying, consolidating or simplifying compliance and reporting requirements under the rules for small entities;

- Use of performance rather than design standards; and
- Exempting small entities from all or part of the proposed rules.

Neither the current mining disclosure requirements nor the proposed 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 disclosure concerning those entities' mineral resources, mineral reserves and material exploration results, to the detriment of investors. Moreover, as noted above, a primary goal of the proposed rules is generally to align the Commission's mining disclosure regime with the standards that have developed under the foreign (CRIRSCO-based) codes so that investors would have a more complete understanding of a registrant's mining operations. Those codes do not provide for 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, given that the majority of mining registrants are small entities, exempting them from the proposed rules would effectively disapply the Commission's mining disclosure regime to most of the companies for which such disclosure would be potentially beneficial.⁵⁰⁵

As noted above, the proposed rules would consolidate existing mining 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 proposed rules because, based on our past experience, we believe the proposed rules would be more beneficial

⁵⁰⁵ See Section IV.B.3., supra.

to investors if there were specific disclosure requirements that were uniform for all registrants with material mining operations. The specific disclosure requirements in the proposed rules are intended to promote consistent and comparable disclosure among all such registrants.

G. Request for Comment

We encourage the submission of comments with respect to any aspect of this Initial Regulatory Flexibility Analysis. In particular, we request comments regarding:

- how the proposed rule amendments can achieve their objective while lowering the burden on small entities;
- the number of small entity companies that may be affected by the proposed amendments;
- the existence or nature of the potential impact of the proposed amendments on small entity companies discussed in the analysis; and
- how to quantify the impact of the proposed amendments.

Respondents are asked to describe the nature of any impact and provide empirical data supporting the extent of the impact. We will consider such comments in the preparation of the Final Regulatory Flexibility Analysis, if the proposed rule amendments are adopted, and will place those comments in the same public file as comments on the proposed amendments themselves.

VII. SMALL BUSINESS REGULATORY ENFORCEMENT FAIRNESS ACT

For purposes of the Small Business Regulatory Enforcement Fairness Act of 1996,⁵⁰⁶ a rule is “major” if it has resulted, or is likely to result in:

⁵⁰⁶ Pub. L. No. 104-121, Title II, 110 Stat. 857 (1996).

- an annual effect on the U.S. economy of \$100 million or more;
- a major increase in costs or prices for consumers or individual industries; or
- significant adverse effects on competition, investment, or innovation.

We request comment and empirical data on whether our proposal would be a “major rule” for purposes of the Small Business Regulatory Enforcement Fairness Act.

VIII. STATUTORY AUTHORITY

We are proposing 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 Parts 229 and 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 proposed to be 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, 78l, 78m, 78n, 78n-1, 78o, 78u-5, 78w, 78ll, 78 mm, 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; Sec. 102(a)(3) Pub. L. 112-106, 126 Stat. 309; and Sec. 84001, Pub. L. 114-94, 129 Stat. 1312.

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 to Item 102 consecutively 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;
 - 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 revisions read 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 Subpart 1300 of Regulation S-K (§§ 229.1301 *et seq.*), in addition to any disclosure required by this section.

* * * * *

3. Amend § 229.601 by revising the exhibit table in paragraph (a) and adding paragraph (b)(96) to read as follows:

§229.601 (Item 601) Exhibits.

* * * * *

EXHIBIT TABLE

* * * * *

Exhibit Table

Securities Act Forms											Exchange Act Forms					
	S-1	S-3	SF-1	SF-3	S-4	S-8	S-11	F-1	F-3	F-4	10	8-K	10-D	10-Q	10-K	ABS-EE

* * * * *

(96) Technical report summary ⁷	X	X			X			X	X	X	X					X	
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⁷ If required pursuant to Item 1302 of Regulation S-K.

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(b) * * *

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(96) *Technical report summary.* (i) A registrant that, pursuant to subpart 1300 of Regulation S-K (§§ 229.1301 *et seq.*), discloses information concerning its mineral resources,

mineral reserves or material exploration results must file a technical report summary by a qualified person that, for each material property, identifies and summarizes the scientific and technical information and conclusions reached concerning 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. Pursuant to § 229.1302(b), a registrant must file the technical report summary as an exhibit to its Securities Act registration statement or Exchange Act registration statement or report when disclosing for the first time mineral resources, mineral reserves or material exploration results or when there is a material change in the mineral resources, mineral reserves or exploration results from the last technical report summary filed for the property.

(ii) The qualified person must sign and date the technical report summary. The qualified person's signature must comply with 17 CFR 230.402(e) or 17 CFR 240.12b-11(d).

(iii) 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 17 CFR 230.421 or 17 CFR 240.13a-20.

(iv)(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 (iv)(B) of this Item. A technical report summary that reports the results of an initial assessment must, at a minimum, provide the information specified in paragraphs (iv)(B)(1) through (13) and (iv)(B)(22) through (26) of this Item, and may also include the information specified in paragraph (iv)(B)(21) of this Item. A technical report summary that reports material exploration results must, at a minimum,

provide the information specified in paragraphs (iv)(B)(1) through (11) and (iv)(B)(22) through (26) of this Item.

(B) A qualified person must include the following information in the technical report summary, as required by paragraph (iv)(A) of this Item.

(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;

(iii) The sources of information and data contained in the technical report summary or used in its preparation, with citations if applicable; and

(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.

Instruction to paragraph (b)(96)(iv)(B)(2): The qualified person must state whether the technical report summary's purpose was to report mineral resources, mineral reserves or material exploration results. The qualified person must also state, when applicable, that the technical

report summary updates a previously filed technical report summary. When filing an update, the qualified person must identify the previous technical report summary by name and date.

(3) *Property Description*. Describe:

(i) 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) The area of the property;

(iii) 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) 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) Any significant encumbrances to the property, including current and future permitting requirements and associated timelines, permit conditions, and violations and fines; and

(vi) Any other significant factors and risks that may affect access, title, or the right or ability to perform work on the property.

Instruction to paragraph (b)(96)(iv)(B)(3): If the registrant holds a royalty or similar interest in the property, the information in paragraph (b)(96)(iv)(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*. Describe briefly:

(i) The regional, local, and property geology;

(ii) 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; and

(iii) 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 exploration program.

Instruction to paragraph (b)(96)(iv)(B)(6): The qualified person must include at least one stratigraphic column and one cross-section of the local geology to meet the requirements of this paragraph.

(7) *Hydrogeology*. Describe:

(i) The nature and quality of the sampling methods used to acquire data on surface and groundwater parameters;

(ii) The type and appropriateness of laboratory techniques used to test for groundwater flow parameters such as permeability. Include discussions of the quality control and quality assurance procedures;

(iii) Results of laboratory testing and the qualified person's interpretation, including any material assumptions. The interpretation must include descriptions of permeable zones or aquifers, flow rates, in-situ saturation, recharge rates and water balance; and

(iv) The groundwater models used to characterize aquifers, including material assumptions used in the modeling.

(8) *Geotechnical Data, Testing and Analysis*. Describe:

(i) The nature and quality of the sampling methods used to acquire geotechnical data;

(ii) 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

(iii) Results of laboratory testing and the qualified person's interpretation, including any material assumptions.

(9) *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:

(A) The procedures and parameters relating to the surveys and investigations;

(B) The sampling methods and sample quality, including whether the samples are representative, and any factors that may have resulted in sample biases;

(C) The location, number, type, nature, and spacing or density of samples collected, and the size of the area covered; and

(D) The significant results of and the qualified person's interpretation of the exploration information.

(ii) For drilling, describe:

(A) The type and extent of drilling including the procedures followed;

(B) Any drilling, sampling, or recovery factors that could materially impact the accuracy and reliability of the results; and

(C) The material results and interpretation of the drilling results.

Instruction 1 to paragraph (b)(96)(iv)(B)(9): The technical report summary must comply with all disclosure standards for material exploration results under Regulation S-K Subpart 1300 (§§ 229.1301 *et seq.*).

Instruction 2 to paragraph (b)(96)(iv)(B)(9): For a technical report summary to support disclosure of material exploration results, the qualified person must provide information on all samples or drill holes to meet the requirements of paragraph (b)(96)(iv)(B)(9)(ii) of this section. If some information is excluded, the qualified person must identify the omitted information and explain why that information is not material.

Instruction 3 to paragraph (b)(96)(iv)(B)(9): 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)(iv)(B)(9)(ii) of this section by providing sampling (including drilling) plans, representative plans and cross-sections of results.

Instruction 4 to paragraph(b)(96)(iv)(B)(9): Reports must include a plan view of the property showing locations of all drill holes and other samples.

(10) 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; and

(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.

Instruction to paragraph (b)(96)(iv)(B)(10): This item must also include the author's opinion on the adequacy of sample preparation, security, and analytical procedures. 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) 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.

(12) *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; and

(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.

Instruction to paragraph (b)(96)(iv)(B)(12): This item must include the qualified person's opinion on the adequacy of the data for the purposes used in the technical report summary. 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.

(13) *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;

(ii) Provide estimates of mineral resources for all commodities, including estimates of quantities, grade or quality, cut-off grades, and metallurgical or processing recoveries; and

(iii) Provide the qualified person's opinion on whether all issues relating to all relevant modifying factors can be resolved with further work.

Instruction 1 to paragraph (b)(96)(iv)(B)(13): The technical report summary must comply with all disclosure standards for mineral resources under subpart 1300 of Regulation S-K (§§ 229.1301 *et seq.*).

Instruction 2 to paragraph (b)(96)(iv)(B)(13): 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.

Instruction 3 to paragraph (b)(96)(iv)(B)(13): The qualified person must classify mineral resources into inferred, indicated, and measured mineral resources in accordance with § 229.1303 and § 229.1304. The qualified person must state the uncertainty in the estimates of inferred, indicated, and measured mineral resources and discuss the sources of uncertainty and how they were considered in the uncertainty estimates. Uncertainty estimates for indicated and measured mineral resources must be stated in the form “±x% relative accuracy at y% confidence level over [annual, quarterly, or monthly] production quantities.” Uncertainty estimates for inferred mineral resources must 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.”

Instruction 4 to paragraph (b)(96)(iv)(B)(13): The qualified person must consider all sources of uncertainty when reporting the 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 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.

Instruction 5 to paragraph (b)(96)(iv)(B)(13): 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 (i.e. confidence limits for indicated and measured mineral resources and the proportion of inferred resources expected to be converted to indicated or measured mineral resources with further exploration) underlying the resource.

Instruction 6 to paragraph (b)(96)(iv)(B)(13): Sections 1303 and 1304 of Regulation S-K (§ 229.1303 and § 229.1304) 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. If the qualified person chooses to disclose resources inclusive of mineral reserves, he or she must also clearly state the mineral resources exclusive of mineral reserves in the technical report summary.

Instruction 7 to paragraph (b)(96)(iv)(B)(13): The technical report summary must include mineral resource estimates of in-situ material, plant or mill feed, and saleable product.

Instruction 8 to paragraph (b)(96)(iv)(B)(13): The qualified person must estimate cut-off grades based on assumed costs for surface or underground operations and commodity prices that are no higher than 24-month average prices. The qualified person may use sales prices as determined by applicable contractual agreements.

Instruction 9 to paragraph (b)(96)(iv)(B)(13): Unless otherwise stated, cut-off grades also refer to net smelter returns, pay limits and other similar terms.

Instruction 10 to paragraph (b)(96)(iv)(B)(13): When the qualified person reports the grade or quality for a multiple commodity mineral resource as metal or mineral equivalent, he or she must also report 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.

(14) *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;

(ii) Provide estimates of mineral reserves for all commodities, including estimates of quantities, grade or quality, cut-off grades, and metallurgical or processing recoveries;

(iii) 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; and

(iv) If a pre-feasibility study is used to support mineral reserve disclosure, the qualified person must provide a justification for using a pre-feasibility study instead of a feasibility study.

Instruction 1 to paragraph (b)(96)(iv)(B)(14): The technical report summary must comply with all disclosure standards for mineral resources under subpart 1300 of Regulation S-K (§§ 229.1301 *et seq.*)

Instruction 2 to paragraph (b)(96)(iv)(B)(14): The qualified person preparing mineral reserve estimates must round off, to appropriate significant figures chosen to reflect order of accuracy, any estimates of quantity and grade or quality.

Instruction 3 to paragraph (b)(96)(iv)(B)(14): The qualified person must classify mineral reserves into probable and proven mineral reserves in accordance with § 229.1303 and § 229.1304.

Instruction 4 to paragraph (b)(96)(iv)(B)(14): The technical report summary must include mineral reserve estimates of in-situ material, plant or mill feed, and saleable product.

Instruction 5 to paragraph (b)(96)(iv)(B)(14): The qualified person must estimate cut-off grades based on detailed cut of grade analysis that includes long term prices that are no higher than the 24-month historical average prices. The qualified person may use the sales prices as determined by applicable contractual agreements.

Instruction 6 to paragraph (b)(96)(iv)(B)(14): When the qualified person reports the grade or quality for a multiple commodity mineral reserve as metal or mineral equivalent, he or she must also report 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.

(15) 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; and

(iv) Required mining equipment fleet and machinery, and personnel.

Instruction to paragraph (b)(96)(iv)(B)(15): The qualified person must include at least one map of the final mine outline.

(16) 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; and

(iii) Current or projected requirements for energy, water, process materials, and personnel.

Instruction 1 to paragraph (b)(96)(iv)(B)(16): If the processing method, plant design or other parameters have never been used to successfully 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.

Instruction 2 to paragraph (b)(96)(iv)(B)(16): 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 no mineral resources or reserves can be disclosed on the basis of that method.

(17) *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.

Instruction to paragraph (b)(96)(iv)(B)(17): The qualified person must include at least one map showing the layout of the infrastructure.

(18) *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 terms, rates or charges the same as could be obtained had the contract been negotiated at arm's length with an unaffiliated third party.

(19) *Environmental Studies, Permitting, and Social or Community Impact.* Describe the environmental, permitting, and social or community factors 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 post mine closure;

(iii) Project permitting requirements, the status of any permit applications, and any known requirements to post performance or reclamation bonds;

(iv) Requirements and plans for social or community engagement and the status of any negotiations or agreements with local communities;

(v) Mine closure plans, including remediation and reclamation plans, and the associated costs; and

(vi) The qualified person's opinion on the adequacy of current plans to address any issues related to environmental, permitting and social or community factors.

Instruction to paragraph (b)(96)(iv)(B)(19): The qualified person must include descriptions of any commitments to ensure local procurement and hiring.

(20) *Capital and Operating Costs.* 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.

Instruction to paragraph (b)(96)(iv)(B)(20): 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, 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.

(21) *Economic Analysis*. Describe:

(i) The key assumptions, parameters, and methods used to demonstrate economic viability;

(ii) 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; and

(iii) 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.

Instruction 1 to paragraph (b)(96)(iv)(B)(21): The qualified person may, but is not required to, include an economic analysis in an initial assessment. If an initial assessment includes this item, the economic analysis must be based on only measured and indicated mineral resources. The qualified person must not include inferred mineral resources in any economic analysis.

Instruction 2 to paragraph (b)(96)(iv)(B)(21): 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.

Instruction 3 to paragraph (b)(96)(iv)(B) (21): To comply with paragraph (b)(96)(iv)(B) (21)(i) of this section, the qualified person must 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.

(22) *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; and

(iv) The technical report clearly distinguishes between the information from the adjacent property and the information from the property that is the subject of the technical report summary.

(23) *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 subpart 1300 of Regulation S-K (§§ 229.1301 *et seq.*).

(24) *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.

(25) *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.

(26) *References.* Include a list of all references cited in the technical report summary in sufficient detail so that a reader can locate each reference.

4. Amend § 229.801 by removing paragraph (g).
5. Amend § 229.802 by removing paragraph (g).
6. Amend Part 229 by adding Subpart 229.1300.

The addition reads as follows:

Subpart 229.1300—Disclosure by Registrants Engaged in Mining Operations

Sec.

229.1301 (Item 1301) General instructions and definitions.

229.1302 (Item 1302) Qualified person, technical report summary, and technical studies.

229.1303 (Item 1303) Summary disclosure.

229.1304 (Item 1304) Individual property disclosure.

229.1305 (Item 1305) Internal controls disclosure.

Subpart 229.1300—Disclosure by Registrants Engaged in Mining Operations

§ 229.1301 (Item 1301) General instructions and definitions.

(a) A registrant must provide the disclosure specified in subpart 1300 of this part if its mining operations are material to its business or financial condition. For purposes of this subpart, the term *material* has the same meaning as under § 230.405 or § 240.12b-2 of this chapter.

(b) 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, geothermal energy, 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.

Instruction 1 to paragraph (b): As used in this section, the term *mining operations* includes operations on all mining properties that a 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.

Instruction 2 to paragraph (b): A registrant's mining operations are presumed to be material if they consist of 10% or more of its total assets.

Instruction 3 to paragraph (b): A registrant's mining operations may be material even if they comprise less than 10% of its total assets if, when considered with other quantitative or qualitative factors, the required disclosure concerning the mining operations would significantly alter the total mix of information available.

(c) 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 17 CFR 230.421 and 17 CFR 240.13a-20, to enhance the readability of the disclosure for investors.

(d) Definitions. As used in this subpart 229.1300, these terms have the following meanings:

(1) *Cut-off grade* is 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 which distinguishes material that is 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 that is deemed to have economic value (its ultimate destination during mining will be a processing facility). Other terms used in similar fashion as cut-off grades include net smelter returns, pay limits, and break-even stripping ratio.

(2) A *development stage issuer* is one that is engaged in the preparation of mineral reserves for extraction on at least one material property.

(3) A *development stage property* is one that has mineral reserves disclosed, pursuant to this subpart, but no material extraction.

(4) *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.

(5) An *exploration stage issuer* is one that has no material property with mineral reserves disclosed.

(6) An *exploration stage property* is one that has no mineral reserves disclosed.

(7)(i) A *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.

(ii) 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.

Note to paragraph (d)(7): The confidence level in the results of a feasibility study is higher than that with a pre-feasibility study. Terms such as *full, final, comprehensive, bankable, or definitive* feasibility study are equivalent to a feasibility study.

(8) A *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 all material contracts required to develop and sell the mineral reserves.

(9)(i) An *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.

(ii) As used in this subpart, the term *adequate geological evidence* means evidence that is sufficient to establish geological and grade or quality continuity with reasonable certainty. The level of geological certainty associated with an indicated mineral resource is sufficient to allow a qualified person to apply modifying factors, as defined in this section, in sufficient detail to support mine planning and evaluation of the economic viability of the deposit.

Note to paragraph (d)(9): 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.

(10)(i) An *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.

(ii) As used in this subpart, the term *limited geological evidence* means evidence that is only sufficient to establish that geological and grade or quality continuity is more likely than not. The level of geological uncertainty associated with an inferred mineral resource is too high to apply modifying factors, as defined in this section, in a manner useful for evaluation of economic viability.

(iii) A qualified person:

(A) 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

(B) Should be able to defend the basis of this expectation before his or her peers.

Note to paragraph (d)(10): 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. As such, 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.

(11)(i) An *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 modifying factors, as defined by this section, 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.

(ii) An initial assessment is required for disclosure of mineral resources but cannot be used as the basis for disclosure of mineral reserves.

(12)(i) A *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.

(ii) As used in this subpart, the term *conclusive geological evidence* means evidence that is sufficient to test and confirm geological and grade or quality continuity. 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.

Note to paragraph (d)(12): 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.

(13)(i) A *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, net of allowances for diluting materials and for losses that may occur when the material is mined or extracted.

(ii) 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, as defined by this section, conducted by a qualified person applying the modifying factors to indicated or measured mineral resources. Such study 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.

(iii) As used in this subpart, 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.

(iv) As used in this subpart, the term *investment and market assumptions* includes all 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. The price shall be 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, except in cases where sales prices are determined by contractual agreements. In such a case, the qualified person may 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.

Note to paragraph (d)(13): 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, as defined in this section.

(14)(i) A *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.

(ii) As used in this subpart, the term *material of economic interest* includes mineralization, including dumps and tailings, geothermal fields, mineral brines, and other resources extracted on or within the earth's crust. It does not include oil and gas resources as defined in Regulation S-X §210.4-10(a)(16)(D) of this chapter, gases (e.g., helium and carbon dioxide), and water.

(iii) When determining the existence of a mineral resource, a qualified person, as defined by this section, 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 an initial assessment, as defined in this section, that he or she conducts by qualitatively applying the modifying factors, as defined by this section, likely to influence the prospect of economic extraction.

Note to paragraph (d)(14)(i): 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.

Note to paragraph (d)(14)(ii): A qualified person must subdivide mineral resources, in order of increasing geological confidence, into inferred, indicated and measured mineral resources.

(15) *Modifying factors* are 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. 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, energy recovery and conversion, processing, metallurgical, economic, marketing, legal, environmental, infrastructure, social 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.

(16)(i) A *preliminary feasibility study (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.

(ii) 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.

Note to paragraph (d)(16): 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.

(17) A *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.

(18)(i) A *probable mineral reserve* is the economically mineable part of an indicated and, in some cases, a measured mineral resource.

(ii) 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.

(iii) 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.

(19) A *production stage issuer* is one that is engaged in material extraction of mineral reserves on at least one material property.

(20) A *production stage property* is one with material extraction of mineral reserves.

(21)(i) A *proven mineral reserve* is the economically mineable part of a measured mineral resource.

(ii) For a proven mineral reserve, the qualified person has 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.

(iii) A proven mineral reserve can only result from conversion of a measured mineral resource.

(22) A *qualified person* is:

(i) 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

(ii) 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:

(A) Be either:

(1) An organization recognized within the mining industry as a reputable professional association, or

(2) A board authorized by U.S. federal, state or foreign statute to regulate professionals in the mining, geoscience or related field;

(B) Admit eligible members primarily on the basis of their academic qualifications and experience;

(C) Establish and require compliance with professional standards of competence and ethics;

(D) Require or encourage continuing professional development;

(E) Have and apply disciplinary powers, including the power to suspend or expel a member regardless of where the member practices or resides; and

(F) Provide a public list of members in good standing.

Instruction 1 to paragraph (d)(22): 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. 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 modifying factors, as

defined in this section. 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.

Instruction 2 to paragraph (d)(22): The term *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, mineral brine, or geothermal fields. 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.

Instruction 3 to paragraph (d)(22): 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.

Instruction 4 to paragraph (d)(22): 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.

Instruction 5 to paragraph (d)(22): 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.

§ 229.1302 (Item 1302) Qualified person, technical report summary, and technical studies.

(a) 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 § 229.1301(d). The registrant is responsible for determining that the person meets the qualifications specified under the definition of qualified person in § 229.1301(d), and that the disclosure in the registrant's filing accurately reflects the information provided by the qualified person.

(b)(1) The registrant must obtain a dated and signed technical report summary from the qualified person, which, 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, mineral reserves or material exploration results determined to be on each material property.

(2) The registrant must file the technical report summary, pursuant to § 229.601(b)(96), as an exhibit to the relevant registration statement or other Commission filing when 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 summary filed for the property.

Instruction to paragraph (b)(2): A royalty company does not have 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 royalty company must incorporate by reference the producing registrant's previously filed technical report summary in the royalty company's filing with the Commission.

(3)(i) The registrant must obtain the written consent of the qualified person to the use of the qualified person's name and any quotation or other use of the technical report summary in the registration statement or report prior to filing the technical report summary with the Commission.

(ii) 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.

(4) The registrant must 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. 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 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.

Instruction to paragraph (b)(4): As used in this section, *affiliate* has the same meaning as in § 230.405 or § 240.12b-2 of this chapter.

(c) A registrant's disclosure of mineral resources under subpart 1300 of this part must be based upon a qualified person's initial assessment, as defined in § 229.1301(d), which supports the determination of mineral resources. At a minimum, the initial assessment must include the qualified person's qualitative evaluation of applicable modifying factors to establish the economic potential of the mining property or project. 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).

Instruction 1 to paragraph (c): 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 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. In such a case, the qualified person may 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.

Instruction 2 to paragraph (c): The qualified person must provide qualitative assessment of all relevant modifying factors, as defined in § 229.1301(d), 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 of this section, those factors include, but are not limited to:

- 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 modifying factors, including socio-economic factors, necessary to demonstrate reasonable prospects for economic extraction.

Instruction 3 to paragraph (c): Additionally, a qualified person may include cash flow analysis in an initial assessment to demonstrate economic potential. The qualified person may not, however, use inferred mineral resources in such cash flow analysis. 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 $\pm 50\%$ and a contingency level of no greater than 25%, as provided by Table 1 of this section. The qualified person must state the accuracy and contingency levels in the initial assessment.

Instruction 4 to paragraph (c): The qualified person should refer to Table 1 of this section for the assumptions permitted to be made when preparing the initial assessment.

TABLE 1. SUMMARY DESCRIPTION OF MODIFYING FACTORS EVALUATED IN TECHNICAL STUDIES

Factors	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	Preferred underground mining method or the pit configuration for surface	Mining method finalized. Detailed mine layouts finalized for preferred

Factors	Initial Assessment	Preliminary Feasibility Study	Feasibility Study
	rates assumed.	mine defined. Detailed mine layouts drawn for each alternative. Development and production plan defined for each alternative with required equipment fleet specified.	alternative. Development and production plan finalized for preferred alternative with required equipment fleet specified.
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 requirements or interests of agencies, NGOs, communities and other stakeholders. Detailed baseline studies with preliminary impact assessment (internal). Detailed tailings disposal, reclamation and mitigation plans.	Identification and detailed analysis of requirements or interests of agencies, NGOs, communities and other stakeholders finalized. Completed baseline studies with final impact assessment (internal). Tailings disposal, reclamation and mitigation plans finalized.
Other modifying factors ¹	Appropriate assessments of other reasonably assumed modifying 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. ² If included: Accuracy: $\pm 50\%$ Contingency: $\leq 25\%$	Accuracy: $\pm 25\%$ Contingency: $\leq 15\%$	Accuracy: $\pm 15\%$ Contingency: $\leq 10\%$
Operating costs	Optional. ² If included: Accuracy: $\pm 50\%$ Contingency: $\leq 25\%$	Accuracy: $\pm 25\%$ Contingency: $\leq 15\%$	Accuracy: $\pm 15\%$ Contingency: $\leq 10\%$
Economic analysis ³	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.

¹The modifying factors, as defined in this section, include, but are not limited to, the factors listed in this table. The number, type and specific characteristics of the modifying factors applied will be a function of and depend upon the mineral, mine, property, or project.

²Initial Assessment, as defined in this section, does not require cash flow analyses or operating and capital cost estimates. The qualified person may include such cash flow analyses at his or her discretion.

³Initial 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. Economic analyses, if included, must only be based on measured and indicated mineral resources.

(d) A registrant's disclosure of mineral reserves under subpart 1300 of this part must be based upon a qualified person's pre-feasibility study or feasibility study, each as defined in § 229.1301(d), which supports a 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. 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). 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.

Instruction 1 to paragraph (d): 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. In addition, in certain circumstances, it may require the completion of at least a preliminary market study, as defined in § 229.1301(d), in the context of a pre-feasibility study, or a final market study, as defined in § 229.1301(d), 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.

Instruction 2 to paragraph (d): 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.

Instruction 3 to paragraph (d): 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. For example, as provided in Table 1 of this section, a pre-feasibility study must define, analyze or otherwise address in detail:

- 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 or interests of agencies, non-governmental organizations, communities and other stakeholders, the baseline studies, and the plans for tailings disposal, reclamation and mitigation, together with an analysis establishing that permitting is possible; and

v. And any other reasonable assumptions, based on appropriate testing, on the modifying factors sufficient to demonstrate that extraction is economically viable.

Instruction 4 to paragraph (d): 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. As discussed in Instruction 1 to paragraph (d) of this Item, in certain situations, estimates of revenues must be based on at least a preliminary market study.

Instruction 5 to paragraph (d): The pre-feasibility study must also identify sources of uncertainty that require further refinement in a final feasibility study.

Instruction 6 to paragraph (d): Operating and capital cost estimates in a pre-feasibility study must, at a minimum, have an accuracy level of approximately $\pm 25\%$ 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.

Instruction 7 to paragraph (d): In some instances, the risk factors associated with a project may indicate that more than a pre-feasibility study is required to disclose mineral reserves, e.g., 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, remoteness, and unique mineralization and recovery methods. In such cases, the qualified person must use a feasibility study in order to achieve the level of confidence necessary for disclosing mineral reserves.

Instruction 8 to paragraph (d): 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. For example, as provided in Table 1 of this section, a feasibility study must define, analyze or otherwise address in detail:

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, including the finalized interests of agencies, NGOs, communities and other stakeholders. The feasibility study must further address the completion of baseline studies and finalized plans for tailings disposal, reclamation and mitigation; and

v. Detailed assessments of other modifying factors necessary to demonstrate that extraction is economically viable.

Instruction 9 to paragraph (d): 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. As discussed in Instruction 1 to paragraph (d) of this Item, in certain situations, estimates of revenues must be based on a final market study or letters of intent to purchase.

Instruction 10 to paragraph (d): Operating and capital cost estimates in a feasibility study must, at a minimum, have an accuracy level of approximately $\pm 15\%$ 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.

Instruction 11 to paragraph (d): 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.

Instruction 12 to paragraph (d): 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.

Instruction 13 to paragraph (d): 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.

§ 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.

(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) A presentation in tabular form, in decreasing order by asset value, of the 20 properties with the largest asset value (or fewer if the registrant has an economic interest in fewer than 20 mining properties). For each of the properties required to be included in the presentation, the registrant must identify the property, report the total production from the property for the three most recently completed fiscal years, and disclose the following information, using the format in Table 2 of this section:

- (i) The location of the property;
- (ii) The type and amount of ownership interest;
- (iii) The identity of the operator;
- (iv) Title, mineral rights, leases or options and acreage involved;
- (v) The stage of the property (exploration, development or production);
- (vi) Key permit conditions;
- (vii) Mine type & mineralization style; and
- (viii) Processing plant and other available facilities.

Instruction 1 to paragraph (b)(2): For purposes of this paragraph, a registrant may treat multiple mines with interrelated mining operations as one mining property.

Instruction 2 to paragraph (b)(2): 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.

TABLE 2. BRIEF DESCRIPTION OF THE 20 MINING PROPERTIES WITH THE HIGHEST ASSET VALUES

Mine or Property	Location	Type and amount of ownership	Operator	Title, mineral rights, leases or options and acreage	Stage ¹	Key permit conditions	Mine type and mineral-ization style	Processing plant and other facilities	Pro-duction for fiscal year ending mm/dd/yy ²	Pro-duction for fiscal year ending mm/dd/yy ²	Production for fiscal year ending mm/dd/yy ²
Property 1											
Property 2											
⋮											
Property 20											
All other properties ³											

¹ Exploration, development or production

² Use these columns to disclose production for the last three fiscal years

³ State the number of properties that make up the other properties.

(3) A summary of all mineral resources and mineral reserves 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 mineral reserves or 10% or more of the registrant's combined measured and indicated mineral resources. This summary must be provided 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, using the format in Table 3 of this section.

Instruction 1 to paragraph (b)(3): 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.

Instruction 2 to paragraph (b)(3): All disclosure of mineral resources must be exclusive of mineral reserves.

Instruction 3 to paragraph (b)(3): 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.

Instruction 4 to paragraph (b)(3): All mineral resource and reserve estimates must be based on long term price that is no higher than the average spot price over 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.

Instruction 5 to paragraph (b)(3): Mineral resource and reserve estimates called for in Table 3 of this section must be in terms of saleable product.

TABLE 3. SUMMARY MINERAL RESOURCES AND RESERVES AT END OF THE FISCAL YEAR ENDED [DATE] BASED ON [PRICE]¹

	Proven mineral reserves	Probable mineral reserves	Total mineral reserves	Measured mineral resources	Indicated mineral resources	Measured + Indicated mineral resources	Inferred mineral resources
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 Unless prices are defined by contractual arrangements, the registrant 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 and must disclose the price used. When prices are defined by contractual agreements, the registrant may use the price set by the contractual arrangement, provided that such price is reasonable, and the registrant discloses that it is using a contractual price and discloses the contractual price used.

§ 229.1304 (Item 1304) Individual property disclosure.

(a) A registrant must disclose the information specified in paragraph (b) of 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(b) 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.

(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) 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) A brief history of previous operations, including the names of previous operators, insofar as known;

(3) 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; and

(iii) The total cost for or book value of the property and its associated plant and equipment.

Instruction to paragraph (b)(3): 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.

(4) 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.

(5) A summary of the exploration activity for the most recently completed fiscal year in tabular form, which, for each sampling method used, discloses the number of samples, the total size or length of the samples, and the total number of assays. The information must be presented using the format in Table 4 of this section.

TABLE 4. [INDIVIDUAL PROPERTY NAME]-SUMMARY EXPLORATION ACTIVITY FOR FISCAL YEAR ENDING [DATE]

Sampling methods	No. of samples ¹	Total size or length ²	Total no. of assays
Method 1			
Method 2			

¹ This refers to number of drill holes, trenches, geophysical survey lines etc.

² This refers to the total length of drill holes, trenches, and geophysical survey lines or total amount of material in bulk sampling.

(6) A summary of material exploration results for the most recently completed fiscal year in tabular form, which, for each property, identifies the hole that generated the exploration results, and describes the length, lithology and key geologic properties of the exploration results. This information must be presented using the format provided in Table 5 of this section, and accompanied by a brief discussion of the exploration results' context and relevance.

Instruction to paragraph (b)(6): 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.

TABLE 5. [INDIVIDUAL PROPERTY NAME]-SUMMARY EXPLORATION RESULTS FOR THE FISCAL YEAR ENDING [DATE].¹

Hole ID	From	To	Length	Lithology	Geologic Property 1	Geologic Property 2	...	Geologic Property n

¹ If only results from selected holes and intersections are included, they should be accompanied with a discussion of the context and justification for excluding other results.

(7) If mineral resources or reserves have been determined, a summary of all mineral resources and reserves, which, for each property, discloses in tabular form, as provided in Table 6 of this section, the estimated tonnages, grades (or quality, where appropriate), cut-off grades and metallurgical recovery, by class of mineral resource and reserve, occurring:

- (i) In-situ;
- (ii) As plant/mill feed; and
- (iii) As saleable product.

TABLE 6. [INDIVIDUAL PROPERTY NAME]- SUMMARY OF [COMMODITY/COMMODITIES] MINERAL RESERVES AND RESOURCES AT THE END OF THE FISCAL YEAR ENDED [DATE] BASED ON [PRICE]¹

	<u>In-situ</u>		<u>Plant/Mill feed</u>		<u>Saleable product</u>	<u>Cut-off grades</u>	<u>Metallurgical recovery</u>
	<u>Amount</u>	<u>Grades/Qualities</u>	<u>Amount</u>	<u>Grades/Qualities</u>			
Proven mineral reserves							
Probable mineral reserves							
Total mineral reserves							
Measured mineral resources							
Indicated mineral resources							
Measured + Indicated mineral resources							
Inferred mineral resources							

¹ Unless prices are defined by contractual arrangements, the registrant 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 and must disclose the price used. When prices are defined by contractual agreements, the registrant may use the price set by the contractual arrangement, provided that such price is reasonable, and the registrant discloses that it is using a contractual price and discloses the contractual price used.

Instruction 1 to paragraphs (b)(5) through (7): The registrant should not include extensive description of regional geology. Rather, it should include geological information that is brief and relevant to property disclosure.

Instruction 2 to paragraphs (b)(5) through (7): The registrant may modify the tabular formats in Tables 4 through 6 of this section for ease of presentation, to add information, or to combine two or more required tables.

Instruction 3 to paragraphs (b)(5) through (7): All disclosure of mineral resources must be exclusive of mineral reserves.

Instruction 4 to paragraphs (b)(5) through (7): 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.

(8) Provide a comparison in tabular form 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. The comparison must use the tabular format, as provided in Tables 7 and 8 of this section, which discloses information concerning:

(i) The mineral resources or reserves at the end of the last two fiscal years;

(ii) 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;

(iii) 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

(iv) 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.

Table 7. Mineral resource reconciliation. Only the sum of Measured and Indicated Resources should be used in reconciliation disclosure.

	Resource at the end of fiscal year ending mm/dd/y ¹	Resource at the end of fiscal year ending mm/dd/y ¹	Net Diff. (%)	Causes of Discrepancies in Resources							Comments
				Depletion or production	Price	Cost	Exploration	Methodology	Acquisition/disposal	Others	
Ore type 1											
Ore type 2											

¹ Use these two columns to disclose resources at the end of each of the last two fiscal years.

Table 8. Mineral reserve reconciliation.

	Reserves at the end of fiscal year ending mm/dd/y ¹	Reserves at the end of fiscal year ending mm/dd/y ¹	Net Diff. (%)	Causes of Discrepancies in Reserves							Comments
				Depletion or production	Resource model	Price	Cost	Methodology	Acquisition/disposal	Others	
Ore type 1											
Ore type 2											

¹ Use these two columns to disclose reserves at the end of each of the last two fiscal years.

(9) 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 to corresponding sections of the technical report summary, which must be filed as an exhibit pursuant to § 229.1302(b).

(10) 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. 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 required disclosure concerning the registrant's exploration results not misleading. The registrant must cite to corresponding sections of the summary technical report, which must be filed as an exhibit pursuant to § 229.1302(b).

Instruction 1 to paragraphs (b)(9) and (10): Whether a change in exploration results, mineral resources, or mineral reserves, is material is based on all facts and circumstances, both quantitative and qualitative.

Instruction 2 to paragraphs (b)(9) and (10): A change in exploration results that significantly alters the potential of the exploration target is considered material.

Instruction 3 to paragraphs (b)(9) and (10): An annual change in total resources or reserves of 10% or more, excluding production as reported in Tables 7 and 8 of this section, is presumed to be material.

Instruction 4 to paragraphs (b)(9) and (10): A cumulative change in total resources or reserves of 30% or more in absolute terms, excluding production as reported in Tables 7 and 8 of this section, from the current filed technical report summary is presumed to be material.

Instruction 5 to paragraphs (b)(9) and (10): In assessing the presumption of materiality tests, the registrant should consider the change in total resources or reserves on the basis of total tonnage or volume of saleable product.

Instruction 6 to paragraphs (b)(9) and (10): A registrant must also carefully consider whether the filed technical report summary is 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). 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, in compliance with Item 601(b)(96) of Regulation S-K (17 CFR 229.601(b)(96)), that supports the registrant's mining property disclosures.

Instruction 7 to paragraphs (b)(9) and (10): 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, is not considered current and cannot be filed in support of disclosure.

§ 229.1305 (Item 1305) Internal controls disclosure.

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.

Instruction to Item 1305: 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 239 — FORMS PRESCRIBED UNDER THE SECURITIES ACT OF 1933

7. The 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, 78l, 78m, 78n, 78o(d), 78o-7 note, 78u-5, 78w(a), 78ll, 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. 71003 and Sec. 84001, Pub. L. 114-94, 129 Stat. 1312, unless otherwise noted.

* * * * *

8. 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

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OFFERING CIRCULAR

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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 (§§ 229.1301 *et seq.*), 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.

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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

9. 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) Pub. L. 111-203, 124 Stat. 1904; and Sec. 102(a)(3) Pub. L. 112-106, 126 Stat. 309, unless otherwise noted.

* * * * *

10. 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

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PART I

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Instructions to Item 4:

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3. Issuers engaged in mining operations must refer to and, if required, provide the disclosure under Subpart 1300 of Regulation S-K (§§ 229.1301 *et seq.* of this chapter).

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INSTRUCTIONS AS TO EXHIBITS

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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]

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By the Commission.

Dated: June 16, 2016

Brent J. Fields
Secretary