

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS
Response to File No. S7-15-08

**To: Florence E. Harmon,
Acting Secretary,
Securities and Exchange Commission**

File Number S7-15-08

**AAPG COMMENTS ON PROPOSED RULES CHANGES: MODERNIZATION OF
THE OIL AND GAS REPORTING REQUIREMENTS**

INTRODUCTION

The American Association of Petroleum Geologists (AAPG) is a professional association of petroleum geoscientists with over 34,500 members in 116 countries. The purpose of AAPG is to advance the science of geology, foster scientific research, and promote pertinent technology.

Working with sister societies, the Society of Petroleum Engineers (SPE), the World Petroleum Council (WPC), and the Society of Petroleum Evaluation Engineers (SPEE), AAPG members have played leading roles in the generation of the March 2007 Petroleum Resources Management System (PRMS). Also, AAPG and SPE jointly sponsored the first International Interdisciplinary Conference on Oil and Gas Reserves in Washington, D. C. in June 2007, which was attended by many members of petroleum-related agencies of the Federal Government, including the U. S. Securities and Exchange Commission (SEC).

AAPG established an ad hoc committee of experienced professional petroleum geoscientists to recommend responses on behalf of AAPG to the SEC's requests, first to the SEC's Concept Release last winter, and now to the SEC's Proposal for rules changes regarding Modernization of the Oil and Gas Reporting Requirements. The present report constitutes AAPG's official response to that request.

The recently released Petroleum Resources Management System (PRMS) is a principles-based system by which corporations, individuals and private businesses may classify and categorize producing and non-producing oil and natural gas assets. Designed to support a diverse group of stakeholders, many of the principles and definitions of PRMS are readily and usefully applicable to a principles-based Reserves disclosure system. The AAPG strongly supports the adoption of PRMS definitions and concepts by the SEC wherever they are applicable to the development of its new rules concerning Reserves and Resources.

As a primarily geoscientific professional association, AAPG sees one of its main responsibilities in the current SEC-response to provide geological perspective on the multidisciplinary topic of Reserves and Resources reporting, in conjunction with engineering concepts and procedures.

KEY ISSUES

The AAPG has worked closely with members of the SPE's Oil and Gas Reserves Committee in developing their submittal based on PRMS guidance. In the interest of avoiding unnecessary duplication, AAPG has thus chosen to confine its response to providing comments on the following six key issues:

Reasonable Certainty and Proved Oil and Gas Reserves (Sec Proposal Section II.D)

Question:

Is the proposed definition of "reasonable certainty" as "much more likely to be achieved than not" a clear standard? Is the standard in the proposed definition appropriate? Would a different standard be more appropriate?

Response:

The AAPG recommends the following modification of the proposed definition that provides improved clarity and increased alignment with PRMS:

If deterministic methods for estimating recoverable resource quantities are used, then reasonable certainty is intended to express a high degree of confidence that the estimated quantities will be recovered. If probabilistic methods are used, there should be at least a 90% probability that the quantities actually recovered will equal or exceed the estimate.

Question:

Is the proposed 90% threshold appropriate for defining reasonable certainty when probabilistic methods are used? Should we use another percentage value? If so, what value?

Response:

The proposed 90% threshold aligns with PRMS guidance based on consensus industry practice.

General Comment:

Two different conventions presently are employed by Exploration and Production (E&P) professionals to express their confidence in Reserves and Resources -- deterministic and probabilistic. Deterministic volumes are estimated for discrete increments and defined scenarios. While deterministic estimates may have broadly inferred confidence levels, they do not have associated quantitatively defined probabilities. Nevertheless, the ranges of the probability guidelines established for the probabilistic method should broadly correlate with the inferred uncertainty in the estimate derived from the deterministic method.

Following PRMS, the probabilistic convention requires that actual recoveries must equal or exceed Proved Reserves estimates based on 90% confidence, whereas the deterministic method requires "Proved" to meet "reasonable certainty" criteria which are considered consistent with the SEC's subjective assessment as "much more likely to be achieved than not."

Both conventions are intended to measure and express the same thing; thus, assuming that specific criteria such as lowest known hydrocarbon are properly accommodated, Proved Reserves quantities from the same well or project measured deterministically and probabilistically should not differ markedly.

New Technology
(SEC Proposal Section II.D.1)

Question:

Is our proposed definition of “reliable technology” appropriate? Should we change any of its proposed criteria, such as widespread acceptance, consistency, or 90% reliability?

Response:

AAPG proposes a revised definition of reliable technology:

“Reliable technology is technology, including computational and analytic methods, that has demonstrated sufficient stability and repeatability in the formation being evaluated or in an analogous formation to provide, in combination with other technologies, valuable information regarding the estimation of recoverable volumes associated with a given accumulation.”

This revised definition omits the 90% reliability requirement; such a requirement is impossible to accurately verify. It would require a continuous global assessment of technologies deployed and their efficacy; no group is currently performing such assessments. Judgments on reliability and applicability of technologies are made by qualified reserves evaluators and subject to company review and audits processes.

Question:

Is the open-ended type of definition of “reliable technology” that we propose appropriate? Would permitting the company to determine which technologies to use to determine their reserves estimates be subject to abuse? Do investors have the capacity to distinguish whether a particular technology is reasonable for use in a particular situation? What are the risks associated with adoption of such a definition?

Response:

Enabling the full use of reliable, modern technologies in defining reserves is an important step to improving reserves disclosures. The open-ended definition of “reliable technology” is appropriate and necessary to allow SEC’s rules to adapt through time to changing technologies. It is necessary for SEC to provide guidelines for this disclosure in a manner that does not undermine this flexibility, enables industry to take advantage of best-in-class technologies, and provides investors with assurance that a company’s reserves have been properly evaluated and classified.

Question:

Is the proposed disclosure of the technology used to establish the appropriate level of certainty for material properties in a company's first filing with the Commission and for material additions to reserves estimates in subsequent filings appropriate? Should we require disclosure of the technology used for all properties? Should we require companies currently filing reports with the Commission to disclose the technology used to establish appropriate levels of certainty regarding their currently disclosed reserves estimates?

Response:

AAPG recognizes that the level and degree of specificity required for the technology disclosure is a challenge. Such disclosure, if required, should not undermine a company's competitive advantage in a particular play.

**Probabilistic Methods
(SEC Proposal Section II.D.2)**

Question:

Should an oil and gas company have the choice of using deterministic or probabilistic methods for reserves estimation, or should we require one method? If we were to require a single method, which one should it be? Why? Would there be greater compatibility between companies if only one method was used?

Response:

AAPG recommends that reporting companies should be free to utilize either method, so long as they honor the definitions SEC has provided. Different projects, and different stages of maturity, naturally lend themselves to different methods. Requiring all projects to be assessed using only the deterministic method would be a disservice to larger, less mature projects, whereas smaller or more mature projects can be assessed with acceptable reliability using the deterministic approach.

AAPG believes that it is essential to recognize that, whether deterministic or probabilistic methods are used, both methods should be attempting to measure the same thing -- estimated recoverable volumes associated with different confidence levels.

The industry is increasingly incorporating probabilistic methodology, where uncertainty levels are quantified and thus calibrated for verification of historical accuracy, and a project's entire resource potential is routinely represented as a full probability distribution. PRMS accommodates and incorporates this evolution.

**Oil and Gas Reserves Tables
(SEC Proposal Section III.B.3i)**

Question:

Should we require all reported reserves to be simple arithmetic sums of all estimates, as proposed? Alternatively, should we allow probabilistic aggregation of reserves estimated probabilistically up to the company level? If we do so, will company reserves estimated and aggregated deterministically be comparable to company reserves estimated and aggregated probabilistically?

Response:

PRMS recommends that, for reporting purposes, assessment results should not incorporate statistical aggregation beyond the field, property, or project level. Results reporting beyond this level should use arithmetic summation by category but should caution that the aggregate Proved may be a very conservative estimate and aggregate Proved plus Probable plus Possible (3P) may be very optimistic, depending on the number of items in the aggregate. Aggregates of Proved plus Probable (2P) results typically have less portfolio effect that may not be significant in mature properties, where the statistical median approaches the mean of the resulting distribution.

Probabilistic aggregation to the business unit, country and corporate level may be used internally for detailed portfolio analyses where the results incorporate the benefits of portfolio size and diversification. Probabilistic aggregation should incorporate degree of dependency.

As the principles of statistical aggregation are better understood and accepted throughout the E&P industry and the Accounting community, AAPG anticipates that the evolving PRMS guidelines will accommodate increased emphasis on probabilistic aggregation so as to support full expression of an organization's producing and non-producing assets.

**Geographic Specificity with Respect to Reserves Disclosures
(SEC Proposal Section III.B.3.iii)**

Question:

Should we provide the proposed guidance about the level of specificity required when a company discloses its oil and gas reserves by "geographic area"?

Response:

The SEC suggests that investors would benefit from greater geographic specificity with regard to Reserves disclosure, particularly if these Reserves are "subject to unique risks, such as political instability." PRMS includes political risk considerations in its resources classification criteria.

In specifying the Reserves disclosure units (continent, country, sedimentary basin, field) in the proposed rule, the SEC should choose units that are well defined:

1. Continents are not strictly defined, but rather based on convention. In the United States and Europe, conventional usage identifies seven continents (Africa, Antarctica, Australia, Asia, Europe, North America, South America). AAPG urges the SEC to specify the convention or standard to use for continent-wide disclosures.
2. Country boundaries are generally well defined, although several boundary disputes exist. To promote comparability and consistency, AAPG urges the SEC to identify a list of recognized countries (e.g., the list of independent states recognized by the United States, as defined by the State Department) and procedures for handling Reserves disclosed in disputed areas.

3. Sedimentary basins are not well defined, with country, corporate, and government variations. Due to the lack of uniform definitions of sedimentary basins, AAPG urges the SEC not to require Reserves disclosure by sedimentary basin.
4. Fields are typically defined in a field development plan and agreed to with the host country or appropriate authority. Field boundaries are defined by contract or regulatory designation and therefore are subject to modification or amendment. AAPG urges the SEC to recognize these weaknesses in the use of fields for Reserves disclosure.

Question:

Are the proposed 15% and 10% thresholds appropriate? Should either, or both, of these percentages be different? For example, should both be 15%? Should both be 10%? Would 5% or 20% be a more appropriate threshold for either or both?

Response:

While AAPG does not espouse a specific threshold concerning the percentage of a company's producing assets that lie in a given geographic area, it is recognized that reporting at the appropriate geographic level is beneficial to the investment community. If too high, key aspects of a company's business impacted by geographical or political influences may not be evident. If too low, the level of detail may not underscore the true material nature of specific components.

Question:

What would be the impact to investors if companies are permitted to omit disclosures based on the individual field or basin due to concerns related to competitive sensitivities? Would investors be harmed if disclosure based on the individual field or basin is omitted due to concerns related to competitive sensitivities? Is there a better way to provide disclosure that a company heavily dependent on a particular field or basin may be subject to risks related to the concentration of its reserves?

Response:

AAPG recognizes the need to provide investors with information related to risks inherent to holding significant reserves concentrated in a single political jurisdiction. While AAPG does not advocate specific guidelines on geographic specificity of disclosure, it does endorse the use of well-defined terms. As mentioned, aggregating and disclosing reserves by sedimentary basin is ill-advised, due to the lack of agreement on the sedimentary basin boundaries. Field boundaries are better defined, but also subject to modification and/or amendment.

AAPG encourages the SEC to adopt a stance that accommodates transparent reporting without jeopardizing partner relations or conflicting with governmental requirements.

Question:

Would greater specificity cause competitive harm? If so, how can the rules mitigate the risk of harm?

Response:

AAPG sees the possibility of greater specificity causing competitive harm and possibly subjecting companies to inappropriate political pressures.

**Preparation of Reserves Estimates or Reserve Audits
(SEC Proposal Section III.B.3.v)**

General Comments:

AAPG believes that the focal point should be on ensuring that companies have systems in place that provide quality assurance on all reported Reserves estimates including:

- 1) verification that Reserves evaluators and auditors (internal and 3rd party) meet at least the minimum qualification requirements as specified in the 2007 SPE publication “Standards Pertaining to the Estimating and Auditing of Oil and Gas Reserves Information”, or have their work closely supervised by individuals who have these qualifications. In all cases, Qualified Reserve Estimators (QRE)/Qualified Reserve Auditors (QRA) level personnel must be accountable for the estimation process prior to final booking;
- 2) ensuring that all appropriate levels of management endorse the property evaluations;
- 3) maintaining and enforcing a corporate code of ethics regarding Reserves assessment and reporting, as expressed in a documented corporate Reserves governance process;
- 4) utilizing 3rd party evaluators as appropriate to verify key property evaluations.

Regarding qualifications for Reserves evaluator and auditor qualifications, AAPG does not support mandatory licensure, as proposed by the SEC. A compulsory requirement for licensure would be problematic for the industry, particularly for multinational companies that have significant numbers of well-qualified reserve estimators and auditors located in areas that do not have systems in place to register or certify geoscience and engineering professionals. Additionally, there would be issues reconciling certification standards between different countries, states, and professional societies.

We believe that appropriate training in the estimation of reserves forms an important grounding in an evaluator’s education. Such education opportunities currently exist and continue to evolve. Specifically, the AAPG, along with the SPE, WPC and SPEE, is sponsoring appropriate training, through the Joint Committee on Reserves Evaluator Training (JCRET). The mission of this committee is to identify, evaluate and recommend for sponsorship a library of approved, sponsored courses to be taught by recognized industry professionals that is intended to elevate the professionalism for the sub-discipline

of Reserves estimation and evaluation for both geoscientists and engineers. While it is recognized that the JCORET is not the sole purveyor of adequate training vehicles, their support by the groups responsible for the drafting of the PRMS brings JCORET special mention.

The AAPG supports the guidelines surrounding the objectivity and ethics of evaluators and auditors for internal staff as well as for third-party estimators and auditors.

CONCLUDING STATEMENT

AAPG applauds the initiatives of the SEC to strive for more transparent reporting of the oil and natural gas assets of public companies, and its willingness to consult with all sectors of the E&P Industry in that regard. This action is consistent with other efforts on the part of the SEC, as well as other regulatory bodies, to move towards a performance-based regulatory environment and away from a rules-based regulatory environment -- from a focus on enforcement to a focus on compliance. AAPG believes this approach aligns with the Petroleum Resources Management System (PRMS) recommendations.

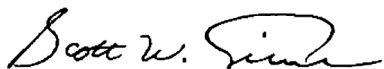
With this transition, AAPG recognizes that the responsibility for objective and reliable reporting of various categories of Reserves and Resources must ultimately rest upon the shoulders of the professional engineers and geoscientists charged with Reserves and Resources assessments, and with the corporate officers who report such estimates to government regulating authorities and to the investing public on behalf of their publicly-held corporations. AAPG will continue to emphasize these ethical responsibilities to its members.

The remarkable evolution and adoption of new principles and technologies that have characterized the oil and gas industry will continue into the future -- that progress will not stop, indeed is likely to accelerate. Thus the concepts and tools used to estimate Reserves and Resources can also be expected to change, and AAPG encourages the SEC to periodically reassess its reporting rules in the interests of transparency and reliability.

AAPG encourages continued interaction and consultation between the SEC and the professional societies of E&P professionals, and suggests that precedent exists for such interaction, on an organized periodic or ongoing basis.

Once again, AAPG sincerely appreciates this opportunity to respond to the SEC's call for input, and stands ready to provide continued input as requested.

Sincerely,



Scott Tinker
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American Association of Petroleum Geologists