U.S. Securities and Exchange Commission Regulations

Part 2: Reserves Disclosures

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Dr. Lee holds BS, MS and PhD degrees in chemical engineering from the Georgia Institute of Technology.

Early in his career, John worked for ExxonMobil and specialized in integrated reservoir studies.
He later joined the Petroleum Engineering faculty at Texas A&M, and became Regents Professor of Petroleum Engineering. While at A&M, he also served as a consultant with S.A. Holditch & Associates, where he specialized in reservoir engineering aspects of unconventional gas resources.

Professor Lee joined the University of Houston faculty in September 2011 and held the Cullen Distinguished University Chair until September 2015, when he rejoined the Texas A&M Faculty.
He served as an Academic Engineering Fellow with the U.S. Securities & Exchange Commission (SEC) in Washington during 2007-2008, and was a principal architect of the modernized SEC rules for reporting oil and gas reserves. John and his team received the SEC's Law and Policy Award in 2009.

Professor Lee is the author/co-author of four textbooks published by SPE and has received numerous awards from SPE, including the Lucas Medal, the DeGolyer Distinguished Service Medal and Honorary Membership. He has received Distinguished Achievement and Honorary Life Member Awards from SPEE and is a member of the U.S. National Academy of Engineering and the Russian Academy of Natural Sciences.

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SEC Regulations: Disclosures

- New disclosure requirements can be found in S-K 229.1200 provided in SEC's "Adopting Release" issued on December 29, 2008
- Following slides summarize major disclosure requirements

Disclosures: Geographic Area [229.1201]

- "By geographic area," for disclosure purposes, means
  - By individual country
  - By groups of countries within a continent
  - By continent
- Does not mean
  - Groups of countries from more than one continent

Reserves Disclosures [229.1202]

- Disclose, by product type, in aggregate, by geographic area and for each country containing 15% or more of registrant's proved reserves (on BOE basis), reserves estimated using prices and costs under existing economic conditions for product
- Disclosure of country reserves not required if prohibited by country or if country disclosure would essentially mean disclosure by field

Reserves Disclosures: Reserves Categories [229.1202]

- Disclose reserves for following categories
  - Proved developed
  - Proved undeveloped
  - Total proved
  - Probable developed (optional)
  - Probable undeveloped (optional)
  - Total probable (optional)
  - Possible developed (optional)
  - Possible undeveloped (optional)
  - Total possible (optional)

Reserves Disclosures: Product Type [229.1202]

- Disclose, separately, material reserves of following product types
  - Oil
  - Natural gas
  - Synthetic oil
  - Synthetic gas
  - Sales products of other non-renewable natural resources intended to be upgraded into synthetic oil or gas

Reserves Disclosures: Aggregation [229.1202]

- Reported reserves totals shall be simple arithmetic sums of all estimates for individual properties or fields within each reserves category
- When probabilistic methods are used, reserves should not be aggregated probabilistically beyond field or property level; instead, use simple arithmetic summation

Reserves Disclosures: Technology [229.1202]

- Provide general discussion of technologies used to establish appropriate level of certainty for reserves estimates from material properties included in total reserves disclosed (individual properties do not have to be identified)
  - For reserves estimates in first filing with SEC
  - For material additions to reserves estimates previously filed

Quality Control of Reserves Estimates and Audits

- Disclose and describe internal company controls used in reserves estimation effort
- For in-house estimates, disclose qualifications of technical person primarily responsible for overseeing preparation of reserves estimates
- For third-party estimates and audits, disclose qualifications of technical person primarily responsible for the estimates or audits

Third-Party Reserves or Audit Reports

- If registrant represents that third party prepared or audited registrant's reserves estimates, or conducted "process review," registrant shall file report of third party as exhibit in filing with SEC
- Contents of report described in 229.1202(a)(8)

Reserves Sensitivity Analysis [229.1202(b)]

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- Optional: Registrant may provide proved, probable, and possible reserves information for different price and cost scenarios, such as a range of prices and costs that might be reasonably achieved, including standardized futures prices or management's own forecasts
- If this option is exercised, registrant must disclose price and cost schedules and assumptions on which disclosed reserves values are based

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Resources Not To Be Disclosed [229.1202]

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- Resources other than oil and gas reserves are not to be disclosed in filings with SEC, except
  - When required by foreign or state law
  - When previously disclosed in connection with a acquisition, merger, or consolidation of registrant's securities, resources may be disclosed in documents related to such acquisition

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Disclosures: Proved Undeveloped Reserves [229.1203]

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- Disclose total proved undeveloped reserves (PUDs) at year end
- Disclose material changes in PUDs during year, including PUDs converted into proved developed reserves (PDRs)
- Discuss investments and progress made during year to convert PUDs to PDRs, including but not limited to, capital expenditures
- Explain why material amounts of PUDs in individual fields or countries remain undeveloped for five years or more after disclosure as PUDs

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Disclosures: Production [229.1204(a)]

- Disclose production, by final product sold, of oil, gas and other products for each of last three fiscal years.
  - Disclose by geographical area
  - Disclose for each country and field that contains >= 15% of registrant's total BOE reserves unless prohibited by country in which reserves are located

Disclosures: Prices and Costs [229.1204(b)]

- For each of last three fiscal years, disclose, by geographical area
  - Average sales price (including transfers) per unit of oil, gas, other products produced
  - Average production cost, not including *ad valorem* and severance taxes, per unit of production

Disclosures: Drilling Activities [229.1205]

- Disclose, by geographical area, for each of last three fiscal years
  - Number of net productive and dry exploratory wells drilled
  - Number of net productive and dry development wells drilled
  - Any other exploratory or development activities conducted, including implementation of mining methods for purposes of oil and gas producing activities

Disclosures: Present Activities [229.1206]

- Disclose, by geographical area, present activities such as
  - Wells being drilled (including wells temporarily suspended)
  - Waterfloods being installed
  - Pressure maintenance operations
  - Other related activities of material importance

Disclosures: Delivery Commitments [229.1207]

- If registrant is committed to provide fixed and determinable quantity of oil or gas in near future under existing contracts or agreements, disclose material information concerning estimated availability of oil and gas from any principal sources

Disclosures: Properties, Wells, Operations, Acreage [229.1208(a)]

- Disclose, by geographical area and as of reasonably current date or end of fiscal year
  - Total gross and net productive wells, expressed separately for oil and gas (including synthetic oil and gas produced through wells)
  - Total gross and net developed acreage (i.e., acreage assignable to productive wells)

Disclosures: Properties, Wells, Operations, Acreage [229.1208(b)]

- Disclose, by geographical area and as of reasonably current date or end of fiscal year
  - Amount of undeveloped acreage, both leases and concessions, if any, expressed in both gross and net acres
  - Indication of acreage concentrations
  - Minimum remaining terms of leases and concessions

Guidance for Management's Discussion and Analysis (MD&A) (Adopting Release, Section V)

- Discuss topics listed, if topic constitutes, involves, or indicates known trends, demands, commitments, uncertainties, or events reasonably likely to have material effect on company

MD&A Guidance: Changes in Reserves

- Discuss changes in proved reserves and, if disclosed, probable and possible reserves, and sources to which changes are attributable, including
  - Changes in prices
  - Technical revisions
  - Changes in status of any concessions held (such as termination, renewals, changes in provisions)

MD&A Guidance: Technologies

- Discuss technologies used to establish appropriate level of certainty for any material additions to, or increases in, reserves estimates, including any material additions or increases to reserves estimates due to new SEC regulations adopted in 2008

MD&A Guidance: Prices, Costs, Performance

Discuss
- Prices and costs, including impact on depreciation, depletion and amortization as well as full cost ceiling test
- Performance of currently producing wells, including water production, and need to use enhanced recovery techniques to maintain production
- Performance of any mining-type activities for production of hydrocarbons

MD&A Guidance: PUDs, Contracts, Rights

Discuss
- Recent ability to convert PUDs to PDRs and, if disclosed, probable reserves to proved and possible reserves to probable or proved
- Minimum remaining terms of leases and concessions
- Material changes to any item in S-K 229.1202-1208
- Potential effects of different forms of rights to resources, such as production sharing contracts, on operations
- Geopolitical risks that apply to material concentrations of reserves

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