

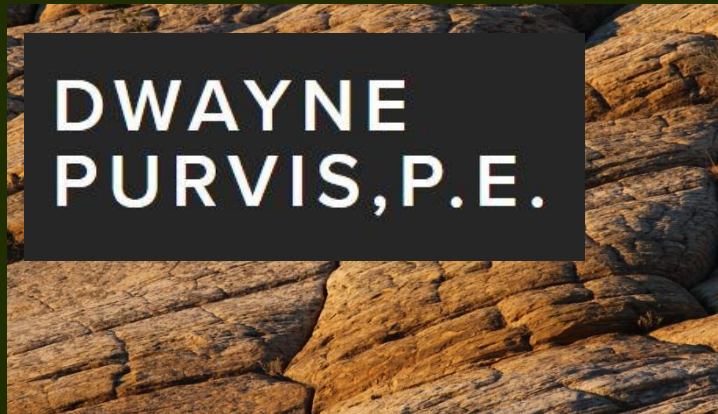
SPEE Lunch Meeting

Your Third-Party Engineer is No Longer a Third Party

Dwayne Purvis, P.E., and Joy M. Young

October 26, 2017

Oklahoma City, OK



ADVISING & CONSULTING, INC.

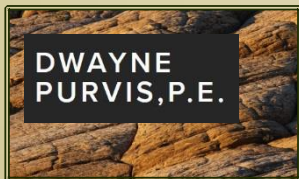
About Dwayne Purvis, P.E.

DWAYNE PURVIS, P.E. Services

DPPE offers reservoir engineering consulting services including field studies, reserve evaluations, training and mentoring.

Dwayne Purvis, P.E.

Dwayne has spent over two decades in reservoir engineering and executive leadership as a consultant and operator. He has led or participated in hundreds of field studies and reserve analyses over dozens of basins in the United States and abroad, and he has participated in the sale or acquisition of projects valued from tens of thousands to billions of dollars. Mr. Purvis has published on issues of reserves, risk analysis and shale reservoirs. He is a registered professional engineer in the state of Texas, member of SPEE, AAPG, SEG and a 25-year member of SPE.



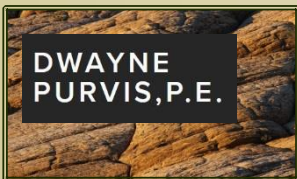
About Oak Advising & Consulting, Inc.

Oak Advising & Consulting, Inc.

Oak Advising & Consulting, Inc. is a specialty firm focusing on helping our clients meet their operational and financial challenges in the areas of EH&S risk and management; corporate finance; enterprise risk management; and financial restructuring. Our members bring to their clients the knowledge and experience gained from long positions in public accounting and industrial corporate leadership. Additionally, we support public accounting firms in their audit duties by offering deep external Environmental Specialist support and can leverage our unique experiences to partner with other consultancies to bring value to their clients.

Joy Young

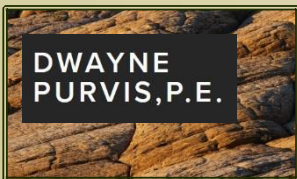
Through her academic education as an environmental toxicologist, and her professional experiences in engineering and accounting firms, Ms. Young is an accomplished environmental risk practitioner who works across a broad range of sectors to help clients identify and mitigate financial risk from environmental, health and safety issues. Ms. Young is also a member of the ASTM task group working to develop a new standard for Recognition and De-recognition of Environmental Liabilities and Asset Retirement Obligations (AROs).



Disclaimer

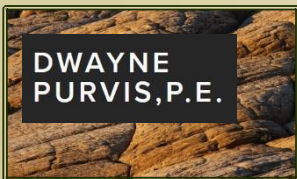
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Key Take-Aways

- Rules of financial auditing are in the final stages of changing
- They will qualitatively shift the work of both company-employed and third-party engineers by requiring much deeper review by auditors
 - Third party engineering firms may find their work audited just like companies or have their audit work questioned by financial auditors; auditors will assess “reasonableness” of methods and assumptions
 - Raising awareness of independence and moral hazard for reserve audit services
 - Industry changes may include finding new engineering firms; less engagement of engineering firms, financial auditors hiring engineering firms, and others



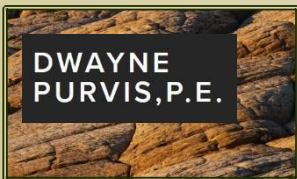
Overview

Current State

1. Development and “internal” audit for engineering estimates
 - a. Oil & gas reserves
 - b. Asset Retirement Obligations / Environmental Liabilities
2. The external financial audit process and the role of the PCAOB
3. Current requirements for external financial auditors for using a company’s specialist’s work

Proposed changes

Potential Implications



The Current State of Auditing

Joy Young

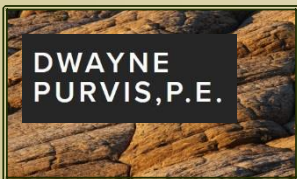
Development of ARO and EL estimates

- Asset Retirement (Decommissioning) Obligation and Environmental Liability estimates **depend heavily** upon non-accounting knowledge bases including:

- Engineering
- Geology / Physical Geography / Geomorphology / Geochemistry
- Hydrogeology
- Toxicology
- Ecology
- Nuclear science
- Law

J. Young: While completely different fields of expertise, both petroleum reserve estimation and ARO and environmental liability estimation are highly technical and involve significant assumptions and uncertainty. When such estimates make their way into the financial statements of a company, auditors are challenged to meet their requirements to understand and assess the estimates. I work as an auditor's employed (and now "engaged") Specialist assisting auditors in challenging EL and ARO estimates. Based on my experiences, new PCAOB requirements for auditors are expected to bring similar challenges to reserve engineers.

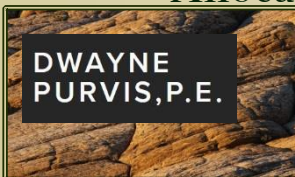
- ARO and EL estimates may be generated for purposes other than financial reporting resulting in estimates that do not meet the requirements under the relevant accounting guidance for financial statements (ex. Decommissioning financial assurance estimates and CERCLA Feasibility Study estimates) Specialists may not know these requirements and thereby introduce errors into the financial statements.
- ARO estimates, in particular, are commonly assembled completely "in house" by the Company



Engineering estimates in the financial reports

J. Young: Quick summary of how and where reserve, ARO, and EL estimates create risk in the financial statements.

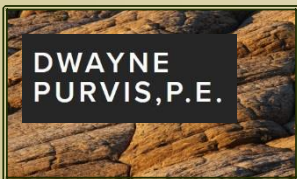
- Financial Statements
 - Balance Sheet: **Assets (tangible and intangible), liabilities**, equity
 - Statement of Cash Flows: revenues, **expenses (depreciation, amortization, operating env. expenses)**
 - Notes to Financial Statements (**notes related to above**)
 - Disclosures (**disclosures related to above**)
- ARO and ELs reported in the balance sheet; mis-accounted expenses may be included in the Cash Flow Statement.
- **Petroleum reserves have a pervasive impact** on several inputs to the E&P company financial statements under both Successful Efforts Method and Full Cost Method accounting:
 - Projections of future income (Cash Flow Statement)
 - Depletion, depreciation, and amortization
 - Impairment and reversal of impairment
 - The recognition of future decommissioning and restoration obligations (AROs)
 - Allocation of purchase price (in business combinations)



The external financial audit process and the role of the PCAOB

- Financial audits add credibility to a company’s assertion that its financial statements fairly represent the organization's financial position and performance for its stakeholders (users of the statements)
- Accounting information used for Financial Reporting should be:
 - Relevant** - the information provided has predictive value, feedback value, and is timely
 - Reliable** - the information is faithfully represented (accurate and complete), neutral, and verifiable (the reliability of a company’s financial statements may depend in part on the quality of the work of a company’s specialist)
- Financial audits are conducted by an external accounting firm which provides an opinion on whether the financial statements are prepared (“stated”) in accordance with specified required criteria

J. Young: Brief introduction to the role of a financial auditor



The external financial audit process and the role of the PCAOB

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

TO THE BOARD OF DIRECTORS AND SHAREHOLDERS OF ROYAL DUTCH SHELL PLC

We have audited the accompanying consolidated balance sheet of Royal Dutch Shell plc as of December 31, 2016, and the related consolidated statements of income, comprehensive income, changes in equity and cash flows for the year then ended. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of Royal Dutch Shell plc at December 31, 2016, and the consolidated results of its operations and its cash flows for the year then ended, in conformity with International Financial Reporting Standards as issued by the International Accounting Standards Board and in conformity with International Financial Reporting Standards as adopted by the European Union.

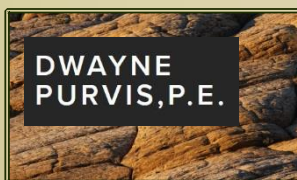
As discussed in Note 5 to the Consolidated Financial Statements, in 2016 Royal Dutch Shell plc elected to change the composition of its reportable segments. We also audited the adjustments to the 2015 and 2014 Consolidated Financial Statements to retrospectively reflect the change in composition of reportable segments. In our opinion, such adjustments are appropriate and have been properly applied. We were not engaged to audit, review or apply any procedures to the 2015 and 2014 Consolidated Financial Statements of the Company other than with respect to the adjustments and, accordingly, we do not express an opinion or any other form of assurance on the 2015 and 2014 Consolidated Financial Statements.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated financial reporting as of December 31, 2016, based on criteria established by the American Institute of Certified Public Accountants (AICPA) and the Financial Accounting Standards Board (FASB), and our report dated March 8, 2017.

/s/ Ernst & Young LLP
London, United Kingdom
March 8, 2017

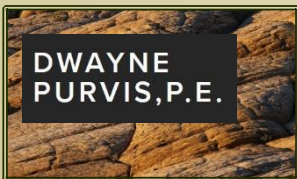
J. Young: This is an example of an auditor's report to the financial statements of a public company. Note that they must assert that they are Independent. This has a very specific meaning. Also, they must state their opinion and to which accounting standards the Company is held. References to materiality indicate that they are providing "reasonable" and not "absolute" assurance.

"In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of Royal Dutch Shell plc at December 31, 2016, and the consolidated results of its operations and its cash flows for the year then ended, in conformity with International Financial Reporting Standards..."



The development of external financial auditing and the PCAOB

- Financial auditing evolved along with the Industrial Revolution and became obligatory after the stock market crash of 1929. Generally accepted auditing standards developed as early as 1917
 - Financial auditors are paid by management → **“moral hazard”** (aka “hidden action” or “agency problem”) : the case in which the objectives of the agent (ex. auditor and management) may differ from the objectives of the principal (ex. investors) such that the agent is incentivized to take actions that benefit themselves at the expense of harming the principal.
- Securities Exchange Commission (SEC) created in 1934 and authorized to require financial audits for public companies and enforce “generally accepted auditing standards”
- Improvements to standards have been continuous since 1934, often in response to negative business events (commonly fraud)
- Sarbanes-Oxley (“SOX”) passed in 2002 in response to multiple scandals: ENRON, Waste Management, Worldcom, Tyco, and others.
 - Created the Public Company Accounting Oversight Board (PCAOB) → **inspects audits, promulgates and enforces financial auditing requirements (public companies)**
 - Establishes standards for external auditor **independence**
 - Requires that signing officer(s) must attest to the validity of all reported information and that responsibility for validity is **individual**. **Imposes potential criminal penalties.**
 - Requires that company’s establish, maintain, and monitor the effectiveness of **internal controls**.



J. Young: While auditing has been performed for a long time, how it is performed continues to evolve. Commonly, this is in response to negative business events like fraud and financial scandals. Prior to the passage of SOX, there was no governmental regulator inspecting and enforcing audit quality.

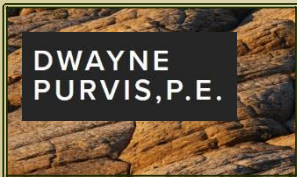


The external financial audit process and the role of the PCAOB

- <https://pcaobus.org/Standards/Auditing/Pages/default.aspx>
- General financial audit process:
 1. An audit plan is developed based on the judgment of the auditor regarding the **risk** presented by the different accounts and elements of the financial statements and their potential for **material misstatement**.
 - “Materiality” is defined for the company **and** for the audit.
 2. Procedures are designed and implemented to address areas determined to exhibit risk.
 - Typically on a **sample** basis (statistical and nonstatistical sampling methods allowed)
 3. Evidence is collected to demonstrate the implementation and results of the procedures
 4. Findings are assembled and **aggregated**.
 5. The auditor concludes whether or not the findings indicate that further procedures are required and implements them, if necessary.
 6. The auditor generates an audit report with an opinion (reasonable assurance) on the fair presentation of the financial statements.
- Audits of public companies are selected for inspection by the PCAOB on a sample basis
 - Findings of the PCAOB may drive further audit procedures or management revisions

J. Young:

The body of auditing standards has become extensive. Key features of an are the financial risk in the estimates as judged by the audit partner; how the estimates are sampled for testing and how errors are extrapolated across the population.



Proposed changes related to engineering estimates

There are two new/amended proposals for auditing standards impacting reserve, ARO, and EL estimates as well as any other accounting estimates in the financial statements developed by “Specialists” (ex. pensions, warranties, business/real estate valuations, etc.)

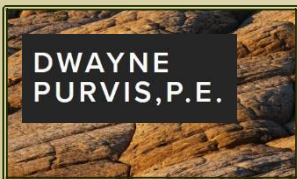
1. Proposed Auditing Standard – Auditing **Accounting Estimates** Including Fair Value Measurements and Proposed Amendments to PCAOB Auditing Standards

2. Proposed Amendments to Auditing Standards for **Auditor’s Use of the Work of Specialists**

These two areas are highly interdependent and the PCAOB specifies that the standards are designed to be implemented together.

Today’s presentation focuses on the new standard related to the work of Specialists

To understand the changes, let’s first look at the current requirements and some of the drivers of the change...



Current requirements for external financial auditors in auditing accounting estimates

J. Young: There are at least three different auditing standards for different types of estimates. They were developed at different times and demonstrate some inconsistencies in approach. This has led to a diversity of practice among auditors, even within the same company.

A. AS 2501, Auditing Accounting Estimates (1988)

The auditor may apply one or a combination of approaches to substantively test an accounting estimate:

1. Testing management's process:

- **Evaluating significant assumptions** used by management **for reasonableness**, and testing and evaluating the **completeness, accuracy**, and relevance of the data used; and
- **Evaluating the consistency of management's assumptions with other information.**

2. Developing an independent estimate:

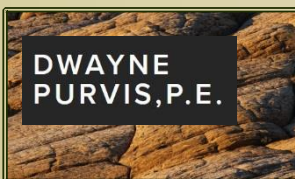
- Generally involves using management's assumptions or alternative assumptions, to develop an independent estimate or an expectation of an estimate.

3. Reviewing subsequent events or transactions:

- Generally involves using events or transactions occurring after the balance sheet data, but prior to the auditor's report, to provide evidence about the reasonableness of the estimate.

B. AS 2502, Auditing Fair Value Estimates (2003)

C. AS 2503, Auditing Derivative Instruments, Hedging Activities, and Securities Investments (2000)



Current requirements for external financial auditors for using a company's specialist's work

A. AS 1210 *Using the Work of a Specialist (2003)*

B. AI 11 *Using the Work of a Specialist: Auditing Interpretations of AS 1210*

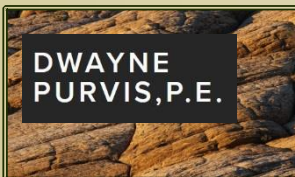
C. AS 2502 *Auditing Fair Value Estimates*

J. Young: There are at least three different standards or guidances related to using the work of a "Specialist." Similarly, these slightly different requirements have led to a diversity in practice.

AS1210: **Specialist** – "a person (or firm) possessing special skill or knowledge in a particular field other than accounting or auditing."

AS1210 applies when:

- 1) **The company engages or employs a specialist and the auditor uses that specialist's work as audit evidence in performing substantive tests to evaluate material financial statement assertions**
- 2) The auditor engages a specialist and uses the specialist's work as audit evidence in performing substantive tests to evaluate material financial statement assertions.

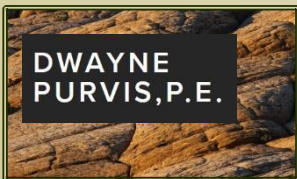


Current requirements for external financial auditors for using a company's specialist's work

AS1210 requires that the auditor perform the following procedures:

- Evaluate the professional qualifications of the specialist;
- Obtain an **understanding** of the nature of the specialist's work;
- Evaluate the relationship of the specialist to the company, including circumstances that might impair the specialist's objectivity; and
- In using the findings of the specialist:
 - obtain an **understanding** of the methods and assumptions used by the specialist;
 - Make appropriate tests of data provided to the specialist; and
 - Evaluate whether the **specialist's findings support the financial statement** assertions.

J. Young: These are the current requirements for an auditor with respect to the work of a Specialist for a non-fair-value accounting estimate. Note that the auditor is required to perform less testing than they might in other parts of the audit. They only are required to develop an "understanding" of the nature of the Specialist's work and of the assumptions and methods he or she used.

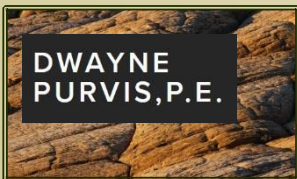


Current requirements for external financial auditors for using a company's specialist's work

AS1210 includes certain provisions that could be considered to **limit** the auditor's responsibilities related to the work of a specialist including:

- “the **appropriateness and reasonableness** of methods and assumptions used, and their application, **are the responsibility of the specialist.**”
- “the auditor **ordinarily would use the work** of the specialist unless the auditor's procedures lead him or her to believe that the findings are unreasonable in the circumstances.”
- “if the auditor determines that the **specialist's finding support the related assertions** in the financial statements, **he or she reasonably may conclude that sufficient appropriate evidential matter has been obtained.**”

J. Young: Further, AS 1210 contains language that appears to limit the auditor's responsibilities when using the work of a Specialist. These limitations are not present when a fair-value estimate is assessed.

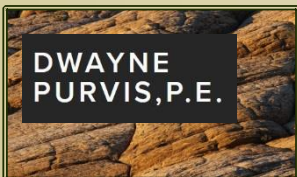


Current requirements for external financial auditors for using a company's specialist's work

Conversely, AS 2502 requires:

When a company's specialist develops assumptions used in a fair value measurement and the auditor tests the company's processes, the auditor is required to evaluate the reasonableness of those assumptions as if the assumptions were developed by the company.

J. Young: The current fair-value estimate assessments require a greater degree of assessment by the auditor. In these estimates, he or she must actually judge the reasonableness of assumptions rather than just gaining an "understanding" of them.



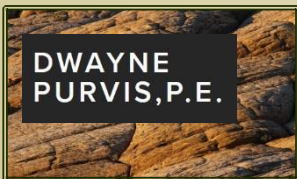
The Proposed Changes to Auditing Rules

Joy Young

PCAOB conclusions regarding accounting estimate auditing and need for new guidance

J. Young: The PCAOB has stated the following reasons for its decision to update the standards and increase the consistency between the processes.

- “Numerous deficiencies” upon PCAOB inspections of audits; most involving a failure to apply professional skepticism
- Variability in practice among audit firms due to various standards.
- Diversity in how audit firms use information from third-party sources and specialists.
- 2008 financial crisis highlighted issues with valuation, impairment, and recoverability of significant categories of assets and the completeness and valuation of significant categories of liabilities.
- Use of the work of Specialists continues to increase in both frequency and significance



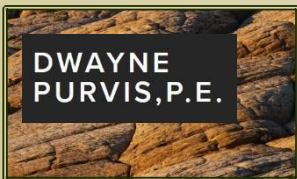
PCAOB conclusions regarding accounting estimate auditing and need for new guidance

Examples of deficiencies related to **auditing estimates**: Failures to...

- Sufficiently test the **relevance, sufficiency, and reliability** of data supporting accounting estimates;
- Perform any procedures to determine the reasonableness of assumptions and methods used by management;
- Understand information provided by third-party pricing sources;
- Perform a retrospective review of a significant accounting estimate to determine whether management's judgments and assumptions indicated a possible bias; and
- Perform procedures to obtain corroboration for management's representations regarding accounting estimates.

Examples of deficiencies related to using the **work of a company's specialist**: Failures to...

- Evaluate the reasonableness of assumptions used by a company's specialist in developing fair value measurements;
- Obtain an understanding of methods or assumptions used by the company's specialist;
- Test the accuracy and completeness of company-provided data used by the company's specialist; and
- Evaluate the professional qualifications of the company's specialist.




PCAOB fines KPMG for audit failures in auditing accounting estimates

BUSINESS
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FINANCE

'Big Four' accounts KPMG and PwC have both just been fined millions

Camilla Hodgson 

Aug. 16, 2017, 4:44 AM

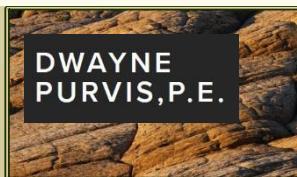


Auditor KPMG has been fined more than \$6.2 million (£4.8 million) by the US Securities and Exchanges Commission (SEC) for failing to properly audit an energy company that grossly overstated the value of its assets.

KPMG issued an unqualified audit of oil and gas company Miller Energy Resources in 2011, despite the fact that the company had overvalued various assets bought in Alaska by 100 times their real worth. The facts presented to auditors “should have raised serious doubts,” the SEC said.

Walter E. Jospin, director of the SEC’s Atlanta Regional Office, said **KPMG “failed to grasp how [Miller Energy] valued oil and gas properties,** resulting in investors being misinformed that properties purchased for less than \$5 million were worth a half-billion dollars.”

Miller Energy Resources’ hugely overblown valuation resulted in the company being listed on the New York Stock Exchange. In 2015, it was charged with accounting fraud and later settled charges against it.



J. Young: These deficiencies have consequences to the audit firms.



PCAOB fines EY - Indonesia for audit failures in accounting estimates and using the work of specialists

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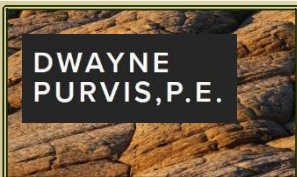
EY firm in Indonesia pays \$1M penalty to PCAOB for audit violations

By
Michael Cohn

Published
February 09 2017, 11:44am EST

The Ernst & Young global network's member firm in Indonesia has agreed to pay a \$1 million penalty to the Public Company Accounting Oversight Board for audit failure, noncooperation, and violations of the board's quality control standards

From the PCAOB Order: During the course of the 2011 audit, Indosat retained an international telecommunication industry specialist ... to conduct a study of the Indonesian cellular tower market to support Indosat's accounting for the pending sale-leaseback transaction. The Tower Market Report provided the Specialist's expert opinion on tenancy forecasts for the Indonesian tower market, which evidenced slot utilization rates below 50%. Even after receiving the Specialist's Tower Market Report, Indosat management continued to assert that a 100% utilization rate was appropriate for determining the fair value of a slot. **[The audit partner] and the engagement team failed to obtain sufficient appropriate evidence to support the reasonableness of this assumption.** In fact, as noted above, the Tower Market Report contained information that appeared to contradict management's 80% assertion.



PCAOB fines Deloitte Brazil for audit failures in accounting estimates and using the work of specialists

FINANCIAL TIMES

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US auditing watchdog fines Deloitte a record \$8m

DECEMBER 5, 2016 by Kara Scannell in New York

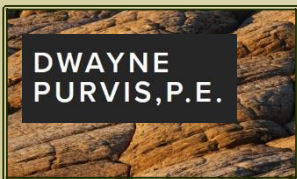
Group's Brazilian arm falsified reports and gave false testimony, says PCAOB

The US auditing watchdog has fined Deloitte's Brazilian arm a record \$8m for falsifying audit reports, altering documents and providing false testimony during an investigation that unearthed what it described as its "most serious" finding of misconduct.

The Public Company Accounting Oversight Board also sanctioned 12 former partners, including a national practice director, and auditors of the Brazil-based Deloitte Touche Tohmatsu Auditores Independentes.

The Deloitte Brazil case is the first time the PCAOB has charged a member of the Big Four auditing firms with fraud and for failing to co-operate with an investigation. In settling, Deloitte Brazil admitted it had violated quality control standards and failed to co-operate with the auditing board's inspection and subsequent investigation.

From the PCAOB Order: During the Audit, [Deloitte] failed to exercise due professional care and professional skepticism and failed to: ... (3) sufficiently evaluate the qualifications, work, relationship to the audit client, and findings of the Company's employed and engaged specialists used for mineral reserves, labor obligations and employee benefits, and fixed asset lives; (4) sufficiently evaluate significant accounting estimates, including estimates related to mineral reserves and useful lives of fixed assets;



PCAOB suspends auditor over failure to perform procedures related to the company's specialist

ORDER INSTITUTING DISCIPLINARY
PROCEEDINGS, MAKING FINDINGS AND
IMPOSING SANCTIONS

*In the Matter of Gordon Brad Beckstead,
CPA,*

PCAOB Release No. 105-2015-007

April 1, 2015



By this Order, the Public Company Accounting Oversight Board is (1) censuring Gordon Brad Beckstead, CPA; (2) suspending him from being an associated person of a registered public accounting firm for a period of one year from the date of this Order; (3) limiting his activities in connection with any “audit” as that term is defined in the Sarbanes-Oxley Act of 2002, for an additional period of one year following the expiration of his suspension; and (4) requiring that he complete forty additional hours of continuing professional education in subject that are directly related to the audits of issuer financial statements under PCAOB standards.

Specifically, during audit planning, **Beckstead failed to properly assess the risk of material misstatement with respect to WebXU's 2011 financial statements.** ... Beckstead also failed to properly establish an overall strategy for the audit and develop an audit plan that included planned risk assessment procedures and planned responses to the risk of material misstatement. ... **Among other things, Beckstead failed to evaluate the qualifications and competence of a specialist that WebXU retained to value a significant acquisition. He also failed to evaluate the reasonableness of the significant assumptions used by the issuer and its specialist to determine the fair value of purchase consideration for that acquisition. Beckstead also failed to test data WebXU provided to the specialist and properly evaluate whether the specialist's findings supported the related financial statement assertions.**



PCAOB declines to differentiate between a company-employed specialist and a company-engaged specialist

From: PCAOB Staff Consultation Paper (2014)

PCAOB
Public Company Accounting Oversight Board

Rules of the Board

Auditing | E

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c. Management's Use of a Specialist

The staff is also exploring whether to include in a potential new standard audit procedures to address information developed by a company's specialist related to accounting estimates. Under existing requirements in AU sec. 328, management's assumptions include assumptions developed by management under the guidance of the

*"...management's assumptions include assumptions developed by a specialist **engaged or employed** by management." ... "As such, if a company uses **a specialist to develop an accounting estimate**, a potential new standard could direct the **auditor to test that information as if it were produced by the company**. ... the **auditor would be required to evaluate the appropriateness of the methods, test the data used, and evaluate the reasonableness of significant assumptions.**"*

SUPPLEMENT

DESCRIPTIVE

of the methods, test the data used, and evaluate the reasonableness of significant assumptions, with respect to the information provided by the specialist. For example, the potential new standard could include the following requirement:

Transcript: Standing Advisory Group Meeting

Oct. 2, 2014

J. Young: In the first version of the proposed updates, the PCAOB indicated a fundamental change ... that, like the fair-value estimate standards, accounting estimates developed by 3rd parties were to be considered as if they were management's own.

J. Young: This first version went through public comment and this requirement was maintained in the amendments proposed in June, 2017....

DWAYNE
PURVIS, P.E.



PCAOB declines to differentiate between a company-employed specialist and a company-engaged specialist

From: PCAOB Release No. 2017-003, p. 108

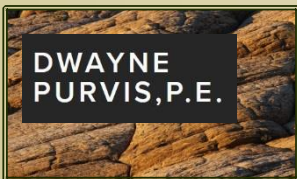


J. Young: In this, and the next three slides, we see that the PCAOB has made it clear in the amendments proposed in June that a 3rd party estimate will not be relied upon untested just because it is developed by a 3rd party.

Proposed Amendments
Page A3-15

control or influence than a company-engaged specialist. Some commenters also stated that evaluating the work of a company-employed specialist should require more rigorous testing than the work of a company-engaged specialist. The Board has not expressly differentiated between the two because the proposed amendments and its specialist inherent risk assessment under the proposed AS 1105.B7d evaluation of the specialist's work would, in part, depend on the auditor's judgments about the work performed, conclusions, or findings.

“... The Board is not proposing to expressly differentiate between company-employed and company-engaged specialists, because the proposed requirement to evaluate the relationship between the company and its specialist inherently takes these considerations into account. For example, under proposed AS 1105.B7d, the necessary evidence needed from the auditor’s testing and evaluation of the specialist’s work to support a conclusion regarding a relevant assertion would, in part, depend on the ability of the company to significantly affect the specialist’s judgments about the work performed, conclusions, or findings.”



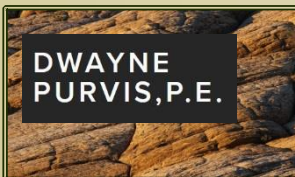
PCAOB declines to differentiate between a company-employed specialist and a company-engaged specialist

From: PCAOB Release No. 2017-003, p. 55

Certain commenters, however, expressed concern that rescinding AS 1210 and elevating the requirements for using the work of a company's specialist would suggest that an auditor is required to have the same level of expertise as a specialist. A few commenters also asserted that such changes would result in the auditor being required

*“... **Some commenters also recommended that the Board distinguish between the work of a company's employed specialists and the work of a company's engaged specialists,** as company management may be able to exert greater influence over a specialist employed by the company.” ... After considering the views expressed by commenters, **the Board determined that the proposed approach appropriately recognizes the purpose of the work of a company's specialist** and aligns the [auditing] requirements ...with the risk assessment standards. This approach would[provide] the auditor with the ability to take the quality of the source of information into consideration when determining his or her audit approach.”*

approach, while at the same time providing the auditor with the ability to take the quality of the source of the information into consideration when determining his or her audit approach.



PCAOB declines to differentiate between a company-employed specialist and a company-engaged specialist

From: PCAOB Release No. 2017-003, p. 74

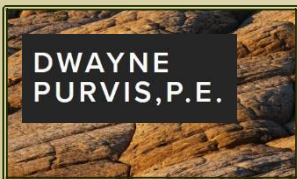
Appendix B – Using the Work of a Company's Specialist as Audit Evidence

.B1 This appendix describes the auditor's responsibilities with respect to the work of a specialist,¹ employed or engaged by the company ("company's specialist"), including procedures to be applied in conjunction with obtaining an understanding of the company's information system relevant to financial reporting (.B2) and procedures to be performed when using the work as audit evidence to support a conclusion regarding a relevant assertion of a significant account or disclosure (.B3-.B10). The requirements in this appendix supplement the requirements of this standard.

¹ For purposes of this standard, a specialist is a person (or firm) possessing special skill or knowledge in a particular field other than accounting or auditing. Because income taxes and information technology are specialized areas of accounting and auditing, this appendix does not apply when the auditor uses the work of an income tax specialist or information technology specialist as audit evidence.

.B2 The auditor should, in conjunction with obtaining an understanding of the company's information system relevant to financial reporting,² obtain an understanding of the work and report(s) of the company's specialist(s) and related company processes and controls, which includes:

- a. The nature and purpose of the specialist's work;
- b. Whether the specialist's work is based on data produced by the company, data obtained from external sources, or both; and



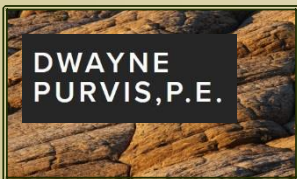
PCAOB specifically mentions oil & gas reserve estimates as an example of audit changes

From: PCAOB Release No. 2017-003, p. 112

J. Young: The PCAOB has, by specific example, included reserve engineers, in this new standard.

The following examples illustrate various ways in which the factors discussed above can affect the necessary audit effort in testing and evaluating the work of a company's specialist under this proposal. The examples have been provided for illustrative purposes only, and similar situations in practice, accompanied by additional information, could lead to different conclusions. The examples assume that the auditor will test and evaluate, as appropriate, the data used by the specialist, evaluate the methods and the significant assumptions used by the specialist, and evaluate the relevance and reliability of the work of the company's specialist.

Example 1 – An oil and gas production company employs an experienced reserve engineer to assist in developing the estimated proven reserves that are used in multiple financial statement areas, including: (1) the company's impairment analysis; (2) depreciation, depletion and amortization calculations; and (3) related financial statement disclosures. The auditor concludes that the risk of material misstatement of the valuation of oil and gas properties is high, and the reserve engineer's work is significant to that assertion. Thus, the auditor would need to extensively test and evaluate the work of the company's specialist to obtain sufficient appropriate evidence, perhaps with the assistance of an auditor's specialist.¹⁷



Comparison of the PCAOB requirements for auditor's use of the work of a Company Specialist

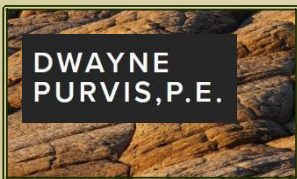
CURRENT Financial Auditor Requirements for Using the Work of Company Specialists

1. Evaluate the professional qualifications of the Specialist
2. Obtain an understanding of the nature of the work of the Specialist's work

PROPOSED Financial Auditor Requirements for Using the Work of Company Specialists

Obtain an understanding of the professional qualifications of the company's specialist...and the entity that employs the specialist, and assess the level of knowledge, skill, and ability of the Specialist (considerations listed).

Obtain an understanding of the work and reports of the Specialist and related company processes and controls → includes the nature and purpose of the Specialist's work; whether the Specialist's work is based on data produced by the company, data obtained from external sources or both; and the company's process for selecting and using the work of Specialists.



Comparison of the PCAOB requirements for auditor's use of the work of a Company Specialist

CURRENT Financial Auditor Requirements for Using the Work of Company Specialists

3. Evaluate the relationship of the specialist to the company, including circumstances that might impair the Specialist's objectivity and

4. In using the findings of the Specialist:

a. Obtain an understanding of the methods and assumptions used by the Specialist

b. Make appropriate tests of data provided to the Specialist; and

c. Evaluate whether the Specialist's findings support the financial statement assertions.

PROPOSED Financial Auditor Requirements for Using the Work of Company Specialists

Assess the relationship of the company to the Specialist and the entity that employs the Specialist – specifically, whether circumstances exist that give the company the ability to significantly affect the Specialist's judgments about the work performed, conclusions, or findings.

Testing and evaluating the work of a company's Specialist involves:

b. Evaluating the methods and significant assumptions used by the Specialist;



a. Testing and evaluating the data used by the Specialist and evaluating whether the data was appropriately used by the Specialist.

c. Evaluate the relevance and reliability of the Specialist's work and its relationship to the relevant assertion.

DWAYNE
PURVIS, P.E.

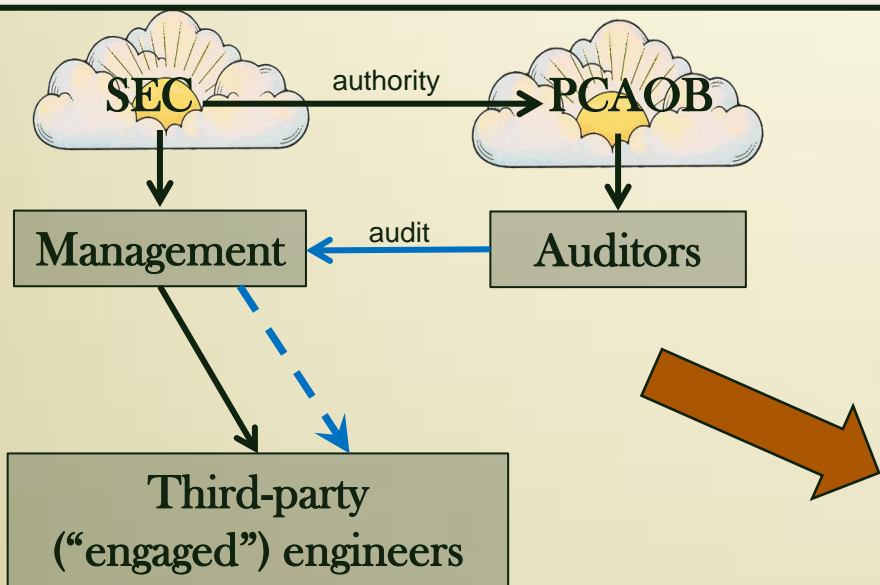
J. Young: While the requirements are greater across the board, the requirement to evaluate (for reasonableness) the methods and assumptions used by a Specialist, has the potential to greatly increase audit effort for these estimates..



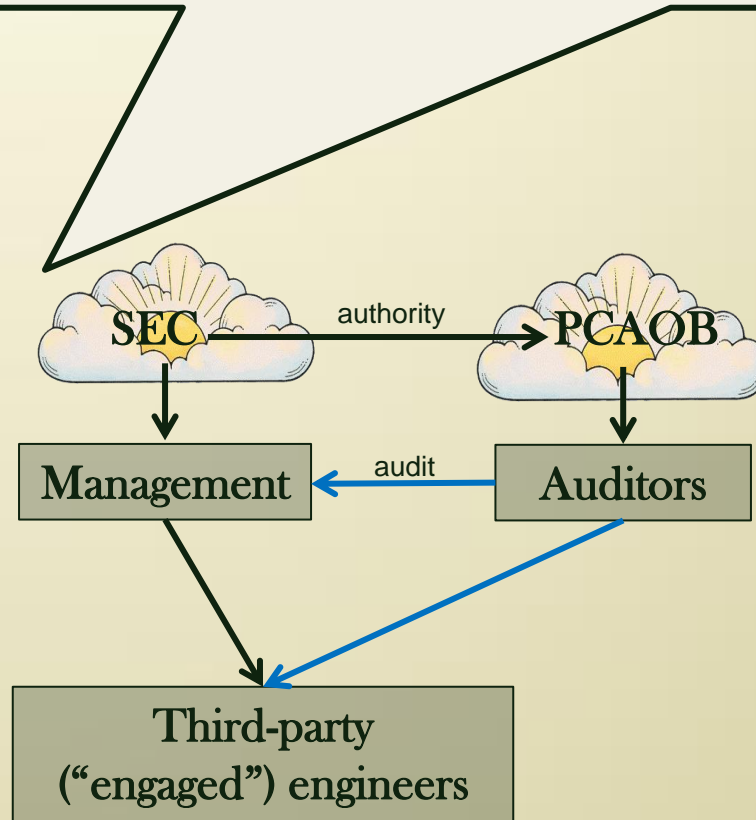
The Potential Implications for Oil and Gas

Dwayne Purvis, P.E.

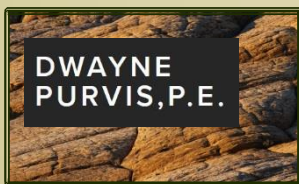
D. Purvis: To summarize, the new PCAOB regulations will change the expectations for the financial auditor in regard to the 3rd party. With respect to reserve estimates prepared by a 3rd party engineer for use by management, the 3rd party estimate will be expected to be assessed for reasonableness as if it were developed solely by management. Financial auditors will have additional requirements for assessing the 3rd party qualifications and assessing the potential for bias and management influence, as well as renewed emphasis on testing the underlying data used by the engineer (“Specialist”).



Currently...



Future



D. Purvis: The auditors' objectives and methods are expected to come to bear on estimates developed for management by 3rd party engineers. Third parties providing "audit" of reserve estimates may start to come under the scrutiny of the financial auditor's concerns as well as an assessment of whether the 3rd party engineering auditor uses similar methods as the financial auditor

Auditors

Objectives

Financial statements are...

Comparable

Relevant & Reliable

- complete
- accurate
- neutral
- verifiable

Methods

Materiality

Sampling & Testing

- data
- methods
- significant assumptions
- relied upon
- for completeness, sufficiency, accuracy, reliability, relevance
- Extrapolation of results

Aggregation of errors

Alternatively. . .

Independent estimates

Subsequent events

Concerns

Financially Independent

- no other consulting relationship
- no other financial relationship
- no inappropriate social relationships with management
- self or family

Mental/Emotional

- professional skepticism
- professional care
- moral hazard and bias

Oversight

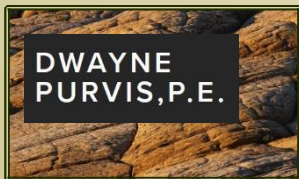
Internal inspections

- sampling basis annually



PCAOB inspections;

- sampling basis annually



Bigger E&P Companies

- Estimates more commonly developed by an “employed specialist”

Management

Qualifications

Training

Documentation

Internal audit boards

D. Purvis: The current structure for reserves certifications are different for larger companies, which tend to do the work internally, and smaller companies which tend to hire third-parties. The scope of third party assignments, though, can vary widely.

Smaller E&P Companies

- Estimates more commonly developed by an “engaged specialist”

Third-party engineers

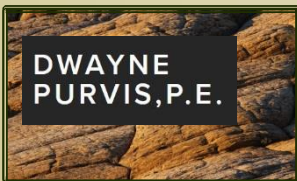
A. Process audit

- internal systems and controls
- qualifications
- documentation

B. Reserves audit

- classifications
- volumes only, or with cash flows
- with or without process audit
- commonly top 80-90%

C. Reserves certification



Third-party engineers

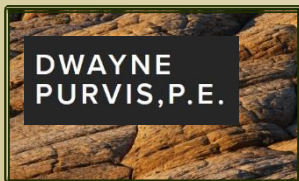
... “is an independent consulting firm qualified to evaluate oil and gas interests. Neither the employment of this firm nor the compensation received is contingent upon our estimates of reserves and future economic value for the subject properties” . . .

... “reviewed for reasonableness but accepted without independent verification” . . .

Auditors

- ✓ Qualifications
- ✓ Understanding
- ~ Relationship to management
- ?’s Go to preparer

D. Purvis: The requirements on the reserves auditors are limited, and they are often documented by simple statements in the cover letter of the third-party engineering report. The depth of the investigation by the reserves auditors of the third-party engineering firms is usually shallow. Financial auditors might consider, under the new guidances, that this is not sufficient work upon which they can rely.



Current

Auditors

- ✓ Qualifications
- ✓ Understanding
- ~ Relationship to management

attach the audit letter

D. Purvis: The proposed requirements would both widen and deepen the review by the auditors of the engineering process.

Proposed

Auditors

Qualifications

- engineer & entity
- knowledge, skill & ability

Processes & controls of company

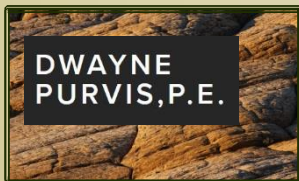
Ability to influence judgment

Source of data

- Reliable (accurate and complete)
- used appropriately

Methods & significant assumptions

Relevance & reliability



Engineers Like Us

D. Purvis: We can expect to see direct increases and changes in our interaction with financial auditors. A learning curve will be expected on both sides with large and possibly difficult changes in the first couple of years after implementation. Secondary impacts to the 3rd party engineering industry are possible.

If employed by the company,

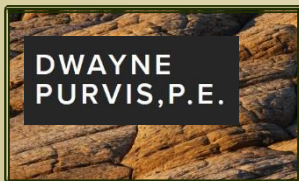
- expect interviews with, and challenges from, auditors
- expect to provide documentation verifying or supporting methods and assumptions
- possibly interaction with SEC/PCAOB during the auditor's inspection (if selected)

If engaged by the company,

- to evaluate reserves: expect to be audited just like the company (as above)
- to audit reserves: potentially expect to follow independence and anti-bias practices like those of financial audit for work to be considered credible and sufficient for auditors to “rely” on it.
Process gets much more scrutiny
Raise awareness of independence and moral hazard

Industry impacts

- Increased costs to management (both internal costs and audit costs)
- Fewer 3rd party engineers ? Less use of 3rd parties by company management?
- Or switching 3rd party engineers ?
- Role for SPE / SPEE in driving consistency in estimation and audits?
- Financial auditing firms become 3rd party engineering clients?

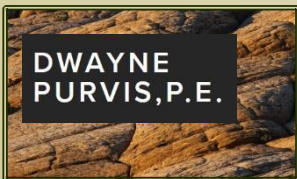


Proposed PCAOB requirements for auditor's testing of accounting estimates



Unfortunately, our time today is limited and we will not go into any other discussion about the proposed Accounting Estimates requirements but they will go hand-in-hand with the changes in the requirements for the work of Specialists.

For further information on these changes, reference the proposed amendments found in the references to this presentation or follow updates from Dwayne Purvis, P.E. or Oak Advising & Consulting, Inc.



Questions?

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Principal

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Joy Young

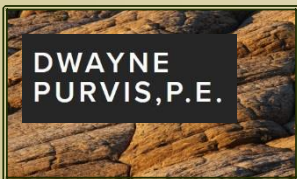
Principal

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Web: www.oakadvcon.com



References

Current and proposed auditing standards

Proposed Auditing Standard – Auditing Accounting Estimates Including Fair Value Measurements and Proposed Amendments to PCAOB Auditing Standards

PCAOB Release No. 2017-002

PCAOB Rulemaking Docket Matter No. 043

June 1, 2017

<https://pcaobus.org/Rulemaking/Pages/docket-043-auditing-accounting-estimates-fair-value-measurements.aspx>

152p.

Proposed Amendments to Auditing Standards for Auditor's Use of the Work of Specialists

PCAOB Release No. 2017-003

PCAOB Rulemaking Docket Matter No. 044

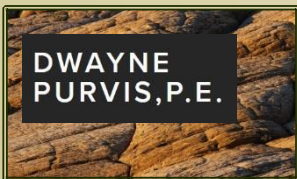
June 1, 2017

<https://pcaobus.org/Rulemaking/Pages/docket-044-auditors-use-work-specialists.aspx>

142p.

Current Financial Auditing Standards (Public Companies):

<https://pcaobus.org/Standards/Auditing/Pages/default.aspx>



Appendices – Other Background Information

Engineering estimates in the financial reports

- Unlike other elements and inputs to the financial statements including cash, direct expenses, etc. , reserve, ARO, and environmental liability values are considered “accounting estimates.” They often cannot be directly measured or include inputs that cannot be directly measured.
- Accounting estimates: an approximation of a financial statement element, item, or account.
 - Estimates are made based on subjective as well as objective factors
 - Judgment is required to estimate an amount at the date of the financial statements
 - Even when management’s estimation process involves competent personnel using relevant and reliable data, there is a potential for bias in the subjective factors
 - The risk of material misstatement of accounting estimates normally varies with the complexity and subjectivity associated with the process, the availability and reliability of relevant data, the number and significance of assumptions that are made, and the degree of uncertainty associated with the assumptions.

