



SPE DISTINGUISHED LECTURER SERIES

is funded principally
through a grant of the

SPE FOUNDATION

The Society gratefully acknowledges
those companies that support the program
by allowing their professionals
to participate as Lecturers.

And special thanks to The American Institute of Mining, Metallurgical,
and Petroleum Engineers (AIME) for their contribution to the program.



Reserve Overbooking – An Issue of Professional Ethics

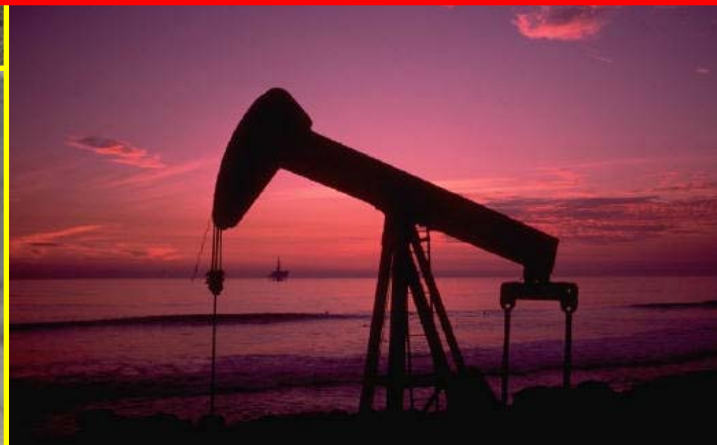
Mark McLane, SPE, Rose & Associates, LLP

Society of Petroleum Engineers
2004 – 2005 Distinguished Lecturer Series



“It takes many good deeds to build a good reputation, and only one bad one to lose it.”

Benjamin Franklin



A Definition of Ethics

“The discipline dealing with what is good and bad and with moral duty and obligation; a set of moral principals or values; a theory or system of moral values; the principles of conduct governing an individual or a group”

Webster's New Collegiate Dictionary

'Ethics' may also be viewed as:

- A framework for discerning Right from Wrong
- A process for choosing between choices equally perceived to be right

Coping with Ethical Conflicts in Organizations

Conflicts? What conflicts?

Organizational “Pressures” – Can be Overt or Subtle

Optimistic Estimates – Reserve & Resource Volumes

- Prospect/Project Approval
- Inflated Corporate Goals – Often Tied to Bonuses
- Market Pressure – Quarterly Earnings Reports

Conservative Estimates – Production & Costs Forecasts

- Incentives to Meet Targets
- Fear of “Being Wrong” – Real or Perceived

Coping with Ethical Conflicts in Organizations

Conflicts? What conflicts?

Personal “Pressures” – Real or Perceived

- Peer Approval and Recognition
- Career Advancement
- Compensation
- Job “Security”

Younger Professionals Often More Susceptible

Living in the “Post-Enron” World

- In spite of increased financial and regulatory scrutiny, reserve overbooking remains a potential problem.
- It is not a technology issue, it is a people issue often with strong ethical components.

How does Reserve Overbooking relate to the issue of Professional Ethics?

Reserve Overbooking

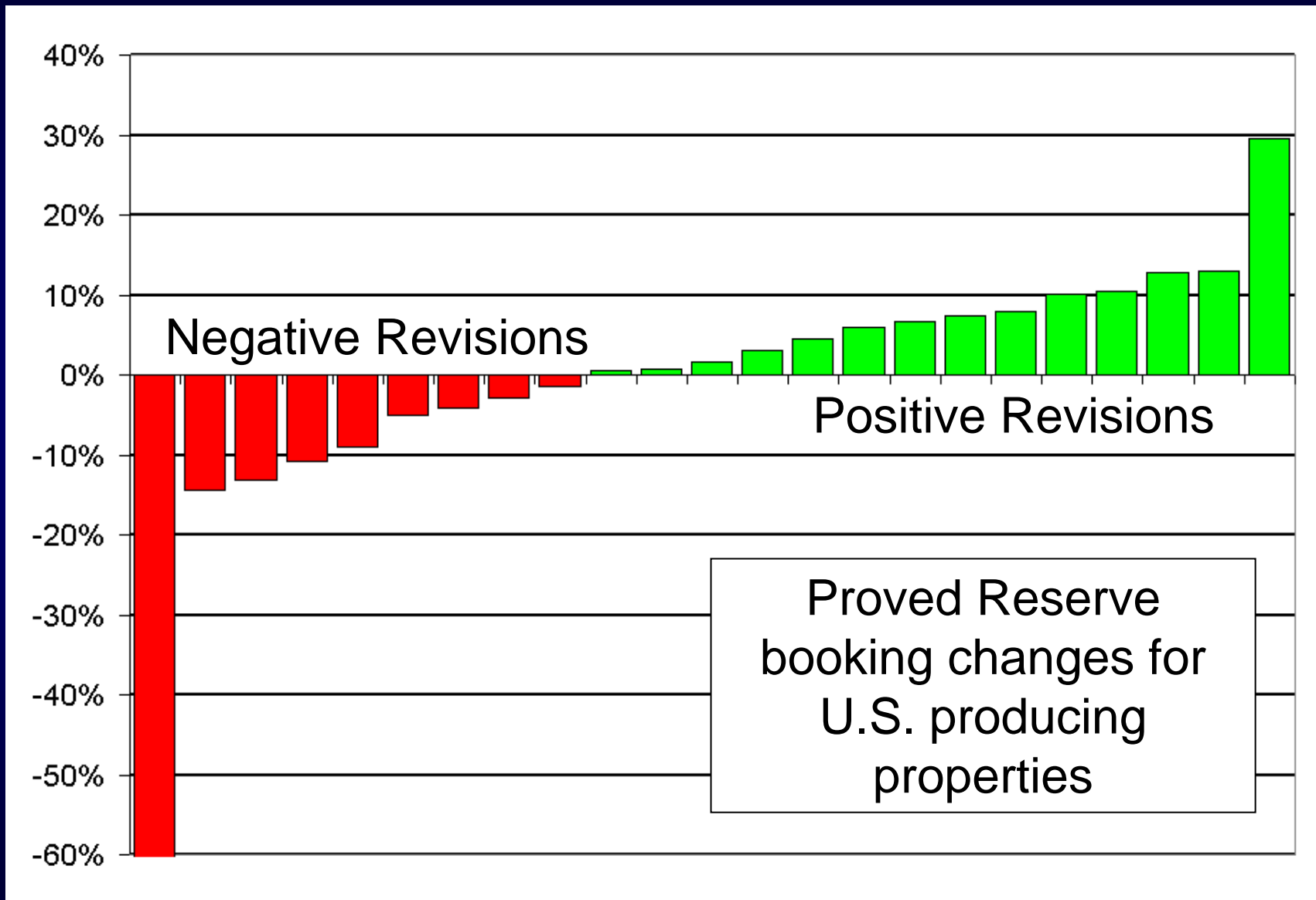
- Widely Acknowledged
- Taboo – Reluctantly Discussed
- Multiple Causes
- Won't Just Go Away

Why are Reserve Estimates So Important?

- Externally
 - An indicator of Asset Value for investors, shareholders and lenders
 - National Energy Policy & Security
- Internally, they are a key component of:
 - Project Valuations
 - Contract & Unitization Agreements
 - Project Evaluation, Approval & Funding
 - Regulatory Reporting
 - Corporate Strategic Planning



1996-2000 Revisions / YE 2000 Reserves



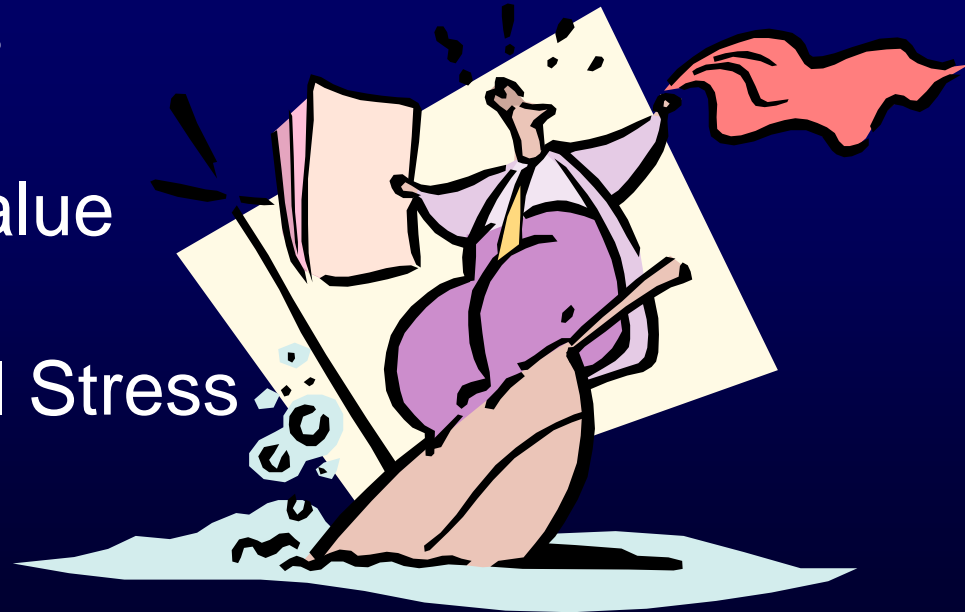
Reserve Overbooking

What's Wrong with It?

Creates 'Ethical Tension' because it conflicts with objectivity, and thus professionalism

It also...

- Misleads Shareholders
- Potentially Destroys Value
- Creates Organizational Stress



Reserve Overbooking – Causes

Errors of Omission

Errors of Commission

Reserve Overbooking – Causes

Errors of Omission

- Ignorance & Poor Estimating Practices
- Solved through Education, Training, Mentoring (Feedback) and Portfolio Monitoring



Good Estimating Practices are Vital!

Though the SEC rules have changed, one thing has not changed: uncertainty. Because of this, oil and gas volumes, and thus reserves will always be estimates.

“It is unfortunate that the term ‘proved’ has been attached to reserves. They are never *proved* – they are always *estimated*! In fact, the only thing which can be said about reserve estimates with any certainty is: No matter what answer you come up with – it is wrong.”

Oil Property Evaluation by Robert Thompson and John Wright

Reserve Overbooking – Causes

Errors of Commission

- Intentional Overbooking – Misguided Incentives
 - Who Benefits?
 - Personal Rewards versus Shareholder Value
- Ignoring Unambiguous Reserve Overbooking
 - What would you do?

Misguided Incentives

“What is honored in a country is cultivated there.”

Plato

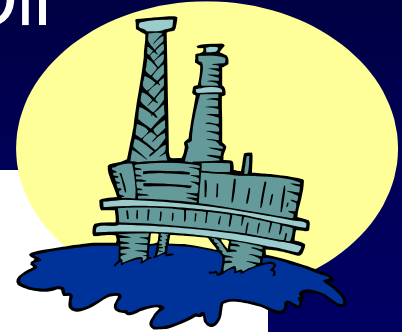
Or...



What gets
rewarded,
gets done!

Misguided Incentives

Example Company – Big Rock Oil



- **Bonuses awarded for drilling wells**
- **Staff not meeting minimum target laid off!**

What results should management expect?

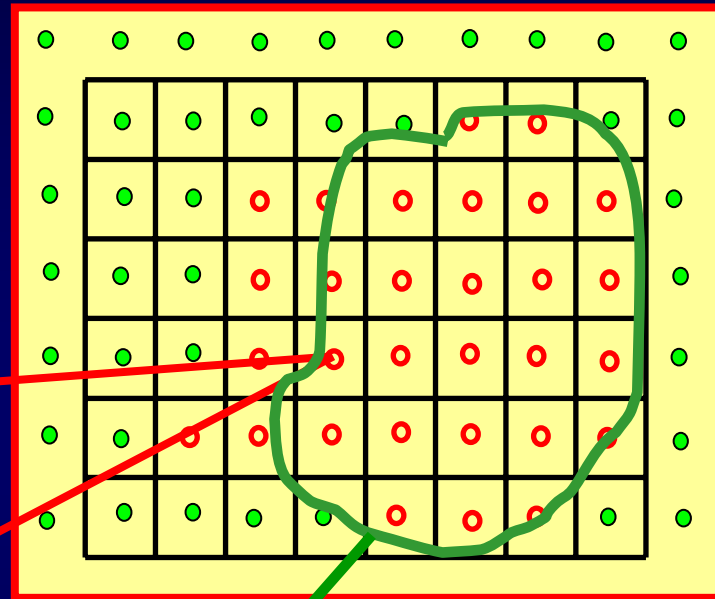
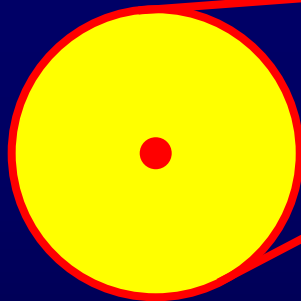
Lots of wells! But will they add value?



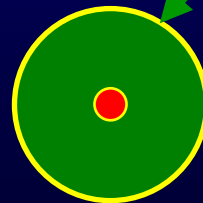
May not matter to staff...but it does to shareholders!

Case Study 1 – “You Are There”

EUR estimated based on 40-acre analogs within the same field



3 Years Later...



Production data indicate drainage areas between 20 and 35 acres

Case Study 1 – “You Are There”

What would you do?

- Write-down reserves now?
- Evaluate recompletion or re-stimulation?
- Wait and hope?

Reserve Overbooking - Solutions

- Leadership

- Education

- Professionalism



Reserve Overbooking - Solutions

Leadership



- Lead by Example
- Clearly Stated Expectations and Standards
 - Willing to be Accountable
- Critically Evaluate Incentive and Reward System
 - “If the Company prospers, we all prosper”
 - Puts Shareholder Value above Personal Gain
- Not Limited to Managers!

Reserve Overbooking - Solutions

Education

- Learning how to deal with Uncertainty through better estimating
 - Systematic and probabilistic
- Understanding the effect of Bias on estimating and Decision Making
- Critically evaluating Patterns of Past Performance
 - The Key to real improvement!



Reserve Overbooking - Solutions

Professionalism

- Guided by Values and Principles – Not Circumstances
- Accepts Personal Responsibility and Accountability
- Places Long-Term Shareholder Value above Personal Gain
- Fair and Objective



Existing Controls, Procedures and Policies

- Governmental Regulations
 - SEC, et. al.
 - State/National Engineering Boards
- Professional Society Guidelines
 - PRMS (SPE, et al, 2007)
 - FASB
 - IASB
- Company Policies

How Are They Working?

Ultimately, compliance...is an issue of personal and corporate values

Our Challenges

1. Education of Executives, Managers & Staff
 - Technology
 - Uncertainty
 - Ethics
2. Clear Reserve/Resource Documentation
 - Rationale & Assumptions
 - Maps & Data
3. Senior Professionals – Mentors & Counselors
4. Provide a process to resolve Ethical issues
 - Independent Reserve Group
 - Senior Ombudsman – Conflict Mediator
5. Proper Incentives
6. Acting on Principles – Honorably Resign Rather Than Compromise Integrity



Coping with Ethical Conflicts in Organizations

Remember...

“It takes many good deeds to build a good reputation, and only one bad one to lose it.”

Benjamin Franklin

Human nature looks for rules and formulas to replace thinking. Principles-based systems (e.g. PRMS) require thinking, analysis, judgment and a good ethical foundation.



Reserve Overbooking – An Issue of Professional Ethics

Mark McLane, SPE, Rose & Associates, LLP

Society of Petroleum Engineers
2004 – 2005 Distinguished Lecturer Series