



Contingent Resources: Will They Ever Make It To Reserves?

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Programme

18.00	Tea & Coffee in the Lower Library
18.30	Presentations Start
19.40	Panel Discussion
20.15	Wine Reception in The Lower Library
21.00	Reception Ends

John Barker & Blake Hodson, *Gaffney Cline & Associates*

John Barker is a senior reservoir engineer with Gaffney, Cline & Associates, where he has led or contributed to numerous projects including the provision of a Competent Person's Report for listings on the London Stock Exchange, advising national oil companies on resource reporting methodology, reserves audits and field development planning. He has over 24 years' oil industry experience, having previously worked for BP, Elf and Total in a variety of technical roles. He has authored 34 papers, of which 20 have appeared in peer-reviewed journals. He has served on several SPE committees and was Executive Editor of SPE Reservoir Engineering in 1999/2000. He holds an M.A. in Mathematics from the University of Cambridge and a Ph.D. in Applied Mathematics from the California Institute of Technology.

Blake Hodson is a reservoir engineer with Gaffney, Cline & Associates, where he has led or participated in numerous projects involving reserves audits, asset valuations, reservoir simulation and field development planning. Blake recently evaluated Contingent Resources within the UK North Sea and he is fully aware of technologies currently in use for the exploitation of both conventional and unconventional reservoirs. He has over 10 years' oil industry experience, having previously worked for BHP Billiton and Santos in a variety of technical and field based engineering roles. He holds a Masters of Petroleum Engineering from the University of New South Wales, and a Bachelors of Chemical Engineering and Bachelors of Commerce from Monash University, Australia.

Abstract: The Independent Auditor's Perspective

Contingent Resources are those quantities of petroleum estimated, as of a given date, to be potentially recoverable from known accumulations, but where the applied project(s) are not yet considered mature enough for commercial development due to one or more contingencies" (PRMS, 2007). These contingencies may take a wide range of forms, and the work required to progress the project to the point where all contingencies have been lifted varies considerably from case to case. The chance of any particular Contingent Resource volume becoming a Reserve volume may be assessed as a "chance of commerciality", which depends on the circumstances and time scale under consideration and which may be almost anywhere between the extreme values of zero and one.

In estimating the value of the Contingent Resources held by a company, it is important to recognise this variability in the chance of commerciality. Quantification of the chance is difficult as the factors involved may include future oil price, political factors or the outcome of contract negotiations. To facilitate consistency of approach in the future, consideration of a number of components factors will be proposed in this presentation. Nevertheless, professional judgement will always be the essential factor in estimating the status of any given project.

Examples will be presented illustrating Contingent Resources with very different chance of commerciality, and how this chance may vary as the project progresses. Volumetric uncertainty in Contingent Resource estimates and how this too may vary as projects are matured to the point of commerciality will be discussed. Guidelines to ensure consistent external reporting of Contingent Resources will also be proposed.

Yogeshwar Sharma, *Hardy Oil and Gas*

Mr Yogeshwar Sharma is a co-founder and major shareholder of Hardy Oil and Gas plc, and has over 35 years' of broad international oil and gas industry experience, specialising in Reservoir Engineering, Reservoir modelling and Economics. Currently, Mr Sharma is the President and Chief Executive of Hardy Exploration & Production (India) Inc. in addition to being the Chief Operating Officer of Hardy.

Prior to founding Hardy he held senior technical positions at Schlumberger Doll Research and Elf International, where he helped found the Elf Geoscience Research centre in London in 1991. While at Elf he was also an external examiner at Heriot Watt University for three years.

Mr Sharma completed his undergraduate studies at the University of Alberta in Mech. Eng and Post Graduate Studies at the University of Calgary in Chemical Engineering. He is a Registered Professional Engineer in Alberta, Canada, and was voted the E&Y Entrepreneur of the Year in London in 2008.

Abstract: The Operator's Perspective

Petroleum Professionals have been making estimates of underground resources and their ability to extract them ever since the discovery of oil. However, as our markets and investment community have become more sophisticated it has become necessary to provide more clarity to the investment community on the nature of their investment to allow for better and improved valuation of the companies in which they are investing. It is not sufficient for an investor to know simply the probabilistic distribution of an underground resource but also the time scale over which they can come on stream and the period over which they could be monetised. Resources which are proven to exist but which cannot be shown to be clearly monetised over an acceptable time scale can be termed as Contingent.

Apart from the obvious preparedness and maturity of a project, some of the factors that affect the conversion of Contingent resources to Reserves are the fiscal regime of the host country, the contractual terms between the Contractor and the Government of the host country which impact the cost recovery of the project and the political stability of the host country. For the benefit of the investment community it is also important for an operator to show the level of uncertainty associated with bringing a Contingent resource to a Reserve category. The types of measurement and technologies used that support the certainty level associated with classifying of reserves of all categories are other key factors in transforming the Contingent Resources to the Reserve category. These technologies must be field proven and demonstrate repeatability.

This presentation will focus on factors that affect the classification of Contingent Resources along with a discussion on the data and technologies used to help define the uncertainty in making their transition to the Reserve Category.

Paul Wheeler, Jefferies

Paul is a geologist by background and worked on exploration projects for a variety of oil companies, together with completing a PhD in Petroleum Geology of SE Asia, prior to joining the banking industry.

Paul has worked in oil and gas Corporate Finance since 2001, initially at ABN AMRO, and since October 2005, at Jefferies International. Paul is a Managing Director of Jefferies' Oil and Gas Investment Banking business and focuses on Mergers, Acquisitions and Divestments, together with public and private financings, exclusively in the oil and gas sector. He has wide international experience having advised on transactions in Europe, the FSU, Africa, Asia and South America.

Recently, Paul has advised Oranje-Nassau on the \$860m sale of Oranje-Nassau Energie to Sumitomo, Dyas and ONH, ConocoPhillips on the \$748m sale of their upstream Dutch business and CNOOC and Sinopec on their \$313m acquisition of Talisman's interests in Trinidad.

Paul is a lecturer on Imperial College's Energy and Finance MSc and the university's Continuing Professional Development Program. Paul is a Fellow of the Geological Society and Member of the Petroleum Exploration Society of Great Britain.

Abstract: The Investor's Perspective

Contingent Resources are a broad resource category covering all discovered hydrocarbons volumes which are potentially recoverable but, as of a given date, are not yet mature enough for commercial development due to one or more contingencies.

The Contingent Resource category includes projects where development is pending through to, and including, projects where development is not viable. As a consequence of this broad range there is a tendency for the category to become a dumping ground for hydrocarbon volumes that could be very close to meeting Reserve requirements or complete "no-hopers".

Oil and Gas M&A focuses on evaluating 2P reserves. Buyers pay full value for these volumes (i.e. they are not risked) and hence the value of these reserves will often constitute the core element of a financial offer. Similarly, a key performance metric of listed companies is their 2P Reserve volume replacement. Both M&A transactions and listed companies are routinely assessed on the Enterprise Value/2P Reserve (\$/boe) multiple and industry observers will judge if a purchaser has overpaid or a company is undervalued based on this multiple. As a consequence, the assessment of commerciality, the dividing line between Contingent Resource and Reserve, becomes of critical importance in M&A, IPO's and investment decisions. The assessment of commerciality can be the decisive factor in winning a competitive M&A process, or, from an investor's perspective, identifying public companies that are undervalued.

For a Contingent Resource to be moved into the Reserve category, the project under consideration must be sufficiently defined to establish its commercial viability. Commercial viability can be measured by, inter alia, evidence of a reasonable timetable for development and evidence that the economics of the project meet certain defined investment and operating criteria. The internal work done by the seller to prepare for an asset sale can often demonstrate commercial viability and cause the seller to reasonably represent a development project as commercial (and therefore as a Reserve).

Moreover, the purchaser's due diligence will cause them to scrutinise volumetrics, development plans, timetables and economics of a given project. A purchaser's technical capability and perspective varies greatly from purchaser to purchaser.

A purchaser's financial capacity to move a project along may also be greater than the seller. Taken together, these factors can result in a purchaser considering that a P50 Contingent Resource volume would be treated as a 2P Reserve in their portfolio. In short, one company's Contingent Resource can be another company's Reserve.

This presentation will analyse 2P Reserve multiples from M&A transactions to demonstrate that winning purchasers looked into the Contingent Resource category to identify value which was

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included in their financial offer. The presentation will also show an analysis of Reserve and Resource multiples which indicate investors will ascribe value to Contingent Resources where they believe that the company has the technical and financial capability to move them into Reserves.

In a competitive asset sale process the prospective purchaser's perception of Contingent Resources vs Reserves can be the decisive factor in them winning or losing the auction. Differences between a buyer and seller's treatment of Contingent Resources can also allow purchasers to inexpensively acquire hydrocarbon volumes they reasonably consider to be 2P Reserves and which will fill their inventory for 2P Reserve additions in the future.

Burlington House Fire Safety Information

If you hear the Alarm

Alarm Bells are situated throughout the building and will ring continuously for an evacuation. Do not stop to collect your personal belongings. Leave the building via the nearest and safest exit or the exit that you are advised to by the Fire Marshall on that floor.

Fire Exits from the Geological Society Conference Rooms

Lower Library:

Exit via Piccadilly entrance or main reception entrance.

Lecture Theatre

Exit at front of theatre (by screen) onto Courtyard or via side door out to Piccadilly entrance or via the doors that link to the Lower Library and to the main reception entrance.

Piccadilly Entrance

Straight out door and walk around to the Courtyard or via the main reception entrance.

Close the doors when leaving a room. **DO NOT SWITCH OFF THE LIGHTS.**

Assemble in the Courtyard in front of the Royal Academy, outside the Royal Astronomical Society.

Please do not re-enter the building except when you are advised that it is safe to do so by the Fire Brigade.

First Aid

All accidents should be reported to Reception and First Aid assistance will be provided if necessary.

Facilities

The ladies toilets are situated in the basement at the bottom of the staircase outside the Lecture Theatre.

The Gents toilets are situated on the ground floor in the corridor leading to the Arthur Holmes Room.

The cloakroom is located along the corridor to the Arthur Holmes Room.

Any messages taken for delegates will be posted on the notice board in the Lower Library.

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