Factors Affecting Current Valuations

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KPMG’s Junior Oil & Gas CFO Breakfast
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Topics to be Discussed

“A few of the current factors …”

- Commodity pricing / recent royalty changes
- Resource disclosure:
  - Growing importance for many companies
- International valuations
Commodity Pricing

- The year 2010 was a little more “predictable”
  - At least compared to the volatility of 2008-09
- General trend of recovery to the N.A. and worldwide markets
  - Still considerable uncertainty around continued growth
• Used as the base scenario for all of our corporate evaluations
• Update our price forecasts quarterly
  • Available publicly at www.GLJPC.com
• Similar to other Canadian consultants price forecasts,
  • Tends to closely follow forward strip for a couple of years.
GLJ Price Forecast (2011-Jan) Oil

- Oil showed several years of severe price fluctuations (2007-09)
  - WTI traded in the range of $40 to $140 US/bbl
- Comparatively quiet 2010
  - WTI traded in the range of $70 to $90 US/bbl
- GLJ Forecast of $88 and $90 for 2011 and 2012, respectively
• Current GLJ Forecast of $88 and $90 US/bbl for 2011 and 2012
• Was previously $83 and $86 US/bbl from our forecast last year
  • This reflects in slightly higher valuations of oil properties
  • Not expecting large revisions due to price
Gas prices have continued to remain depressed,
- HH in range of $3.50 to $5.00 US/mmbtu for 2009-2010
- US rig count continuing to slow as drilling commitments cease and older hedges expire
- Current GLJ Forecast of $4.50, 5.15 and 5.75 for 2011 - 2013
GLJ Price Forecast (2011-Jan) Gas

- GLJ Forecast of $4.50, $5.15 and $5.75 for 2011 - 2013
- @ last year forecast at $7.00 to $7.15 USD/mmbtu for 2011-13
  - This reflects in much lower valuations of gas properties
  - This is impacting marginal PUD assignments from YE-09
Royalties

• Changes to AB and BC royalties:
  • Generally positive impact on resource valuations
• AB New Royalty Framework (NRF):
  • Introduces significant royalty holidays and deep drilling credits
  • Reduces the overall royalties payable at current prices
  • Encouraging resource development (CBM, shale etc.)
• BC programs:
  • Many programs introduced to impact development (summer drilling credits, marginal and ultra-marginal royalties)
  • Net Profit Royalties (NPR) program introduced for certain HRB shale developments
    • Allows for low royalty rates inside this ring fence until certain net revenue triggers are reached
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Resource Disclosure

Why resource disclosure?

• Company reserve bookings are used to represent the following:
  • Producing reserves (PDP etc.)
  • Nonproducing reserves
    • Undeveloped locations (PUD and PbUD)

• This is used to portray the basic reserve information and value to interested parties (e.g. banks, shareholders)
Why resource disclosure?

- This reserve reporting has been satisfactory when applied to conventional reservoirs:
  - Usually the developed reserves have represented a large portion of the reservoir
  - Remaining development locations typically constrained
    - These locations tied with the Company’s drilling plans (at least in the short term of 3-5 years)
Resource Disclosure

Why resource disclosure?

- Standard reserve reporting may become a limiting factor if the Company is active in larger, continuous accumulations.
- These are often termed ‘resource style’ plays:
  - Oil: Bakken, Cardium, Viking etc.
  - Gas: Tight gas, Montney, Shale, CBM etc.
- Frequently this development targets formations identified many years ago:
  - Thus, Geological risk may be lower.
- They have become economic to drill now due to improved drilling and completions technology.
Why resource disclosure?

- The issue is often that the accumulation provides many more drilling opportunities than booked as reserves:
  - Here is an example of a typical shale gas development:
    - Multiple hz wells in a section
    - Multiple hz layers in section
    - Here 8 hz wells /sec is shown
  - If this accumulation extends over a large land base, it quickly becomes a mega-project
  - Likely a bigger project than identified in the Company’s drilling plans (at least in the short term of 3-5 years)
SO NOW .... how do we portray this information to interested parties?

• Certainly, reserves are adequate to define the regions identified with commercial wells if certain criteria is met:
  • Government/Legal/Environmental Approval
  • Technology
  • Market
  • Economics
  • Timing of Development – must be developed in a reasonable timeframe.

• These will be discussed a little more later ....

• But if these criteria are not satisfied we can utilize Resource Disclosure to portray this opportunity
In Canada, resource disclosure is governed by NI 51-101 and COGEH:

- Reserves
- Resources
- Canadian companies generally adapting to new terminology

For SEC filers and US Companies:

- Historically only Proved reserves
- Now can file Probable and Possible also
- No resource disclosure!
- Leads to more erratic terminology
PIIP = “Resources”

General term “Resources” is the quantity initially in-place...
- not just remaining
- not just recoverable

- Vertical Axis – Resource Class/Risks
- Horizontal Axis – Category/Uncertainty
Resource Disclosure

- Limited data availability suggests limited certainty
- Assigned volumes will reflect this certainty
  - Portions of the reservoir remain ‘undiscovered’
  - Portions of the reservoir booked as Contingent Resources
- Large distribution of results from low estimate to high estimate
- Additional data acquisition helps to remove this uncertainty
**Estimated remaining recoverable portion of the resource base split into 3 classes as follows:**

- **Discovered:**
  - Commercial – Reserves
  - Sub-commercial – Contingent Resources
- **Undiscovered** – Prospective Resources

**CR and PR have add’l risks versus Reserves (related to the likelihood of achieving commercial production):**

- Contingent Resources – Chance of Development
- Prospective Resources –
  - Chance of Discovery and
  - Chance of development
• Discovered PIIP (=Discovered Resources), must be “known accumulation” i.e. individual body of petroleum in a reservoir, penetrated by a well and demonstrated the existence of hydrocarbons by testing.

Conventional Reservoirs:
- Single well - entire accumulation commonly “Discovered”.
- Undrilled structures or isolated fault blocks “Undiscovered”.

Unconventional “Continuous Deposits”:
- When is the accumulation discovered?
- How far from confirmed productivity is Discovered?

• Discovery Risk (or 1-Risk = Chance of Discovery) separates discovered from undiscovered PIIP.
This was a much more simple definition with conventional plays.

To be discovered, must be “known accumulation” i.e. individual body of petroleum in a reservoir, penetrated by a well.

Furthermore, to be “known” a well must have demonstrated the existence of hydrocarbons by testing (however, log and/or core an nearby analogy may suffice).
How far away from confirmed productivity does the “known” accumulation extend?
What about log control only (remember low phi)? Or seismic control only?
At what point are we back into “moose pasture”?
The risk of achieving commerciality separates “Commercial” and Sub-commercial Discovered PIIP

- Reserves = Commercial Discovered PIIP
- CR = Sub-commercial Discovered PIIP

For Discovered Sub-commercial PIIP, the chance of achieving commercial production = “Chance of Development”
Considerations for Commerciality which distinguish Reserves from Contingent Resources:

- Government/Legal/Environmental Approval - at least “highly likely” to be approved.
- Technology – known technology/commercial.
- Market – ties to economics; can’t put a ring around all resources in an area incl. 3rd party to meet economics.
- Economics – economically recoverable under forecast prices; if development required, must provide a reasonable return on forecast prices; >0 NPV constant
- Timing of Development – must be developed in a reasonable timeframe. Some exceptions like facility constraints.
Commerciality Consideration (cont.):

- **Commitment to proceed** – grey area; SEC says this is required; CSA says in some cases maybe not req’d. SPE-PRMS commitment very important; COGEH more vague (somewhat related to CSA position). To all evaluators commitment is an important consideration for marginal projects or mega projects.

- **Financing** – For SEC filings, reasonable certainty of procurement of project financing is a requirement for classification as reserves.

**Sufficient Data** – besides commerciality, when data is sparse, at early stage of evaluation, classification as CR rather than reserves may be appropriate.

Note that reservoir related risks are not contingencies.
Within each class of remaining recoverable resources there is a range of estimates (related to uncertainty):

- For Reserves: Proved, Probable and Possible.
- Under SPE and COGEH, P+P is generally regarded as the “best estimate”.
- If probabilistic methods used, minimum confidence level of P90, P50, P10 (1P, 2P, 3P)
- For CR and PR, the corresponding categories of P, P+P and P+P+P are referred to as Low, Best and High Estimates.
Concept is that estimates move vertically from one class to another as risks eliminated – i.e. discovered and/or contingencies removed.

A common misunderstanding is that the progression of resources is 1C to possible to probable to proved (rather than 1C to 1P, etc.)

1C or 2C resources may have more inherent value than P3 (similarly low/best est. PR vs C3)

Sidebar: SEC restriction on disclosure of resources but allowing optional possible reserves disclosure may be challenge to consistency in evaluation and reporting (desire to push CR into P3).
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International Valuation

• Not much unique to say here....
• Oil producing acreage =
  • Seeing same renewed focus in revitalization as in N.A.
  • Incremental drilling and multi-stage frac completions
• Gas producing acreage =
  • Not much of a shift year-over-year
  • European gas pricing still strong ($6.30 US/mmbtu in 2010)
• Shale Gas Exploration and Testing
  • Lots of early activity
  • Slower to ramp up
  • Less onshore service companies
Thank You

- Questions?
- Comments?

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