

Companion Policy 51-101CP
Standards of Disclosure
for Oil and Gas Activities

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This Companion Policy sets out the views of the Canadian Securities Administrators (the "CSA") as to the interpretation and application of National Instrument 51-101 *Standards of Disclosure for Oil and Gas Activities (NI 51-101)* and related forms.

*NI 51-101*¹ supplements other continuous disclosure requirements of *securities legislation* that apply to *reporting issuers* in all business sectors.

The requirements under *NI 51-101* for the filing with *securities regulatory authorities* of information relating to *oil and gas activities* are designed in part to assist the public and analysts in making investment decisions and recommendations.

The CSA encourage registrants² and other persons and companies that wish to make use of information concerning *oil and gas activities* of a *reporting issuer*, including *reserves data*, to review the information filed on *SEDAR* under *NI 51-101* by the *reporting issuer* and, if they are summarizing or referring to this information, to use the applicable terminology consistent with *NI 51-101* and the *COGE Handbook*.

PART 1 APPLICATION AND TERMINOLOGY

1.1 Definitions

- (1) **General** - Several terms relating to *oil and gas activities* are defined in section 1.1 of *NI 51-101*. If a term is not defined in *NI 51-101*, *NI 14-101* or the securities statute in the *jurisdiction*, it will have the meaning or interpretation given to it in the *COGE Handbook* if it is defined or interpreted there, pursuant to section 1.2 of *NI 51-101*.

For the convenience of readers, Appendix 1 of this Companion Policy sets out the meaning of terms, including those defined in *NI 51-101* and several terms which are derived from the *COGE Handbook*.

- (2) **Forecast Prices and Costs** - The term *forecast prices and costs* is defined in subsection 1.1(j) of *NI 51-101* and discussed in the *COGE Handbook*. Except to the extent that the *reporting issuer* is legally bound by fixed or presently

¹ For the convenience of readers, the Appendix to Companion Policy 51-101CP sets out the meanings of terms that are printed in italics in *NI 51-101*, *Form 51-101F1*, *Form 51-101F2* or *Form 51-101F3*, or in this Companion Policy (other than terms italicized in titles of documents, or in the texts of reports set out in Part 8, that are printed entirely in italics).

² "Registrant" has the meaning ascribed to the term under *securities legislation* in the *jurisdiction*.

determinable future prices or costs³, *forecast prices and costs* are future prices and costs "generally recognized as being a reasonable outlook on the future".

The CSA do not consider that future prices or costs would satisfy this requirement if they fall outside the range of forecasts of comparable prices or costs used, as at the same date, for the same future period, by major *independent qualified reserves evaluators or auditors*.

(3) ***Independent*** - The term *independent* is defined in subsection 1.1(o) of *NI 51-101*. Applying this definition, the following are examples of circumstances in which the CSA would consider that a *qualified reserves evaluator or auditor* (or other expert) is not *independent*. We consider a *qualified reserves evaluator or auditor* is not *independent* when the *qualified reserves evaluator or auditor*:

- (a) is an employee, insider, or director of the *reporting issuer*;
- (b) is an employee, insider, or director of a related party of the *reporting issuer*;
- (c) is a partner of any person or company in paragraph (a) or (b);
- (d) holds or expects to hold securities, either directly or indirectly, of the *reporting issuer* or a related party of the *reporting issuer*;
- (e) holds or expects to hold securities, either directly or indirectly, in another *reporting issuer* that has a direct or indirect interest in the property that is the subject of the technical report or an adjacent property;
- (f) has or expects to have, directly or indirectly, an ownership, royalty, or other interest in the property that is the subject of the technical report or an adjacent property; or
- (g) has received the majority of their income, either directly or indirectly, in the three years preceding the date of the technical report from the *reporting issuer* or a related party of the *reporting issuer*.

For the purpose of paragraph (d) above, "related party of the *reporting issuer*" means an affiliate, associate, subsidiary, or control person of the *reporting issuer* as those terms are defined under securities legislation.

There may be instances in which it would be reasonable to consider that the independence of a *qualified reserves evaluator or auditor* would not be compromised even though the *qualified reserves evaluator or auditor* holds an interest in the *reporting issuer's* securities. The *reporting issuer* needs to determine whether a reasonable person would consider such interest would

³ Refer to the discussion of financial instruments in paragraph 2.7(5) below.

interfere with the *qualified reserves evaluator's or auditor's* judgement regarding the preparation of the technical report.

There may be circumstances in which the *securities regulatory authorities* question the objectivity of the *qualified reserves evaluator or auditor*. In order to ensure the requirement for independence of the *qualified reserves evaluator or auditor* has been preserved, the *reporting issuer* may be asked to provide further information, additional disclosure or the opinion of another *qualified reserves evaluator or auditor* to address concerns about possible bias or partiality on the part of the *qualified reserves evaluator or auditor*.

- (4) ***Product Types Arising From Oil Sands and Other Non-Conventional Activities*** - The definition of *product type* in subsection 1.1(v) includes products arising from non-conventional *oil and gas activities*. *NI 51-101* therefore applies not only to conventional *oil and gas activities*, but also to non-conventional activities such as the extraction of *bitumen* from *oil sands* with a view to the *production* of *synthetic oil*, the *in situ production* of *bitumen* and the extraction of methane from coal beds.

Although *NI 51-101* and *Form 51-101F1* make few specific references to non-conventional *oil and gas activities*, the requirements of *NI 51-101* for the preparation and disclosure of *reserves data* and for the disclosure of *resources* apply to *oil and gas reserves and resources* relating to *oil sands, shale, coal or other non-conventional sources of hydrocarbons*. The CSA encourage *reporting issuers* that are engaged in non-conventional *oil and gas activities* to supplement the disclosure prescribed in *NI 51-101* and *Form 51-101F1* with information specific to those activities that can assist investors and others in understanding the business and results of the *reporting issuer*.

- (5) ***Professional Organization*** -

(a) ***Recognized Professional Organizations***

For the purposes of the *Instrument*, a *qualified reserves evaluator or auditor* must also be a member in good standing with a self-regulatory *professional organization* of engineers, geologists, geoscientists or other professionals.

The definition of "*professional organization*" (in subsection 1.1(w) of *NI 51-101* and in the Glossary in Appendix 1 to this Companion Policy) has four elements, three of which deal with the basis on which the organization accepts members and its powers and requirements for continuing membership. The fourth element requires either authority or recognition given to the organization by a statute in Canada, or acceptance of the organization by the *securities regulatory authority or regulator*.

As at January 19, 2007, each of the following organizations in Canada is a *professional organization*:

- Association of Professional Engineers, Geologists and Geophysicists of Alberta (APEGGA)
- Association of Professional Engineers and Geoscientists of the Province of British Columbia (APEGBC)
- Association of Professional Engineers and Geoscientists of Saskatchewan (APEGGS)
- Association of Professional Engineers and Geoscientists of Manitoba (APEGM)
- Association of Professional Geoscientists of Ontario (APGO)
- Professional Engineers of Ontario (PEO)
- Ordre des ingénieurs du Québec (OIQ)
- Ordre des Géologues du Québec (OGQ)
- Association of Professional Engineers of Prince Edward Island (APEPEI)
- Association of Professional Engineers and Geoscientists of New Brunswick (APEGNB)
- Association of Professional Engineers of Nova Scotia (APENS)
- Association of Professional Engineers and Geoscientists of Newfoundland (APEGN)
- Association of Professional Engineers of Yukon (APEY)
- Association of Professional Engineers, Geologists & Geophysicists of the Northwest Territories (NAPEGG) (representing the Northwest Territories and Nunavut Territory)

(b) **Other *Professional Organizations***

The CSA are willing to consider whether particular foreign professional bodies should be accepted as "*professional organizations*" for the purposes of NI 51-101. A *reporting issuer*, foreign professional body or other interested person can apply to have a self-regulatory organization that satisfies the first three elements of the definition of "*professional organization*" accepted for the purposes of NI 51-101.

In considering any such application for acceptance, the *securities regulatory authority* or *regulator* is likely to take into account the degree to which a foreign professional body's authority or recognition, admission criteria, standards and disciplinary powers and practices are similar to, or differ from, those of organizations listed above.

The list of foreign *professional organizations* is updated periodically in CSA Staff Notice 51-309 *Acceptance of Certain Foreign Professional Boards as a "Professional Organization"*. As at January 19, 2007, each of the following foreign organizations has been recognized as a *professional organization* for the purposes of NI 51-101:

- California Board for Professional Engineers and Land Surveyors,

- State of Colorado Board of Registration for Professional Engineers and Professional Land Surveyors
- Louisiana State Board of Registration for Professional Engineers and Land Surveyors,
- Oklahoma State Board of Registration for Professional Engineers and Land Surveyors
- Texas Board of Professional Engineers
- American Association of Petroleum Geologists (AAPG)
- American Institute of Professional Geologists (AIPG), in respect of the AIPG's Certified Professional Geologists

(c) **No Professional Organization**

A *reporting issuer* or other person may apply for an exemption under Part 8 of *NI 51-101* to enable a *reporting issuer* to appoint, in satisfaction of its obligation under section 3.2 of *NI 51-101*, an individual who is not a member of a *professional organization*, but who has other satisfactory qualifications and experience. Such an application might refer to a particular individual or generally to members and employees of a particular foreign *reserves evaluation* firm. In considering any such application, the *securities regulatory authority* or *regulator* is likely to take into account the individual's professional education and experience or, in the case of an application relating to a firm, to the education and experience of the firm's members and employees, evidence concerning the opinion of a *qualified reserves evaluator or auditor* as to the quality of past work of the individual or firm, and any prior relief granted or denied in respect of the same individual or firm.

(d) **Renewal Applications Unnecessary**

A successful applicant would likely have to make an application contemplated in this subsection 1.1(5) only once, and not renew it annually.

- (6) **Qualified Reserves Evaluator or Auditor** - The definitions of *qualified reserves evaluator* and *qualified reserves auditor* are set out in subsections 1.1(y) and 1.1(x) of *NI 51-101*, respectively, and again in the Glossary contained in Appendix 1 to this Companion Policy.

The defined terms "*qualified reserves evaluator*" and "*qualified reserves auditor*" have a number of elements. A *qualified reserves evaluator* or *qualified reserves auditor* must

- possess professional qualifications and experience appropriate for the tasks contemplated in the *Instrument*, and
- be a member in good standing of a *professional organization*.

Reporting issuers should satisfy themselves that any person they appoint to perform the tasks of a *qualified reserves evaluator or auditor* for the purpose of the *Instrument* satisfies each of the elements of the appropriate definition.

In addition to having the relevant professional qualifications, a *qualified reserves evaluator or auditor* must also have sufficient practical experience relevant to the *reserves data* to be reported on. In assessing the adequacy of practical experience, reference should be made to section 3 of volume 1 of the *COGE Handbook* - "Qualifications of Evaluators and Auditors, Enforcement and Discipline".

1.2 COGE Handbook

Pursuant to section 1.2 of *NI 51-101*, definitions and interpretations in the *COGE Handbook* apply for the purposes of *NI 51-101* if they are not defined in *NI 51-101*, *NI 14-101* or the securities statute in the *jurisdiction* (except to the extent of any conflict or inconsistency with *NI 51-101*, *NI 14-101* or the securities statute).

Section 1.1 of *NI 51-101* and the Glossary contained in Appendix 1 of this Companion Policy set out definitions and interpretations, many of which are derived from the *COGE Handbook*. *Reserves* definitions and categories developed by the Petroleum Society of the Canadian Institute of Mining, Metallurgy & Petroleum (CIM) are incorporated in the *COGE Handbook* and also set out, in part, in the Glossary contained in Appendix 1 of this Companion Policy.

Subparagraph 5.2(1)(a)(iii) of *NI 51-101* requires that all estimates of *reserves* or *future net revenue* have been prepared or audited in accordance with the *COGE Handbook*. Under sections 5.2, 5.3 and 5.9 of *NI 51-101*, all types of public *oil* and *gas* disclosure, including disclosure of *reserves* and *resources* must be consistent with the *COGE Handbook*.

1.3 Applies to Reporting Issuers Only

NI 51-101 applies to *reporting issuers* engaged in *oil and gas activities*. The definition of *oil and gas activities* is broad. For example, a *reporting issuer* with no *reserves*, but a few *prospects*, *unproved properties* or *resources*, could still be engaged in *oil and gas activities* because such activities include exploration and development of *unproved properties*.

NI 51-101 will also apply to an issuer that is not yet a *reporting issuer* if it files a prospectus or other disclosure document that incorporates prospectus requirements. Pursuant to the long-form prospectus requirements, the issuer must disclose the information contained in *Form 51-101F1*, as well as the reports set out in *Form 51-101F2* and *Form 51-101F3*.

1.4 **Materiality Standard**

Section 1.4 of *NI 51-101* states that *NI 51-101* applies only in respect of information that is material.

NI 51-101 does not require disclosure or filing of information that is not material. If information is not required to be disclosed because it is not material, it is unnecessary to disclose that fact.

Materiality for the purposes of *NI 51-101* is a matter of judgement to be made in light of the circumstances, taking into account both qualitative and quantitative factors, assessed in respect of the *reporting issuer* as a whole.

This concept of *materiality* is consistent with the concept of *materiality* applied in connection with financial reporting pursuant to the *CICA Handbook*.

The reference in subsection 1.4(2) of *NI 51-101* to a "reasonable investor" denotes an objective test: would a notional investor, broadly representative of investors generally and guided by reason, be likely to be influenced, in making an investment decision to buy, sell or hold a security of a *reporting issuer*, by an item of information or an aggregate of items of information? If so, then that item of information, or aggregate of items, is "material" in respect of that *reporting issuer*. An item that is immaterial alone may be material in the context of other information, or may be necessary to give context to other information. For example, a large number of small interests in *oil* and *gas properties* may be material in aggregate to a *reporting issuer*. Alternatively, a small interest in an *oil* and *gas property* may be material to a *reporting issuer*, depending on the size of the *reporting issuer* and its particular circumstances.

PART 2 ANNUAL FILING REQUIREMENTS

2.1 **Annual Filings on SEDAR**

The information required under section 2.1 of *NI 51-101* must be filed electronically on *SEDAR*. Consult National Instrument 13-101 System for Electronic Document Analysis and Retrieval (*SEDAR*) and the current *CSA "SEDAR Filer Manual"* for information about filing documents electronically. The information required to be filed under item 1 of section 2.1 of *NI 51-101* is usually derived from a much longer and more detailed *oil* and *gas* report prepared by a *qualified reserves evaluator*. These long and detailed reports cannot be filed electronically on *SEDAR*.

2.2 **Inapplicable or Immaterial Information**

Section 2.1 of *NI 51-101* does not require the filing of any information, even if specified in *NI 51-101* or in a form referred to in *NI 51-101*, if that information is inapplicable or not material in respect of the *reporting issuer*. See section 1.4 of this Companion Policy for a discussion of *materiality*.

If an item of prescribed information is not disclosed because it is inapplicable or immaterial, it is unnecessary to state that fact or to make reference to the disclosure requirement.

2.3 Use of Forms

Section 2.1 of *NI 51-101* requires the annual filing of information set out in *Form 51-101F1* and reports in accordance with *Form 51-101F2* and *Form 51-101F3*. *NI 51-101* and the instructions in *Form 51-101F1*, give the *reporting issuer* considerable flexibility in presenting this information, provided that all required information is filed. Appendix 3 to this Companion Policy provides an example of how certain of the *reserves data* might be presented.

The information specified in all three forms, or any two of the forms, can be combined in a single document. A *reporting issuer* may wish to include statements indicating the relationship between documents or parts of one document. For example, the *reporting issuer* may wish to accompany the report of the *independent qualified reserves evaluator or auditor (Form 51-101F2)* with a reference to the *reporting issuer's* disclosure of the *reserves data (Form 51-101F1)*, and vice versa.

The report of management and directors in *Form 51-101F3* may be combined with management's report on financial statements, if any, in respect of the same financial year.

2.4 Annual Information Form

Section 2.3 of *NI 51-101* permits *reporting issuers* to satisfy the requirements of section 2.1 of *NI 51-101* by presenting the information required under section 2.1 in an *annual information form*.

- (1) **Meaning of "Annual Information Form"** - *Annual information form* has the same meaning as "AIF" in National Instrument 51-102 Continuous Disclosure Obligations. Therefore, as set out in that definition, an *annual information form* can be a completed *Form 51-102F2 Annual Information Form* or, in the case of an *SEC* issuer (as defined in *NI 51-102*), a completed *Form 51-102F2* or an annual report or transition report under the *1934 Act* on *Form 10-K*, *Form 10-KSB* or *Form 20-F*.
- (2) **Option to Set Out Information in Annual Information Form** - *Form 51-102F2 Annual Information Form* requires the information required by section 2.1 of *NI 51-101* to be included in the *annual information form*. That information may be included either by setting out the text of the information in the *annual information form* or by incorporating it, by reference from separately filed documents. The option offered by section 2.3 of *NI 51-101* enables a *reporting issuer* to satisfy its obligations under section 2.1 of *NI 51-101*, as well as its obligations in respect of *annual information form* disclosure, by setting out the information required under section 2.1 only once, in the *annual information form*. If the *annual information*

form is on Form 10-K, this can be accomplished by including the information in a supplement (often referred to as a "wrapper") to the Form 10-K.

A *reporting issuer* that elects to set out in full in its *annual information form* the information required by section 2.1 of *NI 51-101* need not also file that information again for the purpose of section 2.1 in one or more separate documents. A *reporting issuer* that elects to follow this approach should file its *annual information form* in accordance with usual requirements of *securities legislation*, and at the same time file on *SEDAR*, in the category for *NI 51-101 oil and gas* disclosure, a notice that the information required under section 2.1 of *NI 51-101* is included in the *reporting issuer's* filed *annual information form*. This notice should be filed under *SEDAR* Filing Type: "Notice of Disclosure for Oil and Gas Activities (NI 51-101)", Document Type: "Notice of Disclosure for Oil and Gas Activities (NI 51-101)".

2.5 **Reporting Issuer That Has No Reserves**

The requirement to make annual *NI 51-101* filings is not limited to only those issuers that have *reserves* and related *future net revenue*. A *reporting issuer* with no *reserves* but with *prospects*, unproved *properties* or *resources* may be engaged in *oil and gas activities* (see paragraph 1.3 above) and therefore subject to *NI 51-101*. That means the issuer must still make annual *NI 51-101* filings and ensure that it complies with other *NI 51-101* requirements. The following is guidance on the preparation of *Form 51-101F1*, *Form 51-101F2*, *Form 51-101F3* and other *oil and gas* disclosure if the *reporting issuer* has no *reserves*.

- (1) **Form 51-101F1** - Section 1.4 of *NI 51-101* states that the *Instrument* applies only in respect of information that is material in respect of a *reporting issuer*. If indeed the *reporting issuer* has no *reserves*, we would consider that fact alone material. The *reporting issuer's* disclosure, under Part 2 of *Form 51-101F1*, should make clear that it has no *reserves* and hence no related *future net revenue*.

Supporting information regarding *reserves data* required under Part 2 (e.g., price estimates) that are not material to the issuer may be omitted. However, if the issuer had disclosed *reserves* and related *future net revenue* in the previous year, and has no *reserves* as at the end of its current financial year, the *reporting issuer* is still required to present a reconciliation to the prior-year's estimates of *reserves*, as required by Part 4 of *Form 51-101F1*.

The *reporting issuer* is also required to disclose information required under Part 6 of *Form 51-101F1*. Those requirements apply irrespective of the quantum of *reserves*, if any. This would include information about *properties* (items 6.1 and 6.2), costs (item 6.6), and exploration and development activities (item 6.7). The disclosure should make clear that the issuer had no *production*, as that fact would be material.

- (2) **Form 51-101F2** - *NI 51-101* requires *reporting issuers* to retain an *independent qualified reserves evaluator or auditor* to evaluate or audit the company's *reserves data* and report to the board of directors. If the *reporting issuer* had no *reserves* during the year and hence did not retain an evaluator or auditor, then it would not need to retain one just to file a (nil) report of the *independent evaluators* on the *reserves data* in the form of *Form 51-101F2* and the *reporting issuer* would therefore not be required to file a *Form 51-101F2*. If, however, the issuer did retain an evaluator or auditor to evaluate *reserves*, and the evaluator or auditor concluded that they could not be so categorized, or reclassified those *reserves* to *resources*, the issuer would have to file a report of the *qualified reserves evaluator* because the evaluator has, in fact, evaluated the *reserves* and expressed an opinion.
- (3) **Form 51-101F3** - Irrespective of whether the *reporting issuer* has *reserves*, the requirement to file a report of management and directors in the form of *Form 51-101F3* applies.
- (4) **Other NI 51-101 Requirements** - *NI 51-101* does not require *reporting issuers* to disclose *anticipated results* in respect of unproved *properties, prospects* or *resources*. However, if a *reporting issuer* chooses to disclose that type of information, sections 5.9 and 5.10 of *NI 51-101* apply to that disclosure, as applicable.

2.6 **Reservation in Report of Independent Qualified Reserves Evaluator or Auditor**

A report of an *independent qualified reserves evaluator or auditor* on *reserves data* will not satisfy the requirements of item 2 of section 2.1 of *NI 51-101* if the report contains a *reservation*, the cause of which can be removed by the *reporting issuer* (subsection 2.4(2) of *NI 51-101*).

The *CSA* do not generally consider time and cost considerations to be causes of a *reservation* that cannot be removed by the *reporting issuer*.

A report containing a *reservation* may be acceptable if the *reservation* is caused by a limitation in the scope of the *evaluation* or audit resulting from an event that clearly limits the availability of necessary records and which is beyond the control of the *reporting issuer*. This could be the case if, for example, necessary records have been inadvertently destroyed and cannot be recreated or if necessary records are in a country at war and access is not practicable.

One potential source of *reservations*, which the *CSA* consider can and should be addressed in a different way, could be reliance by a *qualified reserves evaluator or auditor* on information derived or obtained from a *reporting issuer's independent financial auditors* or reflecting their report. The *CSA* recommend that *qualified reserves evaluators or auditors* follow the procedures and guidance set out in both sections 4.5 and 12.6 of volume 1 of the *COGE Handbook* in respect of dealings with *independent*

financial auditors. In so doing, the CSA expect that the quality of *reserves data* can be enhanced and a potential source of *reservations* can be eliminated.

2.7 Disclosure in Form 51-101F1

- (1) **Royalty Interest in Reserves** - *Net reserves* (or "company *net reserves*") of a *reporting issuer* include its royalty interest in *reserves*.

If a *reporting issuer* cannot obtain the information it requires to enable it to include a royalty interest in *reserves* in its disclosure of *net reserves*, it should, proximate to its disclosure of *net reserves*, disclose that fact and its corresponding royalty interest share of *oil* and *gas production* for the year ended on the *effective date*.

Form 51-101F1 requires that certain *reserves data* be provided on both a "gross" and "net" basis, the latter being adjusted for both royalty entitlements and royalty obligations. However, if a royalty is granted by a trust's subsidiary to the trust, this would not affect the computation of "*net reserves*". The typical *oil* and *gas* income trust structure involves the grant of a royalty by an operating subsidiary of the trust to the trust itself, the royalty being the source of the distributions to trust investors. In this case, the royalty is wholly within the combined or consolidated trust entity (the trust and its operating subsidiary). This is not the type of external entitlement or obligation for which adjustment is made in determining, for example, "*net reserves*". Viewing the trust and its consolidated entities together, the relevant *reserves* and other *oil* and *gas* information is that of the operating subsidiary without deduction of the internal royalty to the trust.

- (2) **Government Restriction on Disclosure** - If, because of a restriction imposed by a government or governmental authority having jurisdiction over a *property*, a *reporting issuer* excludes *reserves* information from its *reserves data* disclosed under *NI 51-101*, the disclosure should include a statement that identifies the *property* or country for which the information is excluded and explains the exclusion.

- (3) **Computation of Future Net Revenue**

(a) **Tax**

Form 51-101F1 requires *future net revenue* to be estimated and disclosed both before and after deduction of income taxes. However, a *reporting issuer* may not be subject to income taxes because of its royalty or income trust structure. In this instance, the issuer should use the tax rate that most appropriately reflects the income tax it reasonably expects to pay on the *future net revenue*. If the issuer is not subject to income tax because of its royalty trust structure, then the most appropriate income tax rate would be zero. In this case, the issuer could present the estimates of *future net revenue* in only one column and explain, in a note to the table, why the estimates of before-tax and after-tax *future net revenue* are the same.

Also, tax pools should be taken into account when computing *future net revenue* after income taxes. The definition of “future income tax expense” is set out in Appendix 1 to this Companion Policy. Essentially, *future income tax expenses* represent estimated cash income taxes payable on the *reporting issuer’s* future pre-tax cash flows. These cash income taxes payable should be computed by applying the appropriate year-end statutory tax rates, taking into account future tax rates already legislated, to future pre-tax *net* cash flows reduced by appropriate deductions of estimated unclaimed costs and losses carried forward for tax purposes and relating to *oil and gas activities* (i.e., tax pools). Such tax pools may include Canadian *oil and gas property* expense (COGPE), Canadian development expense (CDE), Canadian exploration expense (CEE), undepreciated capital cost (UCC) and unused prior year’s tax losses. (Issuers should be aware of limitations on the use of certain tax pools resulting from acquisitions of *properties* in situations where provisions of the Income Tax Act concerning successor corporations apply.)

(b) Other Fiscal Regimes

Other fiscal regimes, such as those involving *production* sharing contracts, should be adequately explained with appropriate allocations made to various classes of proved *reserves* and to *probable reserves*.

- (4) **Supplemental Disclosure of *Future Net Revenue Using Constant prices and costs*** - Form 51-101 F1 gives *reporting issuers* the option of disclosing *future net revenue* using *constant prices and costs* in addition to disclosing *future net revenue* using *forecast prices and costs*. *Constant prices and costs* are based on the *reporting issuer’s* prices and costs as at the *reporting issuer’s* financial year-end. In general, these prices and costs are assumed not to change, but rather to remain constant, throughout the life of a *property*, except to the extent of certain fixed or presently determinable future prices or costs to which the *reporting issuer* is legally bound by a contractual or other obligation to supply a physical product (including those for an extension period of a contract that is likely to be extended).
- (5) **Financial Instruments** - The definition of "*forecast prices and costs*" in subsection 1.1(j) of *NI 51-101* and the term "*constant prices and costs*" as defined in the Glossary in Appendix 1 to this Companion Policy refer to fixed or presently determinable future prices to which a *reporting issuer* is legally bound by a contractual or other obligation to supply a physical product. The phrase "contractual or other obligation to supply a physical product" excludes arrangements under which the *reporting issuer* can satisfy its obligations in cash and would therefore exclude an arrangement that would be a "financial instrument" as defined in Section 3855 of the *CICA Handbook*. The *CICA Handbook* discusses when a *reporting issuer’s* obligation would be considered a financial instrument and sets out the requirements for presentation and disclosure of these financial instruments (including so-called financial hedges) in the *reporting issuer’s* financial statements.

(6) **Reserves Reconciliation** - Subparagraph 4.1(2)(c)(ii) of *Form 51-101F1* requires reconciliations of *reserves* to separately identify and explain technical revisions. Technical revisions show changes in existing *reserves* estimates, in respect of carried-forward *properties*, over the period of the reconciliation (i.e., between estimates as at the *effective date* and the prior year's estimate) and are the result of new technical information, not the result of capital expenditure. With respect to making technical revisions, the following should be noted:

- **Infill Drilling:** It would not be acceptable to include infill drilling results as a technical revision. *Reserves* additions derived from infill drilling during the year are not attributable to revisions to the previous year's *reserves* estimates. Infill drilling *reserves* should be included in the "extensions and improved recovery" category.
- **Acquisitions:** If an acquisition is made during the year, (i.e., in the period between the *effective date* and the prior year's estimate), the *reserves* estimate to be used in the reconciliation is the estimate of *reserves* at the *effective date*, not at the acquisition date, plus any *production* since the acquisition date. This *production* should then be included as *production* in the reconciliation. If there has been a change in the *reserves* estimate between the acquisition date and the *effective date* other than that due to *production*, the issuer may wish to explain this as part of the reconciliation.

(7) **Significant Factors or Uncertainties** - Item 5.2 of *Form 51-101F1* requires an issuer to identify and discuss important economic factors or significant uncertainties that affect particular components of the *reserves data*. Like a "subsequent event" note in a financial statement, the issuer should discuss this type of information even if it pertains to a period subsequent to the *effective date*.

For example, if events subsequent to the *effective date* have resulted in significant changes in expected future prices, such that the forecast prices reflected in the *reserves data* differ materially from those that would be considered to be a reasonable outlook on the future around the date of the company's "statement of *reserves data* and other information", then the issuer's statement might include, pursuant to item 5.2, a discussion of that change and its effect on the disclosed *future net revenue* estimates. It may be misleading to omit this information.

(8) **Additional Information** - As discussed in section 2.3 above and in the instructions to *Form 51-101F1*, *NI 51-101* offers considerable flexibility in the use of the prescribed forms and the presentation of required information.

The disclosure specified in *Form 51-101F1* is the minimum disclosure required, subject to the *materiality* standard. *Reporting issuers* are free to provide additional disclosure that is not inconsistent with *NI 51-101*.

To the extent that additional, or more detailed, disclosure can be expected to assist readers in understanding and assessing the mandatory disclosure, it is encouraged. Indeed, to the extent that additional disclosure of *material* facts is necessary in order to make mandated disclosure not misleading, a failure to provide that additional disclosure would amount to a misrepresentation.

- (9) **Sample Reserves Data Disclosure** - Appendix 3 to this Companion Policy sets out an example of how certain of the *reserves data* might be presented in a manner which the CSA consider to be consistent with *NI 51-101* and *Form 51-101F1*.

The sample presentation in Appendix 3 also illustrates how certain additional information not mandated under *Form 51-101F1* might be incorporated in an annual filing.

The sample presentation in Appendix 3 is provided by way of illustration only, and is not mandatory. However, the CSA urge *reporting issuers* to review Appendix 3 and consider whether a similar presentation might be helpful for their investors.

2.8 *Form 51-101F2*

- (1) **Negative Assurance by *Qualified Reserves Evaluator or Auditor*** - A *qualified reserves evaluator or auditor* conducting a review may wish to express only negative assurance -- for example, in a statement such as "Nothing has come to my attention which would indicate that the *reserves data* have not been prepared in accordance with principles and definitions presented in the Canadian Oil and Gas Evaluation Handbook". This can be contrasted with a positive statement such as an opinion that "The *reserves data* have, in all material respects, been determined and presented in accordance with the Canadian Oil and Gas *Evaluation Handbook* and are, therefore, free of material misstatement".

The CSA are of the view that statements of negative assurance can be misinterpreted as providing a higher degree of assurance than is intended or warranted.

The CSA believe that a statement of negative assurance would constitute so *material* a departure from the report prescribed in *Form 51-101F2* as to fail to satisfy the requirements of item 2 of section 2.1 of *NI 51-101*.

In the rare case, if any, in which there are compelling reasons for making such disclosure (e.g., a prohibition on disclosure to external parties), the CSA believe that, to avoid providing information that could be misleading, the *reporting issuer* should include in such disclosure useful explanatory and cautionary statements. Such statements should explain the limited nature of the work undertaken by the *qualified reserves evaluator or auditor* and the limited scope of the assurance expressed, noting that it does not amount to a positive opinion.

- (2) ***Effective date of Evaluation*** - A *qualified reserves evaluator or auditor* cannot prepare an *evaluation* using information that relates to events that occurred after the *effective date*, being the financial year-end. Information that relates to events that occurred after the year-end should not be incorporated into the forecasts. For example, information about drilling results from wells drilled in January or February, or changes in *production* that occurred after year-end date of December 31, should not be used. Even though this more recent information is available, the evaluator or auditor should not go back and change the forecast information. The forecast is to be based on the evaluator's or auditor's perception of the future as of December 31, the *effective date* of the report.

Similarly, the evaluator or auditor should not use price forecasts for a date subsequent to the year-end date of, in this example, December 31. The evaluator or auditor should use the prices that he or she forecasted on or around December 31. The evaluator or auditor should also use the December forecasts for exchange rates and inflation. Revisions to price, exchange rate or inflation rate forecasts after December 31 would have resulted from events that occurred after December 31.

PART 3 RESPONSIBILITIES OF *REPORTING ISSUERS* AND DIRECTORS

3.1 *Reserves Committee*

Section 3.4 of *NI 51-101* enumerates certain responsibilities of the board of directors of a *reporting issuer* in connection with the preparation of *oil* and *gas* disclosure.

The *CSA* believe that certain of these responsibilities can in many cases more appropriately be fulfilled by a smaller group of directors who bring particular experience or abilities and an *independent* perspective to the task.

Subsection 3.5(1) of *NI 51-101* permits a board of directors to delegate responsibilities (other than the responsibility to approve the content or filing of certain documents) to a committee of directors, a majority of whose members are *independent* of management. Although subsection 3.5(1) is not mandatory, the *CSA* encourage *reporting issuers* and their directors to adopt this approach.

3.2 *Responsibility for Disclosure*

NI 51-101 requires the involvement of an *independent qualified reserves evaluator or auditor* in preparing or reporting on certain *oil* and *gas* information disclosed by a *reporting issuer*, and in section 3.2 mandates the appointment of an *independent qualified reserves evaluator or auditor* to report on *reserves data*.

The *CSA* do not intend or believe that the involvement of an *independent qualified reserves evaluator or auditor* relieves the *reporting issuer* of responsibility for information disclosed by it for the purposes of *NI 51-101*.

PART 4 MEASUREMENT

4.1 Consistency in Dates

Section 4.2 of *NI 51-101* requires consistency in the timing of recording the effects of events or transactions for the purposes of both annual financial statements and annual *reserves data* disclosure.

To ensure that the effects of events or transactions are recorded, disclosed or otherwise reflected consistently (in respect of timing) in all public disclosure, a *reporting issuer* will wish to ensure that both its financial auditors and its *qualified reserves evaluators or auditors*, as well as its directors, are kept apprised of relevant events and transactions, and to facilitate communication between its financial auditors and its *qualified reserves evaluators or auditors*.

Sections 4.5 and 12.6 of volume 1 of the *COGE Handbook* set out procedures and guidance for the conduct of *reserves evaluations* and *reserves audits*, respectively. Section 12.6 deals with the relationship between a *reserves auditor* and the client's financial auditor. Section 4.5, in connection with *reserves evaluations*, deals somewhat differently with the relationship between the *qualified reserves evaluator or auditor* and the client's financial auditor. The *CSA* recommend that *qualified reserves evaluators or auditors* carry out the procedures discussed in both sections 4.5 and 12.6 of volume 1 of the *COGE Handbook*, whether conducting a *reserves evaluation* or a *reserves audit*.

PART 5 REQUIREMENTS APPLICABLE TO ALL DISCLOSURE

5.1 Application of Part 5

Part 5 of *NI 51-101* imposes requirements and restrictions that apply to all "disclosure" (or, in some cases, all written disclosure) of a type described in section 5.1 of *NI 51-101*. Section 5.1 refers to disclosure that is either

- filed by a *reporting issuer* with the *securities regulatory authority*, or
- if not filed, otherwise made to the public or made in circumstances in which, at the time of making the disclosure, the *reporting issuer* expects, or ought reasonably to expect, the disclosure to become available to the public.

As such, Part 5 applies to a broad range of disclosure including

- the annual filings required under Part 2 of *NI 51-101*,
- other continuous disclosure filings, including material change reports (which themselves may also be subject to Part 6 of *NI 51-101*),
- public disclosure documents, whether or not filed, including news releases,

- public disclosure made in connection with a distribution of securities, including a prospectus, and
- except in respect of provisions of Part 5 that apply only to written disclosure, public speeches and presentations made by representatives of the *reporting issuer* on behalf of the *reporting issuer*.

For these purposes, the *CSA* consider written disclosure to include any writing, map, plot or other printed representation whether produced, stored or disseminated on paper or electronically. For example, if material distributed at a company presentation refers to *BOEs*, the material should include, near the reference to *BOEs*, the cautionary statement required by paragraph 5.14(d) of *NI 51-101*.

To ensure compliance with the requirements of Part 5, the *CSA* encourage *reporting issuers* to involve a *qualified reserves evaluator or auditor*, or other person who is familiar with *NI 51-101* and the *COGE Handbook*, in the preparation, review or approval of all such *oil* and *gas* disclosure.

5.2 Disclosure of Reserves and Other Information

- (1) **General** - A *reporting issuer* must comply with the requirements of section 5.2 in its disclosure, to the public, of *reserves* estimates and other information of a type specified in *Form 51-101F1*. This would include, for example, disclosure of such information in a news release.
- (2) **Reserves** - *NI 51-101* does not prescribe any particular methods of estimation but it does require that a *reserve* estimate be prepared in accordance with the *COGE Handbook*. For example, section 5.4.3 of the *COGE Handbook* specifies that, in respect of an issuer's proved *reserves*, there is to be at least a 90 percent probability that the total remaining quantities of *oil* and *gas* to be recovered will equal or exceed the estimated total proved *reserves*.

Additional guidance on particular topics is provided below.

- (3) **Possible Reserves** - A *possible reserves* estimate - either alone or as part of a sum - is often a relatively large number that, by definition, has a low probability of actually being produced. For this reason, the cautionary language prescribed in subparagraph 5.2(a)(v) of *NI 51-101* must accompany the written disclosure of a *possible reserves* estimate.
- (4) **Probabilistic and Deterministic Evaluation Methods** - Section 5.4.3 of volume 1 of the *COGE Handbook* states that "In principle, there should be no difference between estimates prepared using probabilistic or deterministic methods".

When deterministic methods are used, in the absence of a "mathematically derived quantitative measure of probability", the classification of *reserves* is

based on professional judgment as to the quantitative measure of certainty attained.

When probabilistic methods are used in conjunction with good engineering and geological practice, they will provide more statistical information than the conventional deterministic method. The following are a few critical criteria that an evaluator must satisfy when applying probabilistic methods:

- The evaluator must still estimate the *reserves* applying the definitions and using the guidelines set out in the *COGE Handbook*.
 - Entity level probabilistic *reserves* estimates should be aggregated arithmetically to provide reported level *reserves*.
 - If the evaluator also prepares aggregate *reserves* estimates using probabilistic methods, the evaluator should explain in the *evaluation* report the method used. In particular, the evaluator should specify what confidence levels were used at the entity, *property*, and reported (i.e., total) levels for each of proved, proved + *probable* and proved + *probable* + *possible* (if reported) *reserves*.
 - If the *reporting issuer* discloses the aggregate *reserves* that the evaluator prepared using probabilistic methods, the issuer should provide a brief explanation, near its disclosure, about the *reserves* definitions used for estimating the *reserves*, about the method that the evaluator used, and the underlying confidence levels that the evaluator applied.
- (5) **Availability of Funding** - In assigning *reserves* to an undeveloped *property*, the *reporting issuer* is not required to have the funding available to develop the *reserves*, since it may be developed by means other than the expenditure of the *reporting issuer's* funds (for example by a farm-out or sale). *Reserves* must be estimated assuming that development of the *properties* will occur without regard to the likely availability of funding required for that *property*. The *reporting issuer's* evaluator is not required to consider whether the *reporting issuer* will have the capital necessary to develop the *reserves*. (See section 7.8.2 of *COGE Handbook* and subparagraph 5.2(a)(iv) of *NI 51-101*.)

However, item 5.3 of *Form 51-101F1* requires a *reporting issuer* to discuss its expectations as to the sources and costs of funding estimated future development. If the issuer expects that the costs of funding would make development of a *property* unlikely, then even if *reserves* were assigned, it must also discuss that expectation and its plans for the *property*.

- (6) **Proved or Probable Undeveloped Reserves** - Proved or probable *undeveloped reserves* must be reported in the year in which they are recognized. If the *reporting issuer* does not disclose the proved or probable *undeveloped reserves* just because it has not yet spent the capital to develop these *reserves*, it may be omitting *material* information, thereby causing the *reserves* disclosure to be

misleading. If the proved or probable *undeveloped reserves* are not disclosed to the public, then those who have a special relationship with the issuer and know about the existence of these *reserves* would not be permitted to purchase or sell the securities of the issuer until that information has been disclosed. If the issuer has a prospectus, the prospectus might not contain full true and plain disclosure of all *material* facts if it does not contain information about these proved or probable *undeveloped reserves*.

- (7) **Mechanical Updates** - So-called “mechanical updates” of *reserves* reports are sometimes created, often by rerunning previous *evaluations* with a new price deck. This is problematic since there may have been material changes other than price that may lead to the report being misleading. If a *reporting issuer* discloses the results of the mechanical update it should ensure that all relevant material changes are also disclosed to ensure that the information is not misleading.

5.3 **Reserves and Resources Classification**

Section 5.3 of *NI 51-101* requires that any disclosure of *reserves* or *resources* must be made using the categories and terminology as set out in the *COGE Handbook*. A chart of acceptable *reserve* and *resource* categories is appended as Appendix 2 to this Companion Policy. In addition, section 5.3 of *NI 51-101* requires that disclosure of *reserves* or *resources* must relate to the most specific category of *reserves* or *resources* in which the *reserves* or *resources* can be classified. For instance, as illustrated in Appendix 2 there are several subcategories of *discovered resources* including *recoverable resources*, *contingent resources* and *discovered unrecoverable resources*. Although the issuer may not have the necessary information to classify the *discovered resources* as *recoverable resources*, *contingent resources* or as *discovered unrecoverable resources* if the *reporting issuer* does have the necessary information they must classify into one of the subcategories. In addition, as illustrated in Appendix 2, *reserves* can be estimated using three subcategories, namely *proved*, *probable* or *possible reserves*, according to the probability that such quantities of *reserves* will actually be produced. As described in the *COGE Handbook* *proved*, *probable* and *possible reserves* represent conservative, realistic and optimistic estimates of *reserves*, respectively. Therefore any disclosure of *reserves* must be broken down into one of the three subcategories of *reserves*, namely *proved*, *probable* or *possible reserves*. For further guidance on disclosure of *reserves* and *resources* please see sections 5.2 and 5.5 of this Companion Policy.

5.4 **Written Consents**

Section 5.7 of *NI 51-101* restricts a *reporting issuer's* use of a report of a *qualified reserves evaluator or auditor* without written consent. The consent requirement does not apply to the direct use of the report for the purposes of *NI 51-101* (filing *Form 51-101F1*; making direct or indirect reference to the conclusions of that report in the filed *Form 51-101F1* and *Form 51-101F3*; and identifying the report in the mandatory notice under section 2.2). The *qualified reserves evaluator or auditor* retained to report to a *reporting issuer* for the purposes of *NI 51-101* is expected to anticipate these uses of the report.

However, further use of the report (for example, in a securities offering document or in other news releases) would require written consent.

5.5 Disclosure of Resources

- (1) **Disclosure of Resources Generally** -The disclosure of *resources*, excluding proved and *probable reserves*, is not mandatory under *NI 51-101*, except that a *reporting issuer* must make disclosure concerning its unproved *properties* and *resource* activities in its annual filings as described in Part 6 of *Form 51-101F1*. Additional disclosure beyond this is voluntary and must comply with section 5.9 of *NI 51-101* if *anticipated results* from the *resources* are voluntarily disclosed.

For prospectuses, the general securities disclosure obligation of “full, true and plain” disclosure of all *material* facts would require the disclosure of *reserves* or *resources* that are *material* to the issuer, even if the disclosure is not mandated by *NI 51-101*. Any such disclosure should be based on supportable analysis.

Disclosure of *resources* requires the use of statistical measures that may be unfamiliar to a user. It is the responsibility of the evaluator and the *reporting issuer* to be familiar with these measures and for the *reporting issuer* to be able to explain them to investors. Information on statistical measures may be found in the *COGE Handbook* (section 9 of volume 1 and section 4 of volume 2) and in the extensive technical literature⁴ on the subject.

- (2) **Disclosure of Anticipated Results under Subsection 5.9(1) of NI 51-101** - If a *reporting issuer* voluntarily discloses *anticipated results* from *resources* that are not classified as *reserves*, it must disclose certain basic information concerning the *resources*, which is set out in subsection 5.9(1) of *NI 51-101*. Additional disclosure requirements arise if the *anticipated results* disclosed by the issuer include an estimate of a *resource* quantity or associated value, as set out below in subsection 5.5(3).

If the *reporting issuer* discloses the estimated value of an *unproved property* other than a value attributable to an estimated *resource* quantity, then the issuer must disclose the basis of the calculation of the value, in accordance with paragraph 5.9(1)(e). This type of value is typically based on petroleum land management practices that consider activities and land prices in nearby areas. If done *independently*, it would be done by a valuator with petroleum land management expertise who would generally be a member of a *professional organization* such

⁴ For example, Determination of Oil and Gas Reserves, Monograph No. 1, Chapter 22, Petroleum Society of CIM, Second Edition 2004. (ISBN 0-9697990-2-0) Newendorp, P., & Schuyler, J., 2000, Decision Analysis for Petroleum Exploration, Planning Press, Aurora, Colorado (ISBN 0-9664401-1-0). Rose, P. R., Risk Analysis and Management of Petroleum Exploration Ventures, AAPG Methods in Exploration Series No. 12, AAPG (ISBN 0-89181-062-1)

as the Canadian Association of Petroleum Landmen. This is distinguishable from the determination of a value attributable to an estimated *resource* quantity, as contemplated in subsection 5.9(2). This latter type of value estimate must be prepared by a *qualified reserves evaluator or auditor*.

The calculation of an estimated value described in paragraph 5.9(1)(e) may be based on one or more of the following factors:

- the acquisition cost of the *unproved property* to the *reporting issuer*, provided there have been no material changes in the *unproved property*, the surrounding *properties*, or the general *oil* and *gas* economic climate since acquisition;
- recent sales by others of interests in the same *unproved property*;
- terms and conditions, expressed in monetary terms, of recent farm-in agreements related to the *unproved property*;
- terms and conditions, expressed in monetary terms, of recent work commitments related to the *unproved property*;
- recent sales of similar *properties* in the same general area;
- recent exploration and discovery activity in the general area;
- the remaining term of the *unproved property*; or
- burdens (such as overriding royalties) that impact on the value of the *property*.

The *reporting issuer* must disclose the basis of the calculation of the value of the *unproved property*, which may include one or more of the above-noted factors.

The *reporting issuer* must also disclose whether the value was prepared by an *independent* party. In circumstances in which paragraph 5.9(1)(e) applies and where the value is prepared by an *independent* party, in order to ensure that the *reporting issuer* is not making public disclosure of misleading information, the *CSA* expect the *reporting issuer* to provide all relevant information to the valuator to enable the valuator to prepare the estimate.

(3) **Disclosure of an Estimate of Quantity or Associated Value of a *Resource* under Subsection 5.9(2) of *NI 51-101* -**

(a) **Overview of Subsection 5.9(2) of *NI 51-101***

Pursuant to subsection 5.9(2) of *NI 51-101*, if a *reporting issuer* discloses an estimate of a *resource* quantity or an associated value, the estimate must have been prepared by a *qualified reserves evaluator or auditor*. The *COGE Handbook* recommends the use of probabilistic *evaluation* methods for making *resource*

estimates, and although it does not provide detailed guidance there is a considerable amount of technical literature on the subject.

In addition, pursuant to section 5.3 and subsection 5.9(2) of *NI 51-101*, the *reporting issuer* must ensure that the estimated *resource* relates to the most specific category of *resources* in which the *resource* can be classified.

Subsection 5.9(2) requires the *reporting issuer* to disclose certain information in addition to that prescribed in subsection 5.9(1) of *NI 51-101* to assist recipients of the disclosure in understanding the nature of risks associated with the estimate. This information includes a definition of the *resource* category used for the estimate, disclosure of factors relevant to the estimate and cautionary language.

(b) Definitions of *Resource* Categories

For the purpose of complying with the requirement of defining the *resource* category, the *reporting issuer* must ensure that disclosure of the definition is consistent with the *resource* categories and terminology set out in the *COGE Handbook*, pursuant to section 5.3 of *NI 51-101*. A chart of the *resource* categories set out in the *COGE Handbook*, is appended as Appendix 2 to this Companion Policy for illustrative purposes. The definitions of the following *resource* categories (for *resources* that cannot be currently classified as *reserves*) are set out in the Glossary contained in Appendix 1 of this Companion Policy and in section 5 of volume 1 of the *COGE Handbook*:

- *discovered resources*;
- *discovered unrecoverable resources*;
- *contingent resources*;
- *undiscovered resources*;
- *undiscovered unrecoverable resources*; and
- prospective resources.

A *reporting issuer* may wish to report *reserves* or *resources* of *oil* or *gas* as “in-place volumes”. By definition, *reserves* of any type, *contingent resources* and *prospective resources* are estimates of volumes that are recoverable or potentially recoverable and, as such, cannot be described as being “in-place”. Terms such as “potential *reserves*”, “undiscovered *reserves*”, “*reserves* in place”, “in-place *reserves*” or similar terms must not be used because they are incorrect and misleading. The disclosure of *reserves* or *resources* must be consistent with the *reserves* and *resources* terminology and categories set out in the *COGE Handbook*, pursuant to section 5.3 of *NI 51-101*.

The *reporting issuer* can report other categories of *resources*, such as discovered and *undiscovered resources*, as in-place volumes. However, the issuer should caution the reader that this does not represent recoverable volumes.

(c) Application of Subsection 5.9(2) of NI 51-101

If the *reporting issuer* discloses an estimate of a *resource* quantity or associated value, the *reporting issuer* must additionally disclose the following:

- (i) a definition of the *resource* category used for the estimate;
- (ii) the *effective date* of the estimate;
- (iii) significant positive and negative factors relevant to the estimate;
- (iv) an estimated percentage probability relating to recovery of the *resource* as prescribed by subparagraph 5.9(2)(c)(iv) of *NI 51-101*;
- (v) the contingencies which prevent the classification of a contingent *resource* as a *reserve*; and
- (vi) cautionary language as prescribed by subparagraph 5.9(2)(c)(vi) of *NI 51-101*.

The *resource* estimate may be disclosed as a single quantity such as a median or mean. Frequently, however, the estimate consists of three values that reflect a range of reasonable likelihoods (the low value reflecting a conservative estimate, the middle value being the median estimate, and the high value being an optimistic estimate).

Guidance concerning defining the *resource* category is provided above in section 5.3 and paragraph 5.5(3)(b) of this Companion Policy.

With respect to disclosure of an estimated percentage probability in subparagraph 5.9(2)(c)(iv) of *NI 51-101*, this requirement conveys to the investor the uncertainty associated with the estimates of *resources*. It also elaborates on the requirement in paragraph 5.9(1)(d) of *NI 51-101* to disclose the risks and probability of success in recovering the *resource*. In the case of a *discovered resources* or a subset of *discovered resources*, the *reporting issuer* must disclose the percentage probability of commercially extracting the *resource*. In the case of an *undiscovered resource* or a subset of this *resource*, the *reporting issuer* must disclose percentage probability of discovering the hydrocarbons in sufficient quantity for them to be tested to the surface, i.e. the probability of the *undiscovered resource* maturing into a *contingent resource*.

No specific method of estimating the probabilities is prescribed. It may be acceptable to make the disclosure of probabilities as an interval (e.g., from 20 to 30%) that captures the most likely outcome. However, this interval must be meaningful and there must be adequate disclosure concerning the meaning of the interval. It would not, for example be acceptable to quote a range that, although it captures all possible outcomes, is so large that it does not provide meaningful information on the uncertainty of an estimate.

The general disclosure requirements of paragraph 5.9(2)(c) of *NI 51-101* may be illustrated by an example. If a *reporting issuer* discloses, for example, an estimate of a volume of its *bitumen* which is a *contingent resource* to the issuer, the disclosure would include information of the following nature:

The reporting issuer holds a [●] interest in [provide description and location of interest]. As of [●] date, it estimates that, in respect of this interest, it has [●] bbls of *bitumen*, which would be classified as a contingent resource. A contingent resource is defined as that quantity of *oil* estimated on a given date to be potentially recoverable from known accumulations but is not currently economic. There is no certainty that it will be economically viable or technically feasible to produce any portion of the resource. The probability of a commercial project proceeding is estimated to be [●%] [OR Management is unable to provide a firm estimate but the probability is estimated to lie between [●%] and [●%]. The contingencies which currently prevent the classification of the resource as a reserve are [state specific capital costs required to render *production* economic, applicable regulatory considerations, pricing, specific supply costs, technological considerations, and/or other relevant factors]. A significant factor relevant to the estimate is [e.g.] an existing legal dispute concerning title to the interest.

To the extent that this information is provided in a previously filed document, and it relates to the same interest in *resources*, the issuer can omit disclosure of the percentage probability relating to recovery as well as significant positive and negative factors relevant to the estimate and the contingencies which prevent the classification of the *resource* as a *reserve*. However, the issuer must make reference in the current disclosure to the title and date of the previously filed document.

5.6 Analogous Information

A *reporting issuer* may wish to base an estimate on, or include comparative *analogous information* for their area of interest, such as *reserves*, *resources*, and *production*, from *fields* or wells, in nearby or geologically similar areas. Particular care must be taken in using and presenting this type of information. Using only the best wells or *fields* in an area, or ignoring dry holes, for instance, may be particularly misleading. It is important to present a factual and balanced view of the information being provided.

The *reporting issuer* must comply with the disclosure requirements of section 5.10 of *NI 51-101*, when it discloses *analogous information*, as that term is broadly defined in *NI 51-101*, for an area which includes an area of the *reporting issuer's* area of interest. Pursuant to subsection 5.10(2) of *NI 51-101*, if the issuer discloses an estimate of its own *reserves* or *resources* based on an extrapolation from the *analogous information*, or if the *analogous information* itself is an estimate of its own *reserves* or *resources*, the issuer must ensure the estimate is prepared in accordance with the *COGE Handbook* and

disclosed in accordance with *NI 51-101* generally. For example, in respect of a *reserves* estimate, the estimate must be classified and prepared in accordance with the *COGE Handbook* by a *qualified reserves evaluator or auditor* and must otherwise comply with the requirements of section 5.2 of *NI 51-101*.

5.7 Consistent Use of Units of Measurement

Reporting issuers should be consistent in their use of units of measurement within and between disclosure documents, to facilitate understanding and comparison of the disclosure. For example, *reporting issuers* should not, without compelling reason, switch between imperial units of measure (such as barrels) and Système International (SI) units of measurement (such as tonnes) within or between disclosure documents. Issuers should refer to Appendices B and C of volume 1 of the *COGE Handbook* for the proper reporting of units of measurement.

In all cases, in accordance with section 5.2 and section 5.3 of *NI 51-101*, *reporting issuers* should apply the relevant terminology and unit prefixes set out in the *COGE Handbook*.

5.8 BOEs and McfGEs

Section 5.14 of *NI 51-101* sets out requirements that apply if a *reporting issuer* chooses to make disclosure using units of equivalency such as *BOEs* or *McfGEs*. The requirements include prescribed methods of calculation and cautionary disclosure as to the possible limitations of those calculations. Section 13 of the *COGE Handbook*, under the heading "Barrels of Oil Equivalent", provides additional guidance.

5.9 Finding and Development costs

Section 5.15 of *NI 51-101* sets out requirements that apply if a *reporting issuer* chooses to make disclosure of finding and *development costs*.

Because the prescribed methods of calculation under section 5.15 involve the use of *BOEs*, section 5.14 of *NI 51-101* necessarily applies to disclosure of finding and *development costs* under section 5.15. As such, the finding and development cost calculations must apply a conversion ratio as specified in section 5.14 and the cautionary disclosure prescribed in section 5.14 will also be required.

BOEs are based on imperial units of measurement. If the *reporting issuer* uses other units of measurements (such as SI or "metric" measures), any corresponding departure from the requirements of section 5.15 should reflect the use of units other than *BOEs*.

5.10 Prospectus Disclosure

In addition to the general disclosure requirements in *NI 51-101* which apply to prospectuses, the following commentary provides additional guidance on topics of frequent enquiry.

- (1) **Significant Acquisitions** - To the extent that an issuer engaged in *oil and gas activities* discloses a significant acquisition in its prospectus, it must disclose sufficient information for a reader to determine how the acquisition affected the *reserves data* and other information previously disclosed in the issuer's *Form 51-101F1*. This requirement stems from Part 6 of *NI 51-101* with respect to material changes. This is in addition to specific prospectus requirements for financial information satisfying significant acquisitions.
- (2) **Disclosure of Resources** - The disclosure of *resources*, excluding proved and *probable reserves*, is generally not mandatory under *NI 51-101*, except for certain disclosure concerning the issuer's unproved *properties* and *resource* activities as described in Part 6 of *Form 51-101F1*, which information would be incorporated into the prospectus. Additional disclosure beyond this is voluntary and must comply with sections 5.9 and 5.10 of *NI 51-101*, as applicable. However, the general securities disclosure obligation of "full, true, and plain" disclosure of all *material* facts in a prospectus would require the disclosure of *resources* that are *material* to the issuer, even if the disclosure is not mandated by *NI 51-101*. Any such disclosure should be based on supportable analysis.
- (3) **Proved or Probable Undeveloped reserves** - Further to the guidance provided in subsection 5.2(4) of this Companion Policy, proved or probable *undeveloped reserves* must be reported in the year in which they are recognized. If the *reporting issuer* does not disclose the proved or probable *undeveloped reserves* just because it has not yet spent the capital to develop these *reserves*, it may be omitting *material* information, thereby causing the *reserves* disclosure to be misleading. If the issuer has a prospectus, the prospectus might not contain full, true and plain disclosure of all *material* facts if it does not contain information about these proved *undeveloped reserves*.
- (4) **Reserves Reconciliation in an Initial Public Offering** - In an initial public offering, if the issuer does not have a *reserves* report as at its prior year-end, or if this report does not provide the information required to carry out a *reserves* reconciliation pursuant to item 4.1 of *Form 51-101F1*, the CSA may consider granting relief from the requirement to provide the *reserves* reconciliation. A condition of the relief may include a description in the prospectus of relevant changes in any of the categories of the *reserves* reconciliation.
- (5) **Relief to Provide More Recent Form 51-101F1 Information in a Prospectus** - If an issuer is filing a preliminary prospectus and wishes to disclose *reserves data* and other *oil and gas* information as at a more recent date than its applicable year-end date, the CSA may consider relieving the issuer of the requirement to disclose the *reserves data* and other information as at year-end.

An issuer may determine that its obligation to provide full, true and plain disclosure obliges it to include in its prospectus *reserves data* and other *oil and gas* information as at a date more recent than specified in the prospectus

requirements. The prospectus requirements state that the information must be as at the issuer's most recent financial year-end in respect of which the prospectus includes financial statements. The prospectus requirements, while certainly not presenting an obstacle to such more current disclosure, would nonetheless require that the corresponding information also be provided as at that financial year-end.

We would consider granting relief on a case-by-case basis to permit an issuer in these circumstances to include in its prospectus the *oil* and *gas* information prepared with an *effective date* more recent than the financial year-end date, without also including the corresponding information effective as at the year-end date. A consideration for granting this relief may include disclosure of *Form 51-101F1* information with an *effective date* that coincides with the date of interim financial statements. The issuer should request such relief in the covering letter accompanying its preliminary prospectus. The grant of the relief would be evidenced by the prospectus receipt.

PART 6 MATERIAL CHANGE DISCLOSURE

6.1 Changes from Filed Information

Part 6 of *NI 51-101* requires the inclusion of specified information in disclosure of certain material changes.

The information to be filed each year under Part 2 of *NI 51-101* is prepared as at, or for a period ended on, the *reporting issuer's* most recent financial year-end. That date is the *effective date* referred to in subsection 6.1(1) of *NI 51-101*. When a material change occurs after that date, the filed information may no longer, as a result of the material change, convey meaningful information, or the original information may have become misleading in the absence of updated information.

Part 6 of *NI 51-101* requires that the disclosure of the material change include a discussion of the *reporting issuer's* reasonable expectation of how the material change has affected the issuer's *reserves data* and other information contained in its filed disclosure. This would not necessarily require that an *evaluation* be carried out. However, the *reporting issuer* should ensure it complies with the general disclosure requirements set out in Part 5, as applicable. For example, if the material change report discloses an updated *reserves* estimate, this should be prepared in accordance with the *COGE Handbook* and by a *qualified reserves evaluator or auditor*.

This material change disclosure can reduce the likelihood of investors being misled, and maintain the usefulness of the original filed *oil* and *gas* information when the two are read together.

Appendix 1
to
Companion Policy 51-101CP
Standards of Disclosure
for Oil and Gas Activities

Glossary

Section 1.1 of National Instrument 51-101 *Standards of Disclosure for Oil and Gas Activities* ("NI 51-101") defines a number of terms used in NI 51-101, Form 51-101F1, Form 51-101F2, Form 51-101F3 and this Companion Policy. Section 1.2 of NI 51-101 provides that terms used in the *Instrument* but not defined in the *Instrument*, NI 14-101 or the securities statute in the *jurisdiction* have the meaning or interpretation, if any, set out in the *COGE Handbook*.

This Appendix explains much of the terminology used in NI 51-101 and its accompanying documents. It is provided only as a convenience to users of NI 51-101, to assist them in better understanding the purpose and application of NI 51-101.

The explanations in this Appendix are derived from a number of sources, including section 1.1 of NI 51-101, NI 14-101 and the *COGE Handbook*. If the explanation is derived from another source, the source document is indicated in square brackets after the explanation (even if the explanation is not verbatim to the source document).

Background or further guidance may be found in the source documents:

- *CICA Accounting Guideline 16* is included in the *CICA Handbook*, which can be obtained from the *CICA*.
- The *COGE Handbook* can be obtained from the Petroleum Society of the Canadian Institute of Mining, Metallurgy & Petroleum (Telephone (403) 237-5112; email info@petsoc.org; or www.petsoc.org).
- *FAS 19* can be obtained from *FASB*, the United States Financial Accounting Standards Board.
- NI 14-101 can be viewed on the websites of a number of *securities regulatory authorities*.

DEFINITIONS

The terms (and plural, singular or other grammatical variants thereof) set out in the left column below have the meanings respectively set out in the right column.

Defined Term	Meaning
<i>1934 Act</i>	The Securities Exchange Act of 1934 of the United States of America, as amended from time to time. [NI 14-101]
<i>Annual information form</i>	A completed Form 51-102F2 <i>Annual Information Form</i> , or in the case of an <i>SEC</i> issuer (as defined in National Instrument 51-102 Continuous Disclosure Obligations) a completed Form 51-102F2 or an annual report or transition report under the 1934 Act on Form 10-K, Form 10-KSB or Form 20-F. [NI 51-102]
<i>Analogous information</i>	Information about an area outside the area the <i>reporting issuer</i> has an interest or intends to acquire an interest, which is referenced by the <i>reporting issuer</i> for the purpose, in the opinion of a reasonable person, of drawing a comparison or conclusion to an area in which the <i>reporting issuer</i> has an interest or intends to acquire an interest and may include, without limitation: <ul style="list-style-type: none"> • historic information concerning reserves; • estimates of the volume or value of reserves; • historic information concerning resources; • estimates of the volume or value of resources; • historic production amounts; • production estimates; or • information concerning a field, well, basin or reservoir. [NI 51-102]
<i>Anticipated results</i>	Information which may, in the opinion of a reasonable person, indicate the potential value or quantities of <i>resources</i> in respect of the <i>reporting issuer's resources</i> or a portion of its <i>resources</i> which may include, without limitation: <ul style="list-style-type: none"> • an estimate of volume; • an estimate of value; • areal extent; • anticipated pay thickness; • flow rates; or • hydrocarbon content. [NI 51-102]
<i>Associated gas</i>	The <i>gas</i> cap overlying a <i>crude oil</i> accumulation in a <i>reservoir</i> . See <i>gas</i> .

Audit

In relation to *reserves data*, the process whereby an *independent* qualified *reserves* auditor carries out procedures designed to allow the *independent* qualified *reserves* auditor to provide reasonable assurance, in the form of an opinion that the *reporting issuer's reserves data* (or specific parts thereof) have, in all *material* respects, been determined and presented in accordance with the *COGE Handbook* and are, therefore, free of *material* misstatement.

Because of

- (a) the nature of the subject matter (estimates of future results with many uncertainties);
- (b) the fact that the *independent* qualified *reserves* auditor assesses the qualifications and experience of the *reporting issuer's* staff, assesses the *reporting issuer's* systems, procedures and controls and relies on the competence of the *reporting issuer's* staff and the appropriateness of the *reporting issuer's* systems, procedures and controls; and
- (c) the fact that tests and samples (involving examination of underlying documentation supporting the determination of the *reserves* and *future net revenue*) as opposed to complete *evaluations*, are involved;

the level of assurance is designed to be high, though not absolute.

The level of assurance cannot be described with numeric precision. It will usually be less than, but reasonably close to, that of an *independent evaluation* and considerably higher than that of a review.

[*COGE Handbook*]

Bbl

Barrel.

Bitumen

A highly viscous *oil* which is too thick to flow in its native state, and which cannot be produced without altering its viscosity. The density of *bitumen* is generally less than 10 degrees API (as that term is defined by the American Petroleum Institute).

BOEs

Barrels of *oil* equivalent. [*NI 51-101* and *COGE Handbook*]

Canadian GAAP

Generally accepted accounting principles determined with reference

to the *CICA Handbook*. [NI 14-101]

<i>CICA</i>	The Canadian Institute of Chartered Accountants. [NI 51-101]
<i>CICA Accounting Guideline 16</i>	Accounting Guideline AcG-16 "Oil and gas accounting - full cost" included in the <i>CICA Handbook</i> , as amended from time to time. [NI 51-101]
<i>CICA Handbook</i>	The Handbook of the <i>CICA</i> , as amended from time to time.
<i>COGE Handbook</i>	The "Canadian Oil and Gas <i>Evaluation Handbook</i> " prepared jointly by The Society of Petroleum <i>Evaluation Engineers</i> (Calgary Chapter) and the Canadian Institute of Mining, Metallurgy & Petroleum (Petroleum Society) as amended from time to time.
<i>Constant prices and costs</i>	<p>Prices and costs used in an estimate that are:</p> <ul style="list-style-type: none"> (a) the <i>reporting issuer's</i> prices and costs as at the <i>effective date</i> of the estimation, held constant throughout the estimated lives of the <i>properties</i> to which the estimate applies; (b) if, and only to the extent that, there are fixed or presently determinable future prices or costs to which the <i>reporting issuer</i> is legally bound by a contractual or other obligation to supply a physical product, including those for an extension period of a contract that is likely to be extended, those prices or costs rather than the prices and costs referred to in paragraph (a). <p>For the purpose of paragraph (a), the <i>reporting issuer's</i> prices will be the posted price for <i>oil</i> and the spot price for <i>gas</i>, after historical adjustments for transportation, gravity and other factors.</p> <p>[<i>COGE Handbook</i>]</p>
<i>Contingent resources</i>	<i>Contingent resources</i> are defined as those quantities of <i>oil</i> and <i>gas</i> estimated on a given day to be potentially recoverable from known accumulations but are not currently economic. [<i>COGE Handbook</i>]
<i>Crude oil</i>	A mixture that consists mainly of pentanes and heavier hydrocarbons, which may contain sulphur and other non-hydrocarbon compounds, that is recoverable at a well from an underground <i>reservoir</i> and that is liquid at the conditions under which its volume is measured or estimated. It does not include <i>solution gas</i> or <i>natural gas</i> liquids.
	[<i>COGE Handbook</i>]

CSA	The Canadian Securities Administrators, an association consisting of the thirteen <i>securities regulatory authorities</i> in Canada.
<i>Developed non-producing reserves</i>	<i>Developed non-producing reserves</i> are those <i>reserves</i> that either have not been on <i>production</i> , or have previously been on <i>production</i> , but are shut-in, and the date of resumption of <i>production</i> is unknown. [COGE Handbook]
<i>Developed producing reserves</i>	<i>Developed producing reserves</i> are those <i>reserves</i> that are expected to be recovered from completion intervals open at the time of the estimate. These <i>reserves</i> may be currently producing or, if shut-in, they must have previously been on <i>production</i> , and the date of resumption of <i>production</i> must be known with reasonable certainty. [COGE Handbook]
<i>Developed reserves</i>	<i>Developed reserves</i> are those <i>reserves</i> that are expected to be recovered from existing wells and installed facilities or, if facilities have not been installed, that would involve a low expenditure (for example, when compared to the cost of drilling a well) to put the <i>reserves</i> on <i>production</i> . The developed category may be subdivided into producing and non-producing. [COGE Handbook]
<i>Development costs</i>	<p>Costs incurred to obtain access to <i>reserves</i> and to provide facilities for extracting, treating, gathering and storing the <i>oil</i> and <i>gas</i> from the <i>reserves</i>.</p> <p>More specifically, <i>development costs</i>, including applicable <i>operating costs</i> of <i>support equipment and facilities</i> and other costs of development activities, are costs incurred to:</p> <ul style="list-style-type: none"> (a) gain access to and prepare well locations for drilling, including surveying well locations for the purpose of determining specific development drilling sites, clearing ground, draining, road building, and relocating public roads, <i>gas</i> lines and power lines, to the extent necessary in developing the <i>reserves</i>; (b) drill and equip <i>development wells</i>, development type <i>stratigraphic test wells</i> and <i>service wells</i>, including the costs of platforms and of well equipment such as casing, tubing, pumping equipment and the wellhead assembly; (c) acquire, construct and install <i>production</i> facilities such as flow lines, separators, treaters, heaters, manifolds, measuring devices and <i>production</i> storage tanks, <i>natural gas</i> cycling and processing plants, and central utility and waste disposal systems; and

- (d) provide improved recovery systems. [*CICA Accounting Guideline 16*]

<i>Development well</i>	A well drilled inside the established limits of an <i>oil</i> or <i>gas reservoir</i> , or in close proximity to the edge of the <i>reservoir</i> , to the depth of a stratigraphic horizon known to be productive. [<i>CICA Accounting Guideline 16</i>]
<i>Discovered resources</i>	<i>Discovered resources</i> are those quantities of <i>oil</i> and <i>gas</i> estimated on a given date to be remaining in, plus those quantities already produced from, known accumulations. <i>Discovered resources</i> are divided into economic and uneconomic categories, with the estimated future recoverable portion classified as <i>reserves</i> and <i>contingent resources</i> , respectively. [<i>COGE Handbook</i>]
<i>Discovered unrecoverable resources</i>	<i>Discovered unrecoverable resources</i> are those quantities of <i>discovered resources</i> that are neither technically possible nor economic to produce. They represent quantities of petroleum that are in the <i>reservoir</i> after <i>production</i> has ceased, and in known accumulations that are not deemed recoverable due to lack of technical and economic recovery processes. [<i>COGE Handbook</i>]
<i>Effective date</i>	In respect of information, the date as at which, or for the period ended on which, the information is provided.
<i>Evaluation</i>	In relation to <i>reserves data</i> , the process whereby an economic analysis is made of a <i>property</i> to arrive at an estimate of a range of <i>net</i> present values of the estimated <i>future net revenue</i> resulting from the <i>production</i> of the <i>reserves</i> associated with the <i>property</i> . [<i>COGE Handbook</i>]
<i>Exploration costs</i>	Costs incurred in identifying areas that may warrant examination and in examining specific areas that are considered to have <i>prospects</i> that may contain <i>oil</i> and <i>gas reserves</i> , including costs of drilling <i>exploratory wells</i> and exploratory type <i>stratigraphic test wells</i> .
	<i>Exploration costs</i> may be incurred both before acquiring the related <i>property</i> (sometimes referred to in part as "prospecting costs") and after acquiring the <i>property</i> . <i>Exploration costs</i> , which include applicable <i>operating costs</i> of <i>support equipment and facilities</i> and other costs of exploration activities, are:
	(a) costs of topographical, geochemical, geological and geophysical studies, rights of access to <i>properties</i> to conduct those studies, and salaries and other expenses of geologists,

geophysical crews and others conducting those studies (collectively sometimes referred to as "geological and geophysical costs");

- (b) costs of carrying and retaining unproved *properties*, such as delay rentals, taxes (other than income and capital taxes) on *properties*, legal costs for title defence, and the maintenance of land and *lease* records;
- (c) dry hole contributions and bottom hole contributions;
- (d) costs of drilling and equipping *exploratory wells*; and
- (e) costs of drilling exploratory type *stratigraphic test wells*.

[CICA Accounting Guideline 16]

Exploratory well

A well that is not a *development well*, a *service well* or a *stratigraphic test well*. [CICA Accounting Guideline 16]

FAS 19

FASB Statement of Financial Accounting Standards No. 19 "Financial Accounting and Reporting by Oil and Gas Producing Companies", as amended from time to time. [NI 51-101]

FASB

United States Financial Accounting Standards Board.

Field

An area consisting of a single *reservoir* or multiple *reservoirs* all grouped on or related to the same individual geological structural feature and/or stratigraphic condition.

There may be two or more *reservoirs* in a *field* that are separated vertically by intervening impervious strata or laterally by local geologic barriers, or both. *Reservoirs* that are associated by being in overlapping or adjacent *fields* may be treated as a single or common operational *field*. The geological terms "structural feature" and "stratigraphic condition" are intended to denote localized geological features, in contrast to broader terms such as "basin", "trend", "province", "play" or "area of interest". [COGE Handbook]

<i>Forecast prices and costs</i>	<p>Future prices and costs that are:</p> <ul style="list-style-type: none"> (a) generally accepted as being a reasonable outlook of the future; (b) if, and only to the extent that, there are fixed or presently determinable future prices or costs to which the <i>reporting issuer</i> is legally bound by a contractual or other obligation to supply a physical product, including those for an extension period of a contract that is likely to be extended, those prices or costs rather than the prices and costs referred to in paragraph (a).
<i>Foreign geographic area</i>	A geographic area outside North America within one country or including all or portions of a number of countries.
<i>Form 51-101F1</i>	Form 51-101F1 <i>Statement of Reserves Data and Other Oil and Gas Information</i> .
<i>Form 51-101F2</i>	Form 51-101F2 <i>Report on Reserves Data by Independent Qualified Reserves Evaluator or Auditor</i> .
<i>Form 51-101F3</i>	Form 51-101F3 <i>Report of Management and Directors on Oil and Gas Disclosure</i> .
<i>Future income tax expenses</i>	<p><i>Future income tax expenses</i> estimated (generally, year-by-year):</p> <ul style="list-style-type: none"> (a) making appropriate allocations of estimated unclaimed costs and losses carried forward for tax purposes, between <i>oil and gas activities</i> and other business activities; (b) without deducting estimated future costs (for example, Crown royalties) that are not deductible in computing taxable income; (c) taking into account estimated tax credits and allowances (for example, royalty tax credits); and (d) applying to the future pre-tax <i>net</i> cash flows relating to the <i>reporting issuer's oil and gas activities</i> the appropriate year-end statutory tax rates, taking into account future tax rates already legislated.
<i>Future net revenue</i>	<p>The estimated <i>net</i> amount to be received with respect to the development and <i>production</i> of <i>reserves</i> (including <i>synthetic oil</i>, coal bed methane and other non-conventional <i>reserves</i>) estimated using:</p> <ul style="list-style-type: none"> (a) <i>forecast prices and costs</i>; or

- (b) *constant prices and costs.*

This *net* amount is computed by deducting, from estimated future revenues:

- estimated amounts of future royalty obligations;
- costs related to the development and *production* of *reserves*;
- *well abandonment costs*; and
- *future income tax expenses*, unless otherwise specified in *NI 51-101, Form 51-101F1* or *Form 51-101F2*.

Corporate general and administrative expenses and financing costs are not deducted. *Net* present values of *future net revenue* may be calculated using a discount rate or without discount.

Gas (or natural gas)

The lighter hydrocarbons and associated non-hydrocarbon substances occurring naturally in an underground *reservoir*, which under atmospheric conditions are essentially *gases* but which may contain *natural gas* liquids.

Gas can exist in a *reservoir* either

- (a) dissolved in *crude oil (solution gas)*; or
- (b) in a *gaseous phase (associated gas or non-associated gas)*.

Non-hydrocarbon substances may include hydrogen sulphide, carbon dioxide and nitrogen. [*COGE Handbook*]

Gross

- (a) In relation to a *reporting issuer's* interest in *production* or *reserves*, its "*company gross reserves*", which are the *reporting issuer's* working interest (operating or non-operating) share before deduction of royalties and without including any royalty interests of the *reporting issuer*. [*COGE Handbook*]
- (b) In relation to wells, the total number of wells in which a *reporting issuer* has an interest.
- (c) In relation to *properties*, the total area of *properties* in which a *reporting issuer* has an interest.

Heavy oil

In respect of *reserves* or *production*:

- (a) in a *jurisdiction* that has a royalty regime specific to *heavy oil*, "*heavy oil*" is oil that qualifies for royalties specific to *heavy*

oil; or

- (b) in a *jurisdiction* that has no royalty regime specific to *heavy oil*, "*heavy oil*" is *oil* with a density between 10 to 22.3 degrees API (as that term is defined by the American Petroleum Institute). [*COGE Handbook*]

Independent

In respect of the relationship between a *reporting issuer* and a *qualified reserves evaluator or auditor*, the term has the meaning set out in the *COGE Handbook*.

***Instrument
(or NI 51-101)***

NI 51-101 *Standards of Disclosure for Oil and Gas Activities*.

Jurisdiction

For the purposes of *NI 51-101*, a province or territory of Canada. [*NI 14-101*]

Lease

An agreement granting to the lessee rights to explore, develop and exploit a *property*.

Marketable

In respect of *reserves* or sales of *oil*, *gas* or associated by-products, the volume of *oil*, *gas* or associated by-products measured at the point of sale to a third party, or of transfer to another division of the issuer for treatment prior to sale to a third party. For *gas*, this may occur either before or after removal of *natural gas* liquids. For *heavy oil* or *bitumen*, this is before the addition of diluent.

***Material (or
materiality)***

For the purposes of *NI 51-101*, information is *material*, in respect of a *reporting issuer*, if it would be likely to influence a decision by a reasonable investor to buy, hold or sell a security of the *reporting issuer*.

This meaning differs from the definitions of "material change" and "material fact" in *securities legislation*, but is consistent with the meaning of the term as used, for accounting purposes, in the *CICA Handbook*.

[*NI 51-101*]

Mcf

Thousand cubic feet.

McfGE

Thousand cubic feet of *gas* equivalent. [*NI 51-101* and *COGE Handbook*]

Natural gas

Gas. [*COGE Handbook*]

<i>Natural gas liquids</i>	Those hydrocarbon components that can be recovered from <i>natural gas</i> as liquids including, but not limited to, ethane, propane, butanes, pentanes plus, condensate and small quantities of non-hydrocarbons. [<i>COGE Handbook</i>]
<i>Net</i>	(a) In relation to a <i>reporting issuer's</i> interest in <i>production</i> or <i>reserves</i> , the <i>reporting issuer's</i> working interest (operating or non-operating) share after deduction of royalty obligations, plus the <i>reporting issuer's</i> royalty interests in <i>production</i> or <i>reserves</i> . [<i>COGE Handbook</i>] (b) In relation to a <i>reporting issuer's</i> interest in wells, the number of wells obtained by aggregating the <i>reporting issuer's</i> working interest in each of its <i>gross wells</i> . (c) In relation to a <i>reporting issuer's</i> interest in a <i>property</i> , the total area in which the <i>reporting issuer</i> has an interest multiplied by the working interest owned by the <i>reporting issuer</i> .
<i>NI 14-101</i>	National Instrument 14-101 Definitions.
<i>NI 51-101 or the Instrument</i>	National Instrument 51-101 <i>Standards of Disclosure for Oil and Gas Activities</i> .
<i>NI 51-102</i>	National Instrument 51-102 <i>Continuous Disclosure Obligations</i> .
<i>Non-associated gas</i>	An accumulation of <i>natural gas</i> in a <i>reservoir</i> where there is no <i>crude oil</i> . See <i>gas</i> .
<i>Oil</i>	<i>Crude oil</i> or <i>synthetic oil</i> . [<i>COGE Handbook</i>]
<i>Oil and gas activities</i>	" <i>Oil and gas activities</i> ": (a) include: (i) the search for <i>crude oil</i> or <i>natural gas</i> in their natural states and original locations; (ii) the acquisition of <i>property</i> rights or <i>properties</i> for the purpose of further exploring for or removing <i>oil</i> or <i>gas</i> from <i>reservoirs</i> on those <i>properties</i> ; (iii) the construction, drilling and <i>production</i> activities necessary to recover <i>oil</i> and <i>gas</i> from <i>reservoirs</i> , and the acquisition, construction, installation and

maintenance of *field* gathering and storage systems, including lifting *oil* and *gas* to the surface and gathering, treating, *field* processing and *field* storage; and

- (iv) the extraction of hydrocarbons from *oil* sands, shale, coal or other non-conventional sources and activities similar to those referred to in clauses (i), (ii) and (iii) undertaken with a view to such extraction; but
- (b) do not include:
 - (i) transporting, refining or marketing *oil* or *gas*;
 - (ii) activities relating to the extraction of natural *resources* other than *oil* and *gas* and their by-products; or
 - (iii) the extraction of geothermal steam or of hydrocarbons as a by-product of the extraction of geothermal steam or associated geothermal *resources*. [NI 51-101]

Operating costs

Production costs.

Possible reserves

Reserves that are less certain to be recovered than *probable reserves*. It is unlikely that the actual remaining quantities recovered will exceed the sum of the estimated proved plus *probable* plus *possible reserves*. Other criteria, including levels of certainty, that must also be met for the categorization of *possible reserves* are provided in the *COGE Handbook*. [*COGE Handbook*]

Preparation date

In respect of written disclosure, the most recent date to which information relating to the period ending on the *effective date* was considered in the preparation of the disclosure.

Probable reserves

Reserves that are less certain to be recovered than proved *reserves*. It is equally likely that the actual remaining quantities recovered will be greater or less than the sum of the estimated proved plus *probable reserves*. Other criteria, including levels of certainty, that must also be met for the categorization of *probable reserves* are provided in the *COGE Handbook*. [*COGE Handbook*]

Production

Recovering, gathering, treating, *field* or plant processing (for example, processing *gas* to extract *natural gas* liquids) and *field* storage of *oil* and *gas*.

The *oil production* function is usually regarded as terminating at the outlet valve on the *lease* or *field production* storage tank. The *gas*

production function is usually regarded as terminating at the plant gate. In some circumstances, it may be more appropriate to regard the *production* function as terminating at the first point at which *oil*, *gas* or their by-products are delivered to a main pipeline, a common carrier, a refinery or a marine terminal.

Production costs (or Operating costs)

Costs incurred to operate and maintain wells and related equipment and facilities, including applicable *operating costs of support equipment and facilities* and other costs of operating and maintaining those wells and related equipment and facilities.

Lifting costs become part of the cost of *oil* and *gas* produced.

Examples of *production costs* are:

- (a) costs of labour to operate the wells and related equipment and facilities;
- (b) costs of repairs and maintenance;
- (c) costs of materials, supplies and fuel consumed, and supplies utilized, in operating the wells and related equipment and facilities;
- (d) costs of workovers;
- (e) *property* taxes and insurance costs applicable to *properties* and wells and related equipment and facilities; and
- (f) taxes, other than income and capital taxes.

Production group

One of the following together, in each case, with associated by-products:

- (a) light and medium *crude oil* (combined);
- (b) heavy *oil*;
- (c) *associated gas* and *non-associated gas* (combined); and
- (d) *bitumen*, *synthetic oil* or other products from non-conventional *oil and gas activities*.

Product type

One of the following:

- (a) in respect of conventional *oil and gas activities*:

- (i) light and medium *crude oil* (combined);
 - (ii) heavy *oil*;
 - (iii) *natural gas* excluding *natural gas* liquids; or
 - (iv) *natural gas* liquids; and
- (b) in respect of non-conventional *oil and gas activities*:
- (i) *synthetic oil*;
 - (ii) *bitumen*;
 - (iii) coal bed methane;
 - (iv) hydrates;
 - (v) shale oil; or
 - (vi) shale gas.

[NI 51-101]

***Professional
organization***

A self-regulatory organization of engineers, geologists, other geoscientists or other professionals whose professional practice includes *reserves evaluations* or *reserves audits*, that:

- (a) admits members primarily on the basis of their educational qualifications;
- (b) requires its members to comply with the professional standards of competence and ethics prescribed by the organization that are relevant to the estimation, *evaluation*, review or *audit* of *reserves data*;
- (c) has disciplinary powers, including the power to suspend or expel a member; and
- (d) is either:
 - (i) given authority or recognition by statute in a Canadian *jurisdiction*; or
 - (ii) accepted for this purpose by the *securities regulatory authority* or the *regulator*.

[NI 51-101]

Property

A *property* includes:

- (a) fee ownership or a *lease*, concession, agreement, permit, licence or other interest representing the right to extract *oil* or *gas* subject to such terms as may be imposed by the conveyance of that interest;
- (b) royalty interests, *production* payments payable in *oil* or *gas*, and other non-operating interests in *properties* operated by others; and
- (c) an agreement with a foreign government or authority under which a *reporting issuer* participates in the operation of *properties* or otherwise serves as "producer" of the underlying *reserves* (in contrast to being an *independent purchaser*, broker, dealer or importer).

A *property* does not include supply agreements, or contracts that represent a right to purchase, rather than extract, *oil* or *gas*.

[CICA Accounting Guideline 16]

Property acquisition costs

Costs incurred to acquire a *property* (directly by purchase or *lease*, or indirectly by acquiring another corporate entity with an interest in the *property*), including:

- (a) costs of *lease* bonuses and options to purchase or *lease* a *property*;
- (b) the portion of the costs applicable to hydrocarbons when land including rights to hydrocarbons is purchased in fee;
- (c) brokers' fees, recording and registration fees, legal costs and other costs incurred in acquiring *properties*.

[CICA Accounting Guideline 16]

Prospect

A geographic or stratigraphic area, in which the *reporting issuer* owns or intends to own one or more *oil* and *gas* interests, which is geographically defined on the basis of geological data and which is reasonably anticipated to contain at least one *reservoir* or part of a *reservoir* of *oil* and *gas*.

Prospective resources

Prospective resources are defined as those quantities of *oil* and *gas* estimated on a given date to be potentially recoverable from undiscovered accumulations. They are technically viable and uneconomic to recover. [COGE Handbook]

<i>Proved property</i>	A <i>property</i> or part of a <i>property</i> to which <i>reserves</i> have been specifically attributed.
<i>Proved reserves</i>	<i>Reserves</i> that can be estimated with a high degree of certainty to be recoverable. It is likely that the actual remaining quantities recovered will exceed the estimated proved <i>reserves</i> . Other criteria, including levels of certainty, that must also be met for the categorization of proved <i>reserves</i> are provided in the <i>COGE Handbook</i> . [<i>COGE Handbook</i>]
<i>Qualified reserves auditor</i>	An individual who: <ul style="list-style-type: none"> (a) in respect of particular <i>reserves data</i> or related information, possesses professional qualifications and experience appropriate for the estimation, <i>evaluation</i>, review and <i>audit</i> of the <i>reserves data</i> and related information; and (b) is a member in good standing of a <i>professional organization</i>. <p>[<i>NI 51-101</i>]</p>
<i>Qualified reserves evaluator</i>	An individual who: <ul style="list-style-type: none"> (a) in respect of particular <i>reserves data</i> or related information, possesses professional qualifications and experience appropriate for the estimation, <i>evaluation</i> and review of the <i>reserves data</i> and related information; and (b) is a member in good standing of a <i>professional organization</i>. <p>[<i>NI 51-101</i>]</p>
<i>Qualified reserves evaluator or auditor</i>	A qualified <i>reserves auditor</i> or a <i>qualified reserves evaluator</i> .
	[<i>NI 51-101</i>]
<i>Regulator</i>	The <i>securities regulatory authority</i> or a person who holds a specified position with the <i>securities regulatory authority</i> (in several instances, its Executive Director or Director) in each <i>jurisdiction</i> .
	[<i>NI 14-101</i>]
<i>Reporting issuer</i>	<ul style="list-style-type: none"> (a) A "<i>reporting issuer</i>" as defined in <i>securities legislation</i>; or (b) in a <i>jurisdiction</i> in which the term is not defined in <i>securities legislation</i>, an issuer of securities that is required to file financial statements with the <i>securities regulatory authority</i>.

- Reservation*** In relation to a report on *reserves data*, a modification of the standard report of an *independent qualified reserves evaluator or auditor* on *reserves data* set out in *Form 51-101F2*, caused by a departure from the *COGE Handbook* or by a limitation in the scope of work that the *independent qualified reserves evaluator or auditor* considers necessary. A modification may take the form of a qualified or adverse opinion or a denial of opinion.
- Reserves*** *Reserves* are the estimated remaining quantities of *oil* and *natural gas* and related substances anticipated to be recoverable from known accumulations, from a given date forward, based on:
- analysis of drilling, geological, geophysical and engineering data;
 - the use of established technology; and
 - specified economic conditions, which are generally accepted as being reasonable, and shall be disclosed.
- Reserves* are classified according to the degree of certainty associated with the estimates. [*COGE Handbook*]
- Reserves data*** Estimates of proved reserves and probable reserves and related future net revenue estimated using forecast prices and costs. [NI 51-101]
- Reservoir*** A porous and permeable underground formation containing a natural accumulation of producible *oil* or *gas* that is confined by impermeable rock or water barriers and is individual and separate from other *reservoirs*. [*CICA Accounting Guideline 16*]
- Resources*** Those quantities of *oil* and *gas* estimated to exist originally in naturally occurring accumulations.
- Resources* are, therefore, those quantities estimated on a particular date to be remaining in known accumulations plus those quantities already produced from known accumulations plus those quantities in accumulations yet to be discovered.
- Resources* are divided into:
- (a) *discovered resources*, which are limited to known accumulations; and
 - (b) *undiscovered resources*.
- [*COGE Handbook*]
- Review*** In relation to the role of a *qualified reserves evaluator or auditor* in respect of *reserves data*, steps carried out by the *qualified reserves*

evaluator or auditor, consisting primarily of enquiry, analytical procedures, analysis, review of historical *reserves* performance and discussion with *reserves* management staff related to a *reporting issuer's reserves data*, with the limited objective of assessing whether the *reserves data* is "plausible" in the sense of appearing to be worthy of belief based on the information obtained by the *qualified reserves evaluator or auditor* as a result of carrying out such steps. Examination of documentation is not required unless the information does not appear to be plausible.

A *reserves* review, due to the limited nature of the investigation involved, does not provide the level of assurance provided by a *reserves audit*. Although *reserves* reviews can be done for specific applications, they are not a substitute for an *audit*. [COGE Handbook]

SEC

The Securities and Exchange Commission of the United States of America. [NI 14-101]

Securities legislation

The statute (in most cases entitled the "Securities Act") and subordinate legislation (in most cases including regulations or rules) specified, for each *jurisdiction*, in NI 14-101.

References in NI 51-101 to *securities legislation* are to be read as references to *securities legislation* in the particular *jurisdiction*.

Securities regulatory authority

The securities commission or comparable body specified, for each *jurisdiction*, in NI 14-101.

References in NI 51-101 to the *securities regulatory authority* are to be read as references to the *securities regulatory authority* in the particular *jurisdiction*.

SEDAR

The System for Electronic Document Analysis and Retrieval referred to in National Instrument 13-101 System for Electronic Document Analysis and Retrieval (*SEDAR*).

Service well

A well drilled or completed for the purpose of supporting *production* in an existing *field*. Wells in this class are drilled for the following specific purposes: *gas* injection (*natural gas*, propane, butane or flue *gas*), water injection, steam injection, air injection, salt-water disposal, water supply for injection, observation, or injection for combustion.

[CICA Accounting Guideline 16]

Solution gas

Gas dissolved in *crude oil*. See *gas*.

<i>Stratigraphic test well</i>	<p>A drilling effort, geologically directed, to obtain information pertaining to a specific geologic condition. Ordinarily, such wells are drilled without the intention of being completed for hydrocarbon <i>production</i>. They include wells for the purpose of core tests and all types of expendable holes related to hydrocarbon exploration.</p> <p><i>Stratigraphic test wells</i> are classified as</p> <ul style="list-style-type: none"> (a) "exploratory type" if not drilled into a proved <i>property</i>; or (b) "development type", if drilled into a proved <i>property</i>. Development type stratigraphic wells are also referred to as "evaluation wells". [<i>CICA Accounting Guideline 16</i>]
<i>Support equipment and facilities</i>	<p>Equipment and facilities used in <i>oil and gas activities</i>, including seismic equipment, drilling equipment, construction and grading equipment, vehicles, repair shops, warehouses, supply points, camps, and division, district or <i>field</i> offices.</p>
<i>Supporting filing</i>	<p>A document filed by a <i>reporting issuer</i> with a <i>securities regulatory authority</i>. [<i>NI 51-101</i>]</p>
<i>Synthetic oil</i>	<p>A mixture of hydrocarbons derived by upgrading crude <i>bitumen</i> from <i>oil</i> sands or kerogen from <i>oil</i> shales or other substances such as coal. [<i>COGE Handbook</i>]</p>
<i>Undeveloped reserves</i>	<p><i>Undeveloped reserves</i> are those <i>reserves</i> expected to be recovered from known accumulations where a significant expenditure (for example, when compared to the cost of drilling a well) is required to render them capable of <i>production</i>. They must fully meet the requirements of the <i>reserves</i> classification (proved, <i>probable</i>, <i>possible</i>) to which they are assigned. [<i>COGE Handbook</i>]</p>
<i>Undiscovered resources</i>	<p><i>Undiscovered resources</i> are those quantities of <i>oil</i> and <i>gas</i> estimated on a given date to be contained in accumulations yet to be discovered. The estimated potentially recoverable portion of <i>undiscovered resources</i> is classified as <i>prospective resources</i>. [<i>COGE Handbook</i>]</p>
<i>Undiscovered unrecoverable resources</i>	<p><i>Undiscovered unrecoverable resources</i> are those quantities of <i>undiscovered resources</i> that are neither technically possible nor economic to produce. They represent quantities of petroleum that are in unknown accumulations that are not deemed recoverable due to lack of technical and economic recovery processes. [<i>COGE Handbook</i>]</p>
<i>Unproved property</i>	<p>A <i>property</i> or part of a <i>property</i> to which no <i>reserves</i> have been</p>

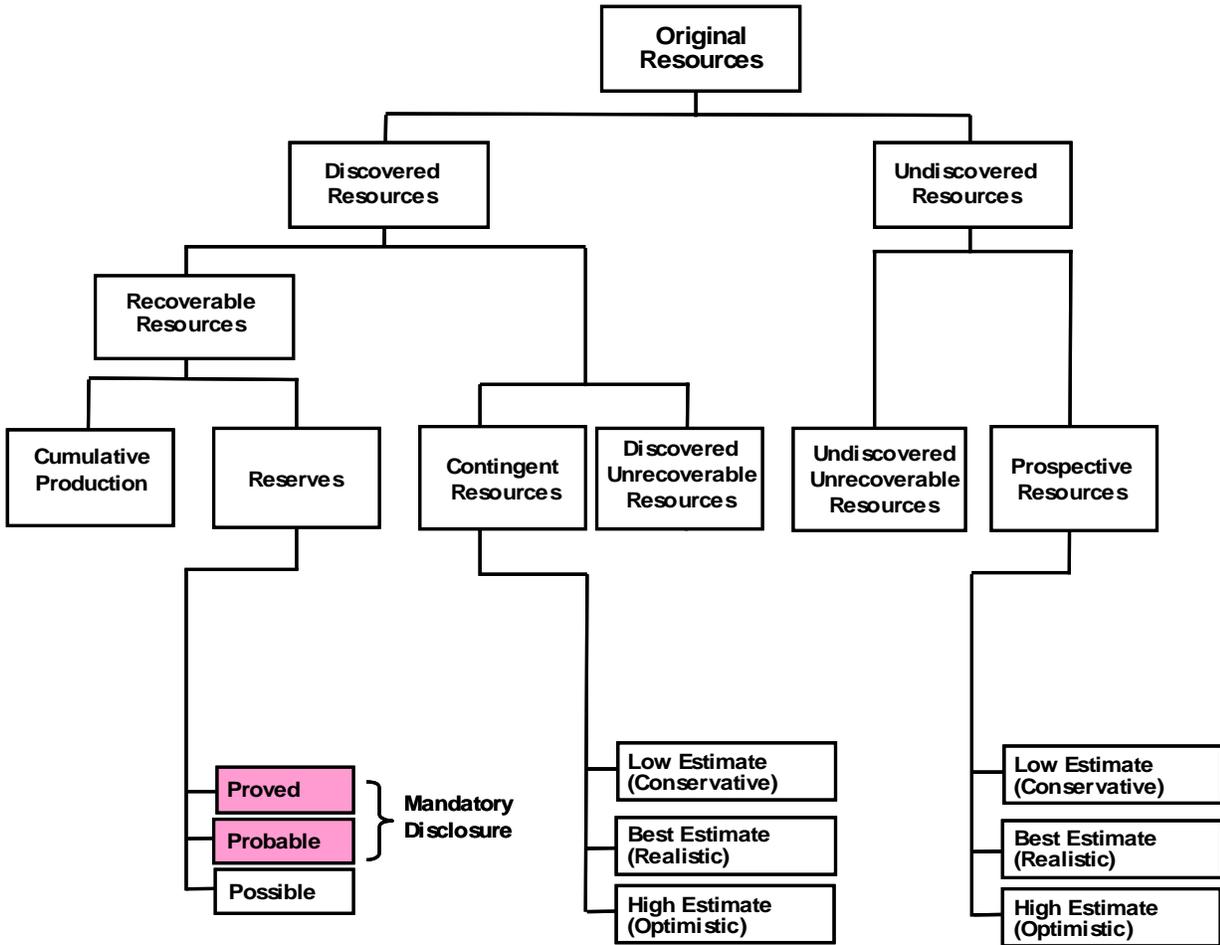
specifically attributed.

Well abandonment costs

Costs of abandoning a well (*net* of salvage value) and of disconnecting the well from the surface gathering system. They do not include costs of abandoning the gathering system or reclaiming the wellsite.

Appendix 2
to
Companion Policy 51-101CP
Standards of Disclosure
for Oil and Gas Activities

Reserves and Resources Classification
as set out in Chapter 5 of Volume 1 of
the *COGE Handbook*



Appendix 3
to
Companion Policy 51-101CP
Standards of Disclosure
for Oil and Gas Activities

Sample Reserves Data Disclosure

Format of Disclosure

NI 51-101 and *Form 51-101F1* offer *reporting issuers* considerable flexibility in the format of their disclosure of *reserves data* and related information. Whatever format and level of detail a *reporting issuer* chooses to use in satisfying the requirements of *NI 51-101*, the objective should be to enable reasonable investors to understand and assess the information, and compare it to corresponding information presented by the *reporting issuer* for other reporting periods or to similar information presented by other *reporting issuers*, in order to be in a position to make informed investment decisions concerning securities of the *reporting issuer*.

A logical and legible layout of information, use of descriptive headings, and consistency in terminology and presentation from document to document and from period to period, are all likely to further that objective.

Reporting issuers and their advisers are reminded of the *materiality* standard under section 1.4 of *NI 51-101*, and of the instructions in *Form 51-101F1*.

See also sections 1.4, 2.2 and 2.3 and subsection 2.7(8) of Companion Policy 51-101CP.

Sample Tables

The following sample tables provide an example of how certain of the *reserves data* might be presented in a manner consistent with *NI 51-101*. Other manners of presentation may also satisfy the requirements of *NI 51-101*.

These sample tables do not reflect all of the information required by *Form 51-101F1*, and they have been simplified to reflect *reserves* in one country only. For the purpose of illustration, the sample tables also incorporate information not mandated by *NI 51-101* but which *reporting issuers* might wish to include in their disclosure; shading indicates this non-mandatory information.

SUMMARY OF OIL AND GAS RESERVES
as of December 31, 2006

CONSTANT PRICES AND COSTS [OPTIONAL SUPPLEMENTAL DISCLOSURE]

RESERVES CATEGORY	RESERVES ⁽¹⁾							
	LIGHT AND MEDIUM OIL		HEAVY OIL		NATURAL GAS ⁽²⁾		NATURAL GAS LIQUIDS	
	Gross (Mbbl)	Net (Mbbl)	Gross (Mbbl)	Net (Mbbl)	Gross (MMcf)	Net (MMcf)	Gross (Mbbl)	Net (Mbbl)
PROVED								
Developed Producing	xx	xx	xx	xx	xx	xx	xx	xx
Developed Non-Producing	xx	xx	xx	xx	xx	xx	xx	xx
Undeveloped	xx	xx	xx	xx	xx	xx	xx	xx
TOTAL PROVED	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
PROBABLE	xx	xx	xx	xx	xx	xx	xx	xx
TOTAL PROVED PLUS PROBABLE	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx

(1) Other product types must be added if material.

(2) Estimates of reserves of natural gas may be reported separately for (i) associated and non-associated gas (combined), (ii) solution gas and (iii) coal bed methane.

**SUMMARY OF NET PRESENT VALUES OF FUTURE NET REVENUE
as of December 31, 2006**

CONSTANT PRICES AND COSTS [OPTIONAL SUPPLEMENTAL DISCLOSURE]

RESERVES CATEGORY	NET PRESENT VALUES OF FUTURE NET REVENUE										
	BEFORE INCOME TAXES DISCOUNTED AT (%/year)					AFTER INCOME TAXES DISCOUNTED AT (%/year)					UNIT VALUE BEFORE INCOME TAX DISCOUNTED AT 10%/year
	0 (MM\$)	5 (MM\$)	10 (MM\$)	15 (MM\$)	20 (MM\$)	0 (MM\$)	5 (MM\$)	10 (MM\$)	15 (MM\$)	20 (MM\$)	(\$/Mcft) (\$/bbl)
PROVED											
Developed Producing	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Developed Non-Producing	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Undeveloped	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
TOTAL PROVED	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xx
PROBABLE	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
TOTAL PROVED PLUS PROBABLE	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxx

 OPTIONAL
SUPPLEMENTAL

Reference: Item 2.2 of *Form 51-101F1*

**TOTAL FUTURE NET REVENUE
(UNDISCOUNTED)
as of December 31, 2006**

CONSTANT PRICES AND COSTS [OPTIONAL SUPPLEMENTAL DISCLOSURE]

RESERVES CATEGORY	REVENUE (M\$)	ROYALTIES (M\$)	OPERATING COSTS (M\$)	DEVELOPMENT COSTS (M\$)	ABANDONMENT AND RECLAMATION COSTS (M\$)	FUTURE NET REVENUE BEFORE INCOME TAXES (M\$)	INCOME TAXES (M\$)	FUTURE NET REVENUE AFTER INCOME TAXES (M\$)
Proved Reserves	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
Proved Plus Probable Reserves	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx

 OPTIONAL
SUPPLEMENTAL

Reference: Item 2.2 of *Form 51-101F1*

**FUTURE NET REVENUE
BY PRODUCTION GROUP
as of December 31, 2006**

CONSTANT PRICES AND COSTS [OPTIONAL SUPPLEMENTAL DISCLOSURE]

RESERVES CATEGORY	PRODUCTION GROUP	FUTURE NET REVENUE BEFORE INCOME TAXES (discounted at 10%/year) (M\$)
Proved Reserves	Light and Medium Crude Oil (including solution gas and other by-products)	xxx
	Heavy Oil (including solution gas and other by-products)	xxx
	Natural Gas (including by-products but excluding solution gas from oil wells)	xxx
	Non-Conventional Oil and Gas Activities	xxx
Proved Plus Probable Reserves	Light and Medium Crude Oil (including solution gas and other by-products)	xxx
	Heavy Oil (including solution gas and other by-products)	xxx
	Natural Gas (including by-products but excluding solution gas from oil wells)	xxx
	Non-Conventional Oil and Gas Activities	xxx

OPTIONAL SUPPLEMENTAL

Reference: Item 2.2 of Form 51-101 F1

SUMMARY OF OIL AND GAS RESERVES
as of December 31, 2006
FORECAST PRICES AND COSTS

RESERVES CATEGORY	RESERVES ⁽¹⁾							
	LIGHT AND MEDIUM OIL		HEAVY OIL		NATURAL GAS ⁽²⁾		NATURAL GAS LIQUIDS	
	Gross (Mbbbl)	Net (Mbbbl)	Gross (Mbbbl)	Net (Mbbbl)	Gross (MMcf)	Net (MMcf)	Gross (Mbbbl)	Net (Mbbbl)
PROVED								
Developed Producing	xx	xx	xx	xx	xx	xx	xx	xx
Developed Non-Producing	xx	xx	xx	xx	xx	xx	xx	xx
Undeveloped	<u>xx</u>	<u>xx</u>	<u>xx</u>	<u>xx</u>	<u>xx</u>	<u>xx</u>	<u>xx</u>	<u>xx</u>
TOTAL PROVED	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
PROBABLE	xx	xx	xx	xx	xx	xx	xx	xx
TOTAL PROVED PLUS PROBABLE	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx

(1) Other product types must be added if material.

(2) Estimates of reserves of natural gas may be reported separately for (i) associated and non-associated gas (combined), (ii) solution gas and (iii) coal bed methane.

SUMMARY OF NET PRESENT VALUES OF FUTURE NET REVENUE
as of December 31, 2006
FORECAST PRICES AND COSTS

RESERVES CATEGORY	NET PRESENT VALUES OF FUTURE NET REVENUE										
	BEFORE INCOME TAXES DISCOUNTED AT (%/year)					AFTER INCOME TAXES DISCOUNTED AT (%/year)					UNIT VALUE BEFORE INCOME TAX DISCOUNTED AT 10%/year
	0 (MMS)	5 (MMS)	10 (MMS)	15 (MMS)	20 (MMS)	0 (MMS)	5 (MMS)	10 (MMS)	15 (MMS)	20 (MMS)	(\$/Mcf) (\$/bbl)
PROVED											
Developed Producing	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Developed Non-Producing	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
Undeveloped	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
TOTAL PROVED	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xx
PROBABLE	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
TOTAL PROVED PLUS PROBABLE	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxx

- (1) A reporting issuer may wish to satisfy its requirement to disclose these unit values by inserting this disclosure for each category of proved reserves and for probable reserves, by production group, in the chart for item 2.1(3)(c) of *Form 51-101F1* (see sample chart below entitled Future Net Revenue by Production Group).
- (2) The unit values are based on net reserve volumes.

Reference: Item 2.1(1) and (2) of *Form 51-101F1*

**TOTAL FUTURE NET REVENUE
(UNDISCOUNTED)
as of December 31, 2006
FORECAST PRICES AND COSTS**

RESERVES CATEGORY	REVENUE (M\$)	ROYALTIES (M\$)	OPERATING COSTS (M\$)	DEVELOPMENT COSTS (M\$)	ABANDONMENT AND RECLAMATION COSTS (M\$)	FUTURE NET REVENUE BEFORE INCOME TAXES (M\$)	INCOME TAXES (M\$)	FUTURE NET REVENUE AFTER INCOME TAXES (M\$)
Proved Reserves	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
Proved Plus Probable Reserves	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx

Reference: Item 2.1(3)(b) of Form 51-101F1

**FUTURE NET REVENUE
BY PRODUCTION GROUP
as of December 31, 2006
FORECAST PRICES AND COSTS**

RESERVES CATEGORY	PRODUCTION GROUP	FUTURE NET REVENUE BEFORE INCOME TAXES (discounted at 10%/year) (M\$)	UNIT VALUE (\$/Mcf) (\$/bbl)
Proved Reserves	Light and Medium Crude Oil (including solution gas and other by-products)	xxx	xxx
	Heavy Oil (including solution gas and other by-products)	xxx	xxx
	Natural Gas (including by-products but excluding solution gas and by-products from oil wells)	xxx	xxx
	Non-Conventional Oil and Gas Activities	xxx	xxx
	Total	xxx	
Proved Plus Probable Reserves	Light and Medium Crude Oil (including solution gas and other by-products)	xxx	xxx
	Heavy Oil (including solution gas and other by-products)	xxx	xxx
	Natural Gas (including by-products but excluding solution gas from oil wells)	xxx	xxx
	Non-Conventional Oil and Gas Activities	xxx	xxx
	Total	xxx	

Reference: Item 2.2(3)(c) of Form 51-101F1

SUMMARY OF PRICING ASSUMPTIONS
as of December 31, 2006

CONSTANT PRICES AND COSTS⁽¹⁾

Year	OIL ⁽²⁾				NATURAL GAS ⁽²⁾	NATURAL GAS LIQUIDS	EXCHANGE RATE ⁽³⁾
	WTI Cushing Oklahoma (\$US/bbl)	Edmonton Par Price 40 ⁰ API (\$Cdn/bbl)	Hardisty Heavy 12 ⁰ API (\$Cdn/bbl)	Cromer Medium 29.3 ⁰ API (\$Cdn/bbl)	AECO Gas Price (\$Cdn/MMBtu)	FOB Field Gate (\$Cdn/bbl)	(\$US/\$Cdn)
Historical (Year End)							
2003	xx	xx	xx	xx	xx	xx	xx
2004	xx	xx	xx	xx	xx	xx	xx
2005	xx	xx	xx	xx	xx	xx	xx
2006 (Year End)	xx	xx	xx	xx	xx	xx	xx

 OPTIONAL SUPPLEMENTAL

- (1) This disclosure is triggered by optional supplemental disclosure of item 2.2 of *Form 51-101F1*.
- (2) This summary table identifies benchmark reference pricing schedules that might apply to a reporting issuer.
- (3) The exchange rate used to generate the benchmark reference prices in this table.

Reference: Item 3.1 of Form 51-101 F1

SUMMARY OF PRICING AND INFLATION RATE ASSUMPTIONS
as of December 31, 2006
FORECAST PRICES AND COSTS

Year	OIL ⁽¹⁾				NATURAL GAS ⁽¹⁾ AECO Gas Price (\$Cdn/MMBtu)	NATURAL GAS LIQUIDS FOB Field Gate (\$Cdn/bbl)	INFLATION RATES ⁽²⁾ %/Year	EXCHANGE RATE ⁽³⁾ \$US/\$Cdn
	WTI Cushing Oklahoma \$US/bbl	Edmonton Par Price 40 ^o API \$Cdn/bbl	Hardisty Heavy 12 ^o API \$Cdn/bbl	Cromer Medium 29.3 ^o API \$Cdn/bbl				
Historical ⁽⁴⁾								
2003	xx	xx	xx	xx	xx	xx	xx	xx
2004	xx	xx	xx	xx	xx	xx	xx	xx
2005	xx	xx	xx	xx	xx	xx	xx	xx
2006	xx	xx	xx	xx	xx	xx	xx	xx
Forecast								
2007	xx	xx	xx	xx	xx	xx	xx	xx
2008	xx	xx	xx	xx	xx	xx	xx	xx
2009	xx	xx	xx	xx	xx	xx	xx	xx
2010	xx	xx	xx	xx	xx	xx	xx	xx
2011	xx	xx	xx	xx	xx	xx	xx	xx
Thereafter	xx	xx	xx	xx	xx	xx	xx	xx

(1) This summary table identifies benchmark reference pricing schedules that might apply to a reporting issuer.

(2) Inflation rates for forecasting prices and costs.

(3) Exchange rates used to generate the benchmark reference prices in this table

(4) Item 3.2 (1)(b) of *Form 51-101F1* also requires disclosure of the *reporting issuer's* weighted average historical prices for the most recent financial year (2006, in this example).

 OPTIONAL
SUPPLEMENTAL

Reference: Item 3.2 of Form 51-101 F1

**RECONCILIATION OF
COMPANY GROSS RESERVES
BY PRODUCT TYPE⁽¹⁾**

FORECAST PRICES AND COSTS

FACTORS	LIGHT AND MEDIUM OIL			HEAVY OIL			ASSOCIATED AND NON-ASSOCIATED GAS		
	Gross Proved (Mbbbl)	Gross Probable (Mbbbl)	Gross Proved Plus Probable (Mbbbl)	Gross Proved (Mbbbl)	Gross Probable (Mbbbl)	Gross Proved Plus Probable (Mbbbl)	Gross Proved (MMcf)	Gross Probable (MMcf)	Gross Proved Plus Probable (MMcf)
December 31, 2005	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
Extensions & Improved Recovery	xx	xx	xx	xx	xx	xx	xx	xx	xx
Technical Revisions	xx	xx	xx	xx	xx	xx	xx	xx	xx
Discoveries	xx	xx	xx	xx	xx	xx	xx	xx	xx
Acquisitions	xx	xx	xx	xx	xx	xx	xx	xx	xx
Dispositions	xx	xx	xx	xx	xx	xx	xx	xx	xx
Economic Factors	xx	xx	xx	xx	xx	xx	xx	xx	xx
Production	xx	xx	xx	xx	xx	xx	xx	xx	xx
December 31, 2006	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx

(1) The reserves reconciliation must include other product types, including synthetic oil, bitumen, coal bed methane, hydrates, shale oil and shale gas, if material for the reporting issuer.

Reference: Item 4.1 of *Form 51-101F1*