

Form 51-101F1
Statement of Reserves Data
and Other Oil and Gas Information

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Form 51-101F1
Statement of Reserves Data
and Other Oil and Gas Information

This is the form referred to in item 1 of section 2.1 of National Instrument 51-101 Standards of Disclosure for Oil and Gas Activities ("NI 51-101").

GENERAL INSTRUCTIONS

- (1) *Terms for which a meaning is given in NI 51-101 have the same meaning in this Form 51-101F1¹.*
- (2) *Unless otherwise specified in this Form 51-101F1, information under item 1 of section 2.1 of NI 51-101 must be provided as at the last day of the **reporting issuer's** most recent financial year or for its financial year then ended.*
- (3) *It is not necessary to include the headings or numbering, or to follow the ordering of Items, in this Form 51-101F1. Information may be provided in tables.*
- (4) *To the extent that any Item or any component of an Item specified in this Form 51-101F1 does not apply to a **reporting issuer** and its activities and operations, or is not **material**, no reference need be made to that Item or component. It is not necessary to state that such an Item or component is "not applicable" or "not material". Materiality is discussed in NI 51-101 and Companion Policy 51-101CP.*
- (5) *This Form 51-101F1 sets out minimum requirements. A **reporting issuer** may provide additional information not required in this Form 51-101F1 provided that it is not misleading and not inconsistent with the requirements of NI 51-101, and provided that material information required to be disclosed is not omitted.*
- (6) *A **reporting issuer** may satisfy the requirement of this Form 51-101F1 for disclosure of information "by country" by instead providing information by **foreign geographic area** in respect of countries outside North America as may be appropriate for meaningful disclosure in the circumstances.*

¹ For the convenience of readers, CSA Staff Notice 51-324 *Glossary to NI 51-101 Standards of Disclosure for Oil and Gas Activities* sets out the meanings of terms that are printed in italics (or, in the Instructions, in bold type) in this Form 51-101F1 or in NI 51-101, Form 51-101F2, Form 51-101F3 or Companion Policy 51-101CP. [This footnote is for the reader's convenience and does not form part of the form officially adopted in British Columbia.]

PART 1 DATE OF STATEMENT

Item 1.1 Relevant Dates

1. Date the statement.
2. Disclose the *effective date* of the information being provided.
3. Disclose the *preparation date* of the information being provided.

INSTRUCTIONS

- (1) *For the purpose of Part 2 of **NI 51-101**, and consistent with the definition of **reserves data** and General Instruction (2) of this **Form 51-101F1**, the **effective date** to be disclosed under section 2 of Item 1.1 is the last day of the **reporting issuer's** most recent financial year. It is the date of the balance sheet for the **reporting issuer's** most recent financial year (for example, "as at December 31, 20xx") and the ending date of the **reporting issuer's** most recent annual statement of income (for example, "for the year ended December 31, 20xx").*
- (2) *The same **effective date** applies to **reserves** of each category reported and to related **future net revenue**. References to a change in an item of information, such as changes in **production** or a change in **reserves**, mean changes in respect of that item during the year ended on the **effective date**.*
- (3) *The **preparation date**, in respect of written disclosure, means the most recent date to which information relating to the period ending on the **effective date** was considered in the preparation of the disclosure. The **preparation date** is a date subsequent to the **effective date** because it takes time after the end of the financial year to assemble the information for that completed year that is needed to prepare the required disclosure as at the end of the financial year.*
- (4) *Because of the interrelationship between certain of the **reporting issuer's reserves data** and other information referred to in this **Form 51-101F1** and certain of the information included in its financial statements, the **reporting issuer** should ensure that its financial auditor and its **qualified reserves evaluators or auditors** are kept apprised of relevant events and transactions, and should facilitate communication between them.*
- (5) *If the **reporting issuer** provides information as at a date more recent than the **effective date**, in addition to the information required as at the **effective date**, also disclose the date as at which that additional information is provided. The provision of such additional information does not relieve the **reporting issuer** of the obligation to provide information as at the **effective date**.*

PART 2 DISCLOSURE OF RESERVES DATA

Item 2.1 Reserves Data (Forecast Prices and Costs)

1. Breakdown of Reserves (Forecast Case) – Disclose, by country and in the aggregate, *reserves, gross and net*, estimated using *forecast prices and costs*, for each *product type*, in the following categories:
 - (a) *proved developed producing reserves*;
 - (b) *proved developed non-producing reserves*;
 - (c) *proved undeveloped reserves*;
 - (d) *proved reserves (in total)*;
 - (e) *probable reserves (in total)*;
 - (f) *proved plus probable reserves (in total)*; and
 - (g) if the *reporting issuer* discloses an estimate of *possible reserves* in the statement:
 - (i) *possible reserves (in total)*; and
 - (ii) *proved plus probable plus possible reserves (in total)*.
2. Net Present Value of Future Net Revenue (Forecast Case) – Disclose, by country and in the aggregate, the net present value of *future net revenue* attributable to the *reserves* categories referred to in section 1 of this Item, estimated using *forecast prices and costs*, before and after deducting *future income tax expenses*, calculated without discount and using discount rates of 5 percent, 10 percent, 15 percent and 20 percent. Also disclose the same information on a unit value basis (e.g., \$/Mcf or \$/bbl using *net reserves*) using a discount rate of 10 percent and calculated before deducting *future income tax expenses*. This unit value disclosure requirement may be satisfied by including the unit value disclosure for each category of *proved reserves* and for *probable reserves* in the disclosure referred to in paragraph 3(c) of Item 2.1.
3. Additional Information Concerning Future Net Revenue (Forecast Case)
 - (a) This section 3 applies to *future net revenue* attributable to each of the following *reserves* categories estimated using *forecast prices and costs*:
 - (i) *proved reserves (in total)*;
 - (ii) *proved plus probable reserves (in total)*; and
 - (iii) if paragraph 1(g) of this Item applies, *proved plus probable plus possible reserves (in total)*.

- (b) Disclose, by country and in the aggregate, the following elements of *future net revenue* estimated using *forecast prices and costs* and calculated without discount:
 - (i) revenue;
 - (ii) royalties;
 - (iii) *operating costs*;
 - (iv) *development costs*;
 - (v) abandonment and reclamation costs;
 - (vi) *future net revenue* before deducting *future income tax expenses*;
 - (vii) *future income tax expenses*; and
 - (viii) *future net revenue* after deducting *future income tax expenses*.
- (c) Disclose, by *production group* and on a unit value basis for each *production group* (e.g., \$/Mcf or \$/bbl using *net reserves*), the net present value of *future net revenue* (before deducting *future income tax expenses*) estimated using *forecast prices and costs* and calculated using a discount rate of 10 percent.

Item 2.2 Supplemental Disclosure of Reserves Data (Constant Prices and Costs)

The *reporting issuer* may supplement its disclosure of *reserves data* under Item 2.1 by also disclosing the components of Item 2.1 in respect of its *proved reserves* or its *proved and probable reserves*, using *constant prices and costs* as at the last day of the *reporting issuer's* most recent financial year.

Item 2.3 Reserves Disclosure Varies with Accounting

In determining *reserves* to be disclosed:

- (a) Consolidated Financial Disclosure – if the *reporting issuer* files consolidated financial statements:
 - (i) include 100 percent of *reserves* attributable to the parent company and 100 percent of the *reserves* attributable to its consolidated subsidiaries (whether or not wholly-owned); and
 - (ii) if a significant portion of *reserves* referred to in clause (i) is attributable to a consolidated subsidiary in which there is a significant minority interest, disclose that fact and the approximate portion of such *reserves* attributable to the minority interest;

- (b) Proportionate Consolidation – if the *reporting issuer* files financial statements in which investments are proportionately consolidated, the *reporting issuer's* disclosed *reserves* must include the *reporting issuer's* proportionate share of investees' *oil* and *gas reserves*; and
- (c) Equity Accounting – if the *reporting issuer* files financial statements in which investments are accounted for by the equity method, do not include investees' *oil* and *gas reserves* in disclosed *reserves* of the *reporting issuer*, but disclose the *reporting issuer's* share of investees' *oil* and *gas reserves* separately.

Item 2.4 Future Net Revenue Disclosure Varies with Accounting

- 1. Consolidated Financial Disclosure – If the *reporting issuer* files consolidated financial statements, and if a significant portion of the *reporting issuer's* economic interest in *future net revenue* is attributable to a consolidated subsidiary in which there is a significant minority interest, disclose that fact and the approximate portion of the economic interest in *future net revenue* attributable to the minority interest.
- 2. Equity Accounting – If the *reporting issuer* files financial statements in which investments are accounted for by the equity method, do not include investees' *future net revenue* in disclosed *future net revenue* of the *reporting issuer*, but disclose the *reporting issuer's* share of investees' *future net revenue* separately, by country and in the aggregate.

INSTRUCTIONS

- (1) *Do not include, in reserves, oil or gas that is subject to purchase under a long-term supply, purchase or similar agreement. However, if the reporting issuer is a party to such an agreement with a government or governmental authority, and participates in the operation of the properties in which the oil or gas is situated or otherwise serves as "producer" of the reserves (in contrast to being an independent purchaser, broker, dealer or importer), disclose separately the reporting issuer's interest in the reserves that are subject to such agreements at the effective date and the net quantity of oil or gas received by the reporting issuer under the agreement during the year ended on the effective date.*
- (2) *Future net revenue includes the portion attributable to the reporting issuer's interest under an agreement referred to in Instruction (1).*
- (3) *Constant prices and costs are prices and costs used in an estimate that are:*
 - (a) *the reporting issuer's prices and costs as at the effective date of the estimation, held constant throughout the estimated lives of the properties 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 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,*

those prices or costs rather than the prices and costs referred to in paragraph (a).

*For the purpose of paragraph (a), the **reporting issuer's** prices will be the posted price for oil and the spot price for gas, after historical adjustments for transportation, gravity and other factors.*

PART 3 PRICING ASSUMPTIONS

Item 3.1 Constant Prices Used in Supplemental Estimates

If supplemental disclosure under Item 2.2 is made, then disclose, for each *product type*, the benchmark reference prices for the countries or regions in which the *reporting issuer* operates, as at the last day of the *reporting issuer's* most recent financial year, reflected in the *reserves data* disclosed in response to Item 2.2.

Item 3.2 Forecast Prices Used in Estimates

1. For each *product type*, disclose:
 - (a) the pricing assumptions used in estimating *reserves data* disclosed in response to Item 2.1:
 - (i) for each of at least the following five financial years; and
 - (ii) generally, for subsequent periods; and
 - (b) the *reporting issuer's* weighted average historical prices for the most recent financial year.
2. The disclosure in response to section 1 must include the benchmark reference pricing schedules for the countries or regions in which the *reporting issuer* operates, and inflation and other forecast factors used.
3. If the pricing assumptions specified in response to section 1 were provided by a *qualified reserves evaluator or auditor* who is *independent* of the *reporting issuer*, disclose that fact and identify the *qualified reserves evaluator or auditor*.

INSTRUCTIONS

- (1) *Benchmark reference prices may be obtained from sources such as public product trading exchanges or prices posted by purchasers.*
- (2) *The term "**constant prices and costs**" and the defined term "**forecast prices and costs**" include any 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. In effect, such contractually committed prices*

override benchmark reference prices for the purpose of estimating reserves data. To ensure that disclosure under this Part is not misleading, the disclosure should reflect such contractually committed prices.

- (3) *Under subsection 5.7(1) of NI 51-101, the reporting issuer must obtain the written consent of the qualified reserves evaluator or auditor to disclose his or her identity in response to section 3 of this Item.*

PART 4 RECONCILIATION OF CHANGES IN RESERVES

Item 4.1 Reserves Reconciliation

1. Provide the information specified in section 2 of this Item in respect of the following reserves categories:
 - (a) gross proved reserves (in total);
 - (b) gross probable reserves (in total); and
 - (c) gross proved plus probable reserves (in total).
2. Disclose changes between the reserves estimates made as at the effective date and the corresponding estimates ("prior-year estimates") made as at the last day of the preceding financial year of the reporting issuer:
 - (a) by country;
 - (b) for each of the following:
 - (i) light and medium crude oil (combined);
 - (ii) heavy oil;
 - (iii) associated gas and non-associated gas (combined);
 - (iv) synthetic oil;
 - (v) bitumen;
 - (vi) coal bed methane;
 - (vii) hydrates;
 - (viii) shale oil; and
 - (ix) shale gas;
 - (c) separately identifying and explaining:

- (i) extensions and improved recovery;
- (ii) technical revisions;
- (iii) discoveries;
- (iv) acquisitions;
- (v) dispositions;
- (vi) economic factors; and
- (vii) *production*.

INSTRUCTIONS

- (1) *The reconciliation required under this Item 4.1 must be provided in respect of reserves estimated using **forecast prices and costs**, with the price and cost case indicated in the disclosure.*
- (2) *For the purpose of this Item 4.1, it is sufficient to provide the information in respect of the products specified in paragraph 2(b), excluding **solution gas, natural gas liquids** and other associated by-products.*
- (3) *The **COGE Handbook** provides guidance on the preparation of the reconciliation required under this Item 4.1.*
- (4) ***Reporting issuers** must not include infill drilling reserves in the category of technical revisions specified in clause 2(c)(ii). **Reserves** additions from infill drilling must be included in the category of extensions and improved recovery in clause 2(c)(i) (or, alternatively, in an additional separate category under paragraph 2(c) labelled “infill drilling”).*

PART 5 ADDITIONAL INFORMATION RELATING TO RESERVES DATA

Item 5.1 *Undeveloped Reserves*

- 1. For *proved undeveloped reserves*:
 - (a) disclose for each *product type* the volumes of *proved undeveloped reserves* that were first attributed in each of the most recent three financial years and, in the aggregate, before that time; and
 - (b) discuss generally the basis on which the *reporting issuer* attributes *proved undeveloped reserves*, its plans (including timing) for developing the *proved undeveloped reserves* and, if applicable, its reasons for not planning to develop particular *proved undeveloped reserves* during the following two years.

2. For *probable undeveloped reserves*:
 - (a) disclose for each *product type* the volumes of *probable undeveloped reserves* that were first attributed in each of the most recent three financial years and, in the aggregate, before that time; and
 - (b) discuss generally the basis on which the *reporting issuer* attributes *probable undeveloped reserves*, its plans (including timing) for developing the *probable undeveloped reserves* and, if applicable, its reasons for not planning to develop particular *probable undeveloped reserves* during the following two years.

Item 5.2 Significant Factors or Uncertainties

1. Identify and discuss important economic factors or significant uncertainties that affect particular components of the *reserves data*.
2. Section 1 does not apply if the information is disclosed in the *reporting issuer's* financial statements for the financial year ended on the *effective date*.

INSTRUCTION

*Examples of information that could warrant disclosure under this Item 5.2 include unusually high expected **development costs** or **operating costs**, the need to build a major pipeline or other major facility before **production of reserves** can begin, or contractual obligations to **produce** and sell a significant portion of **production** at prices substantially below those which could be realized but for those contractual obligations.*

Item 5.3 Future Development Costs

1. (a) Provide the information specified in paragraph 1(b) in respect of *development costs* deducted in the estimation of *future net revenue* attributable to each of the following *reserves* categories:
 - (i) *proved reserves* (in total) estimated using *forecast prices and costs*; and
 - (ii) *proved plus probable reserves* (in total) estimated using *forecast prices and costs*.
- (b) Disclose, by country, the amount of *development costs* estimated:
 - (i) in total, calculated using no discount; and
 - (ii) by year for each of the first five years estimated.
2. Discuss the *reporting issuer's* expectations as to:
 - (a) the sources (including internally-generated cash flow, debt or equity financing, farm-outs or similar arrangements) and costs of funding for estimated future *development costs*; and

- (b) the effect of those costs of funding on disclosed *reserves* or *future net revenue*.
- 3. If the *reporting issuer* expects that the costs of funding referred to in section 2, could make development of a *property* uneconomic for that *reporting issuer*, disclose that expectation and its plans for the *property*.

PART 6 OTHER OIL AND GAS INFORMATION

Item 6.1 Oil and Gas Properties and Wells

- 1. Identify and describe generally the *reporting issuer's* important *properties*, plants, facilities and installations:
 - (a) identifying their location (province, territory or state if in Canada or the United States, and country otherwise);
 - (b) indicating whether they are located onshore or offshore;
 - (c) in respect of *properties* to which *reserves* have been attributed and which are capable of *producing* but which are not *producing*, disclosing how long they have been in that condition and discussing the general proximity of pipelines or other means of transportation; and
 - (d) describing any statutory or other mandatory relinquishments, surrenders, back-ins or changes in ownership.
- 2. State, separately for *oil* wells and *gas* wells, the number of the *reporting issuer's* producing wells and non-producing wells, expressed in terms of both *gross* wells and *net* wells, by location (province, territory or state if in Canada or the United States, and country otherwise).

Item 6.2 Properties With No Attributed Reserves

- 1. For *unproved properties* disclose:
 - (a) the *gross* area (acres or hectares) in which the *reporting issuer* has an interest;
 - (b) the interest of the *reporting issuer* therein expressed in terms of net area (acres or hectares);
 - (c) the location, by country; and
 - (d) the existence, nature (including any bonding requirements), timing and cost (specified or estimated) of any work commitments.
- 2. Disclose, by country, the *net* area (acres or hectares) of *unproved property* for which the *reporting issuer* expects its rights to explore, develop and exploit to expire within one year.

Item 6.3 Forward Contracts

1. If the *reporting issuer* is bound by an agreement (including a transportation agreement), directly or through an aggregator, under which it may be precluded from fully realizing, or may be protected from the full effect of, future market prices for *oil* or *gas*, describe generally the agreement, discussing dates or time periods and summaries or ranges of volumes and contracted or reasonably estimated values.
2. Section 1 does not apply to agreements disclosed by the *reporting issuer*
 - (a) as financial instruments, in accordance with Section 3861 of the *CICA Handbook*; or
 - (b) as contractual obligations or commitments, in accordance with Section 3280 of the *CICA Handbook*.
3. If the *reporting issuer's* transportation obligations or commitments for future physical deliveries of *oil* or *gas* exceed the *reporting issuer's* expected related future *production* from its *proved reserves*, estimated using *forecast prices and costs* and disclosed under Part 2, discuss such excess, giving information about the amount of the excess, dates or time periods, volumes and reasonably estimated value.

Item 6.4 Additional Information Concerning Abandonment and Reclamation Costs

In respect of abandonment and reclamation costs for surface *leases*, wells, facilities and pipelines, disclose:

- (a) how the *reporting issuer* estimates such costs;
- (b) the number of *net* wells for which the *reporting issuer* expects to incur such costs;
- (c) the total amount of such costs, net of estimated salvage value, expected to be incurred, calculated without discount and using a discount rate of 10 percent;
- (d) the portion, if any, of the amounts disclosed under paragraph (c) of this Item 6.4 that was not deducted as abandonment and reclamation costs in estimating the *future net revenue* disclosed under Part 2; and
- (e) the portion, if any, of the amounts disclosed under paragraph (c) of this Item 6.4 that the *reporting issuer* expects to pay in the next three financial years, in total.

INSTRUCTION

*Item 6.4 supplements the information disclosed in response to clause 3(b)(v) of Item 2.1. The response to paragraph (d) of Item 6.4 should enable a reader of this statement and of the **reporting issuer's** financial statements for the financial year ending on the **effective date** to understand both the **reporting issuer's** estimated total abandonment and*

reclamation costs, and what portions of that total are, and are not, reflected in the disclosed reserves data.

Item 6.5 Tax Horizon

If the *reporting issuer* is not required to pay income taxes for its most recently completed financial year, discuss its estimate of when income taxes may become payable.

Item 6.6 Costs Incurred

1. Disclose each of the following, by country, for the most recent financial year (irrespective of whether such costs were capitalized or charged to expense when incurred):
 - (a) *property acquisition costs*, separately for *proved properties* and *unproved properties*;
 - (b) *exploration costs*; and
 - (c) *development costs*.
2. For the purpose of this Item 6.6, if the *reporting issuer* files financial statements in which investments are accounted for by the equity method, disclose by country the *reporting issuer's* share of investees' (i) *property acquisition costs*, (ii) *exploration costs* and (iii) *development costs* incurred in the most recent financial year.

Item 6.7 Exploration and Development Activities

1. Disclose, by country and separately for *exploratory wells* and *development wells*:
 - (a) the number of *gross wells* and *net wells* completed in the *reporting issuer's* most recent financial year; and
 - (b) for each category of wells for which information is disclosed under paragraph (a), the number completed as *oil wells*, *gas wells* and *service wells* and the number that were dry holes.
2. Describe generally the *reporting issuer's* most important current and likely exploration and development activities, by country.

Item 6.8 Production Estimates

1. Disclose, by country, for each *product type*, the volume of *production* estimated for the first year reflected in the estimates of *gross proved reserves* and *gross probable reserves* disclosed under Item 2.1.

2. If one *field* accounts for 20 percent or more of the estimated *production* disclosed under section 1, identify that *field* and disclose the volume of *production* estimated for the *field* for that year.

Item 6.9 *Production History*

1. To the extent not previously disclosed in financial statements filed by the *reporting issuer*, disclose, for each quarter of its most recent financial year, by country for each *product type*:
 - (a) the *reporting issuer's* share of average daily *production* volume, before deduction of royalties; and
 - (b) as an average per unit of volume (for example, *\$/bbl* or *\$/Mcf*):
 - (i) the prices received;
 - (ii) royalties paid;
 - (iii) *production costs*; and
 - (iv) the resulting netback.
2. For each important *field*, and in total, disclose the *reporting issuer's* *production* volumes for the most recent financial year, for each *product type*.

INSTRUCTION

*In providing information for each **product type** for the purpose of Item 6.9, it is not necessary to allocate among multiple **product types** attributable to a single well, **reservoir** or other **reserves** entity. It is sufficient to provide the information in respect of the principal **product type** attributable to the well, **reservoir** or other **reserves** entity. Resulting netbacks may be disclosed on the basis of units of equivalency between **oil** and **gas** (e.g. **BOE**) but if so that must be made clear and disclosure must comply with section 5.14 of **NI 51-101**.*