Guideline

Petroleum Regulations

(CNR 1150/96)

Topic: **Validating Well for the Purpose of Onshore Exploration Permit Extension**

Ref: **Section 26**

26. (1)Subject to subsection (2), where a permittee has complied with the Act, the regulations and the terms and conditions of the permit, and the permittee

(a) has, to the satisfaction of the Minister, drilled a well on the permit during the primary term or commenced the drilling of a well on the permit during the primary term, and is diligently pursuing the drilling of that well upon expiration of the primary term, or

(b) commits to drill a well, to the satisfaction of the Minister, within two years following the expiration of the primary term, and furnishes a performance bond to the Minister of an amount equal to 25% of the estimated cost of the committed well,

the Minister shall, in writing, at the conclusion of the primary term, extend the term of the permit for a secondary term of 2 years.

1.0 Introduction

The purpose of this guideline is to give the operator an overview of the philosophy and criteria used by the Department (Minister) in determining whether a well potentially qualifies as a "validating well" which, under section 26 of the **Petroleum Regulations**, would allow extension of the onshore Exploration Permit to second term.

2.0 Background

The Petroleum Regulations, the Petroleum Drilling Regulations and the Exploration Survey Regulations (Draft) fall under the Petroleum and Natural Gas Act. Petroleum rights issuance and extension provisions are exclusively covered by the Petroleum Regulations but exploration activities are regulated by the other regulations.

It is important that an operator be familiar with the requirements of the applicable regulations when conducting exploration activities. This is especially important when the proposed activity is a drilling program that may impact on the retention of an Exploration Permit past the initial five year term.

3.0 Application of Definitions

The definition of "well", depending on the regulatory instrument, is varied. The Petroleum and Natural Gas Act gives a wide ranging definition while the various regulations under this Act provide more confined definitions for the purpose of interpretation and application of the pertinent regulations (see sec 8).

The primary focus of the Petroleum Regulations is the administration of petroleum rights. They specifically address the extension of petroleum exploration permits via the drilling of a well.

The primary focus of the Petroleum Drilling Regulations is the exploitation and conservation of resources through prudent drilling practices.

Under no circumstances should any definition of a well contained in the Petroleum Drilling Regulations be viewed as the sole determining criteria for a permit extending well (hereinafter referred to as a "validating well"). Water injection wells and water supply wells are among those regarded as "wells" under these regulations. Accepting same as a validating well is obviously outside the intent of the Petroleum Regulations. However, as detailed in this document, the Petroleum Drilling Regulations do provide some assistance in determining the requirements for a validating well.

4.0 Minimum Requirements For A Validating Well

Notwithstanding the need to pass certain other validity tests mentioned later in this document, an operator must meet a number of basic requirements in order to have a well considered a potential validating well. These requirements include:

.1 Well Is Being Drilled To Discover Petroleum.

The well must be drilled for the primary purpose of discovering petroleum and is located to penetrate a geological target that may contain one or more petroleum pools. The target must be defined, to the satisfaction of the Minister, by accepted geoscientific techniques.

.2 Target Must Lie, In Whole Or In Part, Within The Permit Area.

A land based drilling operation directionally drilled solely for the purpose of evaluating an offshore target would not qualify as a validating well for an onshore Exploration Permit.

.3 Drilling Must Commence Before Expiry Of The Permit.

There are provisions, subject to the discretion of the Minister, which accommodate a delay in drilling upon the furnishing of an acceptable deposit. However, an operator should not rely on the Minister approving such an approach.

.4 Well Must Be Drilled In Accordance With The Petroleum Drilling Regulations.

This includes applying for and receiving a Drilling Program Approval and an Authority to Drill a Well, conducting the formation evaluations required, meeting the regulatory reporting requirements and submitting a Final Well Report.

5.0 Requirements Under The Petroleum Drilling Regulations

.1 Definition

"operator" means an individual or company that seeks or has been granted approval under these regulations to conduct a drilling program.

The operator is either the holder of the petroleum exploration permit for the relevant land parcel, a partner acting on behalf of all partners in that parcel or another interested party who has been given permission by the permit holders to act completely on their behalf in all aspects of the operations. Under no circumstances will a drilling contractor be acceptable as the operator unless the contractor meets the previously mentioned requirements.

.2 Application

An application for an Authority to Drill a Well must contain, among other things, the following information:

.2.1 The details of the proposed well evaluation program including, but not limited to, a program for obtaining cores, wireline logs and conducting formation flow tests.

(§29(2)(f)) & (§30(2)(f)

.2.2 A detailed geological prognosis including
- .2.2.1 a stratigraphic section
- .2.2.2 formation lithology
- .2.2.3 structure maps for major horizons
- .2.2.4 seismic data, if available *(§30(2)(e)*

.3 Operations

The **Petroleum Drilling Regulations**, Part VI, Well Evaluation, requires the operator to monitor and conduct drilling and testing operations in such a manner that facilitates the gathering of substantial information on formations encountered. Fundamental requirements include:

.3.1 Obtaining sufficient well tests, wireline logs, analyses, surveys and samples to ensure that a comprehensive geological and reservoir evaluation can be made.

(§90(1))

.3.2 Taking sufficient wireline logs to permit accurate calculation of the porosity, fluid saturation, fluid contact and formation pressure of all reservoirs.

(§95(2)(a)) and (§95(2)(b))

.3.3 Taking sufficient wireline logs to measure the spontaneous potential and natural radioactivity of formations. *(§95(2)(c))*

.3.4 Obtaining sufficient wireline logs to assist in determining formation lithology.

(§95(2)(d))

.3.5 Measuring structural dip. *(§95(2)(e))*

Part VII, Formation Flow Testing, requires that the operator ensure that every formation is sampled or tested to obtain fluid flow and reservoir pressure data and to conduct formation flow tests, if required, for sufficient formation evaluation. *(§106)*

.4 Equivalency Provisions

There are provisions in the Petroleum Drilling Regulations which authorize the use of "*equivalent methods, measures or standards instead of any required by these regulations*". This is intended for use when advances in drilling methods and formation evaluation, or use of alternative methods other than anticipated in the regulations, are utilized and negate the need for specific measurements as defined in the regulations. However, exemptions will only be made when the director is satisfied that equivalent evaluations will be conducted.

(§34)

.5 Post Drilling

The results of flow tests, wireline surveys, and other formation evaluations are required to be included in a Final Well Report and submitted to the Department within 90 days of rig Release. *(§151)*

.6 Summary

An operator wishing to drill a well under the Petroleum Drilling Regulations must provide geological information supporting the drilling of same. The design of the well and the drilling program must be conducive to the gathering of formation and reservoir data sufficient for an accurate determination of formation properties and evaluation of reservoir performance. These requirements apply to any well drilled under the Petroleum Drilling Regulations and meeting same does not guarantee that the well would qualify as a validating well under the Petroleum Regulations.

6.0 Departmental Policy

An operator's failure to design a well drilling program that demonstrates a diligent effort to ensure that the information gathering and formation evaluation requirements will be met will substantially decrease the probability of the well drilling application being approved under the Petroleum Drilling Regulations.

Additionally, the failure of an operator to provide for or conduct a proper well design that accommodates evaluations that meet the spirit of the Petroleum Regulations could result in the drilling of a well that is not acceptable to the Minister as a validating well even though the operator received an Drilling Program Approval and Authority to Drill a Well under the Petroleum Drilling Regulations.

7.0 Criterion For Determining A Validating Well

.1 Philosophy

In reviewing a planned or completed well drilling operation, Department staff, in determining whether the well should qualify as a validating well, review that operation in light of the intent of sec 26 of the **Petroleum Regulations**. The fundamental test is whether the well drilling operation was intended to/ or actually accomplished an evaluation of petroleum potential on the permit.

.2 Checklist

Departmental staff, in preparation for making a recommendation to the Minister regarding the acceptance of the well as a validating well, review a number of factors as listed below:

.2.1 Petroleum Regulations

.2.1.1 Is the permit in good standing?

.2.2.2 Is the operator current with respect to work commitment obligations?

.2.2.3 Did the operator request, prior to drilling, that the well be considered a validating well?

.2.2.4 Did the well location and depth indicate the intent to adequately test the petroleum potential of the permit?

.2.2.5 If the operator has not drilled a well by the end of the term, has it been diligently pursuing same?

.2.2.6 Was the operator informed, prior to drilling, that the well was a suitable candidate as a validating well?

.2.2 Petroleum Drilling Regulations

.2.2.1 Was the well drilled under an Authority to Drill a Well?

.2.2.2 Was sufficient geological information supporting the target horizon supplied with the Application for Authority to Drill a Well?

.2.2.3 Was the well design flexible enough to accommodate typical drilling scenarios and still allow for sufficient formation measurement and reservoir evaluation?

.2.2.4 Has an acceptable Final Well Report been submitted?

.2.2.5 Were formation properties sufficiently measured by wireline logging or equivalent means?

.2.2.6 Is the operator in compliance with all other regulatory requirements?

8.0 Well Definitions

.1 The Petroleum and Natural Gas Act

"well" means any orifice in the ground made by drilling boring or any other manner, from which any petroleum is obtained or obtainable, or which is

being so made for the purpose of seeking or obtaining any petroleum or ascertaining the presence of the same.

.2 The Petroleum Regulations

These regulations contain the provisions for extension of the primary term of an exploration permit into a two year secondary term. "Well" is not defined. Related definitions include:

"drilling a well" means that a drilling rig is rigged up on location and a drilling bit has penetrated the surface of the ground with the intent of drilling a well other than a stratigraphic well.

"stratigraphic well" means a well drilled for the primary purpose of obtaining geological information towards ascertaining the presence of petroleum.

"exploratory well" means a well drilled for the primary purpose of discovering petroleum and drilled into a geological feature that does not contain a petroleum pool previously penetrated by a well.

.3 The Petroleum Drilling Regulations

The definitions in these regulations were developed in 1982, prior to the implementation of the Petroleum Regulations. The Petroleum Drilling Regulations do not address exploration rights issuance matters.

"well" means any opening in the ground that is not a seismic shot hole and that is being made, to be made or is in the process of being made, by drilling, boring or any other method

- *(i) through which oil or gas could be obtained,*
- *(ii) for the purpose of searching for or obtaining oil or gas,*
- *(iii) for the purpose of obtaining water to inject into an underground formation,*
- *(iv) for the purpose of injecting gas, air, water or other substance into an underground formation, or*
- *(v) for any purpose through sedimentary rock to a depth of at least 150 meters.*

"exploratory well" means a well or part of a well, other than a development well or test hole , that is drilled for the purpose of discovering petroleum or obtaining geological information.

"test hole" means any hole, other than a well or seismic shot hole, drilled through sedimentary rock to a depth of more than 30 meters.

9.0 Queries

All queries should be directed to:

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