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# Off-Target Well Completion Requirements

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Directive PNG007

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January 2023

Revision 2.0

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Governing Legislation:

Act: *The Oil and Gas Conservation Act*

Regulation: *The Oil and Gas Conservation Regulations, 2012*

Order: *6/23*

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**Record of Change**

<b>Revision</b>	<b>Date</b>	<b>Description</b>
0.0	September, 2015	Initial draft
1.0	November, 2015	Live Version, Updated Directive Number
2.0	January, 2023	Directive title update, clarification of rules around off-target well completions, and removal of reference to repealed Regulation

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## 1. Introduction

This Directive sets out the requirements of the Saskatchewan Ministry of Energy and Resources (ER) for off-target oil and gas well completions in Saskatchewan. It covers topics such the determination of off-target status and encroachment, application of off-target penalties, and the processes that are required prior to an application for a licence or completion changes.

Other requirements and guidelines that are pertinent to the topics in this Directive are:

- *Directive PNG009: Public Notice Requirements* (Directive PNG009);
- *Directive PNG011: Allowable Rates of Production: Gas Wells* (Directive PNG011);
- *Directive PNG012: Allowable Rates of Production: Oil Wells* (Directive PNG012);
- *Guideline PNG021: Determining Drainage Units and Target Areas* (Directive PNG021);  
and
- *Guideline PNG024: Reclassification and Recompletion* (Directive PNG024).

Questions concerning the requirements set out in this document should be directed to the ER Service Desk at 1-855-219-9373 or email at [ER.servicedesk@gov.sk.ca](mailto:ER.servicedesk@gov.sk.ca).

### 1.1 Governing Legislation

The requirements outlined in this Directive are based on *The Oil and Gas Conservation Act* (OGCA) and *The Oil and Gas Conservation Regulations, 2012* (OGCR). Licensees should consult these documents in conjunction with this Directive. It is the responsibility of all operators, as specified in the legislation, to be aware of ER requirements and to ensure compliance with the requirements for off-target well completion prior to submitting any application.

### 1.2 Definitions

**Allowable rate of production (ARP):** is the amount of oil or gas a well is permitted to produce (see Directive PNG011 and Directive PNG012 for more information).

**Capable of producing:** is a well that has planned or open contact intervals within a producing stratigraphy.

**Commonly-owned land:** is any mineral land where the lessor or lessee between parcels are identical.

**Development well completion:** is a well completion that will be off-target as a result of geological or reservoir reasons, where the proposed completion is within 2.4 km (oil) or 4.8 km (gas) of any existing well completion that is producing or capable of producing and within the same stratigraphic unit.

**Diversely-owned land:** is any mineral land where the lessor or lessee between parcels are NOT identical.

**Drainage unit:** is the area allocated to one or more well completions for the purposes of drilling and producing.

**Exploratory well completion:** is a well completion that will be off-target as a result of geological or reservoir reasons, where the proposed completion is at least 2.4 km (oil) or 4.8 km (gas) away from any existing oil or gas well completion that is producing or capable of producing and within the same stratigraphic unit.

**Offset land:** is any mineral land that is immediately adjacent to the drainage unit land containing the well completion.

**Offset mineral owner:** is any owner of Petroleum and Natural Gas (PNG) mineral rights that are immediately adjacent to the drainage unit land containing the well completion.

**Off-target penalty:** is a penalty that reduces the allowable rate of production on an off-target well completion. (See Directive PNG011 and Directive PNG012 for further details).

**Surface obstruction/topographic well completion:** is a well completion where topographical features (e.g., extreme terrain making it hard to access drill site), environmental constraints (e.g., protected surface location), or surface obstruction reasons (e.g., proximity to an occupied dwelling) prevent locating the well completion on-target.

**Uneconomic well completion in drainage unit:** is a well completion where there is an existing well completion within the drainage unit that penetrates through the stratigraphic unit of interest and has been determined to be uneconomic to produce based on reservoir evaluation.

## 2. Determining if a Proposed Well Completion is Off-Target

A well completion is considered to be off-target if the following situations apply:

- a non-horizontal oil well completion is located outside the prescribed target area; or
- any gas well completion is located outside the prescribed target area.

For assistance in determining the drainage unit and target area for a proposed well completion, see Guideline PNG021.

### 2.1 Well Completions that are not Governed by Off-Target Regulations

Horizontal oil wells are regulated by set-back requirements and are therefore not eligible to be off-target.

Some pool orders provide set-back requirements for vertical and directional well completions; these well completions are also not eligible to be off-target.

To request the reduction of a set-back requirement, an application is required, in accordance with the [Spacing Modification Application Guideline](#).

### 2.2 Types of Off-Target Well Completions

There are four different types of off-target well completions:

- Development well completions
  - Exploratory well completions
  - Surface obstruction/topographic well completions
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- Uneconomic well completion(s) in the drainage unit

These four types of off-target well completions are defined in Section 1.2 and have different requirements for licence application as outlined in Section 3 of this Directive.

### **2.3 Off-Target Well Penalty**

An off-target well may be subject to an off-target well penalty. Section 3 of this Directive further details off-target well penalty determination.

### **2.4 Encroaching Off-Target Well Completions**

In addition to the designation 'off-target', a proposed well completion may also be considered to be 'encroaching' on offset drainage units.

An encroachment occurs when a proposed well completion is off-target and the completion is located closer to an offset drainage unit's target area than an on-target location would allow.

Appendix 1 contains examples of how to determine the encroachment made by a proposed off-target well completion to the target area of the adjacent drainage unit.

### **2.5 Off-Target Well Completions: 50 m Drainage Unit Edge Setback Requirement**

A well completion must be located at least 50 m from a drainage unit edge unless the well is within a designated target area. If the well completion is less than 50 m from the drainage unit edge and is not within a target area (that is, it is off-target), a written consent from the encroached upon offset mineral owners and operators must be obtained in order to proceed with licensing or applying to complete the proposed off-target well.

If the encroached-upon drainage unit involves commonly-owned lands, a licensee must provide consent for an off-target well completion to be located within 50 m of the drainage unit edge.

If the encroached-upon drainage unit involves diversely-owned lands, written consent from the offsetting mineral owners/operators and other impacted parties must be obtained. Public notice will not be accepted in place of written consent.

## **3. Process for Licensing an Off-Target Well Completion**

The processes that must be followed before licensing an off-target well may vary based on the type of off-target well completion being proposed. The following subsections provide examples of the processes that must be followed for the four types of off-target well completions identified in Section 2.2.

Appendix 2 contains a flow chart illustrating the decisions required when applying to license an off-target well completion.

### **3.1 Encroachment Upon Target Area of Diversely-Owned Land**

Where the proposed well completion is found to encroach upon a target area of a drainage unit on diversely-owned land, a consent or public notice is required to obtain a waiver of an off-target penalty. See Directive PNG009 for more details about the requirements for consent letters and the public notice process.

If an encroached-upon party objects to the waiver of the off-target well penalty, the proposed well completion will be subject to an off-target penalty. No technical support is needed to object to the waiver of the off-target penalty.

### **3.2 Development Off-Target Well Completions**

If an off-target development well completion is determined to be encroaching on an adjacent target area of a diversely-owned land, the licensee must proceed with public notice for the location of the off-target well completion. Should an off-target penalty apply, the licensee can choose to include the waiver of the off-target penalty in the same Public Notice for the well location or obtain consent as identified in Section 3.1.

Upon completion of the public notice process, the licensee may submit an off-target well licence application and must disclose that a public notice has been completed.

A licensee may receive an objection to the proposed off-target development well completion location and work to resolve it prior to making any submissions to ER.

If there are unresolved objections to the location of the well, the licensee may still apply for an off-target well licence. That licence application must include copies of the public notification, the objection information and all details of attempts to resolve the conflict. The licensee must have supporting documentation of the licence application (e.g., survey plan, contour maps, isopach maps, geological discussion).

If the proposed off-target development well is encroaching on an adjacent target area of a commonly-owned land, public notice is not required.

### **3.3 Exploratory, Surface Obstruction/Topographic, or Uneconomic Well Completions**

Public notice or consent is required for the waiver of an off-target penalty for the above types of well completions as per Section 3.1 only. For example, a new well being licensed that is off-target due to the reasons of this section, public notice or consent would be required for the waiver of an off-target penalty but would not be required for the proposed drilling location if the well was off-setting diversely-owned lands.

Surface obstruction/topographic off-target well completions should be clearly justified by including details on the proposed well survey. A licensee should have on record supporting documentation that provides justification as to why directional drilling was not an option.

Options to proceed if these types of off-target well completions are encroaching on the target area of a diversely-owned land are detailed in Appendix 2.

**4. Reclassification/Recompletion Off-Target Well Completions**

Proposed well completions that are submitted through a reclassification or recompletion application must still be within the target area to be deemed on target. A well may have multiple completions that are both on and off-target due to difference in pool orders. In such a case, the proposed completion must follow the target area for the proposed pool. If a proposed completion is off-target, it is still subject to off-target penalties if it is encroaching on diversely-owned land.

Public notice requirements are applicable in relation to obtaining a waiver of the off-target penalty as per Section 3.1. If the proposed well completion will be off-target, it should be indicated on the reclassification or recompletion form and the off-target penalty should be identified by the applicant. Public notice documentation or consents must be attached with the application for the waiver of off-target penalty.




**Appendix 1: How to Calculate Encroachment of Adjacent Target Areas**

The following are examples of some drainage units and target areas and how to calculate encroachment of adjacent target areas.

**Legend for the following off-target well encroachment illustrations**

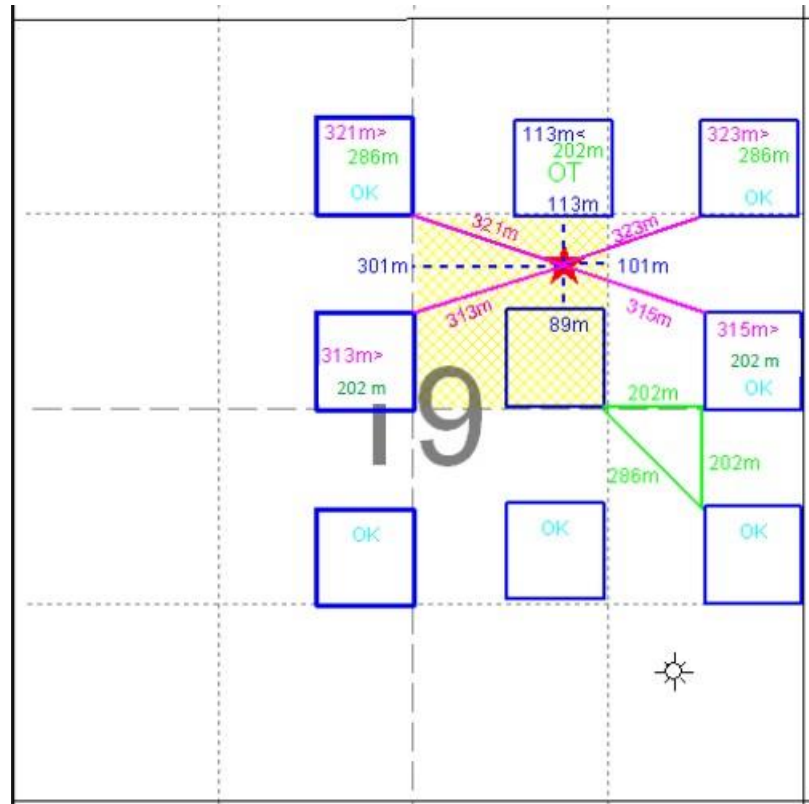
- Illustration Legend:
- Drainage Unit (DU) (will be defined for each example)
  - Legal Subdivision (LSD)\*
  - Target Area (TA)
  - Proposed Well
  - #m Distance from proposed well to DU edge or TA edge
  - #m Distance from on-target to adjacent DU on-target location
  - #m Distance from proposed well to adjacent on-target location
  - OK Off-target well IS NOT encroaching, #m > #m
  - OT Off-target well IS encroaching, #m < #m
- \*LSD - assume 402m X 402m for illustrations

Diagonal distances are calculated using:  $c = \sqrt{a^2 + b^2}$



Example 1: DU = 1 LSD, TA = a rectangle situated in the southeast corner of the DU, having the north and west sides located 200 m from the south and east sides of the DU.

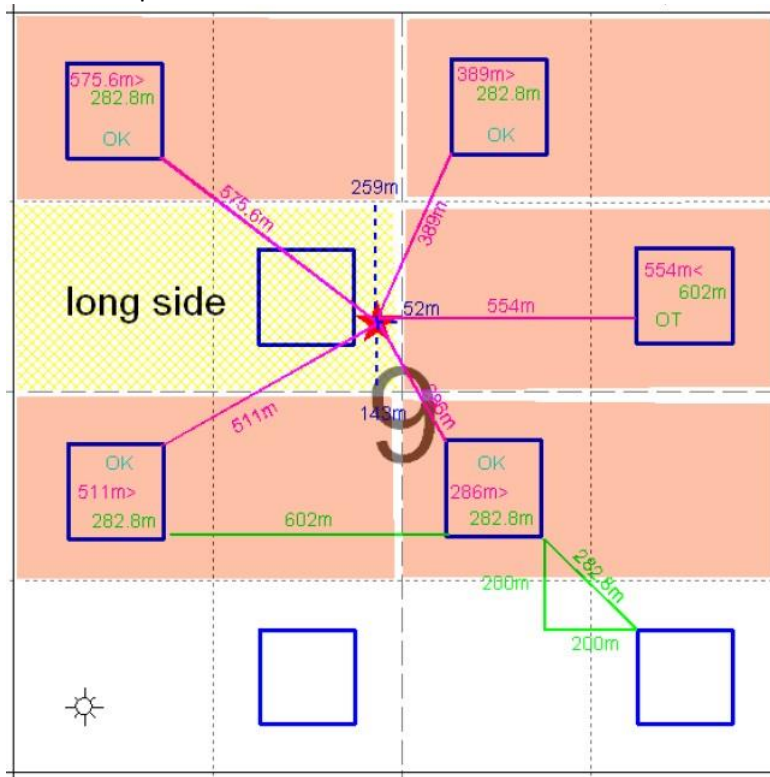
Proposed off-target well completion is located 515 m S of N and 503 m W of E.



Example 2: DU = 2 LSDs, TA = the sides of the target area are located 100 m from and parallel to the corresponding sides of the odd-numbered LSD.

For 2 LSD Spacing, when the proposed well completion is on the short side of the target area in the drainage unit, adjacent drainage units in all directions of the proposed drainage unit can be encroached upon.

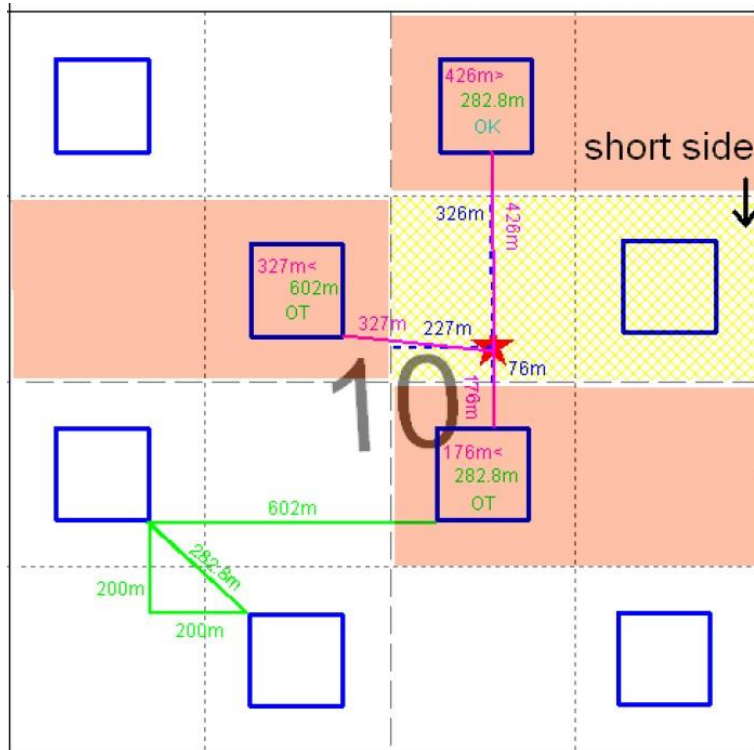
Proposed off-target well completion is located 661 m S of N and 856 m W of E.



Example 3: DU = 2 LSDs, TA = the sides of the target area are located 100 m from and parallel to the corresponding sides of the odd-numbered LSD.

For 2 LSD Spacing, when the proposed well completion is on the long side of the target area in the drainage unit, the adjacent drainage units excepting the diagonal off-set drainage units may be encroached upon.

Proposed off-target well completion is located 726 m S of N and 577 m W of E.



Appendix 2: Flow Chart Showing the Process to License an Off-Target Well Completion

