

Determining Drainage Units and Target Areas

Guideline PNG021

March 2017

Revision 1.1

Governing Legislation:

Regulations: *The Oil and Gas Conservation Regulations, 2012*
Minister's Orders for Oil and Gas Pools

Record of Change

Revision	Date	Author	Description
0	September, 2015	PNG	Draft
1.0	November, 2015	PNG	Final Version, Updated Title/Number
1.1	March 17, 2017	PNG	Updated web-page link to access: InfoMap – ArcIMS site Minister’s Order for Oil and Gas Pools Spacing Area(s) Spacing Areas Map

Drainage Unit and Target Area

Allowable rates of production for oil and gas wells in Saskatchewan are based on whether a proposed well completion is on-target or off-target.

Deciding if a proposed well completion is on-target or off-target involves determining whether or not the proposed well will be within a 'defined pool' and, if so, whether the intended well completion will be within the designated target area for that defined pool.

When an application for a non-horizontal well licence is submitted in the Integrated Resource Information System (IRIS), all licensees must know, and must disclose at the time of application, the drainage unit for that well completion and if their intended well completion will be on-target or off-target. In addition, horizontal oil wells require an understanding of drainage units in order to determine the drainage area on a horizontal oil well completion (see *Directive PNG006: Horizontal Oil Well Requirements* for additional detail on DAs).

This guideline will outline procedures for determining the drainage unit and target area for a proposed well completion.

Governing Legislation

The guidelines below are based on Pool Orders and Spacing Area Orders within the Saskatchewan Ministry of the Economy's (ECON) *Minister's Orders for Oil and Gas*, and on regulations within *The Oil and Gas Conservation Regulations, 2012 (OGCR)*.

It is the responsibility of all operators, as specified in the legislation, to be aware of Ministry requirements and to ensure compliance with all regulations prior to submitting a well licence application.

Definitions

Defined pool: The Saskatchewan Ministry of the Economy has set up areas of 'defined pools' within the province, based on well production and reservoir analysis. Defined pools have defined land boundaries and will often have an associated *Pool Order* that outlines the drainage unit size, and target area for the well completion. A listing of the locations of defined pools may be found at Pool Orders - [Minister's Order for Oil and Gas Pools](#) this list can also be generated within the IRIS system.

A pool that does not have a defined boundary is classed as a 'miscellaneous pool' and will not have a Pool Order that assigns a drainage unit or target area.

Drainage unit (DU): means the area allocated to one or more wells for the purpose of drilling for and producing oil or gas.

Target area (TA): means the specified area within a drainage unit allocated to one well completion for the purpose of producing oil or gas.

Well completion: means a set of one or more wellbore contact intervals that function as a unit to produce or inject fluids or to monitor reservoir performance.

Determining if a Proposed Well Completion is Within a Defined Pool

To determine if a proposed well completion is within a defined pool, the following can be consulted.

- IRIS can be used to search for pools based on stratigraphy and geographic location. If a search returns no results, there is not a defined pool for that stratigraphy and/or geographic location.
- The [InfoMap](#) can also be used to identify if there is a defined pool,

Once you have determined whether or not the proposed well completion is within a defined pool, the next step is to determine which legislation outlines the drainage unit and target area for your proposed well completion.

There are three sets of regulations that determine the drainage unit and target area for every non-horizontal well. They are, in the order they should be consulted:

- *Pool Orders*;
- *Spacing Area Orders*; and
- *The Oil and Gas Conservation Regulations, 2012 (OGCR)*.

If the proposed well location is not within an area covered by a *Pool Order*, check within the *Spacing Area Orders*. If the proposed well location is not within an area covered by a *Spacing Area Order*, check the *OGCR*.

Determining Drainage Unit and Target if a Proposed Well Completion is Within a Defined Pool

- If your proposed well completion is within a defined pool, the Ministry website has a list of the most current *Pool Orders* - [Minister's Order for Oil and Gas Pools](#). The drainage unit and target area are outlined in the *Pool Order*.
- If there is no link to a document for a defined pool within the *Pool Orders*, then a *Minister's Order* has not been issued to identify drainage units or target areas for that pool. In this case, you must check the appropriate *Spacing Area Order*, [Spacing Area\(s\)](#) and, if there is nothing there, the *OGCR*.

Determining Drainage Unit and Target Area if a Proposed Well Completion is Not Within a Defined Pool

1) If the proposed well is to produce oil and/or gas **from a designated spacing area** and the target well completion is not within a defined pool:

- Locate your well using the [Spacing Area Map](#)
- Go to the [Spacing Area\(s\)](#) webpage
- Review the *Spacing Area Order* and find the drainage unit and target area that applies to the well completion. *Spacing Area Orders* are specific to product type (oil/gas), geographic location and stratigraphic layer.

2) If the proposed well completion is **not within a defined pool or within a spacing area**, the *OGCR* now apply:

- [*The Oil and Gas Conservation Regulations, 2012*](#)
- For oil wells, see section 31(1) and 33(1)
 - DU is 1 LSD; central target area is 100 m from DU boundary
- For gas wells, see section 31(3) and 33(2)
 - DU is 1 Section; central target area is 200 m from DU boundary

Off-Target or On-Target?

Non-horizontal wells may be regulated by set-back distances if so stated within the pool order *Pool Orders -Minister's Order for Oil and Gas Pools*, but most have defined target areas within which the well completion must be located for a well to be considered on-target. For a non-horizontal well, if any part of the well completion is outside of the assigned target area, then the well is deemed to be off-target.

Scenario A: Well Completion Within a Defined Pool with No Pool Order

Your proposed well is in the southeast area of Saskatchewan, and the proposed well completion is within the Bakken Formation. You search IRIS and find that your proposed well is located within the Viewfield Bakken Sand Pool, which has a defined pool boundary order but not a pool spacing order. In determining the DU and TA for non-horizontal Bakken wells located within this pool, the next step would be to refer to Spacing Area A, which contains the lands, but exempts production from the Bakken. Because neither the *Pool Order* nor the *Spacing Order* applies, the DU and TA would be determined by referencing *The Oil and Gas Conservation Regulations, 2012* (OGCR), and, based on sections 31(1) and 33(1), would be assigned a 1 LSD DU with target area 100 m inside the boundary edge.