



**Innovation, Energy and Mines**

Petroleum Branch  
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March 1, 2010

Brad Thiessen  
Tundra Oil & Gas Partnership  
1700- One Lombard Place  
Winnipeg, MB R3B 0X3

Dear Brad,

**RE: Ebor Unit No. 2 Project Approval and Determination of Third Tier EOR Factor**

The Petroleum Branch is pleased to grant approval of Ebor Unit No. 2 covering the South ½ of Section 11-9-29 WPM. The effective date for Ebor Unit No. 2 is March 1, 2010.

The execution pages of the Unit Agreement are signed and attached.

Attached is Waterflood Order No.20 which applies to the unit. There are no wells currently listed within Schedule A for this Order as there are no current injectors within the Unit at this time. Tundra is reminded that separate conversion applications are required for any existing horizontals to be converted to waterflood within this new Unit.

The waterflood order requires Tundra to conduct annual pressure surveys and submit an annual progress report. Tundra is reminded that the 2010 report is to be submitted to the Director within 60 days after the end of the calendar year.

Ebor Unit No. 2 will qualify for a Third Tier EOR Factor (TTEF). The Branch has calculated a proposed TTEF of 0.7917 to apply to all tracts in the unit. Table 1 shows the TTEF calculation. The TTEF is based on summed estimates of remaining primary recoverable reserves and incremental waterflood recoverable reserves for unit. Please provide the Branch with any comments on the proposed TTEF by March 31, 2010.



- 4.0 The Unit Operator shall file an annual waterflood progress report in accordance with Section 73 of the Regulation.

March 1, 2010  
Date

*Duthie*  
Director of Petroleum for  
Minister Innovation, Energy and Mines

PETROLEUM DOCUMENT REGISTRY	
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## **MINISTERIAL ORDER**

### **Subsection 116(2) THE OIL AND GAS ACT**

#### **WATERFLOOD ORDER NO. 20**

##### **Pertaining to Waterflood Operations in Ebor Unit No. 2**

- 1.0 The Unit Operator shall conduct waterflood operations by injecting water into the Daly Middle Bakken - Three Forks Pool underlying Ebor Unit No. 2 ("the Unit") through the wells listed in Schedule A. The Director may approve the conversion of additional wells in the Unit to water injection.
- 1.1 Every injection well shall be completed as approved under Section 47 of the Drilling and Production Regulation ("the Regulation").
- 1.2 The maximum wellhead pressure at which water may be injected is 9000 kPa.
- 1.3 The Director may, from time to time, establish a maximum or minimum rate at which water may be injected into a well.
- 1.4 The annulus of each injection well shall be pressure tested in accordance with Section 50 of the Regulation.
- 2.0 The Unit Operator shall conduct an annual survey to determine the level and distribution of reservoir pressure in the Unit. A summary of the results of any pressure surveys conducted during the year are to be included in the annual waterflood progress report required under Section 73 of the Regulation.
- 2.1 The frequency of pressure surveys may be reduced where the Director is satisfied that more frequent surveys will not assist the Unit Operator in monitoring the effectiveness of the waterflood.
- 2.2 The Unit Operator is responsible for monitoring the effectiveness of the waterflood and for collecting such reservoir data and other information as is necessary to evaluate and optimize waterflood performance.
- 2.3 The Unit Operator shall advise the Petroleum Branch of the suspension of water injection at any well, any indication of channelling or breakthrough of injected water to a producing well or out of zone and any other detrimental effects that may be attributable to the waterflood operations.
- 3.0 The Unit Operator shall file a report of production or injection for each well in the Unit in accordance with Section 120 of the Regulation.

**SCHEDULE A**

**WATERFLOOD ORDER NO. 20**

**EBOR UNIT NO. 2**

**WATER INJECTION WELLS**

<b>WELL NAME</b>	<b>LSD</b>	<b>SEC</b>	<b>TWP</b>	<b>RGE</b>
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