

**Waskada Unit No. 2**

**Waterflood Progress Report 2019**

**January 1<sup>st</sup> through December 31<sup>st</sup> 2019**

**Prepared for:**

**Manitoba Industry, Economic Development and Mines**

**Petroleum Branch**

**Prepared by:**

**Tundra Oil and Gas**

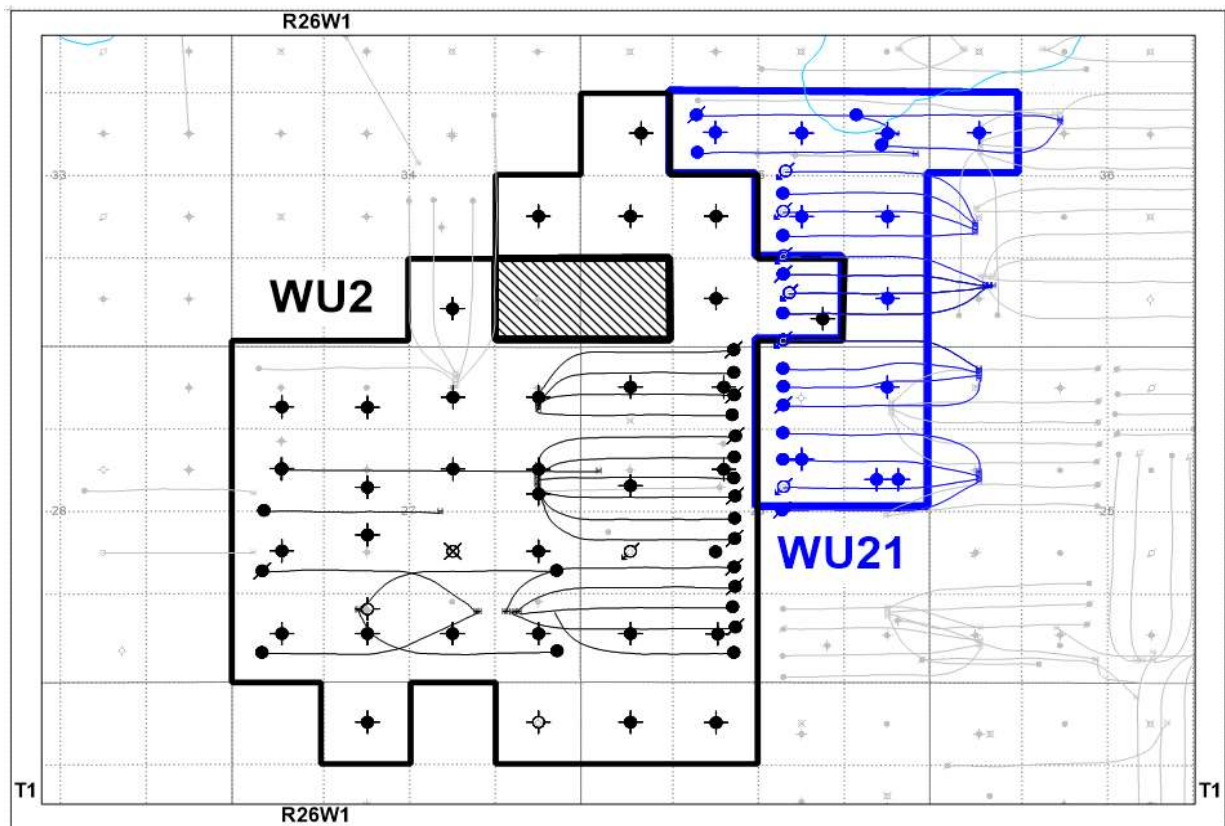
**March 18, 2020**

## INTRODUCTION

Waskada Unit No. 2 Enhanced Oil Recovery (EOR) Waterflood Project was approved under Board Order No. PM58 effective January 1984. The Unit area contains 46 abandoned/inactive wells, including 9 inactive vertical injectors, 14 producing wells and 2 inter-unit horizontal injection wells, in 35 LSDs in Township 1 Range 26 W1 as shown in the figure below.

**This unit is currently not on injection and there are no immediate plans to reactivate injection. The 2 inter-unit horizontal wells at 03/02-35 and 05/02-35-001-26W1 were converted to injectors in 2018 to support Waskada Unit No. 21.**

Figure 1: Waskada Unit No. 2 Area Outline



## Waskada Unit No. 2

Tundra Oil and Gas (Tundra), as the operator of the Waskada Unit No. 2 Enhanced Oil Recovery (EOR) project hereby submits the 2019 EOR report as per section 73 of the Drilling and Production Regulations.

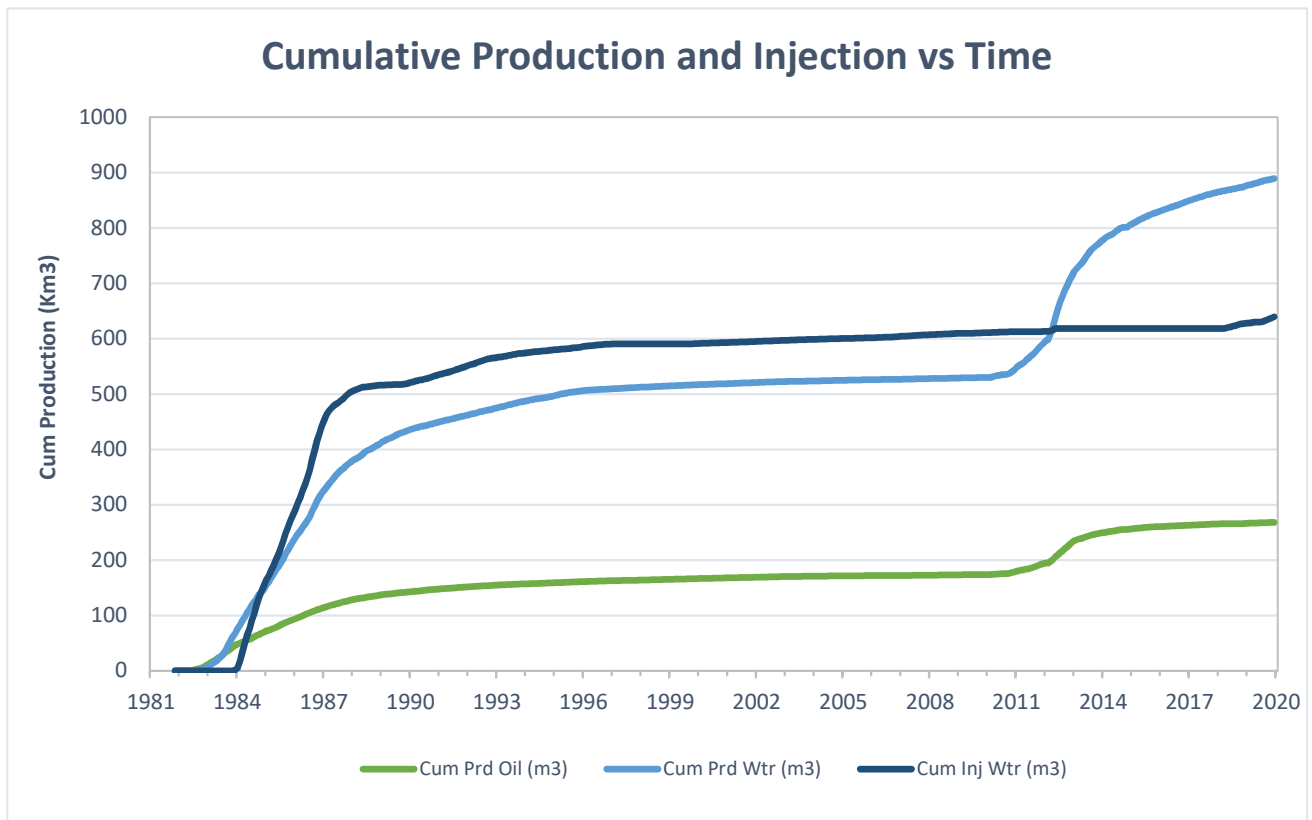
**a) Monthly oil and water production rates, injection rate, GOR and WOR**

MONTH	Cal Dly Oil m <sup>3</sup> /day	Cal Dly Wtr m <sup>3</sup> /day	Cal Inj Wtr m <sup>3</sup> /day	WOR m <sup>3</sup> /m <sup>3</sup>	GOR m <sup>3</sup> /m <sup>3</sup>
Jan-2019	8.57	52.28	10.03	6.10	0
Feb-2019	4.75	33.33	3.61	7.01	0
Mar-2019	4.35	32.55	39.94	7.49	0
Apr-2019	3.76	36.35	23.80	9.66	0
May-2019	5.82	43.50	0.00	7.48	0
Jun-2019	4.61	43.21	0.00	9.37	0
Jul-2019	3.12	40.60	11.32	13.03	0
Aug-2019	4.57	38.00	57.97	8.31	0
Sep-2019	4.19	35.28	65.47	8.42	0
Oct-2019	5.05	32.80	57.45	6.49	0
Nov-2019	4.48	31.89	57.57	7.12	0
Dec-2019	4.18	28.06	59.65	6.71	0

**b) Cumulative volume of oil, gas and water produced and fluid injected**

2019 PRODUCTION	
Produced Oil (m <sup>3</sup> )	1,750
Produced Gas (m <sup>3</sup> )	0
Produced Water (m <sup>3</sup> )	13,637
Fluid Injected (m <sup>3</sup> )	11,833
CUMULATIVE PRODUCTION	
Produced Oil (m <sup>3</sup> )	268,032
Produced Water (m <sup>3</sup> )	889,290

## Waskada Unit No. 2



## c) Well List

## Waskada Unit No. 2 Well List

<i>UWI</i>	<i>Type</i>	<i>Status</i>	<i>Future Plans</i>
100/14-22-001-26W1/0	Vertical	Abandoned	-
100/16-22-001-26W1/0	Vertical	Abandoned	-
100/13-23-001-26W1/0	Vertical	Abandoned	-
100/14-23-001-26W1/0	Vertical	Abandoned	-
100/03-26-001-26W1/0	Vertical	Abandoned Zone	-
102/03-26-001-26W1/0	Horizontal	Producing	-
103/03-26-001-26W1/0	Horizontal	Producing	-
104/03-26-001-26W1/0	Horizontal	Suspended	-
100/04-26-001-26W1/0	Vertical	Abandoned Zone	-
100/05-26-001-26W1/0	Vertical	Injection	-
100/06-26-001-26W1/0	Vertical	Producing	-
102/06-26-001-26W1/0	Horizontal	Suspended	-
103/06-26-001-26W1/0	Horizontal	Producing	-
104/06-26-001-26W1/0	Horizontal	Suspended	-
105/06-26-001-26W1/0	Horizontal	Suspended	-
100/11-26-001-26W1/0	Vertical	Abandoned Zone	-
103/11-26-001-26W1/0	Horizontal	Suspended	-
104/11-26-001-26W1/0	Horizontal	Suspended	-
105/11-26-001-26W1/0	Horizontal	Producing	-
106/11-26-001-26W1/0	Horizontal	Producing	-
102/12-26-001-26W1/0	Vertical	Abandoned	-
100/13-26-001-26W1/0	Vertical	Abandoned	-
100/14-26-001-26W1/0	Vertical	Abandoned	-
102/14-26-001-26W1/0	Horizontal	Producing	-
103/14-26-001-26W1/0	Horizontal	Suspended	-
104/14-26-001-26W1/0	Horizontal	Producing	-
105/14-26-001-26W1/0	Horizontal	Suspended	-
100/01-27-001-26W1/0	Vertical	Abandoned	-
103/01-27-001-26W1/0	Horizontal	Producing	-
100/02-27-001-26W1/0	Vertical	Abandoned	-
100/03-27-001-26W1/0	Vertical	Abandoned	-
102/03-27-001-26W1/2	Vertical	Abandoned	-
100/04-27-001-26W1/0	Vertical	Abandoned	-
102/04-27-001-26W1/0	Horizontal	Producing	-
100/05-27-001-26W1/0	Vertical	Abandoned	-
102/05-27-001-26W1/0	Horizontal	Producing	-
103/05-27-001-26W1/0	Horizontal	Suspended	-
102/06-27-001-26W1/0	Vertical	Abandoned	-
100/07-27-001-26W1/0	Vertical	Abandoned	-
100/08-27-001-26W1/0	Vertical	Abandoned	-
102/08-27-001-26W1/0	Horizontal	Producing	-
100/09-27-001-26W1/0	Vertical	Abandoned	-
102/09-27-001-26W1/2	Vertical	Abandoned	-
100/10-27-001-26W1/0	Vertical	Abandoned Zone	-
102/11-27-001-26W1/0	Vertical	Abandoned	-

## c) Well List

## Waskada Unit No. 2 Well List

<i><b>UWI</b></i>	<i><b>Type</b></i>	<i><b>Status</b></i>	<i><b>Future Plans</b></i>
100/12-27-001-26W1/0	Vertical	Abandoned	-
103/12-27-001-26W1/0	Horizontal	Producing	-
102/13-27-001-26W1/0	Vertical	Abandoned	-
102/14-27-001-26W1/0	Vertical	Abandoned	-
102/15-27-001-26W1/0	Vertical	Abandoned	-
102/16-27-001-26W1/0	Vertical	Abandoned	-
100/02-34-001-26W1/2	Vertical	Abandoned	-
100/08-34-001-26W1/0	Vertical	Abandoned	-
100/02-35-001-26W1/0	Vertical	Abandoned	-
102/02-35-001-26W1/0	Horizontal	Suspended	-
103/02-35-001-26W1/0	Horizontal	Inter-unit Injector	-
104/02-35-001-26W1/0	Horizontal	Producing	-
105/02-35-001-26W1/0	Horizontal	Inter-unit Injector	-
100/03-35-001-26W1/2	Vertical	Abandoned	-
100/05-35-001-26W1/0	Vertical	Abandoned	-
100/06-35-001-26W1/0	Vertical	Abandoned	-
100/12-35-001-26W1/0	Vertical	Abandoned	-