

**EWART UNIT NO. 4**  
**WATERFLOOD EOR PROJECT**  
**ANNUAL REPORT FOR 2015**

**March 31, 2016**

**Tundra Oil and Gas Partnership**

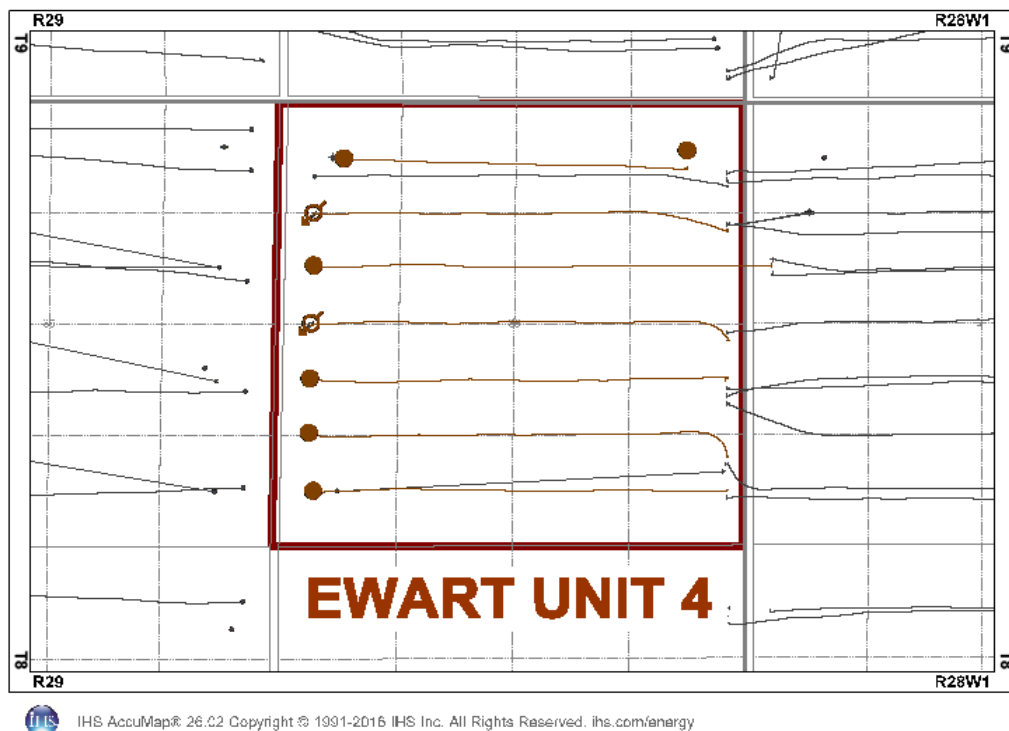
## Table of Contents

Introduction	3.
Discussion	3.
Production History	3.
Waterflood Development Plan	5.
Waterflood EOR Operating Strategy and Performance	6.
Water Source and Quality	6.
Injection Wellhead Pressures	6.
Reservoir Pressure	6.
Well Servicing	6.
Waterflood Performance Discussion	6.
List of Appendices	7.
Appendix A: Well Name and Status Table	
Appendix B: Injection Pattern Summary	
Appendix C: Average Monthly Injection Pressure Summary	
Appendix D: Injector Pattern Production/Injection Rates, Cumulative and VRR Plots for the following injectors:	
102/05-36-008-29W1	
102/12-36-008-29W1	
103/12-36-008-29W1	

## **INTRODUCTION**

Ewart Unit No. 4 was approved on August 1, 2013 with Tundra Oil and Gas (Tundra) as Operator. The Unit area contains 1 abandoned vertical well and 5 horizontal producing wells and 2 horizontal injectors in 16 LSDs in Township 8 Range 29 W1 as shown in the figure below.

**Figure 1: Ewart Unit No. 4 Area Outline**



In accordance with Section 73 of the Manitoba Drilling and Production Regulation, Tundra hereby submits the following 2015 Annual Progress Report for Ewart Unit No. 4.

## **DISCUSSION**

### **Production History**

For the wells included in Ewart Unit No. 4, production started in October 2006 with the 00/16-36-008-29W1 well. Average oil production peaked at 3.08 m<sup>3</sup>/d per well in January 2012. This production was coming from 3 wells and totaled 24.64 m<sup>3</sup>/d for the whole Unit. In December 2015, the Unit was producing 4.52 m<sup>3</sup>/d of oil and 13.15 m<sup>3</sup>/d of

water. Water injection commenced in Ewart Unit No. 4 in November 2015. The rates and WOR are presented in Figure 2.

**Figure 2: Ewart Unit No. 4 Production/Injection Rates and WOR vs Time**

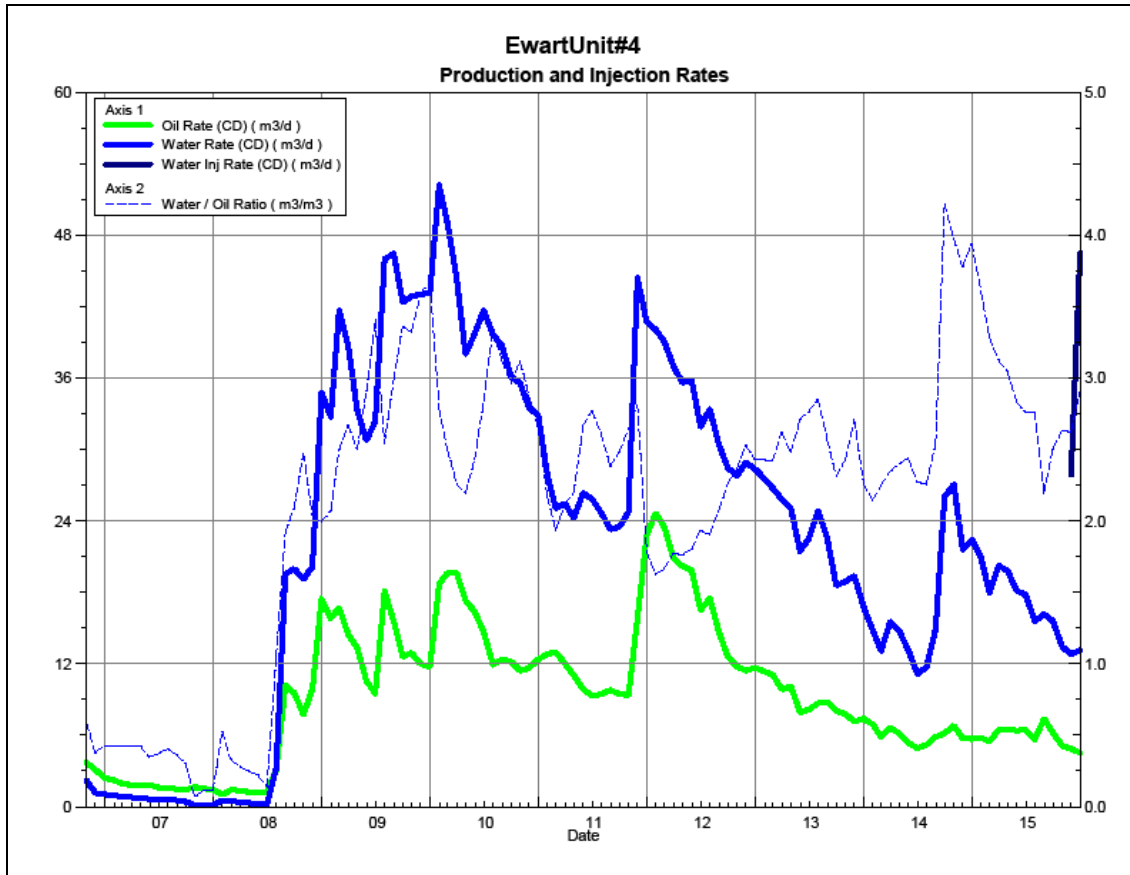
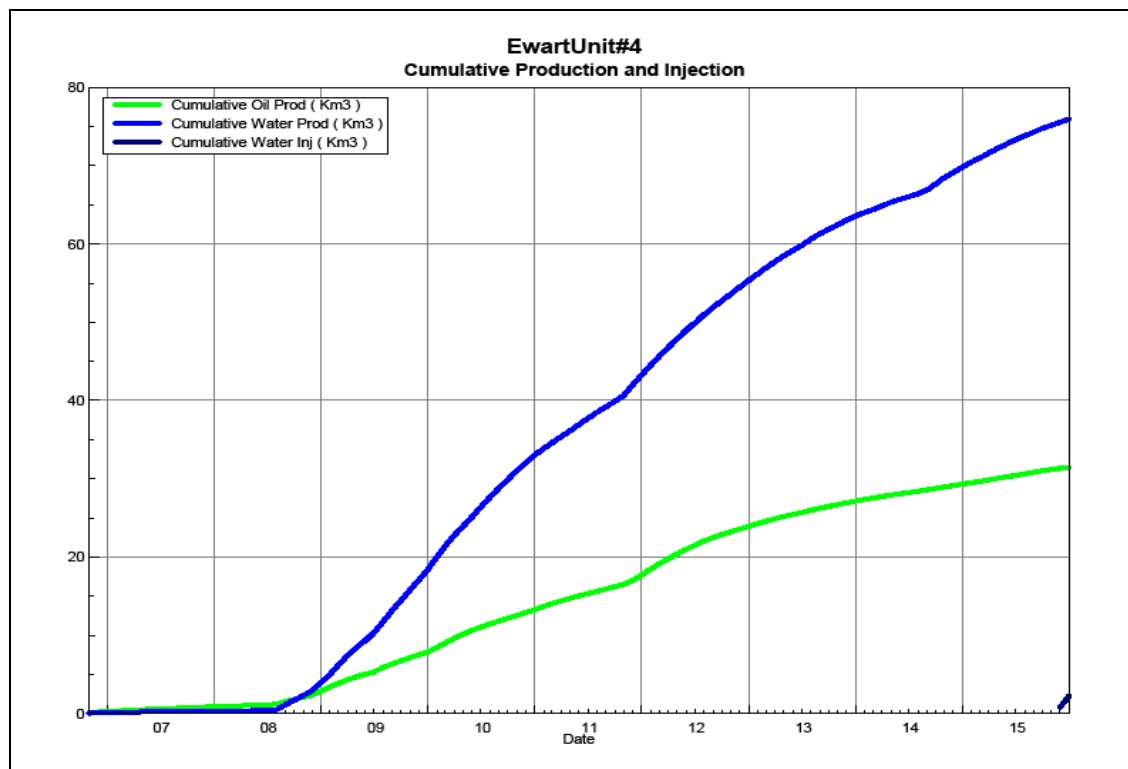


Figure 3 shows the cumulative production for Ewart Unit No. 4 to the end of December 2015 as 31.48 E³m³ of oil, and 75.95 E³m³ of water, representing a 5.9% recovery factor of the OOIP.

**Figure 3: Ewart Unit No. 4 Cumulative Oil, Water and Water Injected vs Time**



## **Waterflood Development Plan**

### **Ewart Unit No. 4 Waterflood (WF) Development Plan**

Ewart Unit No. 4 is still in the development phase at the end of 2015. The three (3) proposed horizontal injection wells were drilled in 2011 between the existing horizontal producing wells, completing an effective 20 acre line drive waterflood pattern. In November 2011, the proposed injectors were put on production. In order to maximize recovery from this Unit, Tundra chose to produce the future injectors for a short period of time to clean-up the reservoir near the wellbores. All horizontal wells are fracture stimulated to improve the injection rates. In 2015, Tundra converted the 02/12-36 and 03/12-36-008-29W1 producers to injectors. Tundra anticipates converting the 02/05-36 producer to an injector in Q4 2016.

Production performance by injector pattern are summarized in Appendix B.

Any future revisions to the waterflood development or surveillance plan would be based on new production or performance response data, technical studies, or observed reservoir behavior and reserves recovery interpretations.

## **Waterflood EOR Operating Strategy and Performance**

### **Water Source and Quality**

The injection water for Ewart Unit No. 4 will be sourced from the 16-32-007-29W1 well (Lodgepole formation). The water is treated at the 03-04-008-29W1 battery where it is filtered to 0.5 microns and has scale inhibitor added. The injection water is then distributed to the injectors through the dedicated infrastructure system.

### **Injection Wellhead Pressures**

Injection started in this Unit in November 2015. The average monthly wellhead injection pressure for each injector is summarized in Appendix C. Since injection in this Unit is still in the early stages, the injectors are still building up to a target injection pressure of 6300 kPaa.

### **Reservoir Pressure**

Where practical, Tundra is committed to collecting pressure data from newly drilled injection wells. For Ewart Unit No. 4, pressure data is currently available for the 02/05-36, 02/12-36 and 03/12-36-008-29W1 locations. The reservoir pressures are 7314, 7517 and 6437 kPa(a), respectively. Pressures are corrected to a common datum of -450 m SS for comparison with other units in the area.

### **Well Servicing**

Table 1 lists the maintenance that was required in Ewart Unit No. 4 in 2015.

**Table 1: Service and Maintenance in Ewart Unit No. 4**

00/16-36-008-29W1/0	Zonal Abandonment	10/26/2015
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## **Waterflood Performance Discussion**

At the end of 2015, Ewart Unit No. 4 waterflood area had 2 injection patterns in place. The waterflood area had three (3) proposed horizontal injection wells drilled and put on production in 2011. Water injection began in November 2015, after the conversion of the 02/12-36 and 03/12-36 producers to injectors. Tundra currently plans to produce the 02/05-36 producer until the latter part of 2016 and then convert it to an injector.

A summary table of the injector pattern(s) is presented in Appendix B. Plots of the production are presented in Appendix D for each of the injection pattern(s).

## **List of Appendices**

Appendix A: Well Name and Status Table

Appendix B: Injection Pattern Summary

Appendix C: Average Monthly Injection Pressure Summary

Appendix D: Injector Pattern Production/Injection Rates, Cumulative and VRR Plots

for the following injectors:

102/05-36-008-29W1

102/12-36-008-29W1

103/12-36-008-29W1

## Appendix A

UWI	Surface Location	Well Status
00/04-36-008-29W1/0	01-36-008-29W1	Capable of OIL Prod
00/05-36-008-29W1/0	08-36-008-29W1	Capable of OIL Prod
02/05-36-008-29W1/0	02/01-36-008-29W1	Capable of OIL Prod
00/12-36-008-29W1/0	12-31-008-28W1	Capable of OIL Prod
02/12-36-008-29W1/0	02/08-36-008-29W1	Water Injection
03/12-36-008-29W1/0	03/09-36-008-29W1	Water Injection
02/13-36-008-29W1/0	16-36-008-29W1	Capable of OIL Prod
00/16-36-008-29W1/0	16-36-008-29W1	Abandoned Zone



## Appendix B

### Ewart Unit No. 4 Injection Pattern Summary as of December 2015

Pattern Name	Injector BH Location (008-29W1)	Injector Surf. Location (008-29W1)	Status	No. of Supported Wells	Supported Wells (008-29W1)	Allocation Factor	Pattern Prod Start Month	Inj Start Month	Oil Rate (m <sup>3</sup> /d)	Water Rate (m <sup>3</sup> /d)	WOR (m <sup>3</sup> /m <sup>3</sup> )	Water Injection (m <sup>3</sup> /d)	Cum Oil (E <sup>3</sup> m <sup>3</sup> )	Cum Water (E <sup>3</sup> m <sup>3</sup> )	Cum Inj Water (E <sup>3</sup> m <sup>3</sup> )	Monthly VRR	Cum VRR
02/05-36-008-29W1 Injector	02/05-36	02/01-36	Capable of Oil Production	2	04-36, 05-36	0.5	Nov 2008	-	2.0	5.7	2.9		7.8	23.2	0.0	0.0	0.00
02/12-36-008-29W1 Injector	02/12-36	02/08-36	WTR Injection	2	05-36, 12-36	0.5	Jun 2009	Nov 2015	1.1	3.6	3.4	23.2	7.5	18.6	1.1	4.9	0.04
03/12-36-008-29W1 Injector	03/12-36	03/09-36	WTR Injection	3	12-36, 02/13-36, 16-36	0.5	Oct 2006	Nov 2015	0.7	1.6	2.2	23.3	9.8	15.9	1.1	10.0	0.04

## Appendix C

### Average Monthly Injection Pressure (kPag)

Month	102/12-36	103/12-36
Nov-15	-75	-68
Dec-15	138	55

## **Appendix D**

### **Rates and VRR Plots**

Oil Formation Vol Factor : 1.00150 m3/m3 Pattern: 02/05-36-008-29Inj Set: EwartUnit#4

Water Formation Vol Factor : 1.00150 m3/m3

March 21, 2016

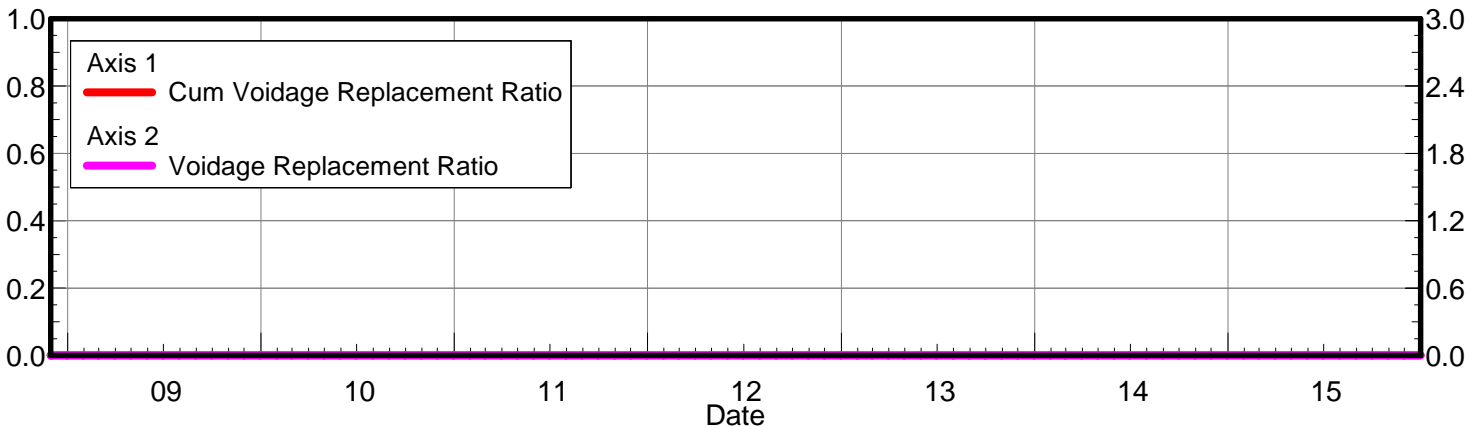
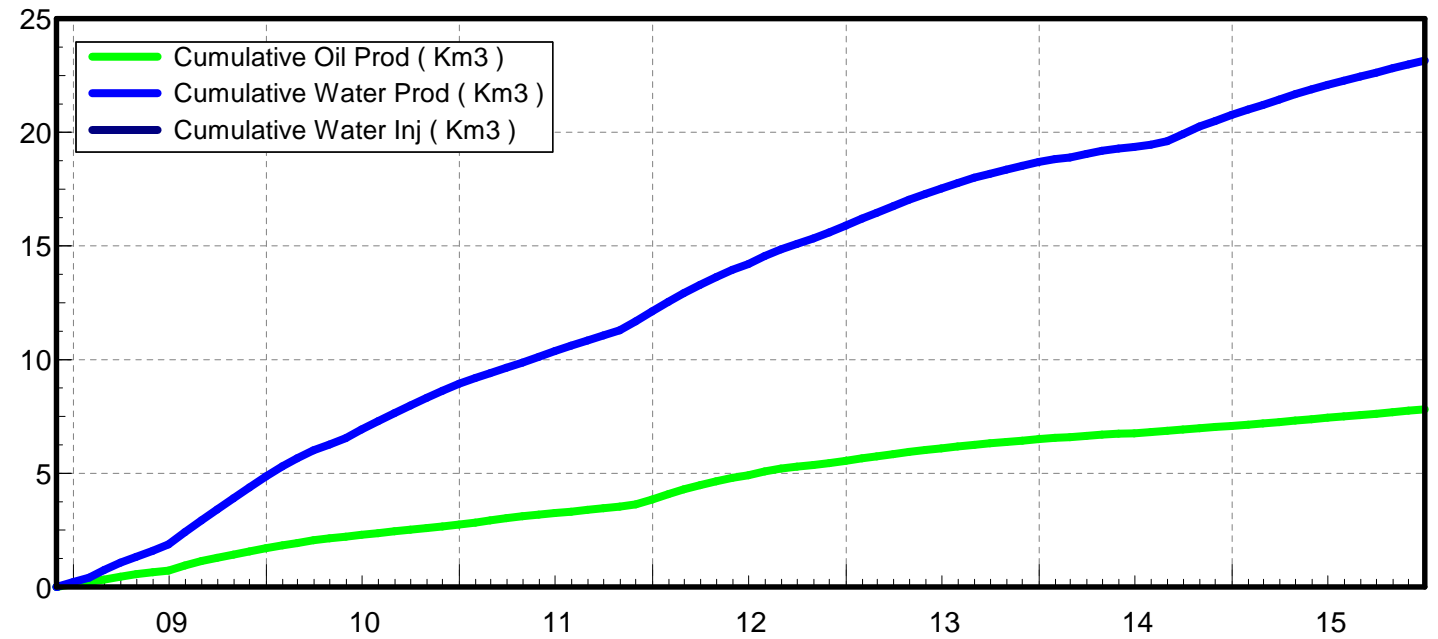
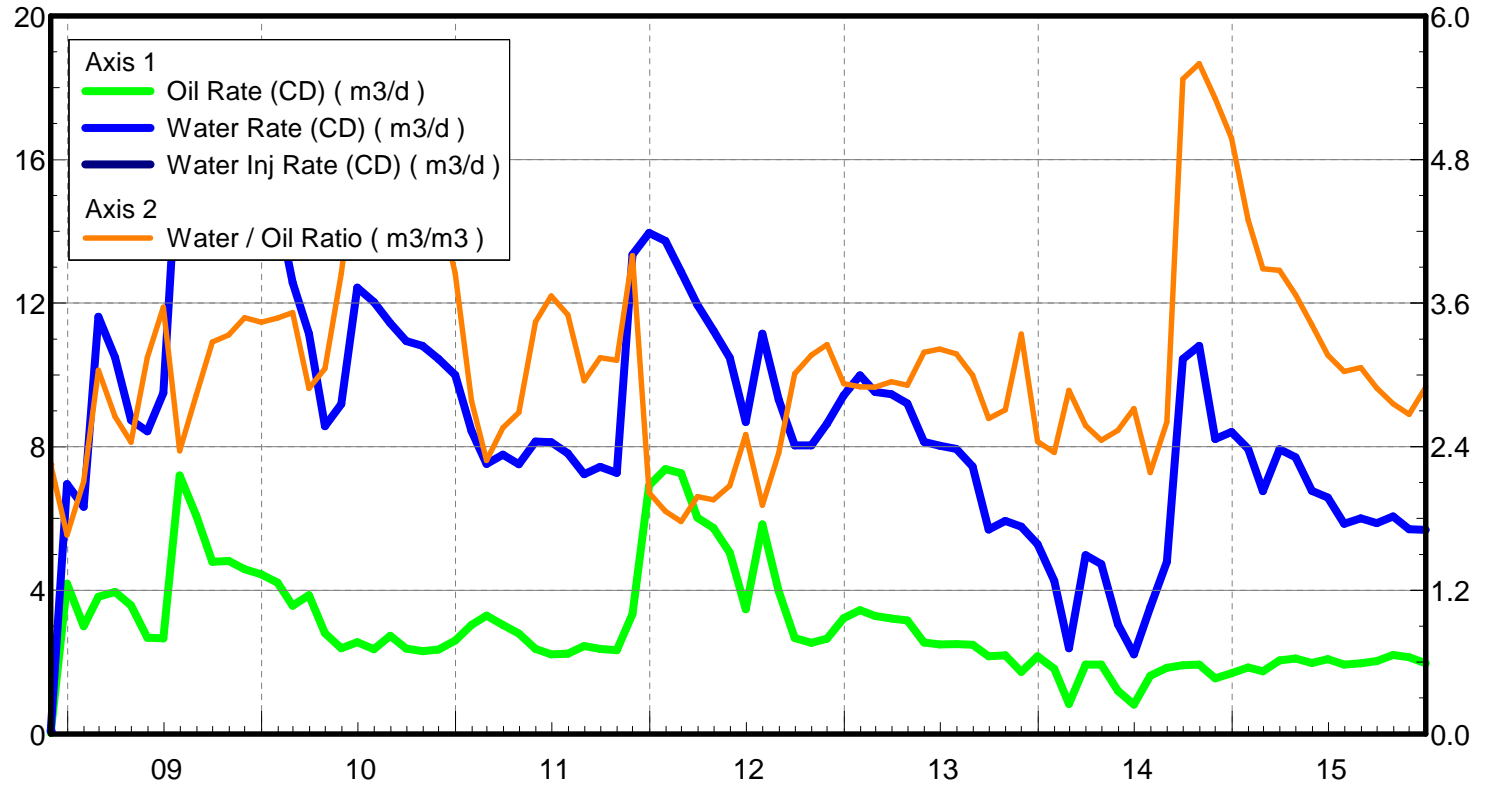
Water / Oil Ratio : 2.94 m3/m3

Operator: Tundra\_O&G\_Prtshp

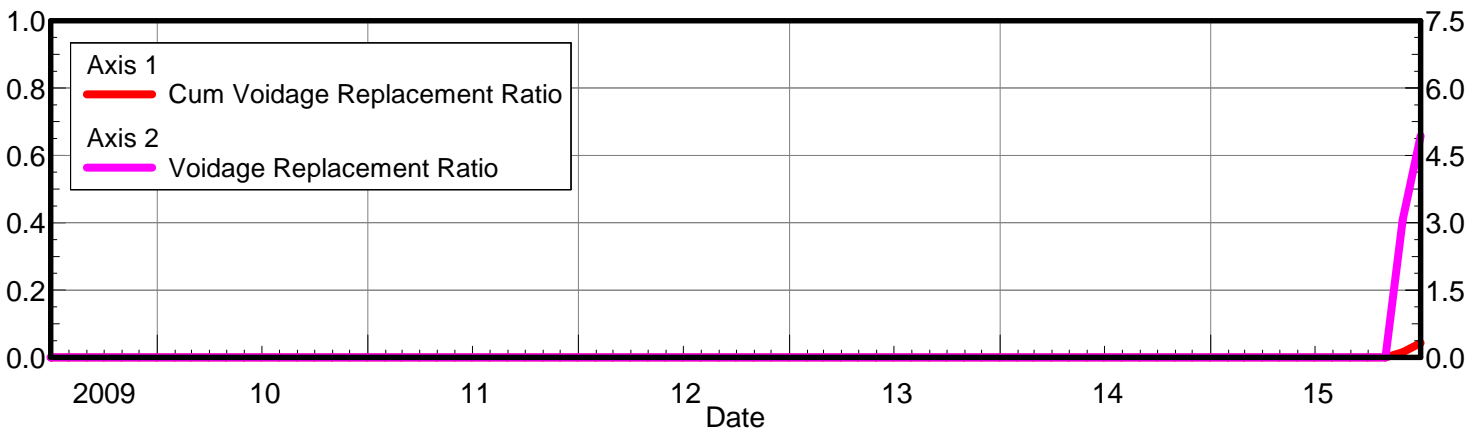
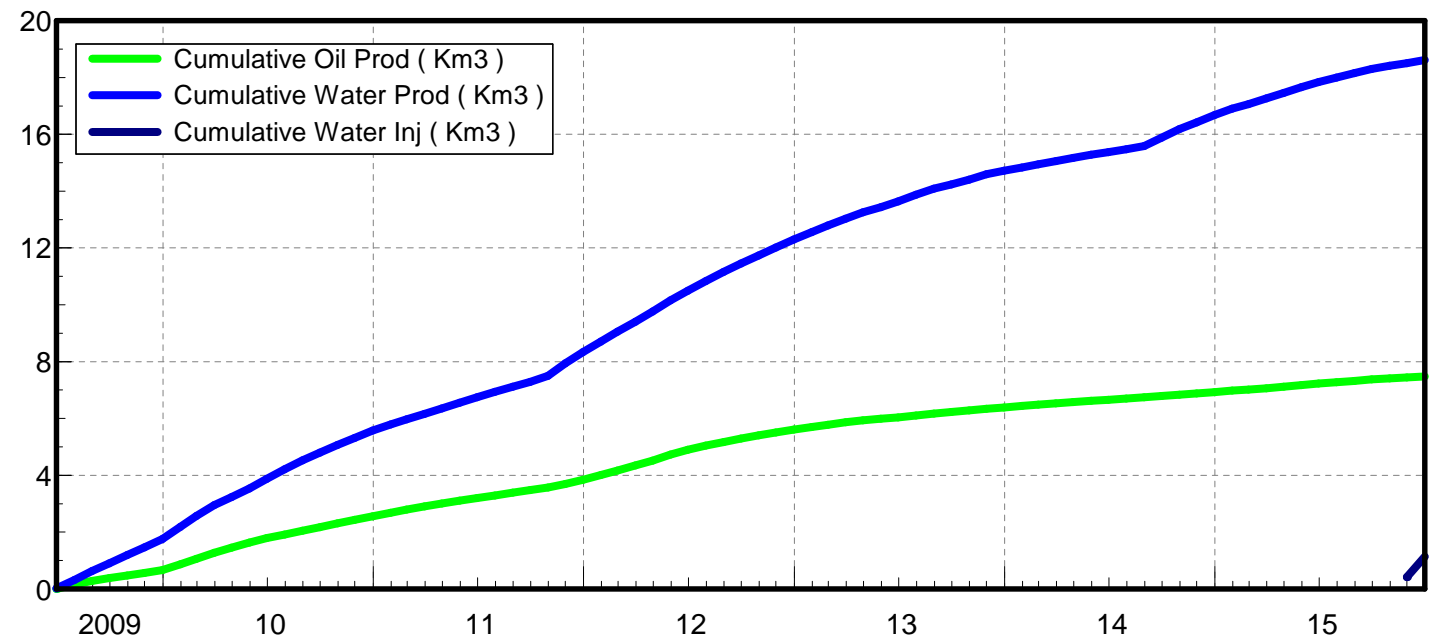
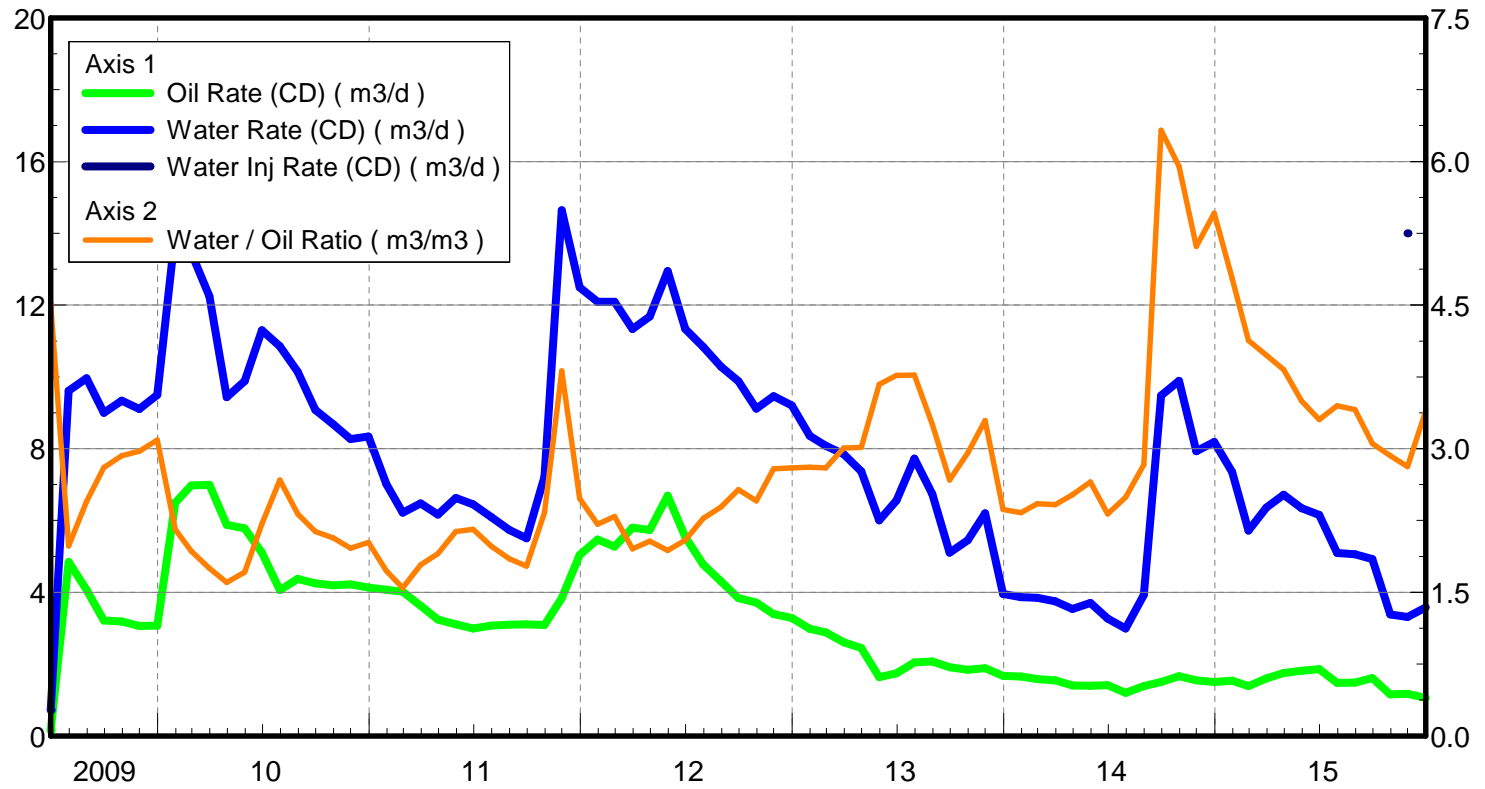
Oil Rate (CD) : 2.13 m3/d

Water Rate (CD) : 6.25 m3/d

Water Inj Rate (CD) : \* m3/d



Oil Formation Vol Factor : 1.00150 m<sup>3</sup>/m<sup>3</sup> Pattern: 02/12-36-008-29 Inj Set: Ewart Unit#4 Oil Rate (CD) : 1.12 m<sup>3</sup>/d  
 Water Formation Vol Factor : 1.00150 m<sup>3</sup>/m<sup>3</sup> March 21, 2016 Water Rate (CD) : 4.71 m<sup>3</sup>/d  
 Water / Oil Ratio : 4.20 m<sup>3</sup>/m<sup>3</sup> Operator: Tundra\_O&G\_Prtshp Water Inj Rate (CD) : 38.26 m<sup>3</sup>/d



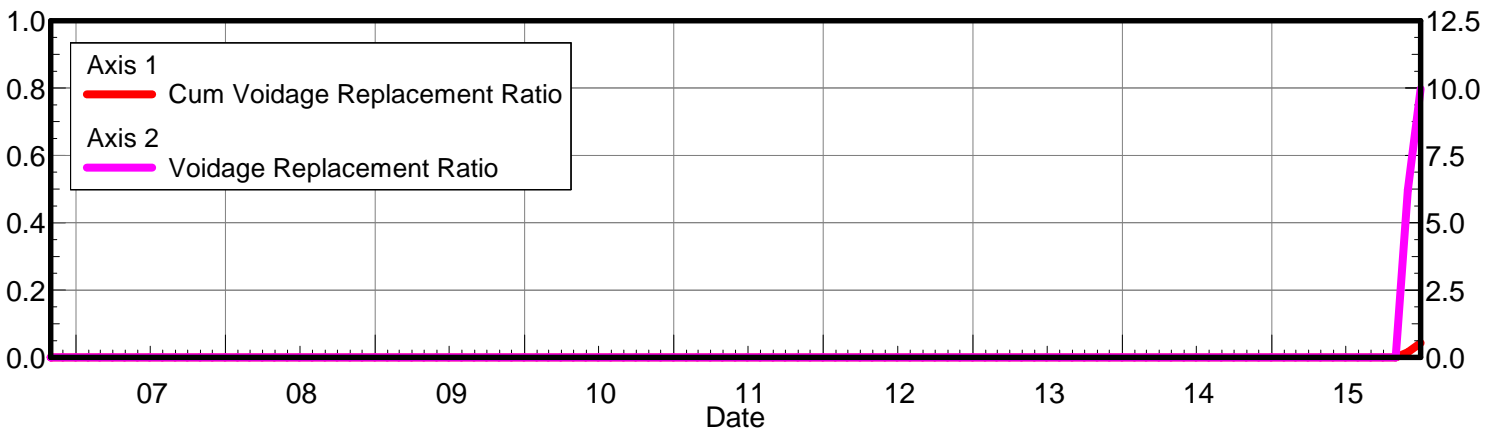
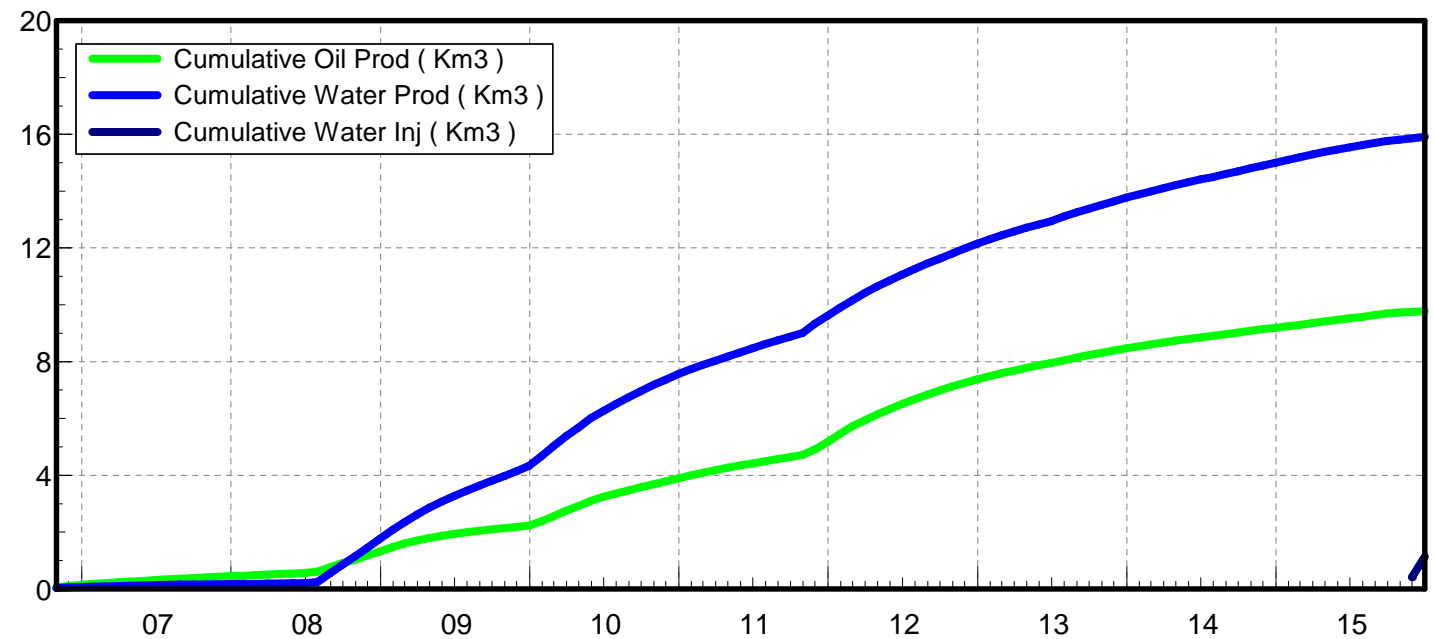
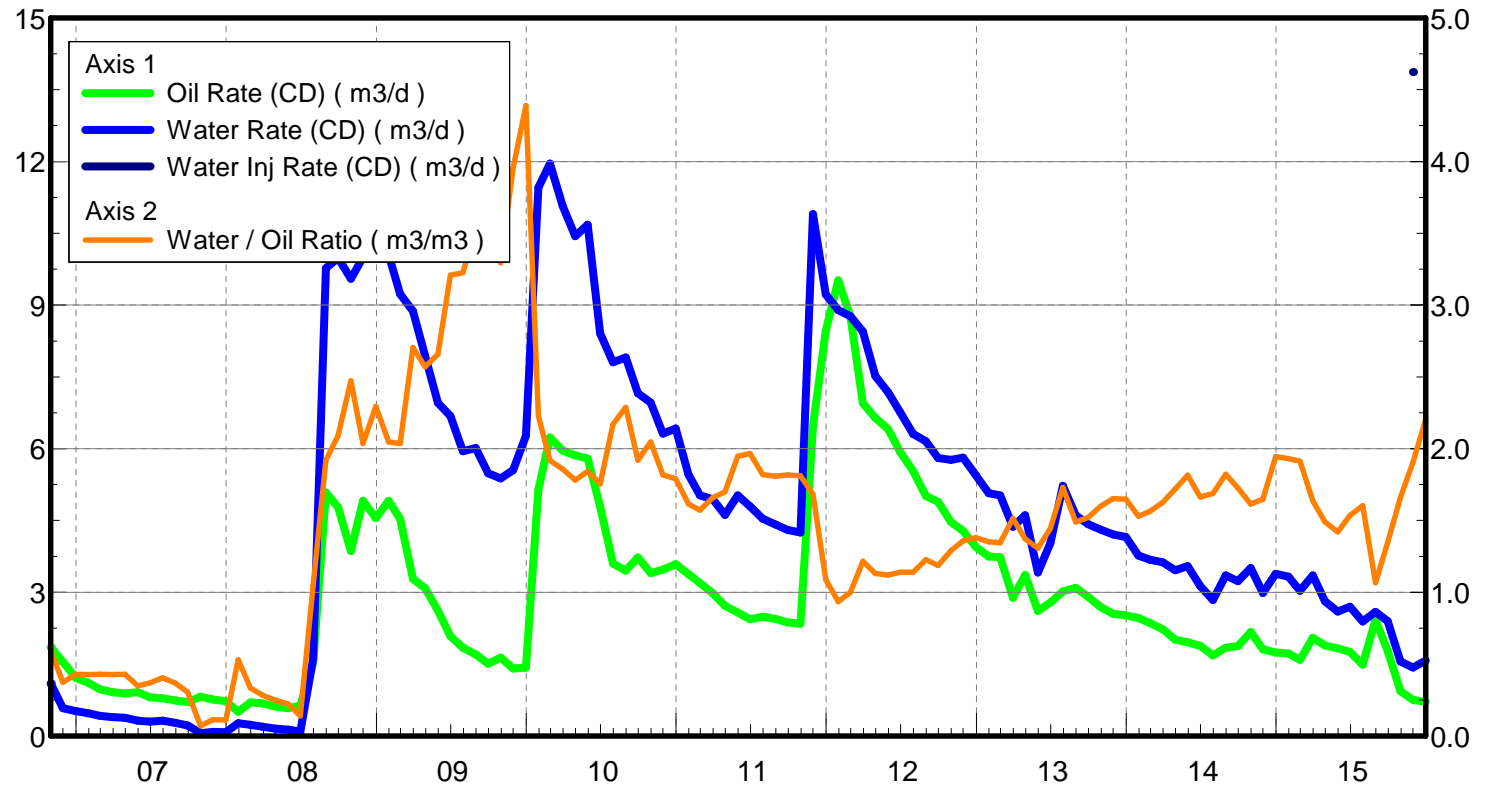
Date	Oil Rate (CD) m3/d	Water Rate (CD) m3/d	Water Oil Ratio m3/m3	Water Inj Rate (CD) m3/d	Cum Oil Prod Km3	Cum Water Prod Km3	Cum Water Inj Km3	VRR	Cum VRR
7/31/2006					0.00	0.00	0.00		
8/31/2006					0.00	0.00	0.00		
9/30/2006					0.00	0.00	0.00		
10/31/2006					0.00	0.00	0.00		
11/30/2006					0.00	0.00	0.00		
12/31/2006					0.00	0.00	0.00		
1/31/2007					0.00	0.00	0.00		
2/28/2007					0.00	0.00	0.00		
3/31/2007					0.00	0.00	0.00		
4/30/2007					0.00	0.00	0.00		
5/31/2007					0.00	0.00	0.00		
6/30/2007					0.00	0.00	0.00		
7/31/2007					0.00	0.00	0.00		
8/31/2007					0.00	0.00	0.00		
9/30/2007					0.00	0.00	0.00		
10/31/2007					0.00	0.00	0.00		
11/30/2007					0.00	0.00	0.00		
12/31/2007					0.00	0.00	0.00		
1/31/2008					0.00	0.00	0.00		
2/29/2008					0.00	0.00	0.00		
3/31/2008					0.00	0.00	0.00		
4/30/2008					0.00	0.00	0.00		
5/31/2008					0.00	0.00	0.00		
6/30/2008					0.00	0.00	0.00		
7/31/2008					0.00	0.00	0.00		
8/31/2008					0.00	0.00	0.00		
9/30/2008					0.00	0.00	0.00		
10/31/2008					0.00	0.00	0.00		
11/30/2008					0.00	0.00	0.00		
12/31/2008					0.00	0.00	0.00		
1/31/2009					0.00	0.00	0.00		
2/28/2009					0.00	0.00	0.00		
3/31/2009					0.00	0.00	0.00		
4/30/2009					0.00	0.00	0.00		
5/31/2009					0.00	0.00	0.00		
6/30/2009	0.16	0.72	4.50		0.00	0.02	0.00	0.000	0.000
7/31/2009	4.84	9.61	1.99		0.15	0.32	0.00	0.000	0.000
8/31/2009	4.07	9.96	2.45		0.28	0.63	0.00	0.000	0.000
9/30/2009	3.21	9.00	2.80		0.38	0.90	0.00	0.000	0.000
10/31/2009	3.19	9.34	2.93		0.48	1.19	0.00	0.000	0.000
11/30/2009	3.06	9.11	2.97		0.57	1.46	0.00	0.000	0.000
12/31/2009	3.08	9.50	3.09		0.66	1.76	0.00	0.000	0.000
1/31/2010	6.49	14.00	2.16		0.86	2.19	0.00	0.000	0.000
2/28/2010	6.97	13.47	1.93		1.06	2.57	0.00	0.000	0.000
3/31/2010	6.99	12.25	1.75		1.28	2.95	0.00	0.000	0.000
4/30/2010	5.88	9.43	1.60		1.45	3.23	0.00	0.000	0.000

Date	Oil Rate (CD) m3/d	Water Rate (CD) m3/d	Water Oil Ratio m3/m3	Water Inj Rate (CD) m3/d	Cum Oil Prod Km3	Cum Water Prod Km3	Cum Water Inj Km3	VRR	Cum VRR
5/31/2010	5.78	9.88	1.71		1.63	3.54	0.00	0.000	0.000
6/30/2010	5.11	11.30	2.21		1.79	3.88	0.00	0.000	0.000
7/31/2010	4.06	10.85	2.67		1.91	4.21	0.00	0.000	0.000
8/31/2010	4.38	10.14	2.32		2.05	4.53	0.00	0.000	0.000
9/30/2010	4.25	9.08	2.14		2.17	4.80	0.00	0.000	0.000
10/31/2010	4.20	8.67	2.07		2.30	5.07	0.00	0.000	0.000
11/30/2010	4.22	8.27	1.96		2.43	5.32	0.00	0.000	0.000
12/31/2010	4.13	8.34	2.02		2.56	5.57	0.00	0.000	0.000
1/31/2011	4.07	7.01	1.72		2.69	5.79	0.00	0.000	0.000
2/28/2011	4.02	6.22	1.55		2.80	5.97	0.00	0.000	0.000
3/31/2011	3.62	6.48	1.79		2.91	6.17	0.00	0.000	0.000
4/30/2011	3.24	6.17	1.90		3.01	6.35	0.00	0.000	0.000
5/31/2011	3.10	6.62	2.13		3.10	6.56	0.00	0.000	0.000
6/30/2011	2.99	6.45	2.16		3.19	6.75	0.00	0.000	0.000
7/31/2011	3.07	6.09	1.98		3.29	6.94	0.00	0.000	0.000
8/31/2011	3.10	5.74	1.85		3.38	7.12	0.00	0.000	0.000
9/30/2011	3.11	5.51	1.77		3.48	7.28	0.00	0.000	0.000
10/31/2011	3.09	7.21	2.33		3.57	7.51	0.00	0.000	0.000
11/30/2011	3.84	14.64	3.81		3.69	7.94	0.00	0.000	0.000
12/31/2011	5.04	12.49	2.48		3.85	8.33	0.00	0.000	0.000
1/31/2012	5.47	12.10	2.21		4.01	8.71	0.00	0.000	0.000
2/29/2012	5.28	12.09	2.29		4.17	9.06	0.00	0.000	0.000
3/31/2012	5.80	11.34	1.95		4.35	9.41	0.00	0.000	0.000
4/30/2012	5.74	11.68	2.04		4.52	9.76	0.00	0.000	0.000
5/31/2012	6.69	12.95	1.94		4.73	10.16	0.00	0.000	0.000
6/30/2012	5.54	11.33	2.05		4.89	10.50	0.00	0.000	0.000
7/31/2012	4.77	10.84	2.27		5.04	10.84	0.00	0.000	0.000
8/31/2012	4.30	10.29	2.39		5.17	11.16	0.00	0.000	0.000
9/30/2012	3.84	9.88	2.57		5.29	11.45	0.00	0.000	0.000
10/31/2012	3.71	9.11	2.46		5.40	11.73	0.00	0.000	0.000
11/30/2012	3.39	9.46	2.79		5.51	12.02	0.00	0.000	0.000
12/31/2012	3.29	9.21	2.80		5.61	12.30	0.00	0.000	0.000
1/31/2013	2.98	8.36	2.81		5.70	12.56	0.00	0.000	0.000
2/28/2013	2.89	8.08	2.80		5.78	12.79	0.00	0.000	0.000
3/31/2013	2.61	7.85	3.01		5.86	13.03	0.00	0.000	0.000
4/30/2013	2.44	7.37	3.01		5.94	13.25	0.00	0.000	0.000
5/31/2013	1.63	6.00	3.67		5.99	13.44	0.00	0.000	0.000
6/30/2013	1.74	6.56	3.77		6.04	13.64	0.00	0.000	0.000
7/31/2013	2.05	7.73	3.77		6.10	13.88	0.00	0.000	0.000
8/31/2013	2.07	6.74	3.25		6.17	14.08	0.00	0.000	0.000
9/30/2013	1.91	5.10	2.67		6.22	14.24	0.00	0.000	0.000
10/31/2013	1.84	5.45	2.96		6.28	14.41	0.00	0.000	0.000
11/30/2013	1.88	6.20	3.29		6.34	14.59	0.00	0.000	0.000
12/31/2013	1.67	3.95	2.36		6.39	14.71	0.00	0.000	0.000
1/31/2014	1.66	3.86	2.33		6.44	14.83	0.00	0.000	0.000
2/28/2014	1.59	3.85	2.43		6.49	14.94	0.00	0.000	0.000

Date	Oil Rate (CD) m3/d	Water Rate (CD) m3/d	Water Oil Ratio m3/m3	Water Inj Rate (CD) m3/d	Cum Oil Prod Km3	Cum Water Prod Km3	Cum Water Inj Km3	VRR	Cum VRR
3/31/2014	1.55	3.75	2.42		6.53	15.06	0.00	0.000	0.000
4/30/2014	1.40	3.54	2.52		6.58	15.16	0.00	0.000	0.000
5/31/2014	1.40	3.70	2.65		6.62	15.28	0.00	0.000	0.000
6/30/2014	1.41	3.27	2.32		6.66	15.38	0.00	0.000	0.000
7/31/2014	1.20	2.99	2.49		6.70	15.47	0.00	0.000	0.000
8/31/2014	1.39	3.93	2.83		6.74	15.59	0.00	0.000	0.000
9/30/2014	1.50	9.48	6.33		6.79	15.88	0.00	0.000	0.000
10/31/2014	1.66	9.89	5.95		6.84	16.18	0.00	0.000	0.000
11/30/2014	1.55	7.93	5.11		6.88	16.42	0.00	0.000	0.000
12/31/2014	1.50	8.18	5.46		6.93	16.67	0.00	0.000	0.000
1/31/2015	1.54	7.35	4.78		6.98	16.90	0.00	0.000	0.000
2/28/2015	1.38	5.72	4.13		7.02	17.06	0.00	0.000	0.000
3/31/2015	1.60	6.36	3.98		7.07	17.26	0.00	0.000	0.000
4/30/2015	1.75	6.71	3.83		7.12	17.46	0.00	0.000	0.000
5/31/2015	1.81	6.34	3.50		7.18	17.66	0.00	0.000	0.000
6/30/2015	1.86	6.15	3.31		7.23	17.84	0.00	0.000	0.000
7/31/2015	1.48	5.09	3.45		7.28	18.00	0.00	0.000	0.000
8/31/2015	1.49	5.06	3.41		7.32	18.16	0.00	0.000	0.000
9/30/2015	1.61	4.92	3.05		7.37	18.30	0.00	0.000	0.000
10/31/2015	1.16	3.39	2.93		7.41	18.41	0.00	0.000	0.000
11/30/2015	1.18	3.31	2.81	14.00	7.44	18.51	0.42	3.066	0.016
12/31/2015	1.05	3.58	3.40	23.23	7.48	18.62	1.14	4.931	0.043



Oil Formation Vol Factor : 1.00150 m<sup>3</sup>/m<sup>3</sup>    Pattern: 03/12-36-008-29Inj Set: EwartUnit#4    Oil Rate (CD) : 0.79 m<sup>3</sup>/d  
 Water Formation Vol Factor : 1.00150 m<sup>3</sup>/m<sup>3</sup>    March 21, 2016    Water Rate (CD) : 2.57 m<sup>3</sup>/d  
 Water / Oil Ratio : 3.27 m<sup>3</sup>/m<sup>3</sup>    Operator: Tundra\_O&G\_Prtshp    Water Inj Rate (CD) : 38.26 m<sup>3</sup>/d



Date	Oil Rate (CD) m3/d	Water Rate (CD) m3/d	Water Oil Ratio m3/m3	Water Inj Rate (CD) m3/d	Cum Oil Prod Km3	Cum Water Prod Km3	Cum Water Inj Km3	VRR	Cum VRR
7/31/2006					0.00	0.00	0.00		
8/31/2006					0.00	0.00	0.00		
9/30/2006					0.00	0.00	0.00		
10/31/2006	1.85	1.09	0.59		0.06	0.03	0.00	0.000	0.000
11/30/2006	1.55	0.58	0.37		0.10	0.05	0.00	0.000	0.000
12/31/2006	1.21	0.52	0.43		0.14	0.07	0.00	0.000	0.000
1/31/2007	1.11	0.47	0.43		0.18	0.08	0.00	0.000	0.000
2/28/2007	0.97	0.42	0.43		0.20	0.09	0.00	0.000	0.000
3/31/2007	0.91	0.39	0.43		0.23	0.11	0.00	0.000	0.000
4/30/2007	0.88	0.38	0.43		0.26	0.12	0.00	0.000	0.000
5/31/2007	0.91	0.32	0.35		0.29	0.13	0.00	0.000	0.000
6/30/2007	0.81	0.30	0.37		0.31	0.14	0.00	0.000	0.000
7/31/2007	0.79	0.32	0.40		0.33	0.15	0.00	0.000	0.000
8/31/2007	0.74	0.27	0.37		0.36	0.15	0.00	0.000	0.000
9/30/2007	0.71	0.22	0.30		0.38	0.16	0.00	0.000	0.000
10/31/2007	0.82	0.06	0.07		0.40	0.16	0.00	0.000	0.000
11/30/2007	0.76	0.09	0.11		0.43	0.17	0.00	0.000	0.000
12/31/2007	0.73	0.08	0.11		0.45	0.17	0.00	0.000	0.000
1/31/2008	0.51	0.27	0.53		0.47	0.18	0.00	0.000	0.000
2/29/2008	0.70	0.23	0.33		0.49	0.18	0.00	0.000	0.000
3/31/2008	0.68	0.19	0.28		0.51	0.19	0.00	0.000	0.000
4/30/2008	0.61	0.15	0.25		0.53	0.19	0.00	0.000	0.000
5/31/2008	0.58	0.13	0.22		0.54	0.20	0.00	0.000	0.000
6/30/2008	0.64	0.09	0.14		0.56	0.20	0.00	0.000	0.000
7/31/2008	1.53	1.60	1.05		0.61	0.25	0.00	0.000	0.000
8/31/2008	5.09	9.77	1.92		0.77	0.55	0.00	0.000	0.000
9/30/2008	4.78	9.99	2.09		0.91	0.85	0.00	0.000	0.000
10/31/2008	3.86	9.55	2.47		1.03	1.15	0.00	0.000	0.000
11/30/2008	4.91	10.00	2.04		1.18	1.45	0.00	0.000	0.000
12/31/2008	4.55	10.44	2.30		1.32	1.77	0.00	0.000	0.000
1/31/2009	4.91	10.05	2.05		1.47	2.08	0.00	0.000	0.000
2/28/2009	4.53	9.23	2.04		1.60	2.34	0.00	0.000	0.000
3/31/2009	3.28	8.87	2.70		1.70	2.62	0.00	0.000	0.000
4/30/2009	3.09	7.94	2.57		1.79	2.85	0.00	0.000	0.000
5/31/2009	2.62	6.96	2.66		1.87	3.07	0.00	0.000	0.000
6/30/2009	2.08	6.68	3.21		1.94	3.27	0.00	0.000	0.000
7/31/2009	1.84	5.95	3.23		1.99	3.46	0.00	0.000	0.000
8/31/2009	1.70	6.01	3.53		2.05	3.64	0.00	0.000	0.000
9/30/2009	1.51	5.49	3.63		2.09	3.81	0.00	0.000	0.000
10/31/2009	1.63	5.38	3.29		2.14	3.97	0.00	0.000	0.000
11/30/2009	1.41	5.55	3.95		2.18	4.14	0.00	0.000	0.000
12/31/2009	1.43	6.27	4.39		2.23	4.33	0.00	0.000	0.000
1/31/2010	5.14	11.46	2.23		2.39	4.69	0.00	0.000	0.000
2/28/2010	6.24	11.96	1.92		2.56	5.02	0.00	0.000	0.000
3/31/2010	5.96	11.07	1.86		2.75	5.37	0.00	0.000	0.000
4/30/2010	5.86	10.44	1.78		2.92	5.68	0.00	0.000	0.000

Date	Oil Rate (CD) m3/d	Water Rate (CD) m3/d	Water Oil Ratio m3/m3	Water Inj Rate (CD) m3/d	Cum Oil Prod Km3	Cum Water Prod Km3	Cum Water Inj Km3	VRR	Cum VRR
5/31/2010	5.80	10.68	1.84		3.10	6.01	0.00	0.000	0.000
6/30/2010	4.79	8.41	1.76		3.25	6.26	0.00	0.000	0.000
7/31/2010	3.60	7.80	2.17		3.36	6.51	0.00	0.000	0.000
8/31/2010	3.45	7.90	2.29		3.46	6.75	0.00	0.000	0.000
9/30/2010	3.73	7.16	1.92		3.58	6.97	0.00	0.000	0.000
10/31/2010	3.40	6.96	2.05		3.68	7.18	0.00	0.000	0.000
11/30/2010	3.47	6.32	1.82		3.79	7.37	0.00	0.000	0.000
12/31/2010	3.59	6.42	1.79		3.90	7.57	0.00	0.000	0.000
1/31/2011	3.38	5.46	1.61		4.00	7.74	0.00	0.000	0.000
2/28/2011	3.19	5.02	1.57		4.09	7.88	0.00	0.000	0.000
3/31/2011	2.98	4.94	1.66		4.18	8.03	0.00	0.000	0.000
4/30/2011	2.72	4.62	1.70		4.27	8.17	0.00	0.000	0.000
5/31/2011	2.58	5.02	1.95		4.35	8.33	0.00	0.000	0.000
6/30/2011	2.44	4.80	1.97		4.42	8.47	0.00	0.000	0.000
7/31/2011	2.49	4.54	1.82		4.50	8.61	0.00	0.000	0.000
8/31/2011	2.44	4.41	1.81		4.57	8.75	0.00	0.000	0.000
9/30/2011	2.37	4.30	1.82		4.64	8.88	0.00	0.000	0.000
10/31/2011	2.35	4.25	1.81		4.72	9.01	0.00	0.000	0.000
11/30/2011	6.47	10.90	1.68		4.91	9.34	0.00	0.000	0.000
12/31/2011	8.46	9.22	1.09		5.17	9.62	0.00	0.000	0.000
1/31/2012	9.52	8.89	0.93		5.47	9.90	0.00	0.000	0.000
2/29/2012	8.76	8.77	1.00		5.72	10.15	0.00	0.000	0.000
3/31/2012	6.95	8.45	1.22		5.94	10.41	0.00	0.000	0.000
4/30/2012	6.64	7.52	1.13		6.14	10.64	0.00	0.000	0.000
5/31/2012	6.41	7.18	1.12		6.33	10.86	0.00	0.000	0.000
6/30/2012	5.93	6.76	1.14		6.51	11.06	0.00	0.000	0.000
7/31/2012	5.53	6.31	1.14		6.68	11.26	0.00	0.000	0.000
8/31/2012	5.01	6.16	1.23		6.84	11.45	0.00	0.000	0.000
9/30/2012	4.89	5.80	1.19		6.99	11.63	0.00	0.000	0.000
10/31/2012	4.47	5.76	1.29		7.12	11.80	0.00	0.000	0.000
11/30/2012	4.28	5.82	1.36		7.25	11.98	0.00	0.000	0.000
12/31/2012	3.95	5.44	1.38		7.38	12.15	0.00	0.000	0.000
1/31/2013	3.75	5.07	1.35		7.49	12.30	0.00	0.000	0.000
2/28/2013	3.74	5.02	1.34		7.60	12.45	0.00	0.000	0.000
3/31/2013	2.89	4.37	1.51		7.69	12.58	0.00	0.000	0.000
4/30/2013	3.36	4.61	1.37		7.79	12.72	0.00	0.000	0.000
5/31/2013	2.61	3.41	1.31		7.87	12.82	0.00	0.000	0.000
6/30/2013	2.79	4.03	1.44		7.95	12.95	0.00	0.000	0.000
7/31/2013	3.02	5.22	1.73		8.04	13.11	0.00	0.000	0.000
8/31/2013	3.09	4.61	1.49		8.14	13.25	0.00	0.000	0.000
9/30/2013	2.91	4.42	1.52		8.23	13.38	0.00	0.000	0.000
10/31/2013	2.69	4.31	1.60		8.31	13.52	0.00	0.000	0.000
11/30/2013	2.55	4.21	1.65		8.39	13.64	0.00	0.000	0.000
12/31/2013	2.52	4.15	1.65		8.47	13.77	0.00	0.000	0.000
1/31/2014	2.46	3.77	1.53		8.54	13.89	0.00	0.000	0.000
2/28/2014	2.36	3.68	1.56		8.61	13.99	0.00	0.000	0.000

Date	Oil Rate (CD) m3/d	Water Rate (CD) m3/d	Water Oil Ratio m3/m3	Water Inj Rate (CD) m3/d	Cum Oil Prod Km3	Cum Water Prod Km3	Cum Water Inj Km3	VRR	Cum VRR
3/31/2014	2.23	3.63	1.63		8.68	14.10	0.00	0.000	0.000
4/30/2014	2.01	3.46	1.72		8.74	14.21	0.00	0.000	0.000
5/31/2014	1.95	3.55	1.82		8.80	14.32	0.00	0.000	0.000
6/30/2014	1.88	3.13	1.66		8.85	14.41	0.00	0.000	0.000
7/31/2014	1.68	2.84	1.69		8.91	14.50	0.00	0.000	0.000
8/31/2014	1.84	3.35	1.82		8.96	14.60	0.00	0.000	0.000
9/30/2014	1.87	3.23	1.73		9.02	14.70	0.00	0.000	0.000
10/31/2014	2.17	3.50	1.62		9.09	14.81	0.00	0.000	0.000
11/30/2014	1.81	2.98	1.65		9.14	14.90	0.00	0.000	0.000
12/31/2014	1.74	3.39	1.95		9.20	15.00	0.00	0.000	0.000
1/31/2015	1.72	3.33	1.93		9.25	15.11	0.00	0.000	0.000
2/28/2015	1.59	3.04	1.91		9.29	15.19	0.00	0.000	0.000
3/31/2015	2.05	3.36	1.64		9.36	15.30	0.00	0.000	0.000
4/30/2015	1.89	2.81	1.49		9.41	15.38	0.00	0.000	0.000
5/31/2015	1.83	2.60	1.42		9.47	15.46	0.00	0.000	0.000
6/30/2015	1.76	2.70	1.53		9.52	15.54	0.00	0.000	0.000
7/31/2015	1.49	2.39	1.60		9.57	15.62	0.00	0.000	0.000
8/31/2015	2.43	2.59	1.07		9.64	15.70	0.00	0.000	0.000
9/30/2015	1.78	2.40	1.35		9.70	15.77	0.00	0.000	0.000
10/31/2015	0.94	1.55	1.66		9.73	15.82	0.00	0.000	0.000
11/30/2015	0.75	1.43	1.90	13.87	9.75	15.86	0.42	6.217	0.016
12/31/2015	0.71	1.58	2.21	23.32	9.77	15.91	1.14	9.967	0.043