

**EAST ROUTLEDGE UNIT NO. 1
WATERFLOOD EOR PROJECT**

ANNUAL REPORT FOR 2015

March 21, 2016

Tundra Oil and Gas Partnership

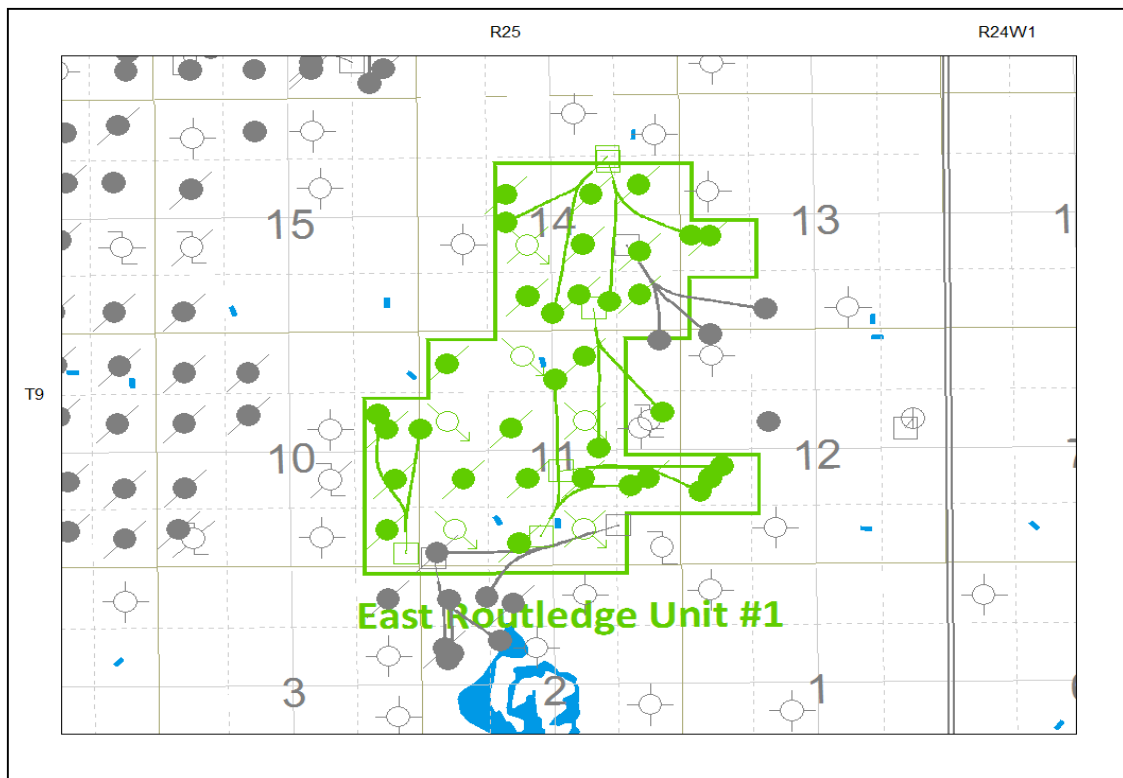
Table of Contents

INTRODUCTION.....	3
DISCUSSION.....	3
Production History	3
Waterflood History.....	5
Waterflood EOR Operating Strategy and Performance	6
Water Source and Quality	6
Injection Wellhead Pressures	6
Reservoir Pressure.....	6
Well Servicing	6
Voidage Replacement	6
Waterflood Performance Discussion.....	6
List of Appendices	8
Appendix A: Well Name and Well Status	
Appendix B: Monthly Injection Wellhead Pressures	
Appendix C: Injection Pattern Summary	
Appendix D: Injector Pattern Production/Injection Rates, Cumulative and VRR Plots	

INTRODUCTION

East Routledge Unit No. 1 Enhanced Oil Recovery (EOR) Waterflood Project was approved under Board Order No. PM 20 effective May 1972 with Samedan Oil of Canada Ltd. as Operator. Tundra acquired the unit from Topa Resources Ltd. and became operator in April 2002. The EOR project area contains 39 wells in 27 LSDs in Township 9, Range 25 W1 as shown in the figure below. Well list and well status is available in Appendix A.

Figure 1: East Routledge Unit No. 1 Area Outline



In accordance with Section 73 of the Manitoba Drilling and Production Regulation, Tundra hereby submits the 2015 Annual Progress Report for East Routledge Unit No. 1 as required by Broad Order No. PM 20.

DISCUSSION

Production History

For the wells included in East Routledge Unit No. 1, production started January 1964 with the 00/07-11-009-25W1/0 well. Oil production peaked at 140 m³/d in March 1968. The Unit was producing 6.23 m³/d of oil and 632.45 m³/d of water in December 2015. The water oil ratio (WOR) averaged 108.5 m³/m³ in 2015. The rates and WOR are plotted in Figure 2.

Figure 2: East Routledge Unit No. 1 Production/Injection Rates and WOR vs. Time

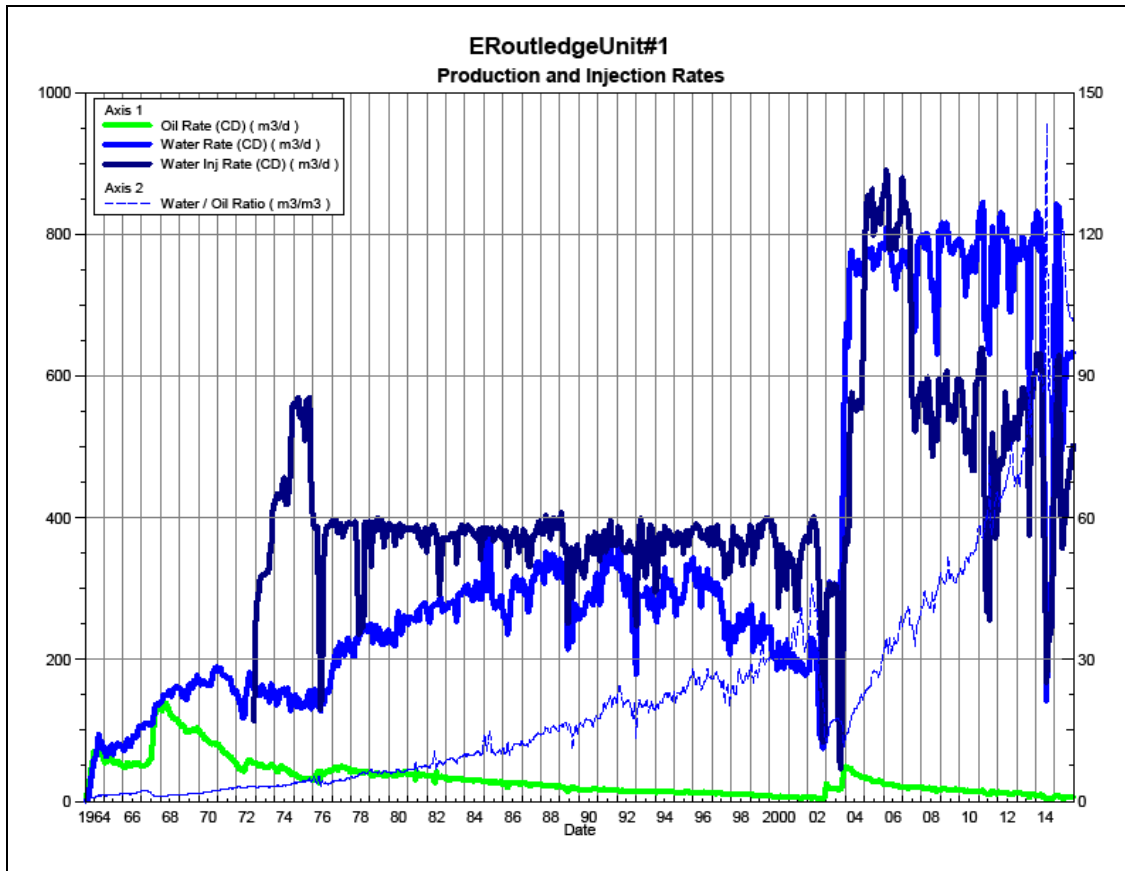
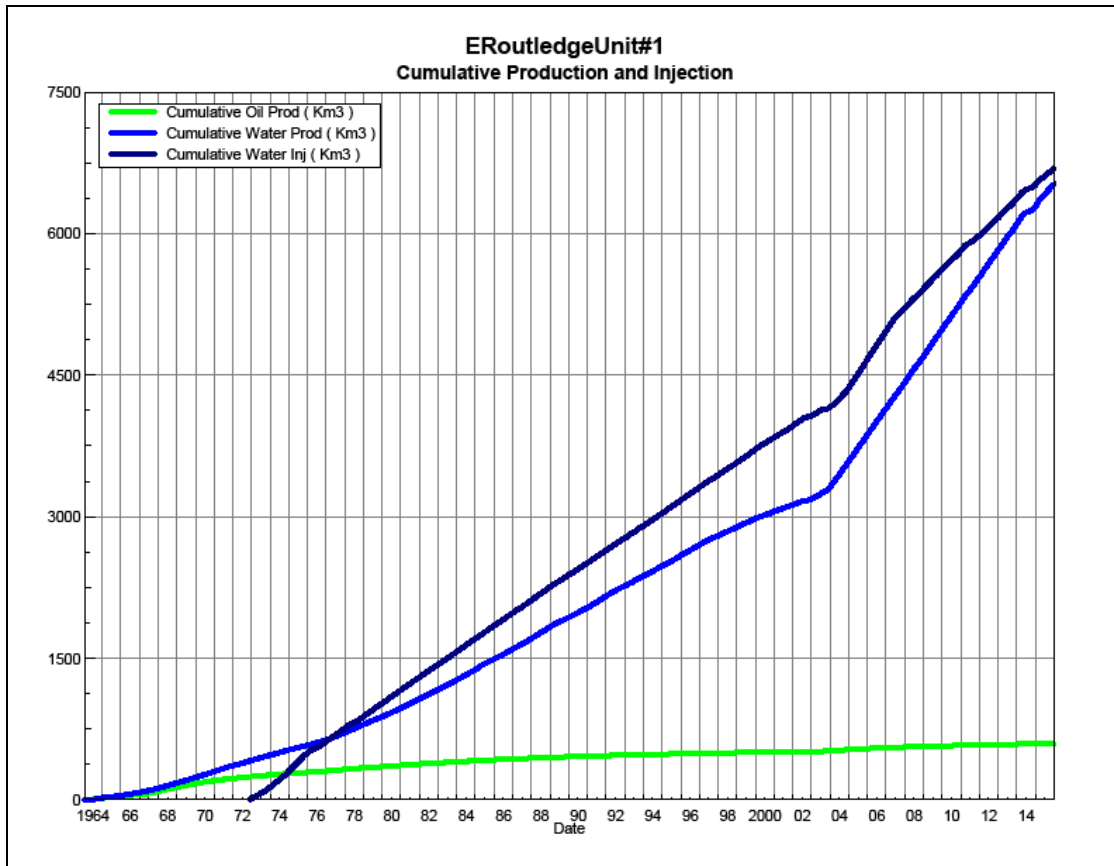


Figure 3 shows the cumulative production for East Routledge Unit No. 1 to the end of December 2015 as 593.6 e³m³ of oil, and 6530.0 e³m³ of water. The cumulative water injected is 6695.0 e³m³.

Figure 3: East Routledge Unit No. 1 Cumulative Oil, Water and Water Injected vs. Time



Waterflood History

As of December 2015, the Unit has 3 active vertical injectors. Water injection started in August 1964. The injector in the northernmost pattern 00/06-14-009-25W1 was abandoned in 2003.

An overall summary for each injector pattern is presented in Appendix C.

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

Currently there is no source water being used at East Routledge Unit No. 1. Produced water is re-injected back into the formation after filtration.

Injection Wellhead Pressures

The average monthly wellhead injection pressures for each injection well are summarized in Appendix B, and show all injection pressures since 2003. Average pressure for the injectors is as follows: 4009 kPag for 00/04-11-009-25W1/00, 1964 kPag for 00/12-11-009-25W1/00 and 3795 kPag for 00/14-11-009-25W1/00.

Reservoir Pressure

No reservoir pressure measurements were taken at East Routledge Unit No. 1 in 2015.

Well Servicing

No maintenance was required on the 15 wells in East Routledge Unit No. 1 in 2015.

Voidage Replacement

Cumulative voidage for East Routledge Unit No. 1 is 0.936 as of December 2015. Tundra hopes to maintain this cumulative VRR, by keeping water injection at its current rate for the foreseeable future. Plots of the Voidage Replacement Ratio on a monthly and cumulative basis for each injection pattern are presented in Appendix D.

Waterflood Performance Discussion

OOIP for East Routledge Unit No. 1 is 1684 e³m³. Current recovery factor within the Unit is approximately 35.2%. Ultimate recovery factor for the East Routledge Unit No. 1 is estimated to approach 40% by decline analysis. The flood has significantly outperformed the predicted estimated ultimate recovery factor of 31.5% predicted in June 1988.

Overall this waterflood has been extremely effective as evident by the significantly high estimated ultimate recovery factor. Two major factors have contributed to the Unit's high recovery. The first is time; this is a mature waterflood that has been in operation and managed relatively well for nearly 40 years. The unit has been producing at watercuts close to 95% for the last 20 years indicating that the flood is in the late stages of its production life, post water breakthrough, etc.

The second major factor that has led to such a high recovery factor has to do with development that occurred in 2002-2003 when horizontal drilling technology was applied to the unit. When horizontal wells were drilled into the unit, unit production increased nearly 10 fold. A portion of the reserves recovered by each horizontal well can be attributed to production acceleration, however, with such a dramatic effect on the units overall production, it is clear that incremental reserves were also encountered when the

horizontal wells were drilled. These incremental reserves have also contributed to the Units overall high recovery factor.

Tundra has no definite plans to significantly alter the way in which the waterflood at East Routledge Unit No. 1 is currently operating; i.e. no drilling plans. The focus at this phase in the pools development is really acceleration of long-life post water breakthrough (high WCT) reserves; in the foreseeable future Tundra will focus on smaller capex items such as pump up-sizes and potentially 1-2 electrical submersible pump installations.

List of Appendices

Appendix A: Well Name and Well Status

Appendix B: Monthly Injection Wellhead Pressures

Appendix C: Injection Pattern Summary

Appendix D: Injector Pattern Production/Injection Rates, Cumulative and VRR Plots
for the following injectors:

00/04-11-009-25W1/00

00/12-11-009-25W1/00

00/06-14-009-25W1/00

Appendix A

UWI	Surface Location	Well Status
100/01-10-009-25W1/00		ABD Producer
100/08-10-009-25W1/00		ABD Producer
100/09-10-009-25W1/00		ABD Producer
102/09-10-009-25W1/00	01-10-009-25W1	Capable of OIL Prod
102/09-10-009-25W1/02	01-10-009-25W1	Capable of OIL Prod
100/02-11-009-25W1/00		ABD WTR Injection
100/03-11-009-25W1/00		ABD Producer
100/04-11-009-25W1/00		WTR Injection
100/05-11-009-25W1/00		ABD Producer
100/06-11-009-25W1/00		ABD Producer
100/07-11-009-25W1/00		ABD Producer
100/08-11-009-25W1/00		ABD Producer
102/08-11-009-25W1/00	03-11-009-25W1	Capable of OIL Prod
103/09-11-009-25W1/02	02-14-009-25W1	Capable of OIL Prod
100/10-11-009-25W1/00		ABD WTR Injection
102/10-11-009-25W1/00	02-14-009-25W1	Capable of OIL Prod
100/11-11-009-25W1/00		ABD Producer
100/12-11-009-25W1/00		WTR Injection
100/13-11-009-25W1/00		ABD Producer
100/14-11-009-25W1/00		WTR Injection
100/15-11-009-25W1/00		ABD Producer
102/15-11-009-25W1/02	03-11-009-25W1	Capable of OIL Prod
100/05-12-009-25W1/00		ABD Producer
102/05-12-009-25W1/00	07-11-009-25W1	Capable of OIL Prod
103/05-12-009-25W1/02	07-11-009-25W1	Capable of OIL Prod
100/05-13-009-25W1/00		ABD Producer
102/05-13-009-25W1/00	10-14-009-25W1	Capable of OIL Prod
100/01-14-009-25W1/00		ABD Producer
100/02-14-009-25W1/00		ABD Producer
102/02-14-009-25W1/00	10-14-009-25W1	Capable of OIL Prod
102/02-14-009-25W1/02	10-14-009-25W1	Capable of OIL Prod
100/03-14-009-25W1/00		ABD Producer
100/06-14-009-25W1/00		ABD WTR Injection
102/06-14-009-25W1/02	10-14-009-25W1	Capable of OIL Prod
100/07-14-009-25W1/00		ABD Producer
100/08-14-009-25W1/00		ABD Producer
100/09-14-009-25W1/00		ABD Producer
100/10-14-009-25W1/00		ABD Producer
100/11-14-009-25W1/00		ABD Producer

Appendix B

Average Monthly Injection Pressure (kPag)

Injection Pressure					Injection Pressure					Injection Pressure					Injection Pressure				
Month	100/04-11	100/12-11	100/14-11	100/06-14	Month	100/04-11	100/12-11	100/14-11	100/06-14	Month	100/04-11	100/12-11	100/14-11	100/06-14	Month	100/04-11	100/12-11	100/14-11	100/06-14
Jun-02	0	-	-	-	Jan-06	3148	2061	5619	-	Jan-10	4119	2200	4400	-	Jan-14	4400	1900	3800	-
Jul-02	0	-	-	-	Feb-06	3357	2636	5404	-	Feb-10	4007	2200	4400	-	Feb-14	4400	1900	3800	-
Aug-02	0	-	-	-	Mar-06	3337	3171	5687	-	Mar-10	4016	2266	4406	-	Mar-14	4450	2000	3750	-
Sep-02	0	-	-	-	Apr-06	3027	2933	5193	-	Apr-10	4057	2430	4437	-	Apr-14	4450	2000	3750	-
Oct-02	0	-	-	-	May-06	3303	2039	5598	-	May-10	4074	2465	4432	-	May-14	4450	2000	3750	-
Nov-02	0	-	-	-	Jun-06	3394	2000	6033	-	Jun-10	4123	2430	4433	-	Jun-14	4450	2000	3750	-
Dec-02	0	0	0	0	Jul-06	3531	2000	6045	-	Jul-10	4042	2223	4342	-	Jul-14	4450	2000	3750	-
Jan-03	778	929	929	0	Aug-06	3332	2000	5929	-	Aug-10	3758	1803	3839	-	Aug-14	4450	2000	3750	-
Feb-03	2420	4816	4881	0	Sep-06	3448	2000	6107	-	Sep-10	3753	1920	4300	-	Sep-14	4450	2000	3750	-
Mar-03	2417	4865	4900	353	Oct-06	3624	2000	6194	-	Oct-10	4184	1923	4865	-	Oct-14	4450	2000	3750	-
Apr-03	2400	4800	4800	8	Nov-06	3600	2000	6000	-	Nov-10	4230	1900	5033	-	Nov-14	4450	2000	3750	-
May-03	2479	5394	5394	-	Dec-06	3600	1971	6058	-	Dec-10	4158	1900	5000	-	Dec-14	4450	2000	3750	-
Jun-03	2550	6000	6000	-	Jan-07	3600	1900	6200	-	Jan-11	4435	1900	5097	-	Jan-15	4248	1919	3952	-
Jul-03	2550	6000	6000	-	Feb-07	3600	1900	6200	-	Feb-11	4518	1900	5071	-	Feb-15	4200	1900	4000	-
Aug-03	606	2155	2221	-	Mar-07	3584	1900	6200	-	Mar-11	4590	1900	5200	-	Mar-15	4200	1900	4000	-
Sep-03	200	0	0	-	Apr-07	3475	1900	6200	-	Apr-11	4213	1900	4360	-	Apr-15	4200	1997	4000	-
Oct-03	794	1290	1290	-	May-07	3431	1958	6084	-	May-11	3616	1900	3800	-	May-15	4200	2000	3826	-
Nov-03	2435	4870	4870	-	Jun-07	4270	2125	5793	-	Jun-11	3200	1900	3800	-	Jun-15	4200	2000	3023	-
Dec-03	2775	5647	5741	-	Jul-07	4685	2310	5368	-	Jul-11	3200	1900	3800	-	Jul-15	4200	2000	3645	-
Jan-04	2898	5858	6000	-	Aug-07	4027	2121	5076	-	Aug-11	4139	1900	3800	-	Aug-15	3981	1977	3890	-
Feb-04	3100	6100	6000	-	Sep-07	3955	2100	5200	-	Sep-11	4800	1900	3800	-	Sep-15	3800	2000	3800	-
Mar-04	2592	5319	5000	-	Oct-07	4202	2100	5626	-	Oct-11	4742	1900	3800	-	Oct-15	3677	1969	3800	-
Apr-04	2918	4513	4100	-	Nov-07	4193	2100	5567	-	Nov-11	4260	1900	3800	-	Nov-15	3600	1950	3800	-
May-04	2910	4594	4206	-	Dec-07	4215	2194	5597	-	Dec-11	4455	1900	3800	-	Dec-15	3600	1950	3800	-
Jun-04	2908	4637	4220	-	Jan-08	4203	2200	5600	-	Jan-12	4768	1900	3800	-					
Jul-04	2906	4571	4131	-	Feb-08	4179	2200	5510	-	Feb-12	4972	1900	3800	-					
Aug-04	3008	4619	4158	-	Mar-08	4203	2200	5413	-	Mar-12	5013	1900	3800	-					
Sep-04	2912	4625	4162	-	Apr-08	4207	2200	5513	-	Apr-12	4760	1900	3800	-					
Oct-04	2953	4604	4165	-	May-08	4052	2200	5426	-	May-12	4135	1900	3761	-					
Nov-04	3080	4955	4423	-	Jun-08	3940	2190	5257	-	Jun-12	3833	1900	3800	-					
Dec-04	2444	4321	4295	-	Jul-08	3400	2155	4423	-	Jul-12	3752	1900	3658	-					
Jan-05	2831	5139	5139	-	Aug-08	3865	2200	5116	-	Aug-12	4006	1900	3781	-					
Feb-05	3018	5616	5616	-	Sep-08	3857	2137	4850	-	Sep-12	4387	1900	3800	-					
Mar-05	3002	5650	5631	-	Oct-08	3965	2161	4416	-	Oct-12	4400	1900	3800	-					
Apr-05	3122	5470	5687	-	Nov-08	4523	2200	5223	-	Nov-12	4400	1900	3800	-					
May-05	2874	2900	5319	-	Dec-08	4658	2200	5200	-	Dec-12	4400	1900	3800	-					
Jun-05	3345	1350	6145	-	Jan-09	4210	2200	5035	-	Jan-13	4400	1900	3800	-					
Jul-05	3416	1350	6110	-	Feb-09	4014	2200	4882	-	Feb-13	4400	1900	3800	-					
Aug-05	3488	1350	6073	-	Mar-09	4274	2200	5303	-	Mar-13	4400	1900	3800	-					
Sep-05	3406	962	5923	-	Apr-09	4253	2200	5400	-	Apr-13	4400	1900	3800	-					
Oct-05	3010	1535	5676	-	May-09	3723	2168	4790	-	May-13	4400	1900	3800	-					
Nov-05	3163	1740	5468	-	Jun-09	3753	2287	4393	-	Jun-13	4400	1900	3800	-					
Dec-05	3150	1832	5626	-	Jul-09	3845	2284	4445	-	Jul-13	4400	1900	3800	-					
					Aug-09	3974	2200	4348	-	Aug-13	4400	1900	3800	-					
					Sep-09	4000	2200	4593	-	Sep-13	4400	1900	3800	-					
					Oct-09	4010	2200	4400	-	Oct-13	4400	1900	3800	-					
					Nov-09	4110	2200	4353	-	Nov-13	4400	1900	3800	-					
					Dec-09	4097	2200	4394	-	Dec-13	4400	1900	3800	-					

Appendix C

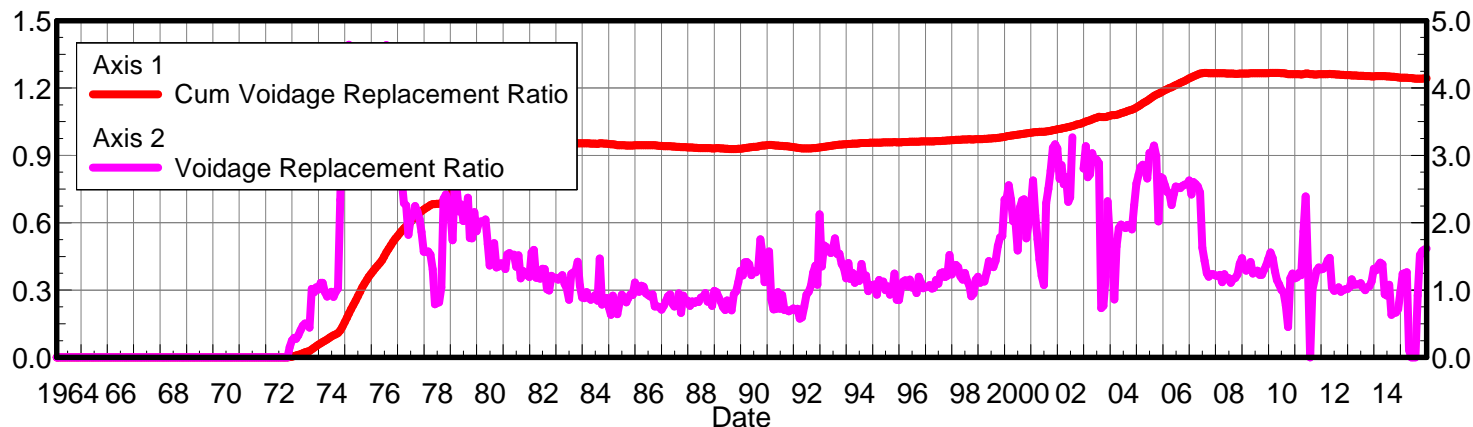
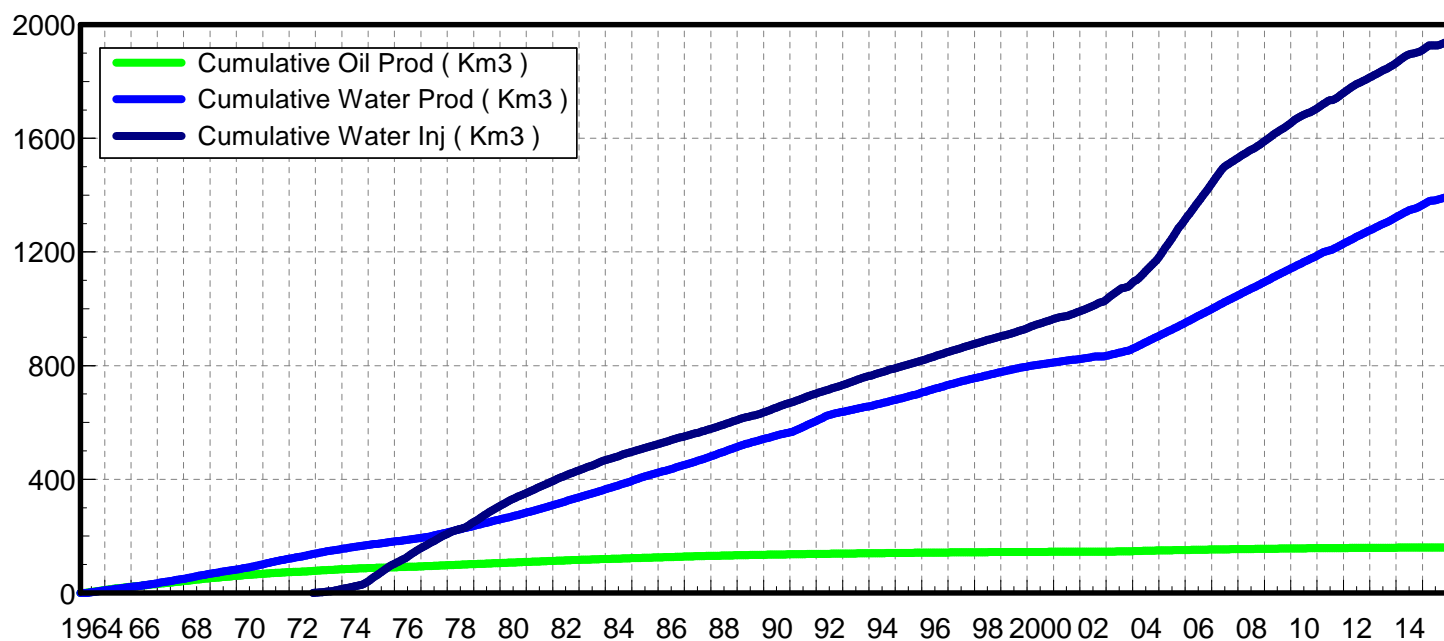
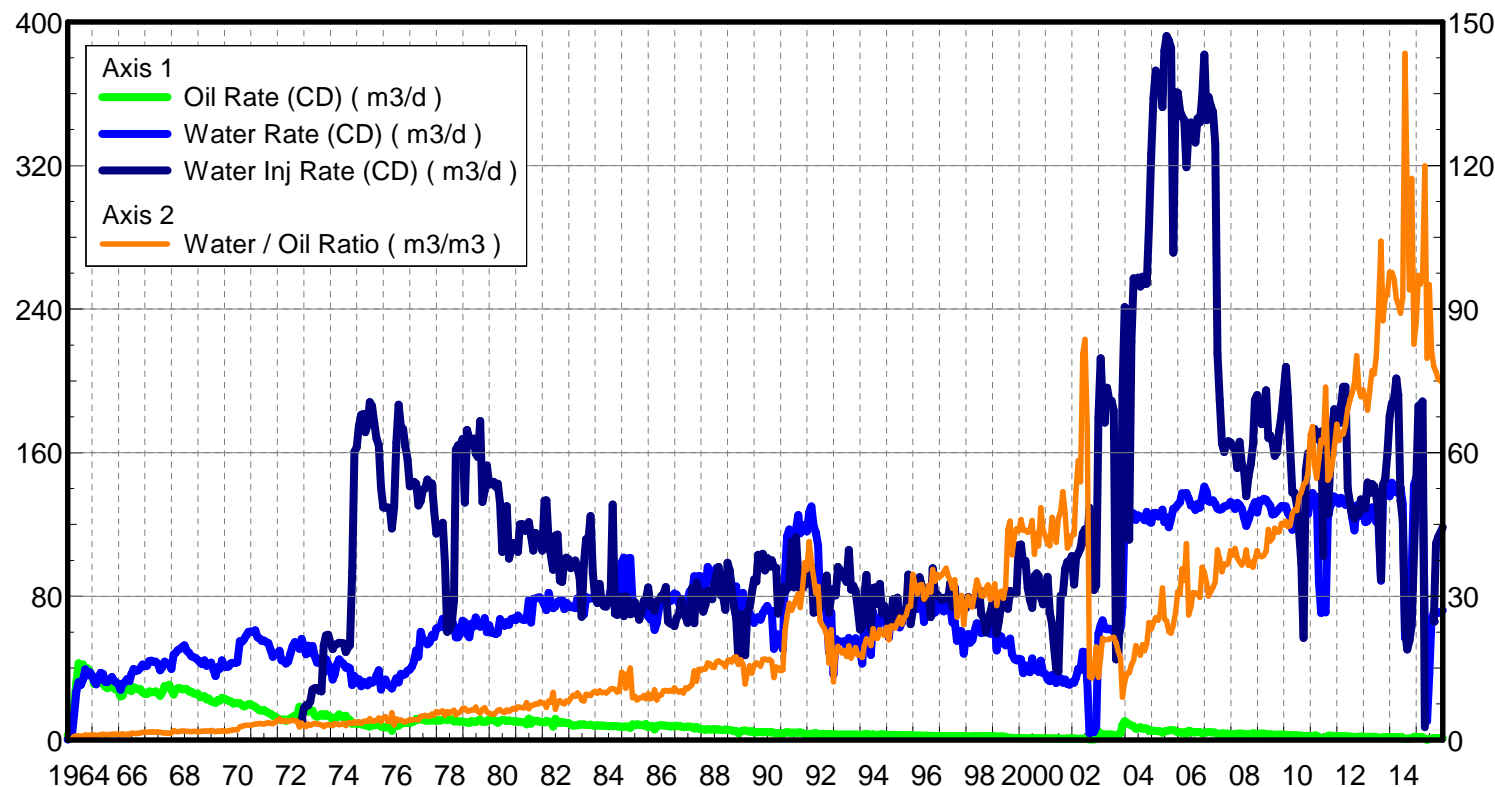
East Routledge Unit No. 1 Injector Pattern Summary as of December 2015

Pattern Name	Injector Location (009-25W)	Injector Surf. Location (009-25W1)	Status	No. of Supported Wells	Supported Wells (009-25W1)	Allocation Factor	Pattern Prod Start Month	Inj Start Month	Inj End Month	Oil Rate (m³/d)	Water Rate (m³/d)	WOR (m³/m²)	Water Injection (m³/d)	Cum Oil (E³m)	Cum Water (E³m)	Cum Inj Water (E³m)	Monthly VRR	Cum VRR
00/04-11-009-25W1 Injector	00/04-11	Vertical Well	WTR Injection	14	01-10, 02/09-10/2 (Surf. 01-10), 02-11, 03-11	1	Jan 1964	Nov 1972		0.97	72.16	74.46	118.42	160.11	1394.95	1943.32	1.6	1.24
					08-10, 05-11, 06-11, 07-11, 08-11, 05-12	0.5												
					02/09-10 (Surf. 01-10), 02/08-11 (Surf. 03-11)	0.4												
					02/05-12 (Surf. 07-11), 03/05-12 (Surf. 07-11)	0.1												
00/12-11-009-25W1 Injector	00/12-11 00/14-11	Vertical Well	WTR Injection	24	09-10, 10-11, 02/10-11 (Surf. 02-14), 11-11, 13-11, 15-11, 02/15-11 (Surf. 03-11), 03/09-11/2 (Surf. 02-14)	1	Jan 1964	Nov 1972		3.1	359.9	114.94	384.1	228.5	3178.9	3490.5	1.1	1.02
					02/05-12 (Surf. 07-11), 03/05-12 (Surf. 07-11)	0.9												
					02/09-10 (Surf. 01-10), 02/08-11 (Surf. 03-11)	0.6												
					08-10, 05-11, 06-11, 07-11, 08-11, 05-12, 01-14, 02-14, 03-14	0.5												
					02/02-14 (Surf. 10-14)	0.2												
					02/05-13 (Surf. 10-14), 02/02-14/2 (Surf. 10-14)	0.1												
00/06-14-009-25W1 Injector	00/06-14	Vertical Well	ABD WTR Injection	13	05-13, 02/06-14 (Surf. 10-14), 07-14, 08-14, 09-14, 10-14, 11-14	1	Apr 1967	Nov 1972	Apr 2003	2.1	200.4	94.27	0.0	205.0	1956.1	1261.1	0.0	0.58
					02/05-13 (Surf. 10-14), 02/02-14/2 (Surf. 10-14)	0.9												
					02/02-14 (Surf. 10-14)	0.8												
					01-14, 02-14, 03-14	0.5												

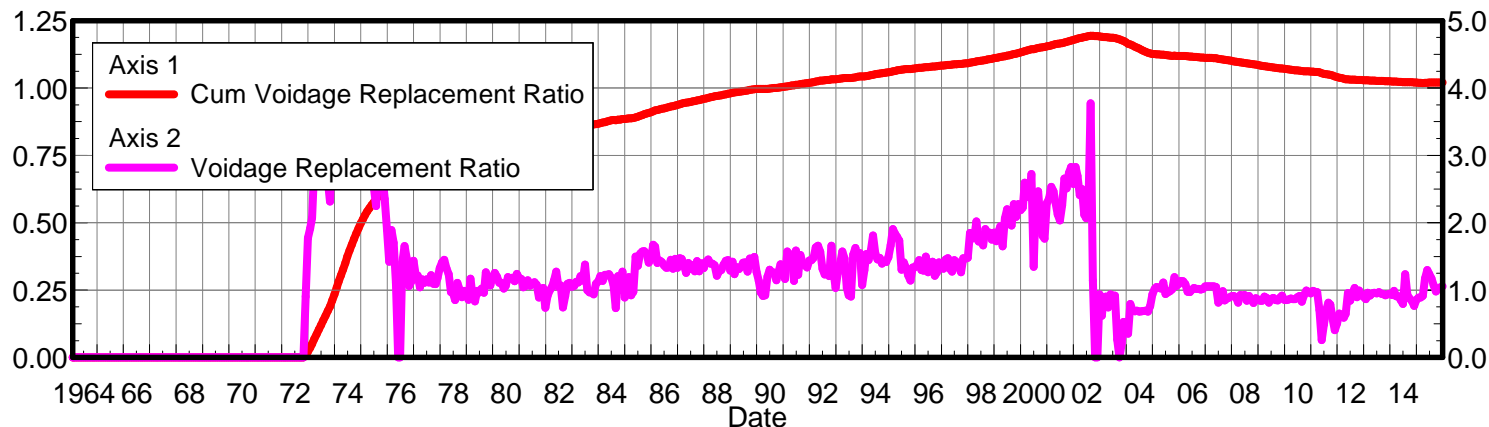
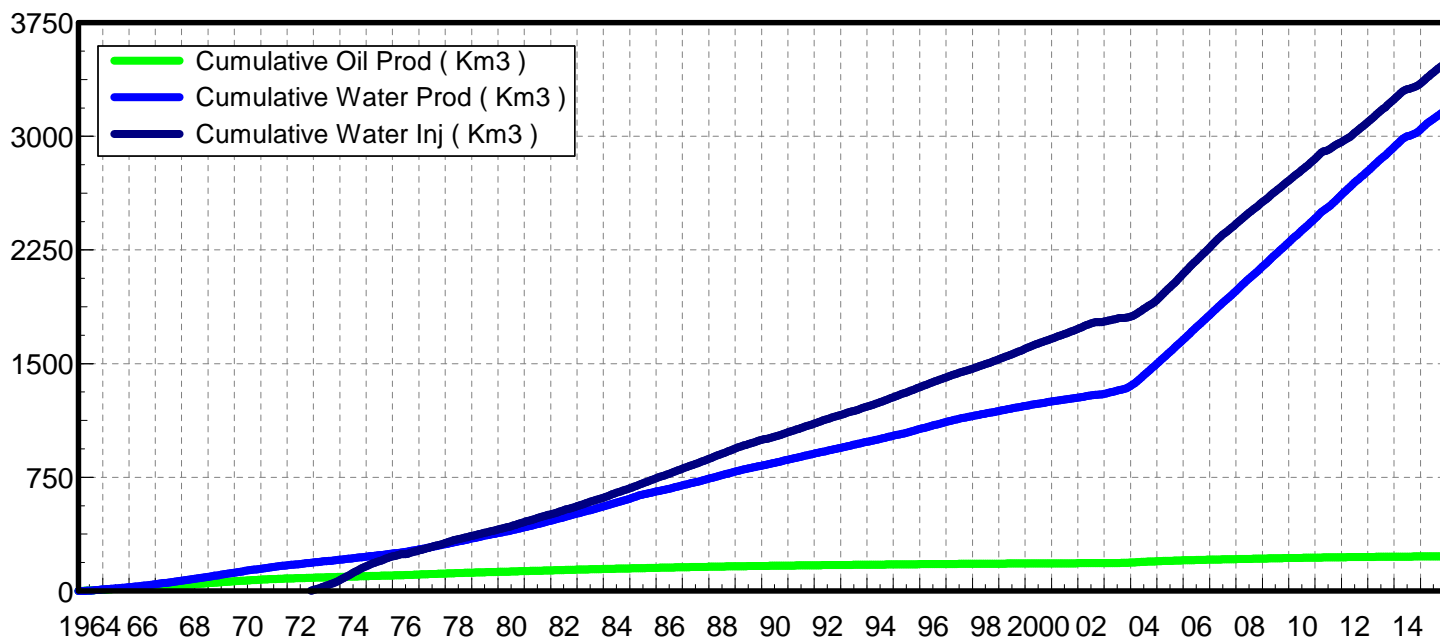
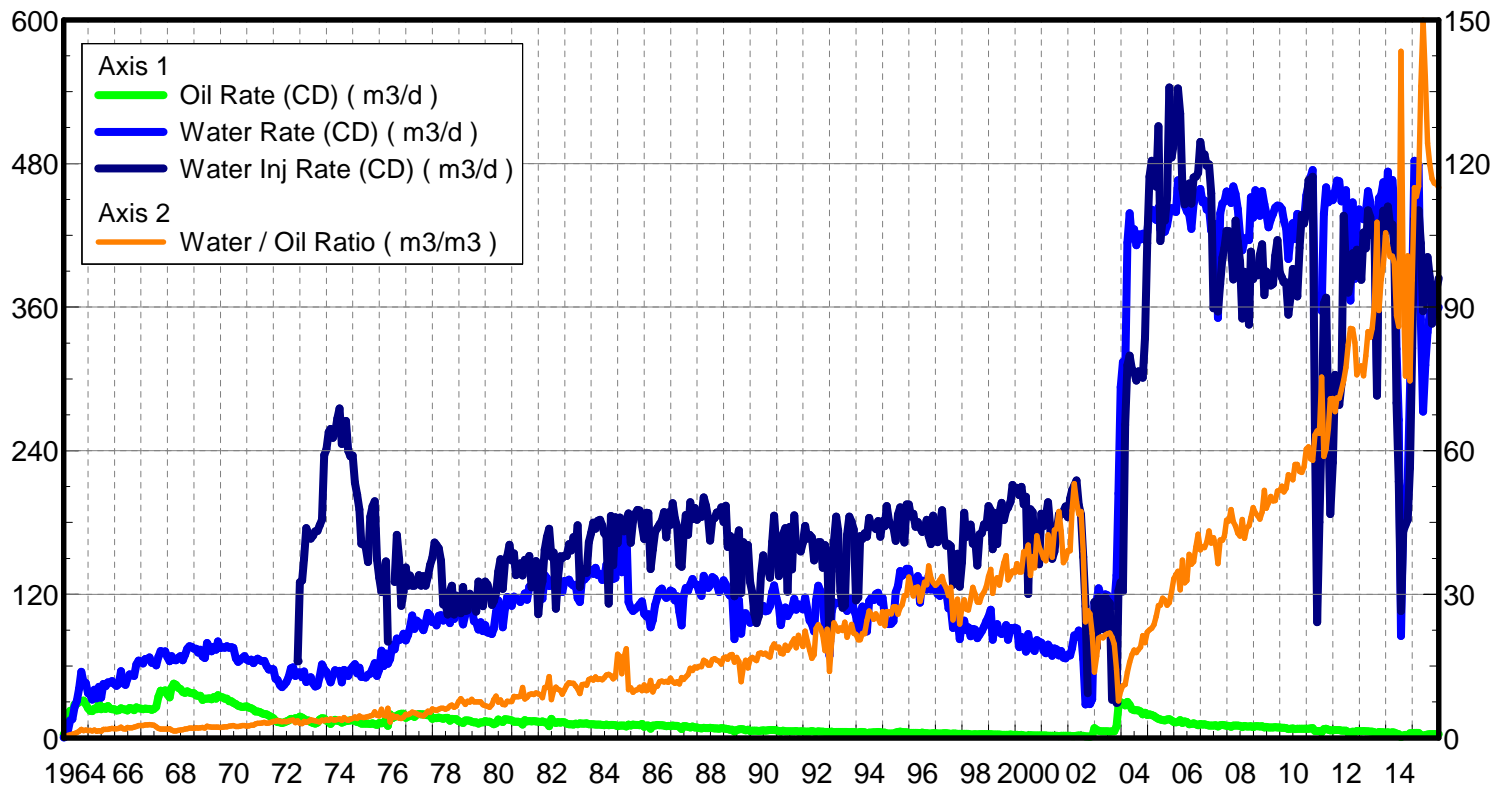
Appendix D

Rates and VRR Plots

Oil Formation Vol Factor : 0.0000 m3/m3
 Water Formation Vol Factor : 1.00000 m3/m3
 Water / Oil Ratio : 74.46 m3/m3
 Pattern: 00/04-11-009-25Inj Set: ERoutledgeUnit#1
 March 11, 2016
 Operator: Tundra_O&G_Prtshp
 Oil Rate (CD) : 0.97 m3/d
 Water Rate (CD) : 72.16 m3/d
 Water Inj Rate (CD) : 118.42 m3/d



Pattern: 00/12-11-009-25Inj Set: ERoutledgeUnit#1
 Oil Formation Vol Factor: 1.00000 m3/m3
 Water Formation Vol Factor: 1.00000 m3/m3
 Water / Oil Ratio : 114.94 m3/m3
 March 11, 2016
 Operator: Tundra_O&G_Prtshp
 Oil Rate (CD) : 3.13 m3/d
 Water Rate (CD) : 359.89 m3/d
 Water Inj Rate (CD) : 384.10 m3/d



Oil Formation Vol Factor : 1.00000 m3/m3
 Water Formation Vol Factor : 1.00000 m3/m3
 Water / Oil Ratio : 94.27 m3/m3
 Pattern: 00/06-14-009-25Inj Set: ERoutledgeUnit#1
 March 11, 2016
 Operator: Tundra_O&G_Prtshp
 Oil Rate (CD) : 2.13 m3/d
 Water Rate (CD) : 200.41 m3/d
 Water Inj Rate (CD) : 5.05 m3/d

