

BIRDTAIL UNIT NO. 1
WATERFLOOD EOR PROJECT
ANNUAL REPORT FOR 2013

April 5, 2014
Tundra Oil and Gas Partnership

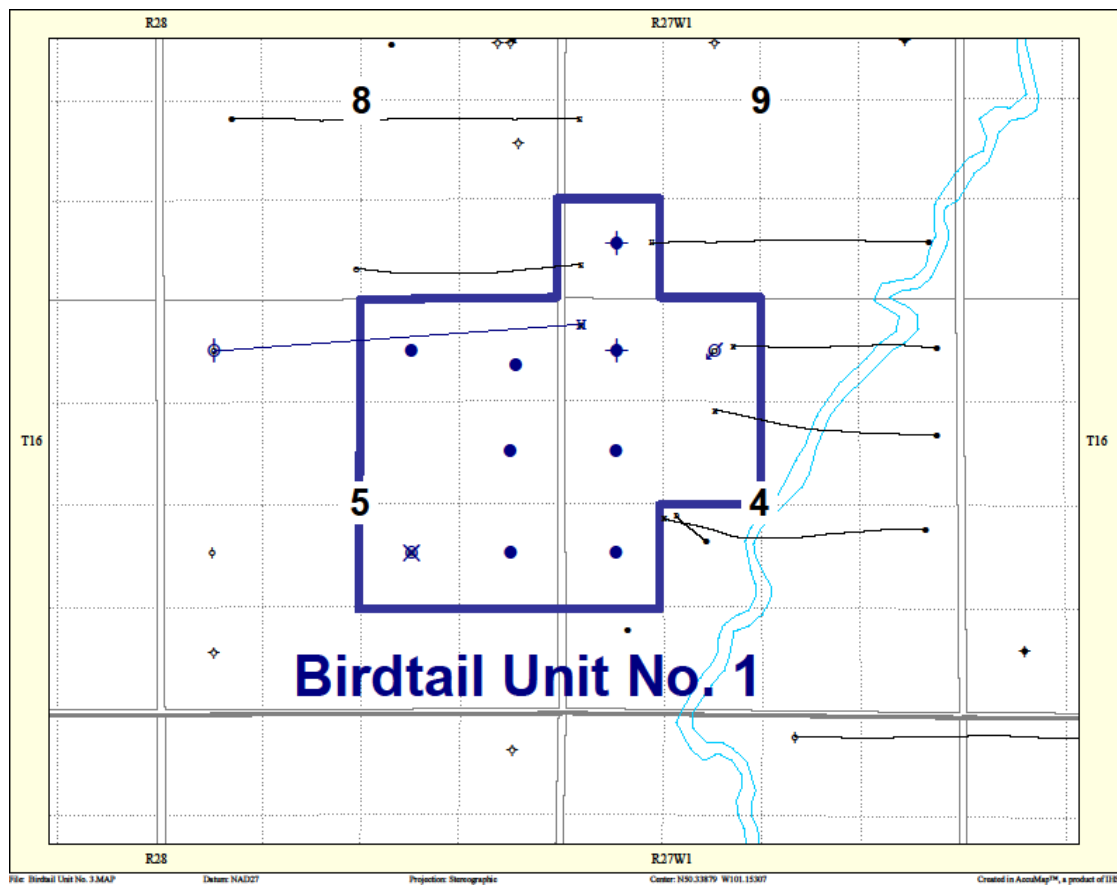
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INTRODUCTION

Birdtail Unit No. 1 Enhanced Oil Recovery (EOR) Waterflood Project was approved under Waterflood Order No. 7 effective August 1, 1999 with Progress Energy Production Partnership as Operator. Tundra acquired the unit from Progress Energy Production Partnership and become operator in October 2003. The EOR project area contains 11 wells in 12 LSDs in Township 16, Range 27 W1 as shown in the figure below. Well list and well status is available in Appendix A.

Figure 1: Birdtail Unit No. 1 Area Outline



In accordance with Section 73 of the Manitoba Drilling and Production Regulation, Tundra hereby submits the 2013 Annual Progress Report for Birdtail Unit No. 1 as required by Waterflood Order No. 7.

DISCUSSION

Production History

For the wells included in Birdtail Unit No. 1, production started September 1996 with the 00/16-05-016-27W1/0 well. Oil production peaked at 17.9 m³/d in October 1997. The Unit was producing 2.0 m³/d of oil and 17.2 m³/d of water in December 2013 and had an

average WOR of 11.41 m³/m³ in 2013. The oil production rate, injection rate, and WOR during each month for each injection pattern and for whole project are presented in Appendix D. The rates and WOR are plotted in Figure 2.

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

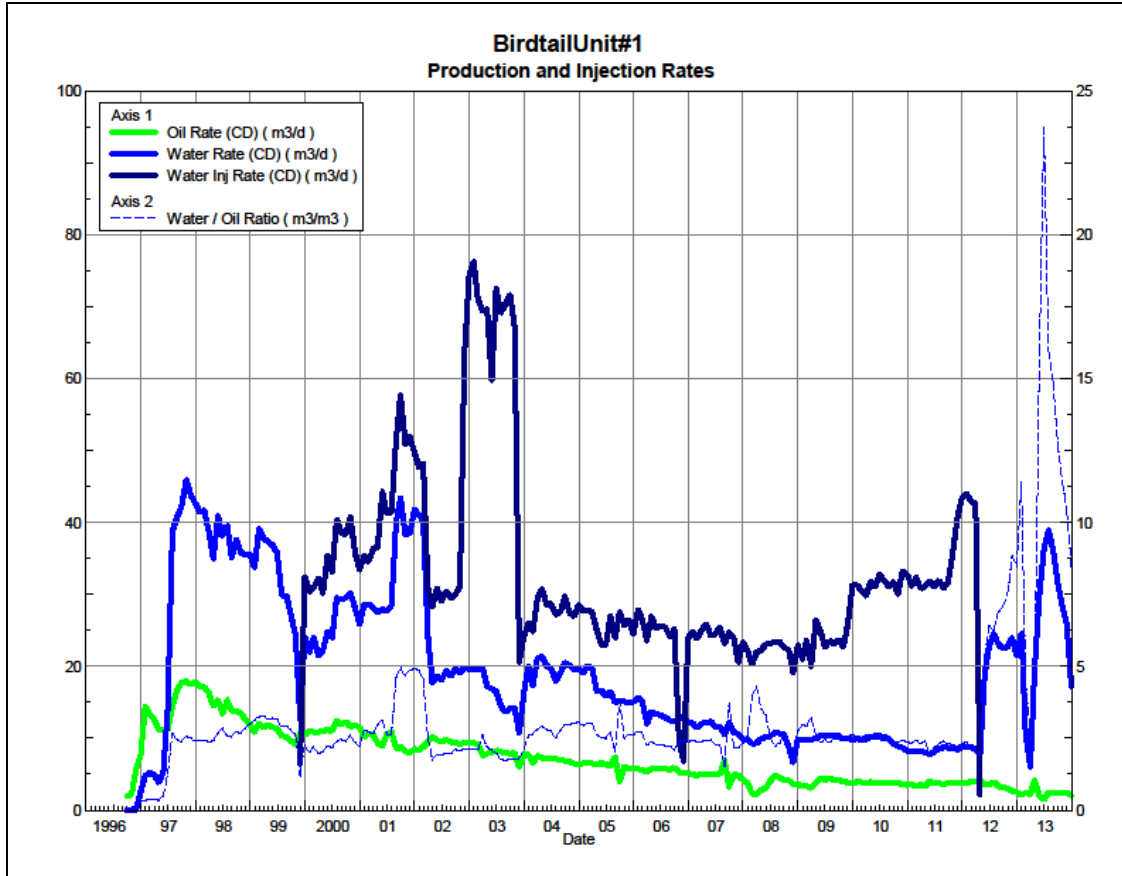
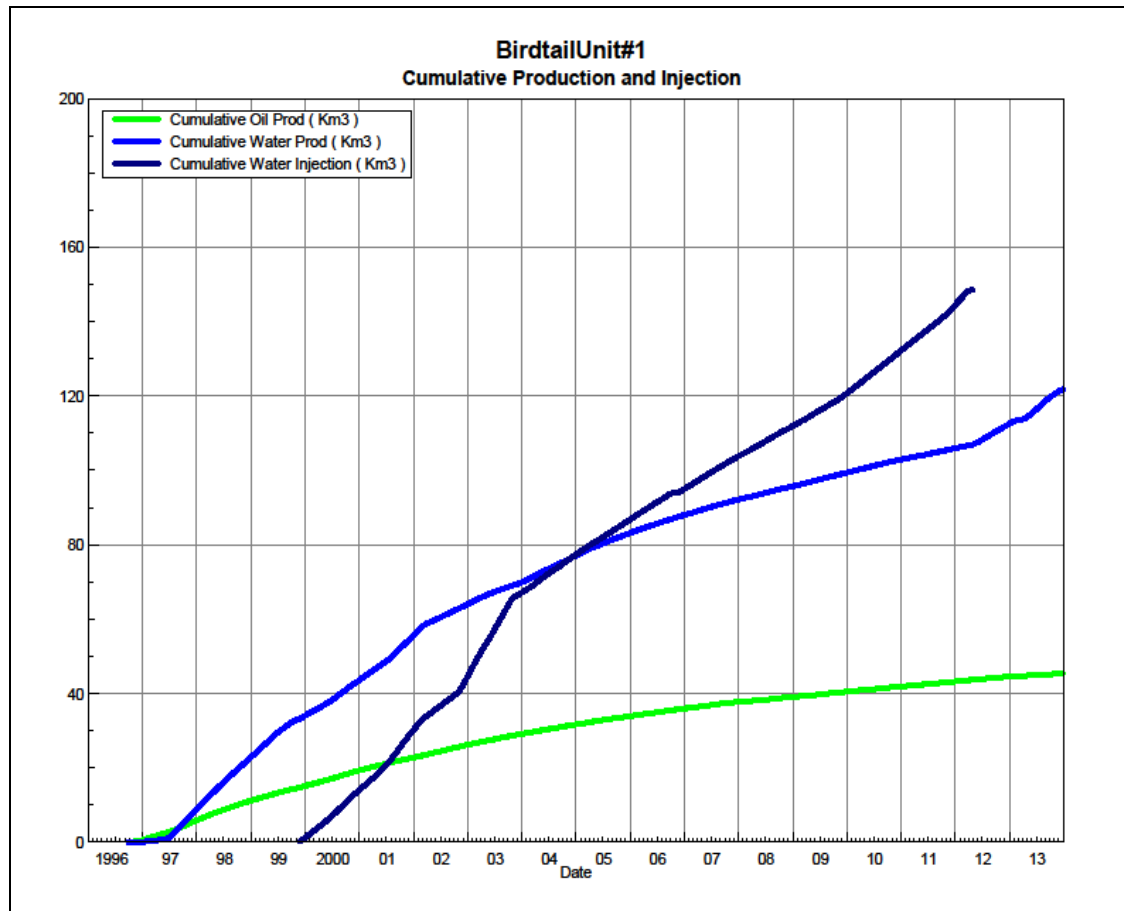


Figure 3 shows the cumulative production for Birdtail Unit No. 1 to the end of December 2013 as 45.4 E³m³ of oil, and 121.8 E³m³ of water. The cumulative water injected is 148.5 E³m³. The cumulative volume of oil, and water produced and fluid injected for each injection pattern and for the whole project for each injection well is presented in Appendix D.

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



Waterflood History

Water injection started in November 1999 in the two injectors at 00/14-04-016-27W1 and 00/07-05-016-27W1. The 00/07-05-016-27W1 injector has been abandoned since July 2003. In April 2012, injection into the 00/14-04-016-27W1 well was suspended.

Tundra is in the process of redeveloping this unit. Tundra no longer wants to use produced water for injection in this Unit, so they currently have in place a new source of water at 00/02-32-016-27W1. As part of the redevelopment of this unit, Tundra drilled a new producer at 00/13-05-016-27W1/0 in the north part of the unit in 2013 along with the construction of a new injection line coming from the Birdtail battery (09-05-016-27W1). This line will supply filtered source water to the unit. In 2014, a couple of vertical wells will be converted into injectors to improve the sweep efficiency of the waterflood.

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 Operations

Water Source and Quality

There is currently no injection in Birdtail Unit No. 1.

Injection Wellhead Pressures

The monthly wellhead injection pressure for the injection well is summarized in Appendix B, and shows injection pressures since 2003. Injection pressure for 00/14-04-16-27W1/0 has been consistent since 2003, averaging 6700 kPag. Injection was suspended in Birdtail Unit No. 1 in April 2012, so no wellhead injection pressures are available for 2013.

Reservoir Pressure

No reservoir pressure measurements were taken in Birdtail Unit No. 1 in 2013.

Well Servicing

No maintenance was required on the 11 wells in Birdtail Unit No. 1 in 2013.

Voidage Replacement

Cumulative voidage for Birdtail Unit No. 1 was 0.887 in December 2013. Since April 2002, the monthly voidage has remained greater than 1. Calculation, plots and tables of the Voidage Replacement Ratio on a monthly and cumulative basis for each injection pattern and for the project area are presented in Appendix D.

Waterflood Performance Discussion

The original oil-in-place (OOIP) is estimated based on 3.5 m pay, 15% porosity, 45% water saturation, formation volume factor of 1.003, and a 192 ha area. The resulting OOIP is 572.4 E³m³. The cumulative oil recovered to date is 45.4 E³m³ or a recovery factor of 7.9%. The ultimate expected recoverable reserve based on decline analysis is 52.5 E³m³ or an ultimate recovery factor of 9.2%.

The overall performance of this waterflood has been poor as indicated by the low recovery factor, and obvious lack of waterflood response in producers. This is likely due to the poorer than average reservoir quality of the injector wells, the location of the injectors, and the resulting poor areal sweep efficiency.

Trends in production in 2013 continue to show very low decline production. Despite the slightly flattened oil decline trends, no significant change in production trends for produced water or oil is expected until waterflood optimization operations are undertaken, possibly at the same time as facility enhancements to increase total fluid throughput.

List of Appendices

Appendix A: Well Name and Well Status

Appendix B: Monthly Injection Wellhead Pressures Table and Plots

Appendix C: Birdtail Unit No. 1 Injection Pattern Summary

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

00/14-04-016-27W1/0

Appendix A

UWI	Well Status
100/05-04-016-27W1/00	Capable of OIL Prod
100/12-04-016-27W1/00	Capable of OIL Prod
100/13-04-016-27W1/00	ABD Producer
100/14-04-016-27W1/00	WTR Injection
100/07-05-016-27W1/00	ABD WTR Injection
100/08-05-016-27W1/00	Capable of OIL Prod
100/09-05-016-27W1/00	Capable of OIL Prod
100/13-05-016-27W1/00	Completing
100/15-05-016-27W1/00	Capable of OIL Prod
100/16-05-016-27W1/00	Capable of OIL Prod
100/04-09-016-27W1/00	ABD Producer

Appendix B

Average Monthly Injection Pressure (kPag)

Injection Pressure		Injection Pressure		Injection Pressure		Injection Pressure	
Month	100/14-04	Month	100/14-04	Month	100/14-04	Month	100/14-04
		Jan-06	6729	Jan-09	6984	Jan-12	6548
		Feb-06	6814	Feb-09	6768	Feb-12	6448
		Mar-06	6777	Mar-09	6695	Mar-12	6458
		Apr-06	6933	Apr-09	6980	Apr-12	6053
		May-06	7090	May-09	7026		
		Jun-06	6793	Jun-09	7320		
		Jul-06	6839	Jul-09	7068		
		Aug-06	6771	Aug-09	6892		
		Sep-06	6362	Sep-09	7147		
Oct-03	7220	Oct-06	5352	Oct-09	6871		
Nov-03	6587	Nov-06	4522	Nov-09	7000		
Dec-03	6445	Dec-06	6387	Dec-09	7065		
Jan-04	6413	Jan-07	8106	Jan-10	7187		
Feb-04	6224	Feb-07	6468	Feb-10	7014		
Mar-04	6694	Mar-07	6594	Mar-10	7148		
Apr-04	6400	Apr-07	6693	Apr-10	7207		
May-04	6442	May-07	8645	May-10	6684		
Jun-04	6373	Jun-07	6593	Jun-10	6580		
Jul-04	6419	Jul-07	6681	Jul-10	6697		
Aug-04	6813	Aug-07	7019	Aug-10	6626		
Sep-04	6930	Sep-07	6753	Sep-10	6583		
Oct-04	6839	Oct-07	6797	Oct-10	6542		
Nov-04	6730	Nov-07	6937	Nov-10	6480		
Dec-04	6839	Dec-07	6616	Dec-10	6458		
Jan-05	6816	Jan-08	6710	Jan-11	6371		
Feb-05	6775	Feb-08	6741	Feb-11	6446		
Mar-05	6939	Mar-08	6713	Mar-11	6365		
Apr-05	6940	Apr-08	6850	Apr-11	6334		
May-05	6948	May-08	7006	May-11	6394		
Jun-05	6707	Jun-08	6987	Jun-11	6400		
Jul-05	6732	Jul-08	7113	Jul-11	6395		
Aug-05	6771	Aug-08	7068	Aug-11	6355		
Sep-05	6870	Sep-08	6970	Sep-11	6363		
Oct-05	7206	Oct-08	6748	Oct-11	6374		
Nov-05	7157	Nov-08	6807	Nov-11	6577		
Dec-05	6771	Dec-08	6958	Dec-11	6600		

Appendix C

Birdtail Unit 1 Pattern Summary as of December 2013

Pattern Name	Injector Location (016-27W1)	Status	No. of Supported Wells	Supported Wells (016-27W1)	Allocation Factor	Pattern Prod Start Month	Inj Start Month	Oil Rate (m³/d)	Water Rate (m³/d)	WOR (m³/m³)	Water Injection (m³/d)	Cum Oil (E³m³)	Cum Water (E³m³)	Cum Inj Water (E³m³)	Monthly VRR	Cum VRR
00/14-04-016-27W1 Injector	00/14-04	WTR Injection	10	04-09, 05-04, 07-05, 08-05, 09-05, 12-04, 13-04, 15-05, 16-05	1	Oct 1996	Nov 1999	2.0	17.2	8.43	0.0	45.4	121.8	148.5	0.0	0.89
				13-05	0.5											

Appendix D
Rates and VRR
Plots and Tables

Pattern: 14-04-016-27 Set: BirdtailUnit#1

Oil Formation Vol Factor : 1.00300 m3/m3

Water Formation Vol Factor : 1.00000 m3/m3

Water / Oil Ratio : 8.43 m3/m3

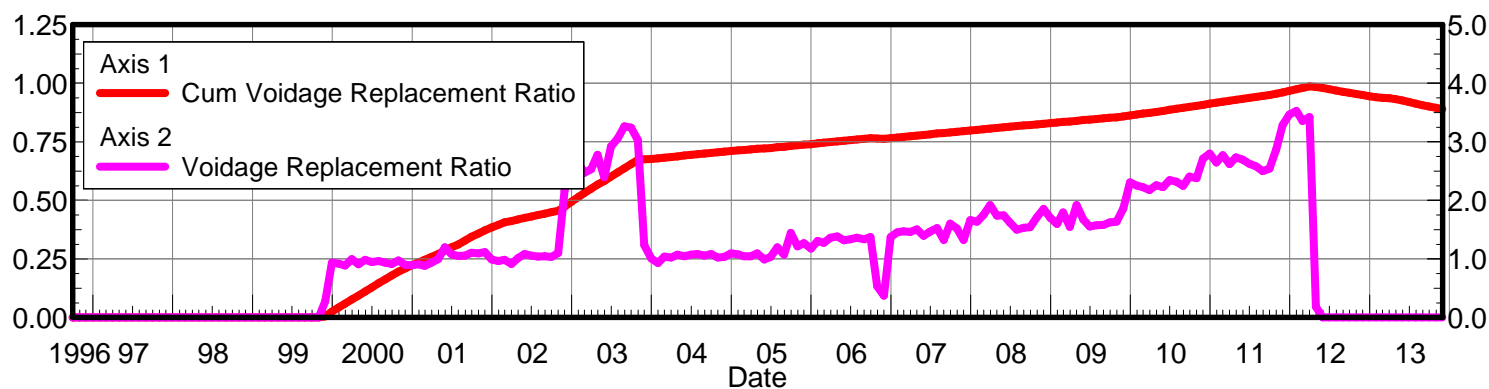
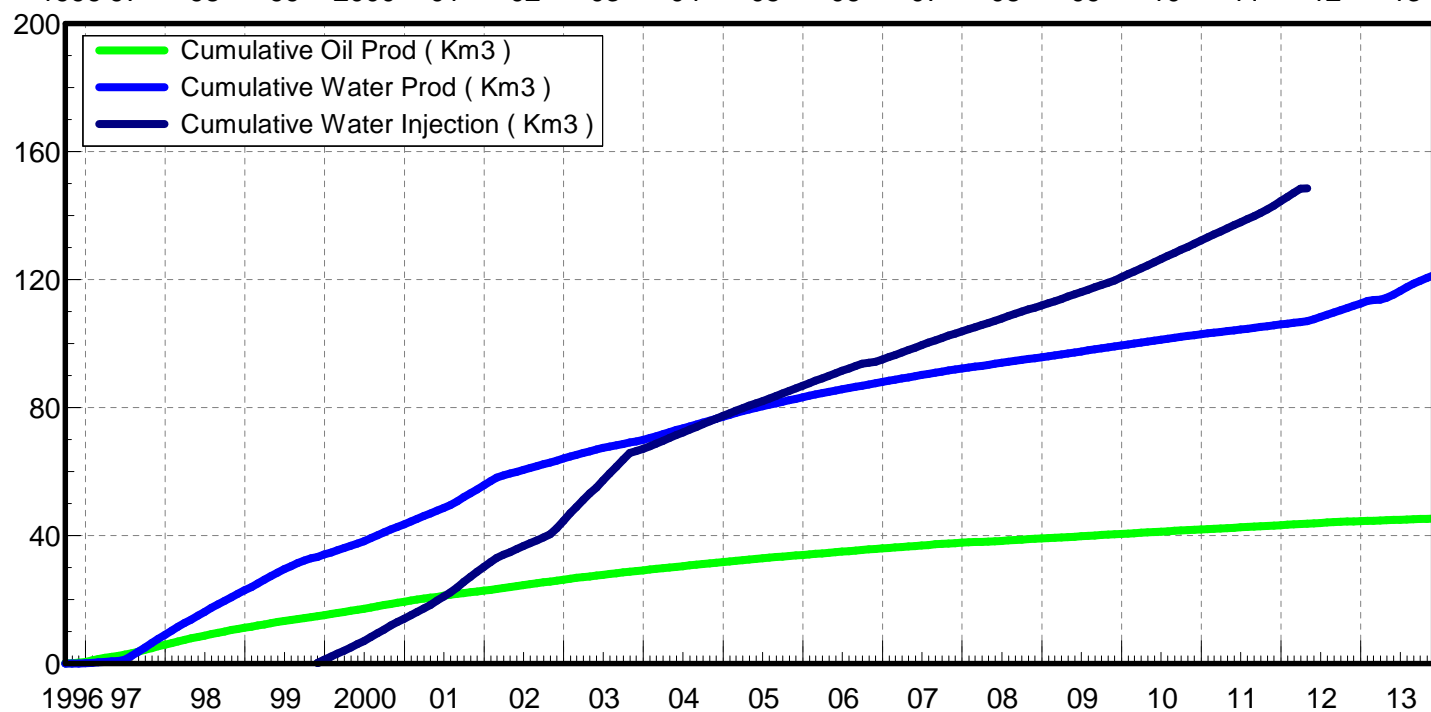
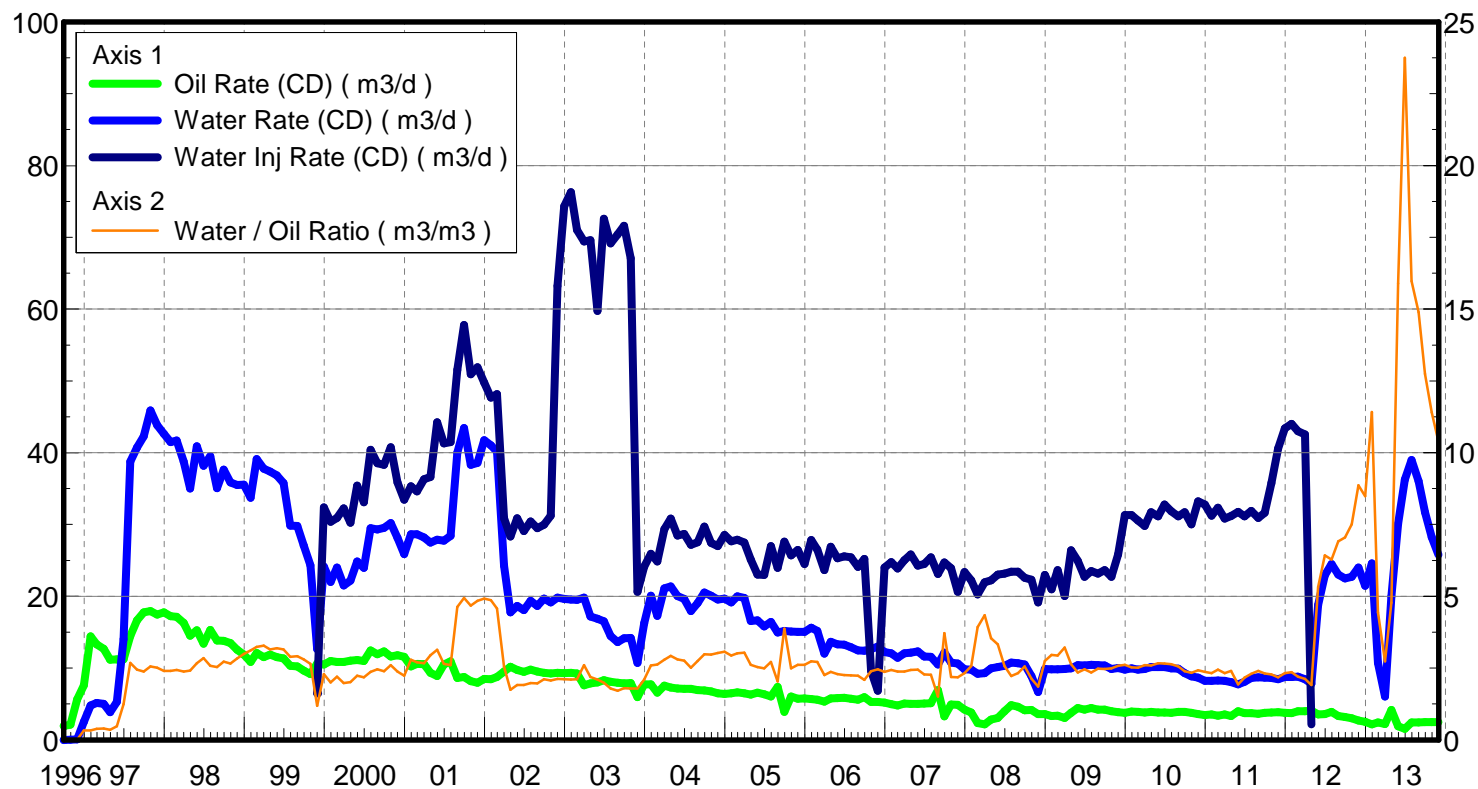
February 25, 2014

Operator: Tundra_O&G_Prtshp

Oil Rate (CD) : 2.04 m3/d

Water Rate (CD) : 17.15 m3/d

Water Inj Rate (CD) : 2.15 m3/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	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio
9/30/1996	1.93	0.00	0.00		0.06	0.00	0.00	0.000	0.000
10/31/1996	2.13	0.02	0.01		0.12	0.00	0.00	0.000	0.000
11/30/1996	5.62	0.05	0.01		0.29	0.00	0.00	0.000	0.000
12/31/1996	7.62	2.52	0.33		0.53	0.08	0.00	0.000	0.000
1/31/1997	14.41	4.81	0.33		0.98	0.23	0.00	0.000	0.000
2/28/1997	13.33	5.15	0.39		1.35	0.37	0.00	0.000	0.000
3/31/1997	12.68	5.02	0.40		1.74	0.53	0.00	0.000	0.000
4/30/1997	11.16	3.87	0.35		2.08	0.65	0.00	0.000	0.000
5/31/1997	11.23	5.27	0.47		2.42	0.81	0.00	0.000	0.000
6/30/1997	11.22	14.00	1.25		2.76	1.23	0.00	0.000	0.000
7/31/1997	14.45	38.78	2.68		3.21	2.43	0.00	0.000	0.000
8/31/1997	16.66	40.72	2.44		3.73	3.69	0.00	0.000	0.000
9/30/1997	17.78	42.27	2.38		4.26	4.96	0.00	0.000	0.000
10/31/1997	17.94	45.89	2.56		4.81	6.38	0.00	0.000	0.000
11/30/1997	17.47	43.83	2.51		5.34	7.70	0.00	0.000	0.000
12/31/1997	17.75	42.61	2.40		5.89	9.02	0.00	0.000	0.000
1/31/1998	17.23	41.47	2.41		6.42	10.31	0.00	0.000	0.000
2/28/1998	17.13	41.68	2.43		6.90	11.47	0.00	0.000	0.000
3/31/1998	16.31	38.74	2.38		7.41	12.67	0.00	0.000	0.000
4/30/1998	14.49	35.03	2.42		7.84	13.72	0.00	0.000	0.000
5/31/1998	15.29	40.89	2.67		8.32	14.99	0.00	0.000	0.000
6/30/1998	13.40	38.19	2.85		8.72	16.14	0.00	0.000	0.000
7/31/1998	15.30	39.53	2.58		9.19	17.36	0.00	0.000	0.000
8/31/1998	13.82	35.05	2.54		9.62	18.45	0.00	0.000	0.000
9/30/1998	13.79	37.63	2.73		10.04	19.58	0.00	0.000	0.000
10/31/1998	13.48	35.84	2.66		10.45	20.69	0.00	0.000	0.000
11/30/1998	12.54	35.52	2.83		10.83	21.76	0.00	0.000	0.000
12/31/1998	11.87	35.54	2.99		11.20	22.86	0.00	0.000	0.000
1/31/1999	10.84	33.72	3.11		11.53	23.90	0.00	0.000	0.000
2/28/1999	12.09	39.11	3.24		11.87	25.00	0.00	0.000	0.000
3/31/1999	11.50	37.76	3.28		12.23	26.17	0.00	0.000	0.000
4/30/1999	11.87	37.39	3.15		12.59	27.29	0.00	0.000	0.000
5/31/1999	11.53	36.82	3.19		12.94	28.43	0.00	0.000	0.000
6/30/1999	11.34	35.76	3.15		13.28	29.50	0.00	0.000	0.000
7/31/1999	10.32	29.85	2.89		13.60	30.43	0.00	0.000	0.000
8/31/1999	10.22	29.81	2.92		13.92	31.35	0.00	0.000	0.000
9/30/1999	9.64	27.08	2.81		14.21	32.17	0.00	0.000	0.000
10/31/1999	9.16	24.30	2.65		14.49	32.92	0.00	0.000	0.000
11/30/1999	10.65	12.62	1.18	6.47	14.81	33.30	0.19	0.278	0.004
12/31/1999	10.52	24.12	2.29	32.40	15.14	34.04	1.20	0.935	0.024
1/31/2000	11.00	21.99	2.00	30.39	15.48	34.73	2.14	0.920	0.043
2/29/2000	10.88	24.00	2.21	30.92	15.79	35.42	3.04	0.886	0.059
3/31/2000	10.85	21.49	1.98	32.23	16.13	36.09	4.04	0.996	0.077
4/30/2000	11.04	22.18	2.01	30.23	16.46	36.75	4.94	0.909	0.093
5/31/2000	11.14	24.86	2.23	35.41	16.81	37.52	6.04	0.983	0.111
6/30/2000	11.00	23.97	2.18	33.10	17.14	38.24	7.03	0.946	0.127
7/31/2000	12.45	29.48	2.37	40.41	17.52	39.16	8.29	0.963	0.146
8/31/2000	11.93	29.32	2.46	38.55	17.89	40.07	9.48	0.934	0.163

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	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio
9/30/2000	12.32	29.52	2.40	38.31	18.26	40.95	10.63	0.915	0.179
10/31/2000	11.62	30.21	2.60	40.76	18.62	41.89	11.89	0.974	0.196
11/30/2000	11.80	28.13	2.38	35.84	18.98	42.73	12.97	0.897	0.210
12/31/2000	11.57	25.87	2.24	33.44	19.34	43.53	14.01	0.892	0.223
1/31/2001	10.24	28.65	2.80	35.34	19.65	44.42	15.10	0.908	0.235
2/28/2001	10.58	28.64	2.71	34.59	19.95	45.22	16.07	0.881	0.246
3/31/2001	10.55	28.19	2.67	36.29	20.28	46.10	17.20	0.936	0.259
4/30/2001	9.32	27.48	2.95	36.61	20.56	46.92	18.29	0.994	0.271
5/31/2001	8.91	27.90	3.13	44.24	20.83	47.79	19.66	1.201	0.286
6/30/2001	10.49	27.74	2.64	41.31	21.15	48.62	20.90	1.080	0.299
7/31/2001	10.94	28.42	2.60	41.47	21.49	49.50	22.19	1.053	0.312
8/31/2001	8.64	40.02	4.63	51.53	21.75	50.74	23.79	1.059	0.328
9/30/2001	8.78	43.43	4.94	57.77	22.02	52.05	25.52	1.106	0.344
10/31/2001	8.19	38.30	4.67	50.91	22.27	53.23	27.10	1.094	0.359
11/30/2001	7.96	38.56	4.84	51.90	22.51	54.39	28.66	1.115	0.372
12/31/2001	8.48	41.76	4.92	49.75	22.77	55.68	30.20	0.989	0.385
1/31/2002	8.43	41.05	4.87	47.69	23.04	56.96	31.68	0.963	0.396
2/28/2002	8.78	40.14	4.57	48.14	23.28	58.08	33.02	0.984	0.406
3/31/2002	9.51	24.27	2.55	30.89	23.58	58.83	33.98	0.914	0.412
4/30/2002	10.20	17.74	1.74	28.34	23.88	59.37	34.83	1.013	0.418
5/31/2002	9.75	18.64	1.91	30.86	24.18	59.94	35.79	1.086	0.425
6/30/2002	9.47	18.07	1.91	29.08	24.47	60.48	36.66	1.055	0.431
7/31/2002	9.78	19.36	1.98	30.41	24.77	61.09	37.60	1.042	0.438
8/31/2002	9.51	18.66	1.96	29.46	25.07	61.66	38.52	1.045	0.444
9/30/2002	9.33	19.70	2.11	29.99	25.35	62.25	39.42	1.032	0.450
10/31/2002	9.24	19.15	2.07	31.21	25.63	62.85	40.38	1.098	0.456
11/30/2002	9.35	19.82	2.12	63.23	25.91	63.44	42.28	2.166	0.473
12/31/2002	9.30	19.62	2.11	74.32	26.20	64.05	44.59	2.568	0.494
1/31/2003	9.32	19.56	2.10	76.29	26.49	64.66	46.95	2.639	0.515
2/28/2003	9.25	19.48	2.11	71.01	26.75	65.20	48.94	2.469	0.532
3/31/2003	7.61	19.81	2.60	69.43	26.99	65.82	51.09	2.530	0.550
4/30/2003	7.86	17.18	2.18	69.62	27.22	66.33	53.18	2.777	0.568
5/31/2003	8.02	16.87	2.10	59.74	27.47	66.86	55.03	2.398	0.583
6/30/2003	8.30	16.51	1.99	72.57	27.72	67.35	57.21	2.921	0.601
7/31/2003	8.11	14.48	1.79	69.16	27.97	67.80	59.35	3.059	0.619
8/31/2003	7.95	13.61	1.71	70.40	28.22	68.22	61.53	3.262	0.638
9/30/2003	7.88	14.16	1.80	71.59	28.45	68.65	63.68	3.245	0.655
10/31/2003	7.91	14.19	1.79	67.08	28.70	69.09	65.76	3.032	0.672
11/30/2003	5.97	10.70	1.79	20.62	28.88	69.41	66.38	1.235	0.675
12/31/2003	7.74	16.26	2.10	24.14	29.12	69.91	67.13	1.005	0.677
1/31/2004	7.76	20.08	2.59	25.94	29.36	70.53	67.93	0.931	0.679
2/29/2004	6.58	17.30	2.63	24.84	29.55	71.04	68.65	1.040	0.682
3/31/2004	7.55	21.11	2.79	29.35	29.78	71.69	69.56	1.023	0.685
4/30/2004	7.30	21.37	2.93	30.81	30.00	72.33	70.49	1.074	0.688
5/31/2004	7.16	20.05	2.80	28.47	30.22	72.95	71.37	1.046	0.691
6/30/2004	7.12	19.65	2.76	28.68	30.44	73.54	72.23	1.070	0.694
7/31/2004	7.13	17.96	2.52	27.15	30.66	74.10	73.07	1.081	0.697
8/31/2004	6.94	19.06	2.75	27.54	30.87	74.69	73.93	1.058	0.700

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	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio
9/30/2004	6.88	20.51	2.98	29.73	31.08	75.31	74.82	1.085	0.703
10/31/2004	6.76	20.10	2.97	27.44	31.29	75.93	75.67	1.021	0.705
11/30/2004	6.47	19.55	3.02	26.98	31.48	76.52	76.48	1.036	0.708
12/31/2004	6.41	19.66	3.07	28.55	31.68	77.12	77.36	1.094	0.710
1/31/2005	6.51	19.15	2.94	27.64	31.88	77.72	78.22	1.076	0.713
2/28/2005	6.64	20.01	3.01	27.88	32.07	78.28	79.00	1.045	0.715
3/31/2005	6.50	19.78	3.04	27.50	32.27	78.89	79.85	1.045	0.718
4/30/2005	6.33	16.54	2.61	25.11	32.46	79.39	80.61	1.097	0.720
5/31/2005	6.56	16.65	2.54	23.05	32.66	79.90	81.32	0.992	0.722
6/30/2005	6.35	15.82	2.49	22.97	32.86	80.38	82.01	1.035	0.724
7/31/2005	6.06	16.44	2.71	27.01	33.04	80.89	82.85	1.199	0.727
8/31/2005	7.37	14.96	2.03	23.96	33.27	81.35	83.59	1.072	0.729
9/30/2005	3.92	15.20	3.88	27.59	33.39	81.81	84.42	1.443	0.732
10/31/2005	6.04	15.08	2.50	25.68	33.58	82.28	85.21	1.215	0.735
11/30/2005	5.74	15.03	2.62	26.44	33.75	82.73	86.01	1.272	0.738
12/31/2005	5.76	15.05	2.61	24.49	33.93	83.19	86.77	1.176	0.740
1/31/2006	5.71	15.61	2.74	27.85	34.10	83.68	87.63	1.306	0.743
2/28/2006	5.60	15.20	2.71	26.50	34.26	84.10	88.37	1.273	0.746
3/31/2006	5.32	12.00	2.26	23.63	34.43	84.47	89.10	1.363	0.749
4/30/2006	5.78	13.68	2.37	26.91	34.60	84.89	89.91	1.382	0.752
5/31/2006	5.82	13.32	2.29	25.29	34.78	85.30	90.69	1.320	0.755
6/30/2006	5.87	13.27	2.26	25.57	34.96	85.70	91.46	1.335	0.757
7/31/2006	5.75	12.89	2.24	25.43	35.13	86.10	92.25	1.363	0.760
8/31/2006	5.58	12.46	2.23	24.10	35.31	86.48	93.00	1.334	0.763
9/30/2006	5.94	12.40	2.09	25.23	35.49	86.85	93.75	1.374	0.766
10/31/2006	5.29	12.64	2.39	9.59	35.65	87.25	94.05	0.535	0.765
11/30/2006	5.28	13.00	2.46	6.84	35.81	87.64	94.26	0.374	0.763
12/31/2006	5.18	12.26	2.36	23.99	35.97	88.02	95.00	1.374	0.766
1/31/2007	4.96	12.06	2.43	24.78	36.12	88.39	95.77	1.454	0.768
2/28/2007	4.80	11.41	2.38	23.85	36.26	88.71	96.44	1.469	0.771
3/31/2007	5.07	12.07	2.38	25.02	36.41	89.08	97.21	1.459	0.774
4/30/2007	5.00	12.16	2.43	25.83	36.56	89.45	97.99	1.504	0.777
5/31/2007	5.04	12.32	2.45	24.28	36.72	89.83	98.74	1.397	0.780
6/30/2007	5.08	11.60	2.28	24.48	36.87	90.18	99.47	1.466	0.782
7/31/2007	5.10	11.55	2.27	25.45	37.03	90.54	100.26	1.526	0.785
8/31/2007	6.94	10.52	1.52	23.11	37.25	90.86	100.98	1.322	0.788
9/30/2007	3.27	12.16	3.72	24.73	37.34	91.23	101.72	1.602	0.790
10/31/2007	4.93	10.77	2.19	23.90	37.50	91.56	102.46	1.521	0.793
11/30/2007	4.88	10.64	2.18	20.60	37.64	91.88	103.08	1.326	0.795
12/31/2007	4.23	9.83	2.33	23.39	37.77	92.19	103.81	1.663	0.798
1/31/2008	3.81	9.78	2.57	22.22	37.89	92.49	104.49	1.634	0.801
2/29/2008	2.34	9.21	3.93	20.27	37.96	92.76	105.08	1.753	0.803
3/31/2008	2.15	9.30	4.34	21.97	38.03	93.04	105.76	1.918	0.806
4/30/2008	2.82	9.96	3.54	22.21	38.11	93.34	106.43	1.737	0.809
5/31/2008	3.05	10.16	3.33	23.04	38.21	93.66	107.14	1.743	0.812
6/30/2008	4.01	10.31	2.57	23.16	38.33	93.97	107.84	1.617	0.814
7/31/2008	4.85	10.75	2.22	23.43	38.48	94.30	108.57	1.501	0.817
8/31/2008	4.60	10.70	2.33	23.44	38.62	94.63	109.29	1.530	0.819

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	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio
9/30/2008	4.11	10.51	2.56	22.58	38.74	94.95	109.97	1.543	0.822
10/31/2008	4.15	8.87	2.14	22.33	38.87	95.22	110.66	1.712	0.825
11/30/2008	3.61	6.68	1.85	19.13	38.98	95.42	111.24	1.857	0.827
12/31/2008	3.60	9.89	2.75	22.96	39.09	95.73	111.95	1.701	0.830
1/31/2009	3.32	9.82	2.96	20.97	39.19	96.03	112.60	1.595	0.832
2/28/2009	3.35	9.83	2.93	23.63	39.29	96.31	113.26	1.792	0.835
3/31/2009	3.06	9.85	3.22	20.02	39.38	96.62	113.88	1.549	0.837
4/30/2009	3.77	9.95	2.64	26.40	39.50	96.91	114.67	1.922	0.840
5/31/2009	4.44	10.43	2.35	24.94	39.63	97.24	115.44	1.677	0.843
6/30/2009	4.22	10.39	2.46	22.70	39.76	97.55	116.13	1.552	0.845
7/31/2009	4.45	10.46	2.35	23.53	39.90	97.87	116.85	1.576	0.847
8/31/2009	4.20	10.42	2.48	23.15	40.03	98.20	117.57	1.582	0.850
9/30/2009	4.20	10.35	2.47	23.66	40.15	98.51	118.28	1.625	0.852
10/31/2009	3.97	9.88	2.49	22.71	40.28	98.81	118.99	1.638	0.855
11/30/2009	3.87	10.00	2.58	25.84	40.39	99.11	119.76	1.862	0.858
12/31/2009	3.75	9.79	2.61	31.31	40.51	99.42	120.73	2.310	0.862
1/31/2010	3.95	9.96	2.52	31.33	40.63	99.73	121.70	2.251	0.866
2/28/2010	3.90	9.80	2.51	30.54	40.74	100.00	122.56	2.227	0.870
3/31/2010	3.79	9.87	2.60	29.80	40.86	100.31	123.48	2.179	0.874
4/30/2010	3.91	10.13	2.59	31.73	40.98	100.61	124.43	2.257	0.878
5/31/2010	3.81	10.15	2.67	31.12	41.09	100.92	125.40	2.227	0.882
6/30/2010	3.81	10.13	2.66	32.78	41.21	101.23	126.38	2.348	0.887
7/31/2010	3.78	9.95	2.63	31.85	41.33	101.54	127.37	2.317	0.891
8/31/2010	3.89	9.94	2.55	31.13	41.45	101.85	128.33	2.249	0.895
9/30/2010	3.88	9.28	2.39	31.72	41.56	102.12	129.29	2.407	0.899
10/31/2010	3.78	8.85	2.34	30.04	41.68	102.40	130.22	2.376	0.903
11/30/2010	3.58	8.67	2.42	33.25	41.79	102.66	131.21	2.713	0.908
12/31/2010	3.48	8.22	2.36	32.77	41.90	102.91	132.23	2.799	0.912
1/31/2011	3.54	8.23	2.32	31.22	42.01	103.17	133.20	2.649	0.917
2/28/2011	3.39	8.28	2.44	32.36	42.10	103.40	134.10	2.772	0.921
3/31/2011	3.54	8.21	2.32	30.84	42.21	103.65	135.06	2.621	0.925
4/30/2011	3.34	8.04	2.40	31.17	42.31	103.90	136.00	2.737	0.929
5/31/2011	4.00	7.76	1.94	31.74	42.43	104.14	136.98	2.697	0.934
6/30/2011	3.74	8.10	2.17	31.13	42.55	104.38	137.91	2.626	0.938
7/31/2011	3.74	8.62	2.31	31.90	42.66	104.65	138.90	2.580	0.942
8/31/2011	3.63	8.71	2.40	30.90	42.77	104.92	139.86	2.501	0.946
9/30/2011	3.75	8.69	2.32	31.64	42.89	105.18	140.81	2.541	0.950
10/31/2011	3.79	8.65	2.28	35.75	43.00	105.44	141.92	2.872	0.955
11/30/2011	3.88	8.45	2.18	40.58	43.12	105.70	143.13	3.288	0.961
12/31/2011	3.77	8.74	2.32	43.40	43.24	105.97	144.48	3.466	0.967
1/31/2012	3.71	8.76	2.36	44.00	43.35	106.24	145.84	3.525	0.974
2/29/2012	4.00	8.80	2.20	43.00	43.47	106.50	147.09	3.356	0.980
3/31/2012	3.98	8.44	2.12	42.54	43.59	106.76	148.41	3.423	0.986
4/30/2012	4.09	7.83	1.91	2.15	43.72	106.99	148.47	0.180	0.984
5/31/2012	3.53	18.77	5.32		43.82	107.57	148.47	0.000	0.980
6/30/2012	3.57	22.94	6.42		43.93	108.26	148.47	0.000	0.975
7/31/2012	3.91	24.52	6.28		44.05	109.02	148.47	0.000	0.969
8/31/2012	3.33	23.01	6.91		44.16	109.74	148.47	0.000	0.964

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	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio
9/30/2012	3.19	22.50	7.05		44.25	110.41	148.47	0.000	0.959
10/31/2012	3.02	22.69	7.51		44.35	111.11	148.47	0.000	0.954
11/30/2012	2.71	23.98	8.86		44.43	111.83	148.47	0.000	0.949
12/31/2012	2.53	21.48	8.48		44.51	112.50	148.47	0.000	0.945
1/31/2013	2.15	24.59	11.41		44.57	113.26	148.47	0.000	0.940
2/28/2013	2.41	10.71	4.44		44.64	113.56	148.47	0.000	0.938
3/31/2013	2.21	6.04	2.74		44.71	113.75	148.47	0.000	0.936
4/30/2013	4.19	20.00	4.78		44.83	114.35	148.47	0.000	0.932
5/31/2013	1.89	30.11	15.90		44.89	115.28	148.47	0.000	0.926
6/30/2013	1.53	36.26	23.75		44.94	116.37	148.47	0.000	0.920
7/31/2013	2.44	38.96	15.98		45.01	117.58	148.47	0.000	0.912
8/31/2013	2.42	36.04	14.90		45.09	118.70	148.47	0.000	0.906
9/30/2013	2.49	31.69	12.75		45.16	119.65	148.47	0.000	0.900
10/31/2013	2.48	28.25	11.40		45.24	120.52	148.47	0.000	0.895
11/30/2013	2.48	25.78	10.40		45.31	121.30	148.47	0.000	0.890
12/31/2013	2.04	17.15	8.43		45.38	121.83	148.47	0.000	0.887