

PennWest

Waskada Lower Amaranth Unit No. 1

Waterflood Progress Report

January 1st – December 31st, 2014

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INTRODUCTION

The Waskada Lower Amaranth Unit No.1 pressure maintenance project commenced water injection into the Lower Amaranth designed and in accordance with Manitoba Energy and Mines Approval No. PM 58.

Please refer to Attachment 1 – Area Map.

PRESSURE MAINTENANCE: Governed by Board Order No. PM 58

UNIT INFORMATION

UNITIZED ZONE: Lower Amaranth
Original Unit, January 1, 1983 Board Order – Voluntary
First Enlargement, July 1, 1983

POOL: Waskada Lower Amaranth A (03 29A)

This report documents the performance of the Waskada Lower Amaranth Unit No.1 pressure maintenance project for the period of January 1 to December 31, 2014. The Unit had no water injection and new drills for the year 2014.

Please refer to Attachment 1A – Area Map of Unit

Lower Amaranth Unit No. 1 is part of the main Waskada field. The Waskada field is situated on the northeast rim of the Williston Basin in southern Manitoba. It comprises a large portion of Township 1 and 2, Ranges 25 and 26 W1.

GEOLOGY

The Waskada Fields produce light density crude (approximately 36° API), predominantly from the Lower Amaranth formation. This is an interlaminated, shallow marine to subtidal succession of sandstones, siltstones, and shale progressively on laps the Mississippian unconformity surface from basin center, up dip to the north and eastern basin limits in Saskatchewan and Manitoba. The fine grained reservoir rock has a complex reservoir characterization with 13 to 16 % porosity and permeability on the order of 0.5 to 15 md. The Lower Amaranth, the oldest Mesozoic unit, is a clastic red bed sequence lying directly on the Paleozoic erosional surface. It consists of a series of dolomitic siltstones and sandstones interbedded with argillaceous siltstones and shales. The section is usually subdivided into a lower sandy unit and an overlying shale unit. The lower sequence is the oil production zone. The bulk of pay is found in the laminated sandstone/siltstone facies.

The Lower Amaranth has been classified into four general lithological types:

1. Interbedded shale/siltstone/sandstone by grain size, color and texture
2. Siltstone – This lithology occurs in distinct intervals up to two or three metres in thickness. It is generally light green in color and dolomitic.
3. Laminated sandstone – This occurs in distinct sandy intervals with a wide range of grain sizes and primary sedimentary structures.
4. Massive sandstone – This lithology occurs in thin intervals and usually associated with the laminated sandstones facies. Beds are usually light grey to reddish grey in color and coarse to medium – grained.

DISCUSSION

Production and Injection Performance

Board Order No. PM 58 provided for pressure maintenance operations in Waskada Lower Amaranth Unit No.1. From the startup of injection in February 1983, injection rates fluctuated to the same degree in each injector, making it difficult to link any production responses to any injector. The Unit includes 8 injection wells, at the end of 2014 none are currently active, and 35 active producers. Pressure maintenance by water injection ceased in January 2013.

Please refer to Attachment 2 – A Spreadsheet of the Unit Well List and History.

Please refer to Attachment 3 – A Production and Injection plot of the Unit.

Please refer to Attachment 4 – A spreadsheet of Unit Annual Volumes and Rates.

Please refer to Attachment 5 – A Cumulative Production and Injection plot of the Unit.

Voidage Replacement Ratio Calculation:

The Cumulative VRR from production start reached a maximum of 1.17 in 1997 and has remained constant in the last year to 0.9. The Cumulative VRR from injection start stabilized at 1.2 dropping in the last year to 0.94. The decline in both Cumulative VRR's in the last 3 years is coincident with reduced Monthly VRR's in 2012, essentially no injection in 2014 and the startup of horizontal producers in 2012. Currently there are no active injectors in this Unit and PennWest has no plans to reactivate at this time any of the old injectors.

Please refer to Attachment 6 – A Unit Voidage Replacement Ratio Plot.

Please refer to Attachment 7 – Individual Injection Well Performance Plots.

Pressure Surveys:

Pressure surveys were conducted in 2014 on 5 wells. Average pressures for the area is around 1611 kPa.

Please refer to Attachment 1B - Area Map of 2014 Pressure Surveys with Values Posted.

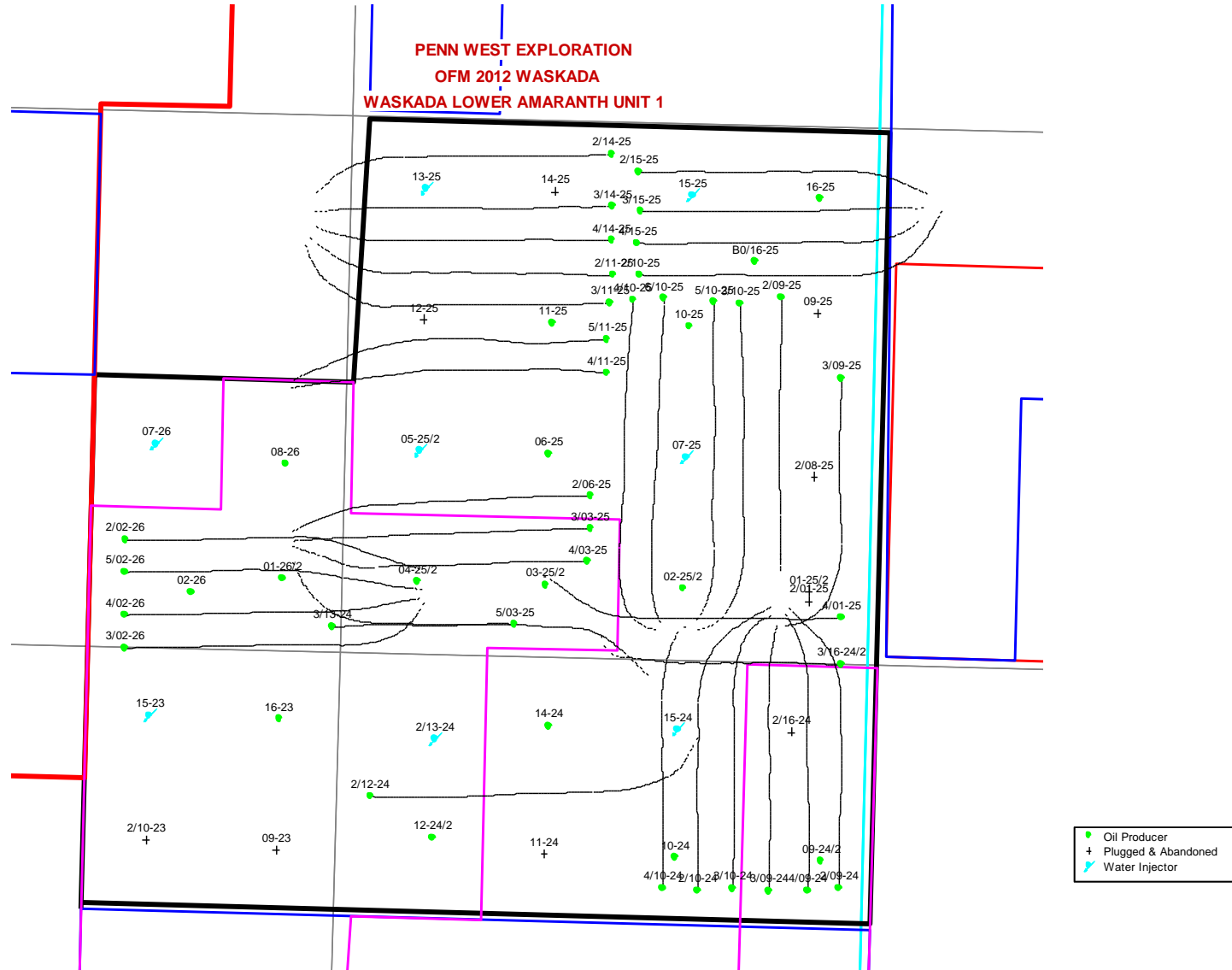
Corrosion and Scale Prevention Program:

Scale corrosion programs are implemented throughout the field. Wells and pipelines have mitigation measures in place.

SUMMARY AND RECOMMENDATIONS

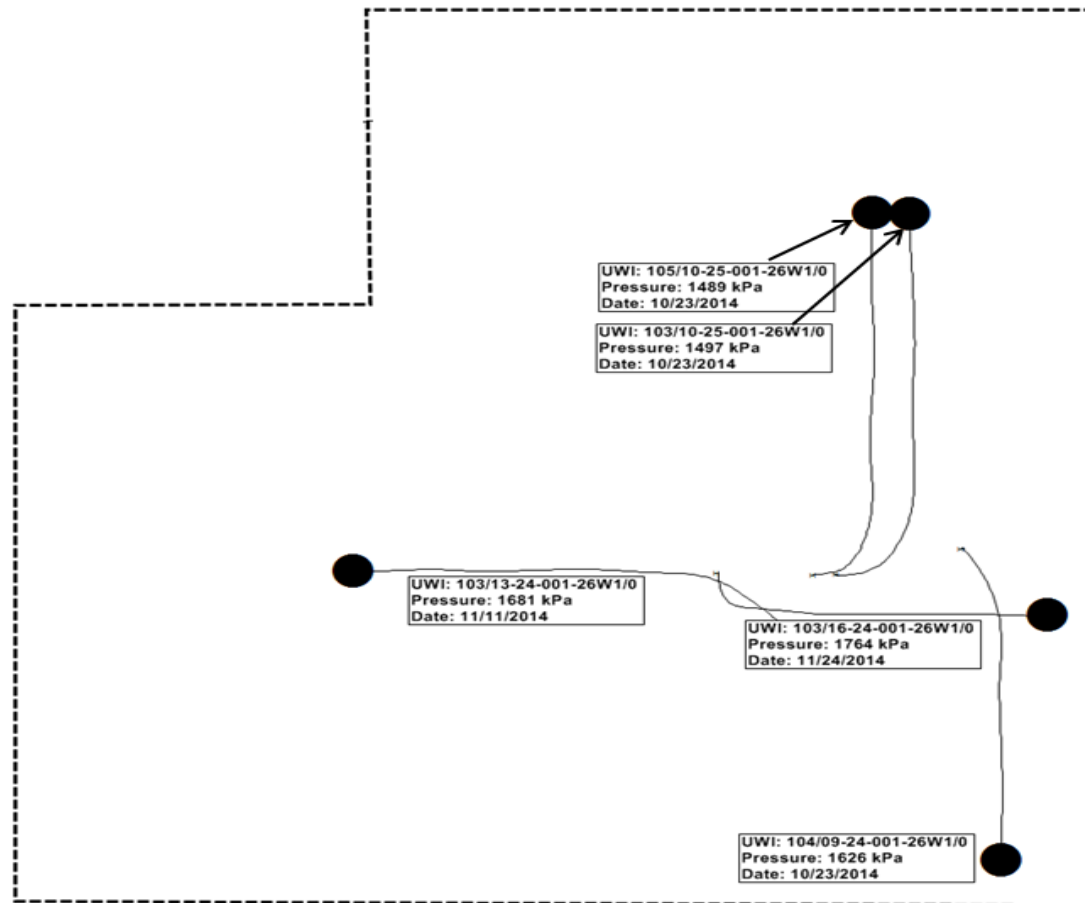
The behavior of Waskada Unit 1 Lower Amaranth producers are indicated by good initial oil productivity, rapidly declining to low rates, with almost no discernible water flood response. It is also believed that fracture stimulation treatments, performed on these wells prior to initiation of water injection, “broke through” into the higher productivity Mississippian and that the majority of injected water to date has entered this zone. This is one of the major explanations for lack of waterflood response to date and the continued decline in oil productivities.

ATTACHMENT 1A – AREA MAP OF UNIT



ATTACHEMENT 1B - AREA MAP OF 2014 PRESSURE SURVEYS

*PennWest Exploration
Accumap 2012
Waskada Lower Amaranth Unit # 1
2014 Pressure Surveys*



ATTACHMENT # 2 – UNIT HISTORY

Unit History : Waskada Lower Amaranth Unit # 1														
Well UWI	Completion Date	Operator	Status	New Drills	Kb Elevation	Total Depth	First Production Date	Cum Oil Prod	Cum Water Prod	Last Prd Date	First Injection Date	Cum Water Injected	Cum Gas Injected	Last Injection Date
					m	m		m3	m3			m3	scm	
00/01-25-001-26W1/2	7/6/1981	PENN_WEST	ABD-OIL	<N/A>	470.20	950.00	5/1/1990	0.20	394.70	11/1/1990		0.00	0.00	
00/01-26-001-26W1/2	9/18/1981	PENN_WEST	CMG-OIL	<N/A>	470.30	960.00	2/1/1982	32911.90	28723.60	5/1/2013		0.00	0.00	
00/02-25-001-26W1/2	8/26/1981	PENN_WEST	OIL	<N/A>	470.30	950.00	2/1/1983	31503.20	5697.40	1/1/2014		0.00	0.00	
00/02-26-001-26W1/0	11/21/1981	PENN_WEST	CMG-OIL	<N/A>	467.30	952.00	2/1/1982	26498.70	21948.60	2/1/2011		0.00	0.00	
00/03-25-001-26W1/2	7/19/1981	PENN_WEST	OIL	<N/A>	471.10	956.00	12/1/1982	30270.50	11743.90	1/1/2013		0.00	0.00	
00/04-25-001-26W1/2	8/21/1981	PENN_WEST	CMG-OIL	<N/A>	470.80	963.00	11/1/1982	30711.00	5178.80	2/1/2013		0.00	0.00	
00/05-25-001-26W1/2	8/31/1981	PENN_WEST	WTR-INJ	<N/A>	471.10	953.00	10/1/1981	3740.70	517.40	2/1/1983	2/1/1983	344455.00	0.00	9/1/2012
00/06-25-001-26W1/0	1/23/1982	PENN_WEST	OIL	<N/A>	471.40	936.00	2/1/1982	45231.10	66047.80	12/1/2012		0.00	0.00	
00/07-25-001-26W1/0	3/6/1982	PENN_WEST	WTR-INJ	<N/A>	469.90	937.00	6/1/1982	1959.50	608.20	2/1/1983	2/1/1983	151191.00	0.00	5/1/2012
00/07-26-001-26W1/0	7/11/1982	PENN_WEST	WTR-INJ	<N/A>	467.80	950.00	10/1/1982	2446.40	306.10	12/1/1983	1/1/1984	140303.70	0.00	1/1/2013
00/08-26-001-26W1/0	11/2/1981	PENN_WEST	OIL	<N/A>	469.60	948.00	1/1/1982	37114.10	45497.10	4/1/2013		0.00	0.00	
00/09-23-001-26W1/0	7/6/1982	PENN_WEST	ABD-OIL	<N/A>	470.10	953.00	8/1/1982	10673.10	32946.00	12/1/1990		0.00	0.00	
00/09-24-001-26W1/2	12/3/1981	PENN_WEST	OIL	<N/A>	473.00	944.00	1/1/1983	13547.20	18352.60	8/1/2011		0.00	0.00	
00/09-25-001-26W1/0	1/10/1982	PENN_WEST	ABDZ-OIL	<N/A>	471.30	934.00	2/1/1982	4928.10	6496.00	2/1/1991		0.00	0.00	
00/10-24-001-26W1/0	2/11/1982	PENN_WEST	OIL	<N/A>	470.30	935.00	3/1/1982	5135.40	1650.00	11/1/2012		0.00	0.00	
00/10-25-001-26W1/0	5/19/1982	PENN_WEST	OIL	<N/A>	473.10	938.00	6/1/1982	22200.80	10329.00	7/1/2013		0.00	0.00	
00/11-24-001-26W1/0	2/17/1982	PENN_WEST	ABD-OIL	<N/A>	469.80	935.00	3/1/1982	5111.40	740.50	10/1/1995		0.00	0.00	
00/11-25-001-26W1/0	5/24/1982	PENN_WEST	OIL	<N/A>	472.40	940.00	6/1/1982	22675.70	23917.90	11/1/2011		0.00	0.00	
00/12-24-001-26W1/2	11/6/1981	PENN_WEST	CMG-OIL	<N/A>	468.10	952.00	2/1/1983	24642.80	23212.50	5/1/2008		0.00	0.00	
00/12-25-001-26W1/0	5/30/1982	PENN_WEST	ABD-OIL	<N/A>	471.00	946.00	6/1/1982	16862.20	39232.80	3/1/1992		0.00	0.00	
00/13-25-001-26W1/0	8/4/1982	PENN_WEST	WTR-INJ	<N/A>	469.00	960.10	10/1/1982	343.60	241.80	12/1/1983	12/1/1983	66694.80	0.00	12/1/2007
00/14-24-001-26W1/0	11/16/1981	PENN_WEST	OIL	<N/A>	469.30	951.00	2/1/1982	14321.90	10382.10	4/1/2012		0.00	0.00	
00/14-25-001-26W1/0	8/9/1982	OMEGA_HYDROC	ABD-OIL	<N/A>	471.10	936.00	12/1/1982	439.40	252.40	8/1/1989		0.00	0.00	
00/15-23-001-26W1/0	1/29/1982	PENN_WEST	WTR-INJ	<N/A>	467.50	941.00	2/1/1982	2958.10	789.60	9/1/1983	10/1/1983	169248.10	0.00	5/1/2004
00/15-24-001-26W1/0	10/2/1981	PENN_WEST	WTR-INJ	<N/A>	470.50	963.00	10/1/1981	3402.60	431.20	2/1/1983	2/1/1983	129998.40	0.00	11/1/2006
00/15-25-001-26W1/0	8/12/1982	PENN_WEST	WTR-INJ	<N/A>	471.20	948.00	11/1/1982	467.20	136.20	9/1/1983	12/1/1983	38585.70	0.00	10/1/2012

00/16-23-001-26W1/0	9/24/1981	PENN_WEST	OIL	<N/A>	468.80	965.00	11/1/1981	49579.30	44886.60	11/1/2013		0.00	0.00	
00/16-25-001-26W1/0	8/19/1982	PENN_WEST	OIL	<N/A>	472.40	955.00	10/1/1982	3667.20	1630.00	9/1/2008		0.00	0.00	
02/01-25-001-26W1/0	9/14/1982	PENN_WEST	ABD-OIL	<N/A>	471.70	947.00	1/1/1983	3356.50	15964.00	12/1/1990		0.00	0.00	
02/02-26-001-26W1/0	2/12/2013	PENN_WEST	OIL	2013	470.80	1739.00	8/1/2013	4248.50	2543.00	1/1/2015		0.00	0.00	
02/06-25-001-26W1/0	1/10/2013	PENN_WEST	OIL	2013	472.90	1751.00	2/1/2013	4840.10	7741.00	1/1/2015		0.00	0.00	
02/08-25-001-26W1/0	1/17/1982	PENN_WEST	ABD-OIL	<N/A>	472.70	945.00	2/1/1982	5790.20	1684.70	9/1/1995		0.00	0.00	
02/09-24-001-26W1/0	11/28/2011	PENN_WEST	OIL	<N/A>	471.40	1729.00	2/1/2012	4923.60	5477.90	1/1/2015		0.00	0.00	
02/09-25-001-26W1/0	9/26/1994	PENN_WEST	PMP-OIL	<N/A>	470.90	1703.00	10/1/1994	9701.70	21294.20	7/1/2014		0.00	0.00	
02/10-23-001-26W1/0	6/2/1983	PENN_WEST	ABD-OIL	<N/A>	469.80	948.00	6/1/1983	8664.80	16439.80	11/1/1992		0.00	0.00	
02/10-24-001-26W1/0	11/22/2011	PENN_WEST	OIL	<N/A>	471.50	1758.00	2/1/2012	4527.60	6380.50	1/1/2015		0.00	0.00	
02/10-25-001-26W1/0	6/30/2012	PENN_WEST	OIL	<N/A>	472.30	1796.00	10/1/2012	1371.10	4148.00	1/1/2015		0.00	0.00	
02/11-25-001-26W1/0	2/18/2011	PENN_WEST	OIL	<N/A>	470.20	1775.00	10/1/2011	6042.80	3958.90	1/1/2015		0.00	0.00	
02/12-24-001-26W1/0	1/14/2010	PENN_WEST	OIL	<N/A>	472.50	1850.00	5/1/2010	2812.80	2203.10	1/1/2015		0.00	0.00	
02/13-24-001-26W1/0	9/16/1982	PENN_WEST	WTR-INJ	<N/A>	470.10	951.00		0.00	0.00		2/1/1983	125434.20	0.00	11/1/2006
02/14-25-001-26W1/0	3/12/2011	PENN_WEST	OIL	<N/A>	470.40	1777.00	10/1/2011	2550.50	2235.70	10/1/2014		0.00	0.00	
02/15-25-001-26W1/0	3/3/2012	PENN_WEST	OIL	<N/A>	472.30	1738.00	10/1/2012	1675.00	3530.70	1/1/2015		0.00	0.00	
02/16-24-001-26W1/0	2/6/1982	PENN_WEST	ABD-OIL	<N/A>	472.30	956.00	2/1/1982	12749.40	18033.70	5/1/2002		0.00	0.00	
03/02-26-001-26W1/0	1/29/2013	PENN_WEST	OIL	2013	471.00	1751.00	8/1/2013	2504.10	2127.60	1/1/2015		0.00	0.00	
03/03-25-001-26W1/0	1/5/2013	PENN_WEST	OIL	2013	472.60	1733.00	2/1/2013	3157.60	2776.30	1/1/2015		0.00	0.00	
03/09-24-001-26W1/0	11/5/2011	PENN_WEST	OIL	<N/A>	471.60	1636.00	2/1/2012	4082.50	3647.20	1/1/2015		0.00	0.00	
03/09-25-001-26W1/0	1/15/2013	PENN_WEST	OIL	2013	471.60	1607.00	2/1/2013	4239.00	3274.10	1/1/2015		0.00	0.00	
03/10-24-001-26W1/0	11/10/2011	PENN_WEST	OIL	<N/A>	471.40	1666.00	2/1/2012	4449.60	2818.00	1/1/2015		0.00	0.00	
03/10-25-001-26W1/0	1/28/2012	PENN_WEST	OIL	<N/A>	471.30	1847.00	4/1/2012	3642.00	2821.80	10/1/2014		0.00	0.00	
03/11-25-001-26W1/0	2/11/2011	PENN_WEST	OIL	<N/A>	470.20	1817.00	10/1/2011	6077.20	8004.60	1/1/2015		0.00	0.00	
03/13-24-001-26W1/0	1/20/2010	PENN_WEST	OIL	<N/A>	472.20	1852.00	5/1/2010	5713.50	6388.30	10/1/2014		0.00	0.00	
03/14-25-001-26W1/0	3/5/2011	PENN_WEST	OIL	<N/A>	470.40	1740.00	10/1/2011	2807.60	3814.40	11/1/2014		0.00	0.00	
03/15-25-001-26W1/0	2/21/2012	PENN_WEST	OIL	<N/A>	472.40	1700.00	10/1/2012	2719.60	5175.30	1/1/2015		0.00	0.00	
03/16-24-001-26W1/2	9/4/2010	PENN_WEST	OIL	<N/A>	472.10	1562.00	11/1/2010	8182.80	14534.20	9/1/2014		0.00	0.00	
04/01-25-001-26W1/0	3/4/2013	PENN_WEST	OIL	2013	472.00	1750.00	8/1/2013	1268.10	648.10	1/1/2015		0.00	0.00	
04/02-26-001-26W1/0	2/4/2013	PENN_WEST	OIL	2013	470.80	1728.00	8/1/2013	2967.30	656.90	1/1/2015		0.00	0.00	
04/03-25-001-26W1/0	12/16/2012	PENN_WEST	OIL	2013	472.60	1729.00	2/1/2013	4649.20	2632.00	1/1/2015		0.00	0.00	
04/09-24-001-26W1/0	11/16/2011	PENN_WEST	OIL	<N/A>	472.20	1666.00	2/1/2012	4649.00	3121.60	5/1/2014		0.00	0.00	
04/10-24-001-26W1/0	1/19/2012	PENN_WEST	OIL	<N/A>	471.40	1648.00	4/1/2012	3308.50	3761.70	4/1/2014		0.00	0.00	
04/10-25-001-26W1/0	7/10/2012	PENN_WEST	OIL	<N/A>	471.30	1836.00	8/1/2012	5284.00	7867.50	1/1/2015		0.00	0.00	

04/11-25-001-26W1/0	2/9/2013	PENN_WEST	OIL	2013	469.70	1756.00	3/1/2013	3744.80	6573.50	1/1/2015		0.00	0.00	
04/14-25-001-26W1/0	2/25/2011	PENN_WEST	OIL	<N/A>	470.50	1745.00	10/1/2011	3171.30	1700.40	10/1/2014		0.00	0.00	
04/15-25-001-26W1/0	2/24/2012	PENN_WEST	OIL	<N/A>	472.30	1727.00	10/1/2012	2061.40	3514.30	1/1/2015		0.00	0.00	
05/02-26-001-26W1/0	2/7/2013	PENN_WEST	OIL	2013	470.90	1729.00	8/1/2013	2798.90	1176.00	1/1/2015		0.00	0.00	
05/03-25-001-26W1/0	11/30/2012	PENN_WEST	OIL	2013	473.30	1572.00	2/1/2013	1911.80	1158.80	12/1/2014		0.00	0.00	
05/10-25-001-26W1/0	2/5/2012	PENN_WEST	OIL	<N/A>	471.20	1827.00	8/1/2012	2015.80	1892.30	8/1/2014		0.00	0.00	
05/10-26-001-26W1/0	1/6/2013	PENN_WEST	OIL	2013	471.30	1727.00	2/1/2013	5177.80	5983.50	1/1/2015		0.00	0.00	
05/11-25-001-26W1/0	2/5/2013	PENN_WEST	OIL	2013	469.70	1776.00	3/1/2013	2004.80	2087.50	12/1/2014		0.00	0.00	
06/10-25-001-26W1/0	7/5/2012	PENN_WEST	OIL	<N/A>	471.30	1814.00	8/1/2012	3832.70	7450.50	1/1/2015		0.00	0.00	
80/16-25-001-26W1/0	10/27/1997	PENN_WEST	OIL	<N/A>	473.60	929.00	11/1/1997	1261.10	206.30	8/1/2012		0.00	0.00	

ATTACHEMENT # 3 – UNIT PRODUCTION AND INJECTION PLOT

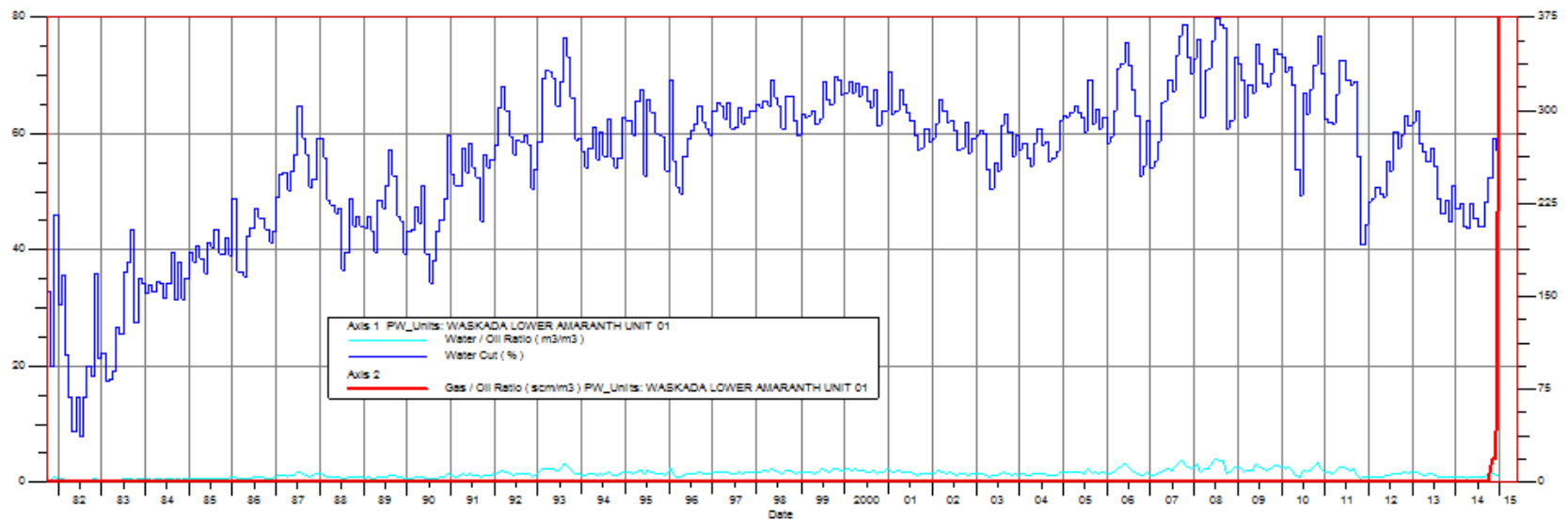
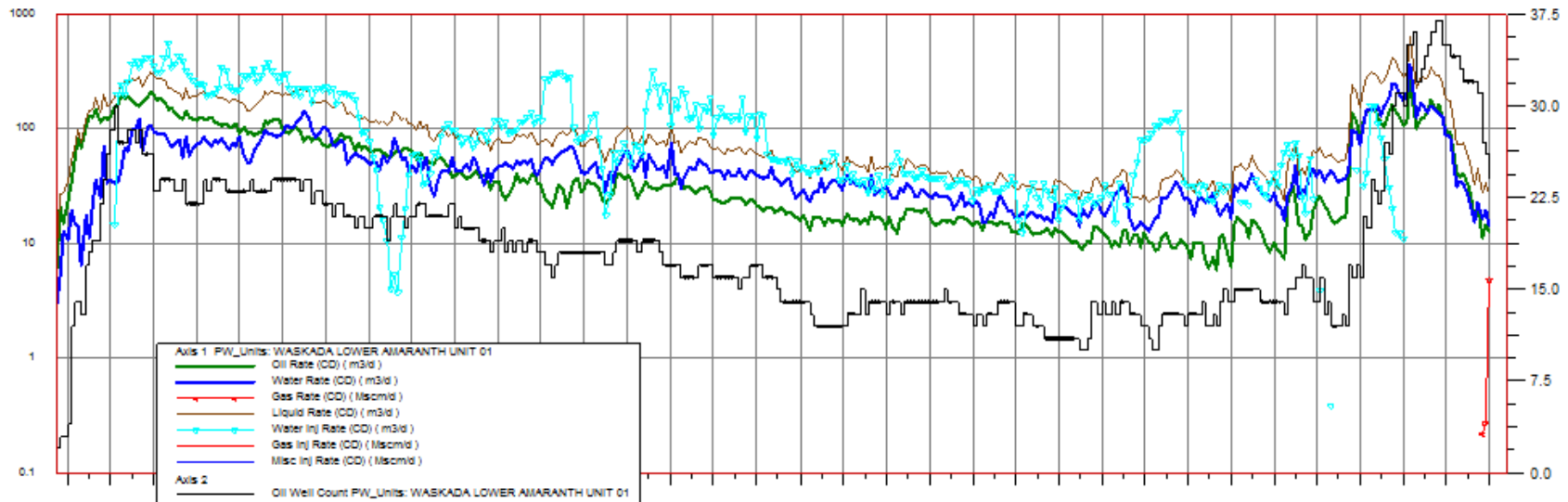
PENN WEST

PW_Units: WASKADA LOWER AMARANTH UNIT 01

Last Prod/Inj Date: 201501

Cumulative Gas Inj : 0.00 MMscm
Cumulative Water Inj : 1165.91 Mm3
Cumulative Misc Inj : 0.00 MMscm

Cumulative Water Prod : 619.74 Mm3
Cumulative Oil Prod : 614.28 Mm3
Cumulative Gas Prod : 0.16 MMscm

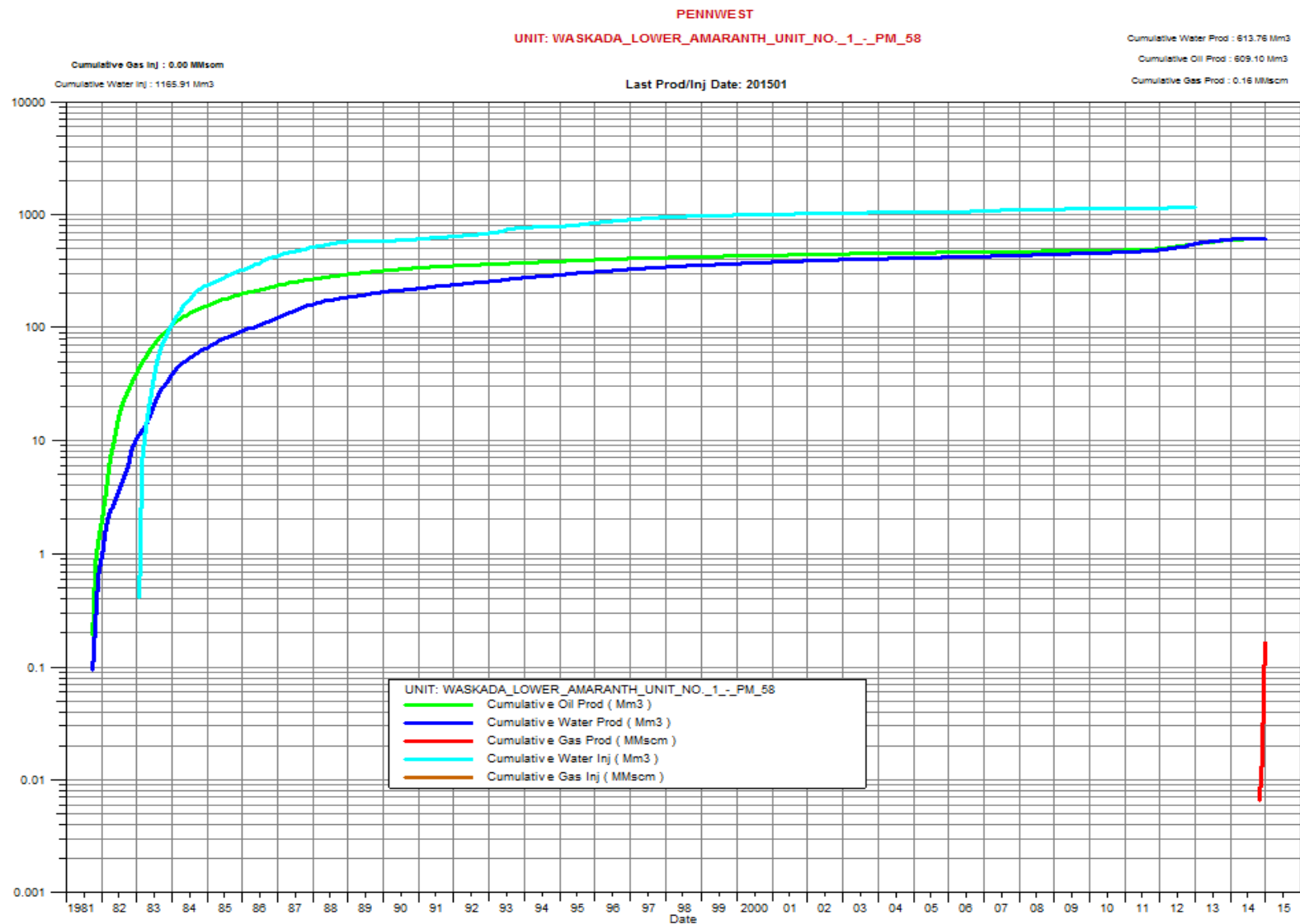


ATTACHMENT # 4 – UNIT ANNUAL VOLUMES AND RATES***Unit: Waskada Lower Amaranth Unit No 1--PM58******Rates and Volume History***

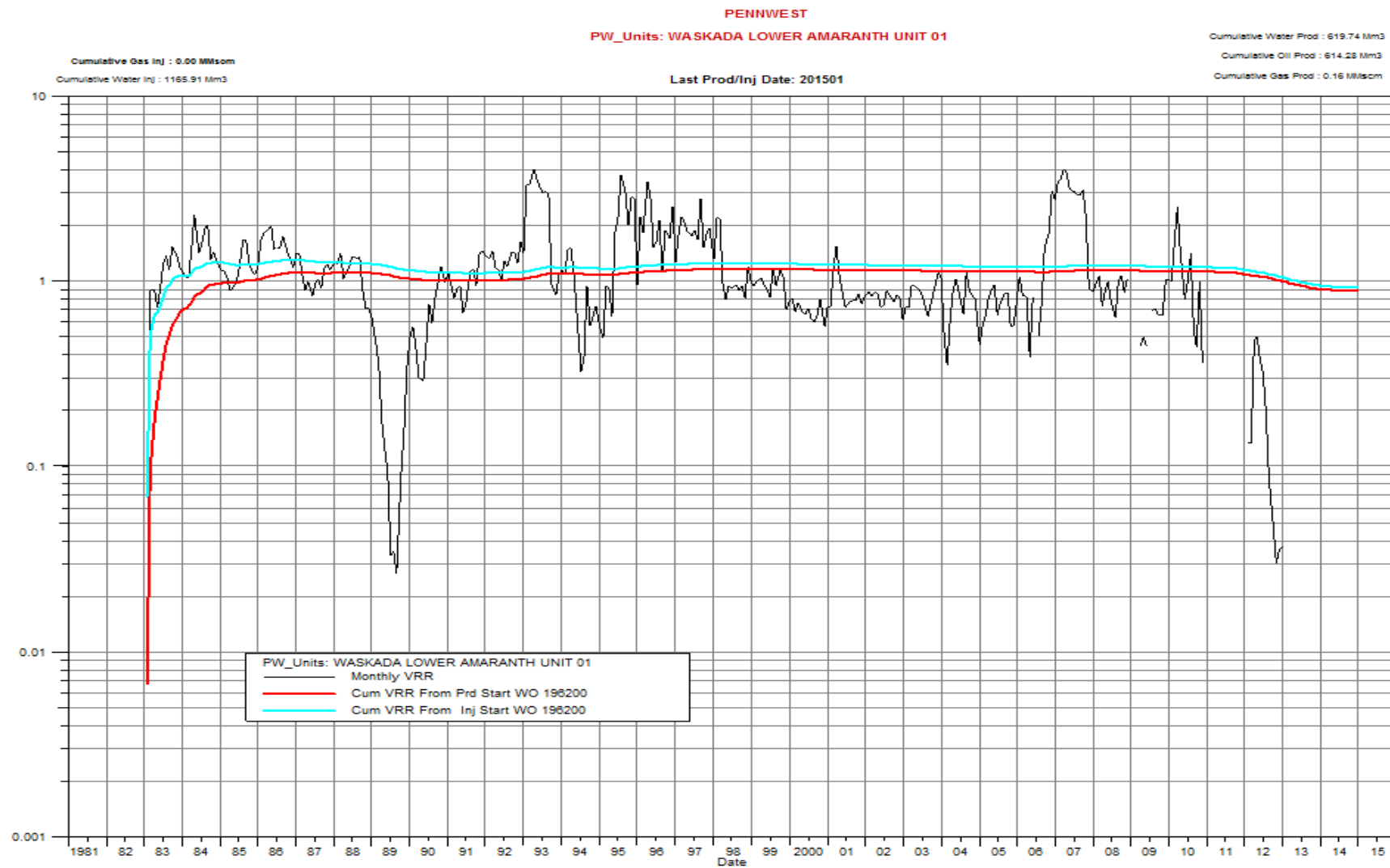
<i>Date</i>	<i>Annual Oil Prod</i>	<i>Annual Oil Rate</i>	<i>Annual Water Prod</i>	<i>Annual Water Rate</i>	<i>Annual Water Inj</i>	<i>Annual Water Inj Rate</i>	<i>Annual Gas Inj</i>	<i>Annual Gas Inj Rate</i>
	<i>m3</i>	<i>m3/d</i>	<i>m3</i>	<i>m3/d</i>	<i>m3</i>	<i>m3/d</i>	<i>Mscm</i>	<i>Mscm/d</i>
1/1/1981	1292.90	3.54	647.20	1.77				
1/1/1982	34588.90	94.76	8564.20	23.46				
1/1/1983	63455.20	173.85	26800.80	73.43	98755	270.56	0.00	0.00
1/1/1984	55294.50	151.08	28616.90	78.19	132955	363.27	0.00	0.00
1/1/1985	41786.90	114.48	27554.80	75.49	86897	238.07	0.00	0.00
1/1/1986	37496.30	102.73	28006.20	76.73	107802	295.35	0.00	0.00
1/1/1987	32268.40	88.41	39340.00	107.78	82230	225.29	0.00	0.00
1/1/1988	28003.10	76.51	25126.10	68.65	64867	177.23	0.00	0.00
1/1/1989	23116.60	63.33	20406.20	55.91	9366	25.66	0.00	0.00
1/1/1990	19472.30	53.35	15999.60	43.83	24156	66.18	0.00	0.00
1/1/1991	13901.50	38.09	16049.70	43.97	31802	87.13	0.00	0.00
1/1/1992	12341.80	33.72	17728.70	48.44	41247	112.70	0.00	0.00
1/1/1993	10180.20	27.89	20905.40	57.28	81517	223.33	0.00	0.00
1/1/1994	11592.40	31.76	15872.90	43.49	26062	71.40	0.00	0.00
1/1/1995	11593.30	31.76	18339.50	50.25	56183	153.92	0.00	0.00
1/1/1996	11489.30	31.39	16991.80	46.43	57114	156.05	0.00	0.00
1/1/1997	8730.50	23.92	15107.50	41.39	46833	128.31	0.00	0.00
1/1/1998	7119.80	19.51	13147.40	36.02	24871	68.14	0.00	0.00
1/1/1999	5829.00	15.97	11052.60	30.28	17130	46.93	0.00	0.00
1/1/2000	5997.50	16.39	11739.70	32.08	12856	35.12	0.00	0.00
1/1/2001	6356.20	17.41	10507.90	28.79	15584	42.70	0.00	0.00
1/1/2002	5845.50	16.02	9015.90	24.70	12815	35.11	0.00	0.00
1/1/2003	5398.90	14.79	7475.80	20.48	10947	29.99	0.00	0.00
1/1/2004	4779.20	13.06	6511.10	17.79	9381	25.63	0.00	0.00
1/1/2005	4145.90	11.36	7148.90	19.59	8353	22.88	0.00	0.00
1/1/2006	4094.10	11.22	7752.00	21.24	11382	31.18	0.00	0.00
1/1/2007	3775.30	10.34	8307.60	22.76	36593	100.26	0.00	0.00

1/1/2008	3226.50	8.82	8271.40	22.60	10750	29.37	0.00	0.00
1/1/2009	4681.60	12.83	10885.00	29.82	6697	18.35	0.00	0.00
1/1/2010	5691.90	15.59	11077.80	30.35	17244	47.24	0.00	0.00
1/1/2011	14013.70	38.39	17601.60	48.22	1465	4.01	0.00	0.00
1/1/2012	47697.20	130.32	59593.20	162.82	21723	59.35	0.00	0.00
1/1/2013	49005.70	134.26	58551.80	160.42	336	0.92	0.00	0.00
1/1/2014	14460.90	39.62	12650.60	34.66	0	0.00	0.00	0.00
Sum	608723.00		613347.80		1165911			

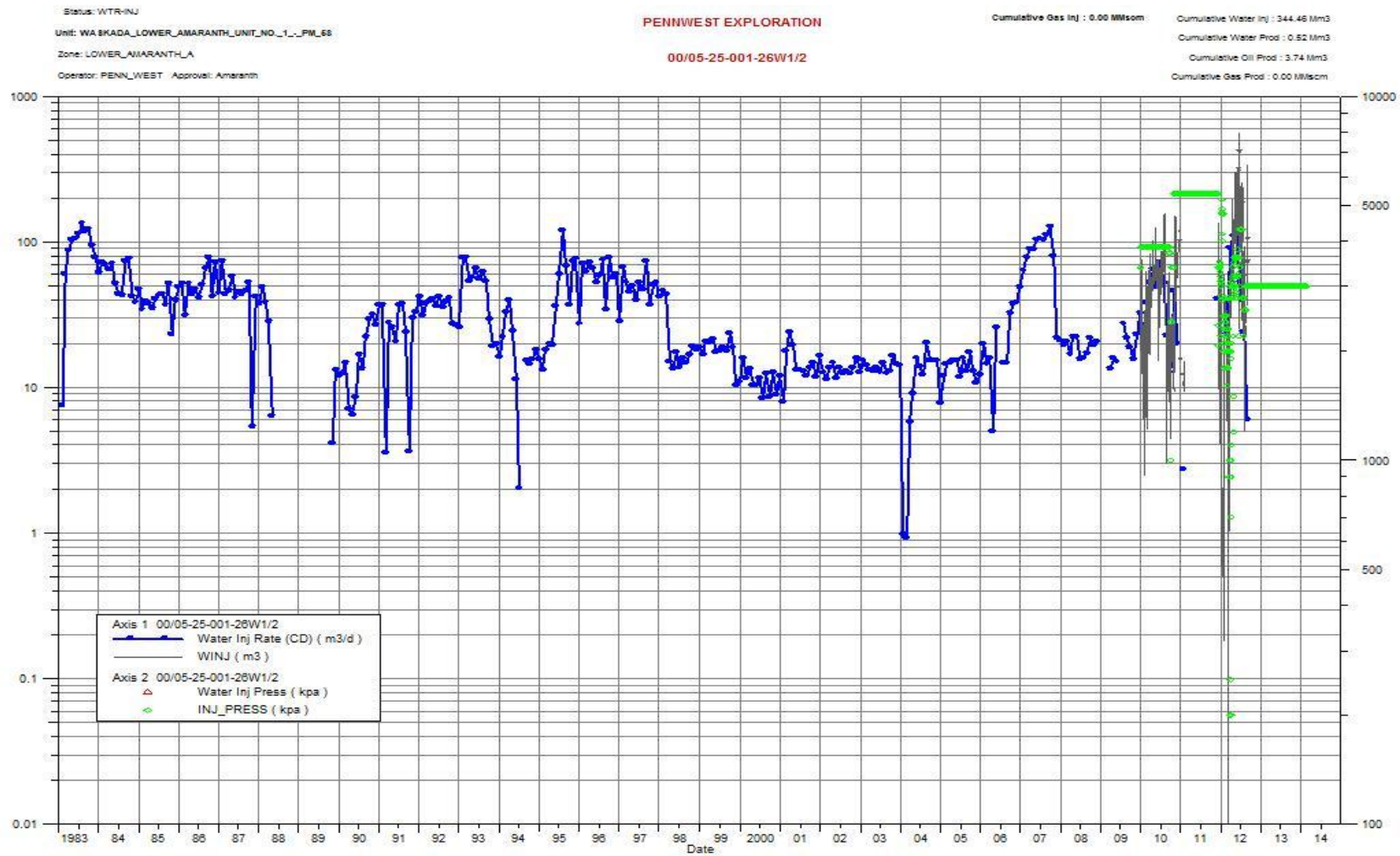
ATTACHMENT 5 – UNIT CUMULATIVE PRODUCTION AND INJECTION PLOT



ATTACHMENT 6 – UNIT VOIDAGE REPLACEMENT RATIO PLOT



ATTACHMENT 7 – INDIVIDUAL INJECTION WELL PERFORMANCE PLOTS



Status: WTR-INJ

Unit: WA BKADA_LOWER_AMARANTH_UNIT_NO_1_-_PW_68

Zone: LOWER_AMARANTH_A

Operator: PENN_WEST / Approval: Amaranth

PENNWEST EXPLORATION

00/07-25-001-26W1/0

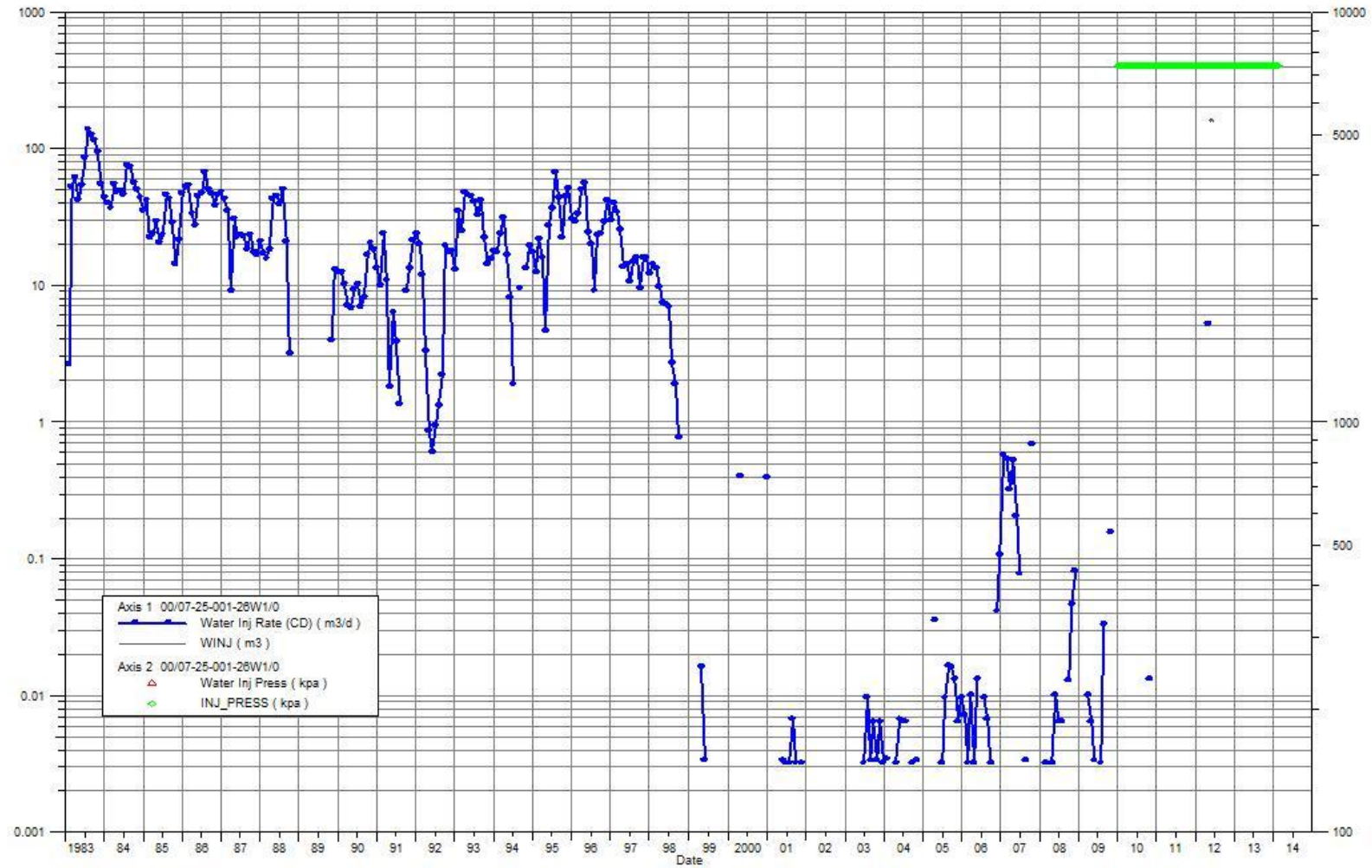
Cumulative Gas Inj : 0.00 MMscm

Cumulative Water Inj : 151.19 Mm3

Cumulative Water Prod : 0.61 Mm3

Cumulative Oil Prod : 1.96 Mm3

Cumulative Gas Prod : 0.00 MMscm



Status: WTR-INJ

Unit: WA BKADA_LOWER_AMARANTH_UNIT_NO_1_-_PW_68

Zone: LOWER_AMARANTH_A

Operator: PENN_WEST / Approval: Amaranth

PENNWEST EXPLORATION

00/07-26-001-26W1/0

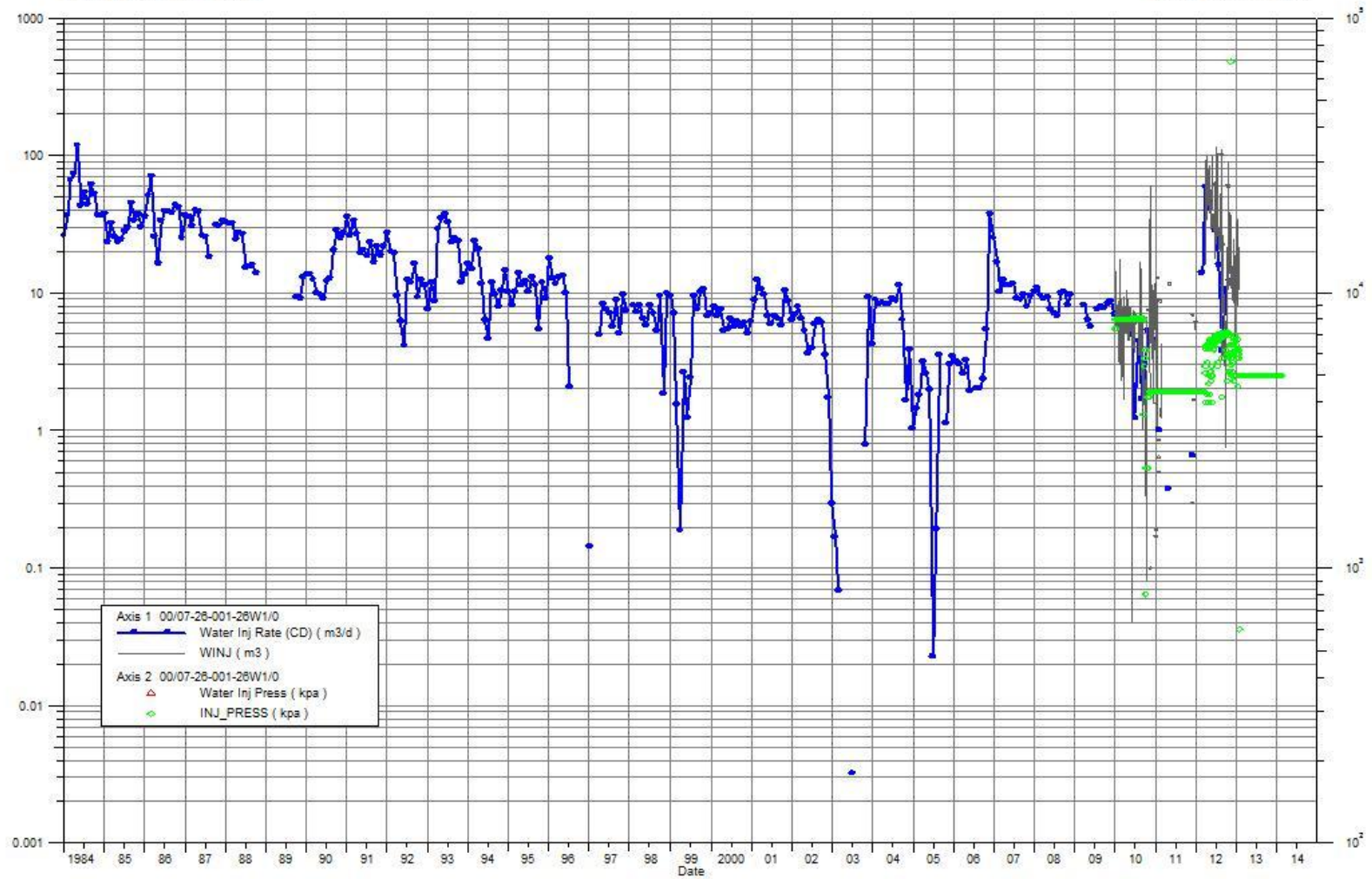
Cumulative Gas Inj : 0.00 MMscm

Cumulative Water Inj : 140.30 Mm3

Cumulative Water Prod : 0.31 Mm3

Cumulative Oil Prod : 2.45 Mm3

Cumulative Gas Prod : 0.00 MMscm



Status: WTR-INJ

Unit: WASKADA_LOWER_AMARANTH_UNIT_NO_1_-_FM_68

Zone: LOWER_AMARANTH_A

Operator: PENN_WEST Approval: Amaranth

PENNWEST EXPLORATION

00/13-25-001-26W1/0

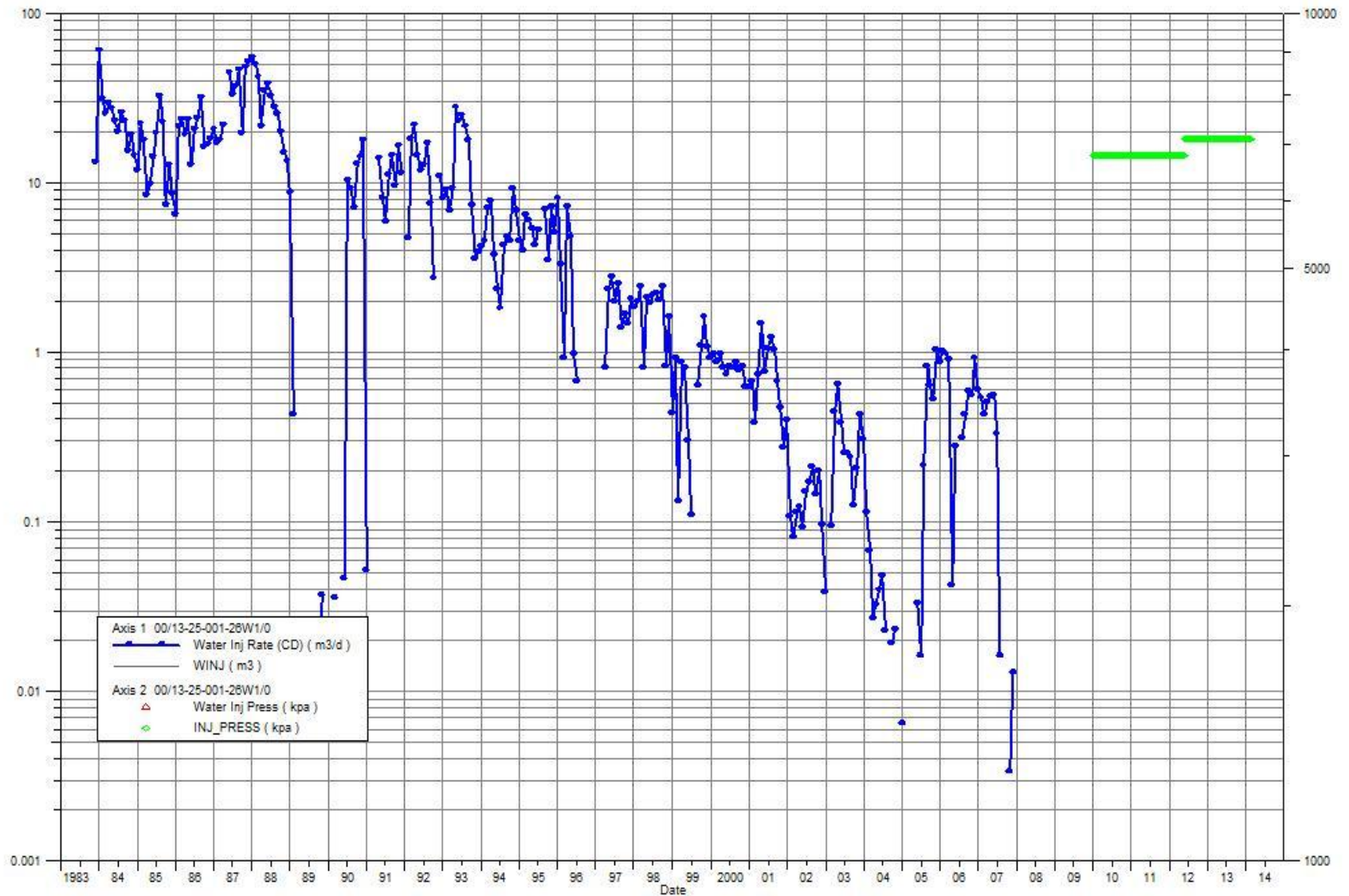
Cumulative Gas Inj : 0.00 MMscm

Cumulative Water Inj : 66.69 Mm3

Cumulative Water Prod : 0.24 Mm3

Cumulative Oil Prod : 0.34 Mm3

Cumulative Gas Prod : 0.00 MMscm



Status: WTR-INJ

Unit: WA BKADA_LOWER_AMARANTH_UNIT_NO_1_-_PW_68

Zone: LOWER_AMARANTH_A

Operator: PENN_WEST Approval: Amaranth

PENNWEST EXPLORATION

00/15-23-001-26W1/0

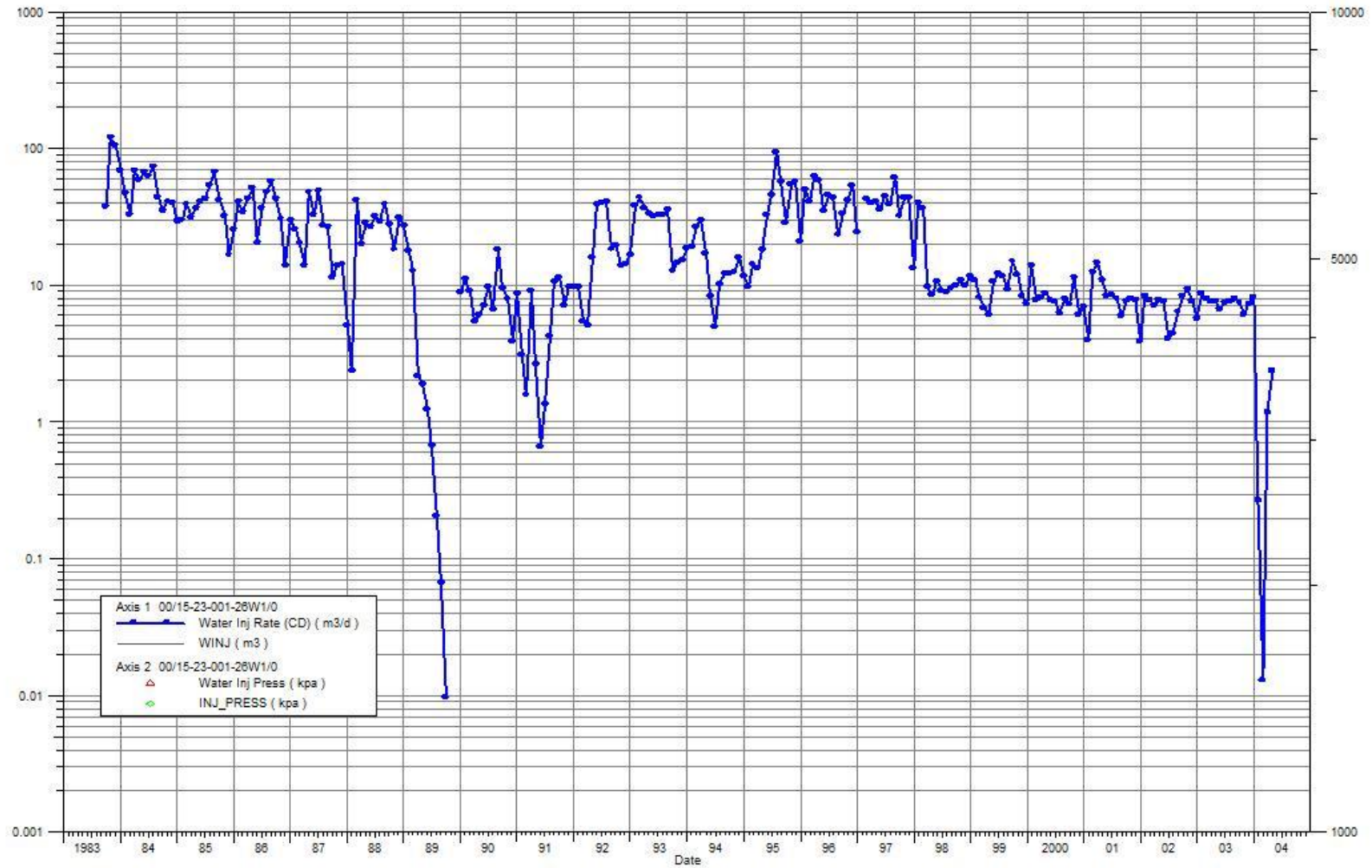
Cumulative Gas Inj : 0.00 MMscm

Cumulative Water Inj : 169.25 Mm3

Cumulative Water Prod : 0.79 Mm3

Cumulative Oil Prod : 2.96 Mm3

Cumulative Gas Prod : 0.00 MMscm



Status: WTR-INJ

Unit: WA BKADA_LOWER_AMARANTH_UNIT_NO_1_-_PW_68

Zone: LOWER_AMARANTH_A

Operator: PENN_WEST Approval: Amaranth

PENNWEST EXPLORATION

00/15-24-001-26W1/0

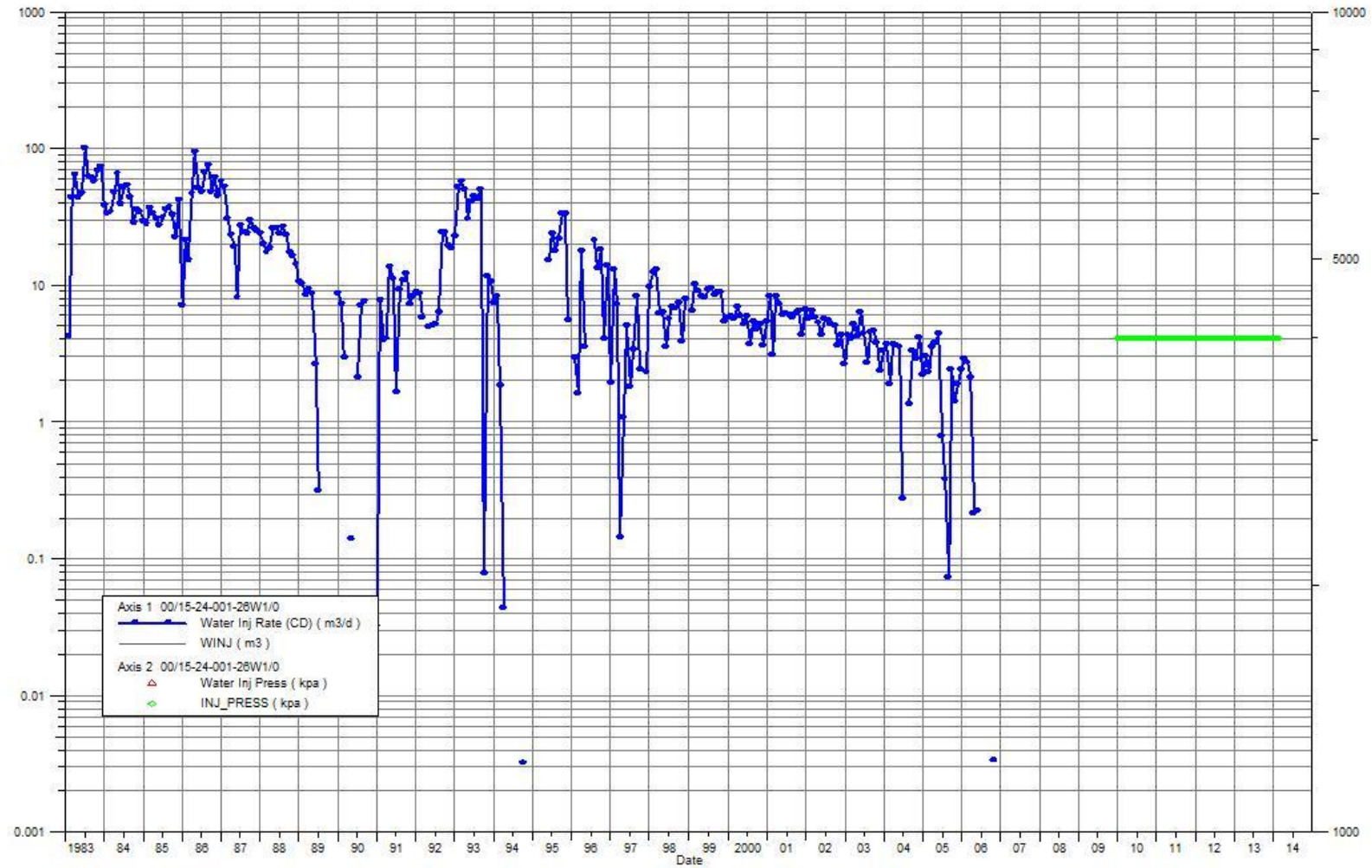
Cumulative Gas Inj : 0.00 MMscm

Cumulative Water Inj : 130.00 Mm3

Cumulative Water Prod : 0.43 Mm3

Cumulative Oil Prod : 3.40 Mm3

Cumulative Gas Prod : 0.00 MMscm



Status: WTR-INJ

Unit: WA BKADA_LOWER_AMARANTH_UNIT_NO_1_-_PM_68

Zone: LOWER_AMARANTH_A

Operator: PENN_WEST Approval: Amaranth

PENNWEST EXPLORATION

00/15-25-001-26W1/0

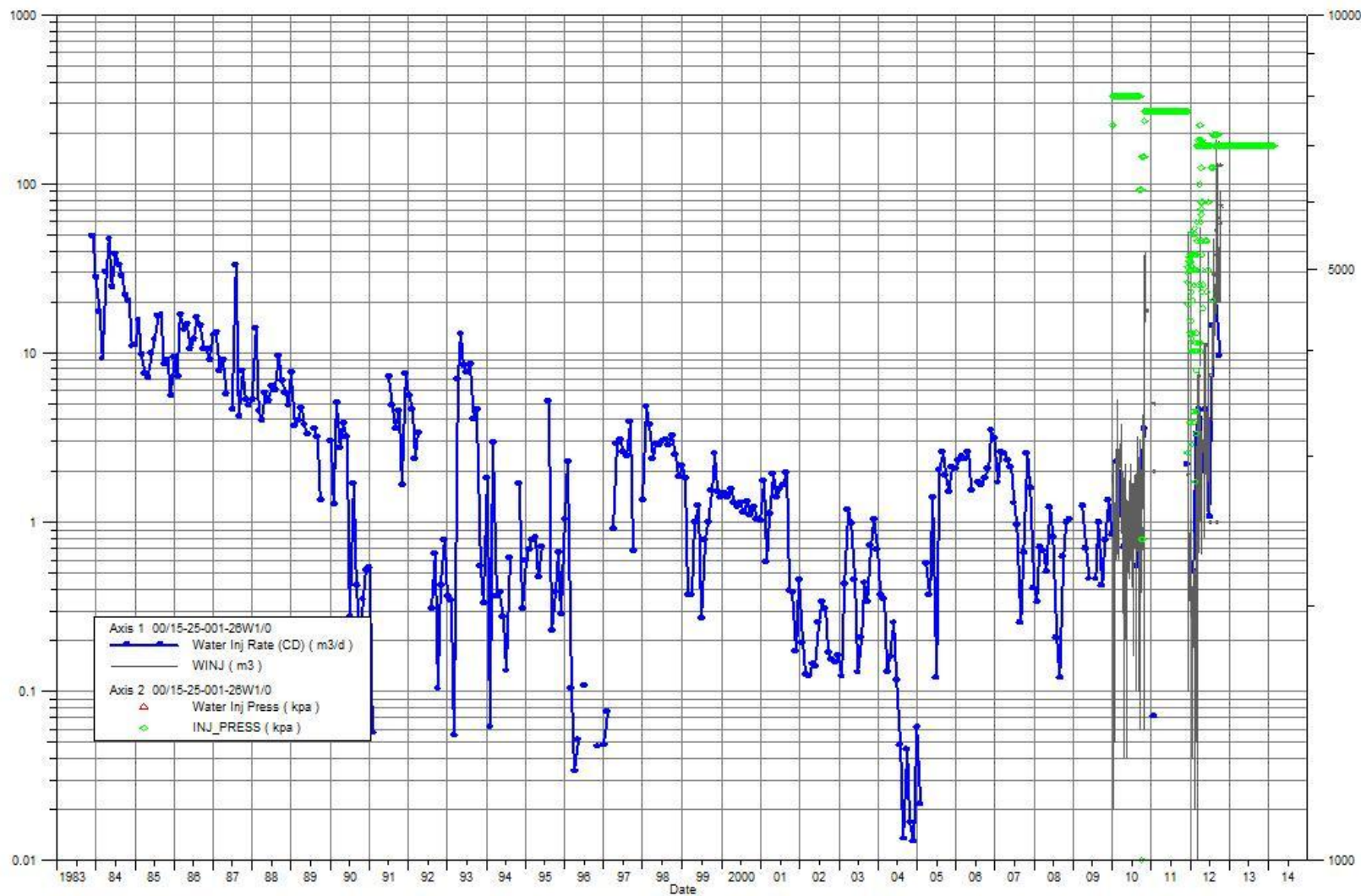
Cumulative Gas Inj : 0.00 MMscm

Cumulative Water Inj : 38.59 Mm3

Cumulative Water Prod : 0.14 Mm3

Cumulative Oil Prod : 0.47 Mm3

Cumulative Gas Prod : 0.00 MMscm



Status: WTR-INJ

Unit: WA SKADA_LOWER_AMARANTH_UNIT_NO_1_-_PM_68

Zone: LOWER_AMARANTH_A

Operator: PENN_WEST Approval: Amaranth

PENNWEST EXPLORATION

02/13-24-001-26W1/0

Cumulative Gas Inj : 0.00 MMscm

Cumulative Water Inj : 125.43 Mm3

Cumulative Water Prod : - Mm3

Cumulative Oil Prod : - Mm3

Cumulative Gas Prod : - MMscm

