

PennWest

Waskada Unit No.5

Waterflood Progress Report

January 1st – December 31st, 2014

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INTRODUCTION:

The Waskada Unit No.5 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, 1985 Board Order – Voluntary

First Enlargement, March 1, 1986 - Voluntary

POOL: Waskada Lower Amaranth A (03 29A)

This report documents the performance of the Waskada Unit No. 5 pressure maintenance project for the period of January 1 to December 31, 2013. The Unit had 14 active producers and no active injectors at the end of 2014. There were no new drills in 2014.

Please refer to Attachment 1A – Area Map of Unit

Unit No. 5 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 onlaps 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 Unit No.5. From the startup of injection in June 1984, injection rates fluctuated to the same degree in each injector, making it difficult to link any production responses to any injector. The Unit includes 9 injection wells; at the end of 2014 none are currently active. Injection ceased essentially in 2006. There are currently 14 active producers; 2 horizontal wells were drilled in 2013 briefly adding to Unit production.

Please refer to Attachment 2 – A Summary of the Unit Well List and History with New Drills

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

Please refer to Attachment 4 – A Summary 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 is at 0.6; the Cumulative VRR from injection start is at 0.7. Both have dropped from 1.0 and 1.3 slightly in the last 4 years due to essentially no injection from 2006 onwards and the startup of new producers. Currently there are no active injectors in this Unit hence Monthly VRR is zero. 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 (9).

Pressure Surveys:

Pressure survey was conducted on one well (102/10-02-002-26W1/0) in 2014 with pressure 3273kPa.

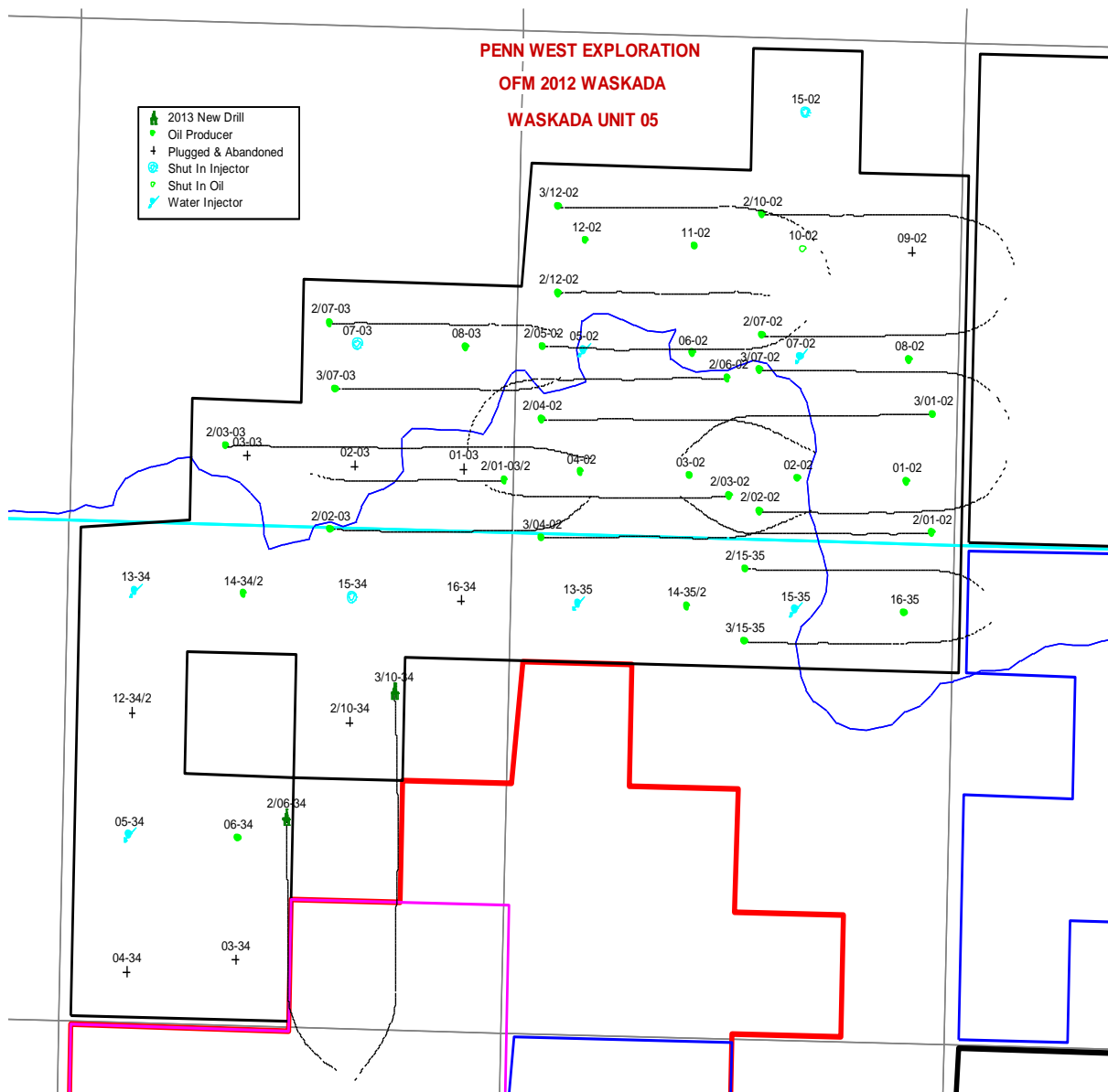
Corrosion and Scale Prevention Program:

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

SUMMARY AND RECOMMENDATIONS

The behavior of Waskada Unit 5 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.

**PENN WEST EXPLORATION
OFM 2012 WASKADA
WASKADA UNIT 05**



***PennWest Exploration
Accumap 2012
Waskada Unit # 5
2014 Pressure Surveys***

UWI: 102/10-02-002-26W1/0
Pressure: 3273 kPa
Date: 11/19/2014

ATTACHMENT 2- UNIT HISTORY

| <i>Unit Histroy : Waskada Unit # 3</i> | | | | | | | | | | | | | | |
|--|------------------------|-----------------|---------------|-------------------|---------------------|--------------------|-----------------------|--------------------|----------------------|----------------------|-----------------------|----------------------|--------------------|----------------------|
| <i>UWI</i> | <i>Completion Date</i> | <i>Operator</i> | <i>Status</i> | <i>New Drills</i> | <i>Kb Elevation</i> | <i>Total Depth</i> | <i>First prd Date</i> | <i>Cum Oil Prd</i> | <i>Cum Water Prd</i> | <i>Last Prd Date</i> | <i>First Inj Date</i> | <i>Cum Water Inj</i> | <i>Cum Gas Inj</i> | <i>Last Inj Date</i> |
| | | | | | <i>m</i> | <i>m</i> | | <i>m3</i> | <i>m3</i> | | | <i>m3</i> | <i>scm</i> | |
| 00/01-02-002-26W1/0 | 10/16/1983 | PENN_WEST | OIL | <N/A> | 469.70 | 952.00 | 11/1/1983 | 10171.20 | 3136.40 | 3/1/2012 | | 0.00 | 0.00 | |
| 00/01-03-002-26W1/0 | 3/14/1984 | PENN_WEST | ABD-OIL | <N/A> | 466.50 | 951.00 | 5/1/1984 | 2717.40 | 1436.80 | 10/1/1996 | | 0.00 | 0.00 | |
| 00/02-02-002-26W1/0 | 10/21/1983 | PENN_WEST | OIL | <N/A> | 468.00 | 954.00 | 11/1/1983 | 6742.90 | 1264.10 | 2/1/2011 | | 0.00 | 0.00 | |
| 00/02-03-002-26W1/0 | 2/27/1984 | PENN_WEST | ABD-OIL | <N/A> | 467.00 | 951.50 | 3/1/1984 | 1650.10 | 895.70 | 4/1/1990 | | 0.00 | 0.00 | |
| 00/03-02-002-26W1/0 | 12/5/1983 | PENN_WEST | OIL | <N/A> | 469.80 | 950.00 | 2/1/1984 | 4775.80 | 1643.30 | 11/1/2012 | | 0.00 | 0.00 | |
| 00/03-03-002-26W1/0 | 3/4/1984 | PENN_WEST | ABD-OIL | <N/A> | 465.60 | 950.00 | 3/1/1984 | 1441.50 | 2967.80 | 7/1/1986 | | 0.00 | 0.00 | |
| 00/03-34-001-26W1/0 | 2/9/1981 | OMEGA_HYDROC | ABD-OIL | <N/A> | 464.50 | 968.10 | 6/1/1981 | 1535.20 | 5834.50 | 12/1/1989 | | 0.00 | 0.00 | |
| 00/04-02-002-26W1/0 | 10/20/1983 | PENN_WEST | OIL | <N/A> | 467.00 | 955.00 | 11/1/1983 | 6025.50 | 1250.10 | 8/1/2011 | | 0.00 | 0.00 | |
| 00/04-34-001-26W1/0 | 6/23/1984 | OMEGA_HYDROC | ABD-OIL | <N/A> | 465.00 | 958.00 | 7/1/1984 | 352.90 | 10302.40 | 2/1/1988 | | 0.00 | 0.00 | |
| 00/05-02-002-26W1/0 | 12/1/1983 | PENN_WEST | WTR-INJ | <N/A> | 465.80 | 945.00 | 1/1/1984 | 894.20 | 322.30 | 12/1/1984 | 1/1/1985 | 20882.60 | 0.00 | 10/1/2003 |
| 00/05-34-001-26W1/0 | 6/27/1984 | PENN_WEST | WTR-INJ | <N/A> | 466.30 | 960.00 | 7/1/1984 | 821.60 | 4442.40 | 2/1/1986 | 3/1/1986 | 20335.00 | 0.00 | 4/1/1998 |
| 00/06-02-002-26W1/0 | 7/17/1983 | PENN_WEST | OIL | <N/A> | 468.40 | 950.00 | 8/1/1983 | 5833.00 | 1413.20 | 10/1/2013 | | 0.00 | 0.00 | |
| 00/06-34-001-26W1/0 | 11/30/1983 | PENN_WEST | OIL | <N/A> | 465.10 | 937.00 | 2/1/1984 | 5049.50 | 32844.00 | 9/1/2008 | | 0.00 | 0.00 | |
| 00/07-02-002-26W1/0 | 10/16/1983 | PENN_WEST | WTR-INJ | <N/A> | 468.50 | 948.00 | 11/1/1983 | 722.30 | 298.90 | 12/1/1984 | 1/1/1985 | 21327.00 | 0.00 | 6/1/2004 |
| 00/07-03-002-26W1/0 | 8/24/1983 | PENN_WEST | SUS-WTR-INJ | <N/A> | 469.50 | 950.00 | 9/1/1983 | 1405.90 | 716.50 | 2/1/1986 | 3/1/1986 | 27111.60 | 0.00 | 4/1/1998 |
| 00/08-02-002-26W1/0 | 10/12/1983 | PENN_WEST | OIL | <N/A> | 466.40 | 948.00 | 11/1/1983 | 4609.30 | 1444.40 | 6/1/2008 | | 0.00 | 0.00 | |
| 00/08-03-002-26W1/0 | 3/23/1984 | PENN_WEST | OIL | <N/A> | 468.10 | 950.00 | 6/1/1984 | 5107.00 | 2517.50 | 8/1/2013 | | 0.00 | 0.00 | |
| 00/09-02-002-26W1/0 | 11/22/1983 | PENN_WEST | ABD-OIL | <N/A> | 469.00 | 951.00 | 1/1/1984 | 2107.70 | 569.20 | 3/1/1991 | | 0.00 | 0.00 | |
| 00/10-02-002-26W1/0 | 11/25/1983 | PENN_WEST | SUS-OIL | <N/A> | 469.40 | 941.00 | 1/1/1984 | 3206.30 | 920.20 | 5/1/2008 | | 0.00 | 0.00 | |
| 00/11-02-002-26W1/0 | 11/26/1983 | PENN_WEST | OIL | <N/A> | 467.30 | 950.00 | 1/1/1984 | 7295.90 | 9128.90 | 6/1/2011 | | 0.00 | 0.00 | |
| 00/12-02-002-26W1/0 | 9/3/1983 | PENN_WEST | OIL | <N/A> | 469.70 | 950.00 | 9/1/1983 | 5700.20 | 1735.40 | 7/1/2011 | | 0.00 | 0.00 | |
| 00/12-34-001-26W1/2 | 3/19/1984 | PENN_WEST | ABD-OIL | <N/A> | 467.50 | 961.00 | 6/1/1984 | 2757.10 | 11032.50 | 4/1/1996 | | 0.00 | 0.00 | |
| 00/13-34-001-26W1/0 | 9/12/1983 | PENN_WEST | WTR-INJ | <N/A> | 464.90 | 951.00 | 10/1/1983 | 806.90 | 2737.80 | 2/1/1986 | 3/1/1986 | 30344.30 | 0.00 | 5/1/2000 |
| 00/13-35-001-26W1/0 | 9/23/1983 | PENN_WEST | WTR-INJ | <N/A> | 467.50 | 956.00 | 10/1/1983 | 802.10 | 1401.70 | 12/1/1984 | 1/1/1985 | 20297.70 | 0.00 | 10/1/2003 |
| 00/14-34-001-26W1/2 | 6/28/1983 | PENN_WEST | CMG-OIL | <N/A> | 465.10 | 957.00 | 8/1/1983 | 2191.40 | 4042.50 | 11/1/2011 | | 0.00 | 0.00 | |

| | | | | | | | | | | | | | | |
|---------------------|------------|--------------|-------------|-------|--------|---------|-----------|----------|---------|-----------|----------|----------|------|----------|
| 00/14-35-001-26W1/2 | 9/20/1983 | PENN_WEST | OIL | <N/A> | 469.30 | 956.00 | 10/1/1983 | 6005.80 | 6250.60 | 4/1/2012 | | 0.00 | 0.00 | |
| 00/15-02-002-26W1/0 | 9/28/1982 | PENN_WEST | SUS-WTR-INJ | <N/A> | 469.20 | 948.00 | 11/1/1982 | 1039.00 | 636.50 | 1/1/1986 | 3/1/1986 | 24389.20 | 0.00 | 4/1/1998 |
| 00/15-34-001-26W1/0 | 10/29/1983 | PENN_WEST | SUS-WTR-INJ | <N/A> | 464.80 | 950.00 | 2/1/1984 | 455.30 | 1768.60 | 2/1/1986 | 3/1/1986 | 52436.10 | 0.00 | 4/1/1998 |
| 00/15-35-001-26W1/0 | 9/17/1983 | PENN_WEST | WTR-INJ | <N/A> | 469.20 | 943.00 | 10/1/1983 | 1240.10 | 279.80 | 12/1/1984 | 1/1/1985 | 24849.70 | 0.00 | 2/1/2006 |
| 00/16-34-001-26W1/0 | 10/25/1983 | OMEGA_HYDROC | ABD-OIL | <N/A> | 466.50 | 951.00 | 1/1/1984 | 255.60 | 1995.70 | 4/1/1989 | | 0.00 | 0.00 | |
| 00/16-35-001-26W1/0 | 9/17/1983 | PENN_WEST | OIL | <N/A> | 470.30 | 948.00 | 10/1/1983 | 13266.60 | 2143.90 | 9/1/2012 | | 0.00 | 0.00 | |
| 02/01-02-002-26W1/0 | 2/9/2010 | PENN_WEST | OIL | <N/A> | 471.50 | 1787.00 | 7/1/2010 | 4224.50 | 2949.30 | 9/1/2012 | | 0.00 | 0.00 | |
| 02/02-02-002-26W1/0 | 1/14/2011 | PENN_WEST | OIL | <N/A> | 471.20 | 1780.00 | 3/1/2011 | 1674.40 | 3215.30 | 5/1/2014 | | 0.00 | 0.00 | |
| 02/02-03-002-26W1/0 | 2/23/2010 | PENN_WEST | OIL | <N/A> | 468.20 | 1792.00 | 7/1/2010 | 1913.00 | 1541.30 | 10/1/2012 | | 0.00 | 0.00 | |
| 02/03-02-002-26W1/0 | 2/23/2011 | PENN_WEST | OIL | <N/A> | 467.60 | 1766.00 | 9/1/2011 | 1279.60 | 2309.70 | 1/1/2015 | | 0.00 | 0.00 | |
| 02/03-03-002-26W1/0 | 3/1/2010 | PENN_WEST | OIL | <N/A> | 468.60 | 2145.00 | 7/1/2010 | 9620.30 | 7663.00 | 1/1/2015 | | 0.00 | 0.00 | |
| 02/04-02-002-26W1/0 | 9/8/2009 | PENN_WEST | OIL | <N/A> | 469.80 | 1872.00 | 11/1/2009 | 5279.70 | 3346.30 | 5/1/2014 | | 0.00 | 0.00 | |
| 02/05-02-002-26W1/0 | 1/19/2011 | PENN_WEST | OIL | <N/A> | 472.00 | 1849.00 | 2/1/2011 | 3376.50 | 3157.90 | 1/1/2015 | | 0.00 | 0.00 | |
| 02/06-02-002-26W1/0 | 3/4/2011 | PENN_WEST | OIL | <N/A> | 467.50 | 1861.00 | 9/1/2011 | 912.20 | 2017.60 | 4/1/2013 | | 0.00 | 0.00 | |
| 02/07-02-002-26W1/0 | 2/17/2011 | PENN_WEST | OIL | <N/A> | 469.70 | 1754.00 | 3/1/2011 | 1759.30 | 1851.50 | 4/1/2014 | | 0.00 | 0.00 | |
| 02/07-03-002-26W1/0 | 2/26/2012 | PENN_WEST | OIL | <N/A> | 467.80 | 1683.00 | 3/1/2012 | 3270.40 | 2209.70 | 1/1/2015 | | 0.00 | 0.00 | |
| 02/10-02-002-26W1/0 | 2/11/2011 | PENN_WEST | OIL | <N/A> | 471.00 | 1783.00 | 3/1/2011 | 2344.30 | 3293.80 | 12/1/2013 | | 0.00 | 0.00 | |
| 02/10-34-001-26W1/0 | 9/13/1983 | OMEGA_HYDROC | ABD-OIL | <N/A> | 465.50 | 949.00 | 12/1/1983 | 651.80 | 7152.20 | 1/1/1990 | | 0.00 | 0.00 | |
| 02/12-02-002-26W1/0 | 2/2/2010 | PENN_WEST | OIL | <N/A> | 470.10 | 1642.00 | 3/1/2010 | 5633.20 | 4839.10 | 1/1/2015 | | 0.00 | 0.00 | |
| 02/15-35-001-26W1/0 | 10/11/2011 | PENN_WEST | OIL | <N/A> | 470.50 | 1774.00 | 11/1/2011 | 2936.30 | 2549.70 | 1/1/2014 | | 0.00 | 0.00 | |
| 03/01-02-002-26W1/0 | 2/14/2010 | PENN_WEST | OIL | <N/A> | 471.60 | 1781.00 | 7/1/2010 | 5673.40 | 3638.90 | 1/1/2015 | | 0.00 | 0.00 | |
| 03/04-02-002-26W1/0 | 9/2/2009 | PENN_WEST | OIL | <N/A> | 469.60 | 1866.00 | 11/1/2009 | 4221.00 | 5281.30 | 1/1/2015 | | 0.00 | 0.00 | |
| 03/07-02-002-26W1/0 | 1/21/2011 | PENN_WEST | OIL | <N/A> | 470.90 | 1785.00 | 3/1/2011 | 1550.30 | 2858.90 | 7/1/2013 | | 0.00 | 0.00 | |
| 03/07-03-002-26W1/0 | 2/19/2012 | PENN_WEST | OIL | <N/A> | 467.80 | 1690.00 | 3/1/2012 | 3862.00 | 3328.40 | 4/1/2014 | | 0.00 | 0.00 | |
| 03/12-02-002-26W1/0 | 1/11/2011 | PENN_WEST | OIL | <N/A> | 471.90 | 1850.00 | 2/1/2011 | 3720.50 | 2592.30 | 4/1/2014 | | 0.00 | 0.00 | |
| 03/15-35-001-26W1/0 | 10/5/2011 | PENN_WEST | OIL | <N/A> | 470.30 | 1767.00 | 11/1/2011 | 11785.40 | 3397.20 | 1/1/2015 | | 0.00 | 0.00 | |

ATTACHMENT 3 – UNIT PRODUCTION AND INJECTION PLOT

PENN WEST

UNIT: WASKADA_UNIT_NO_5_-_PM_58

Last Prod/Inj Date: 201501

Cumulative Gas Inj : 0.00 MMscm

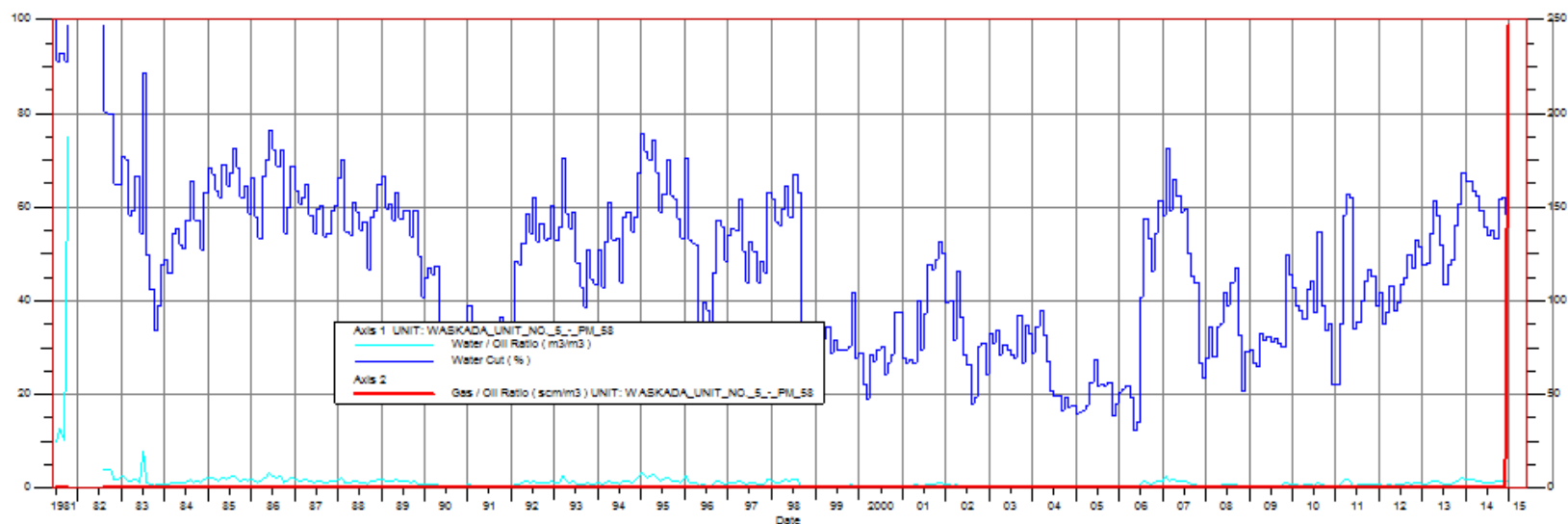
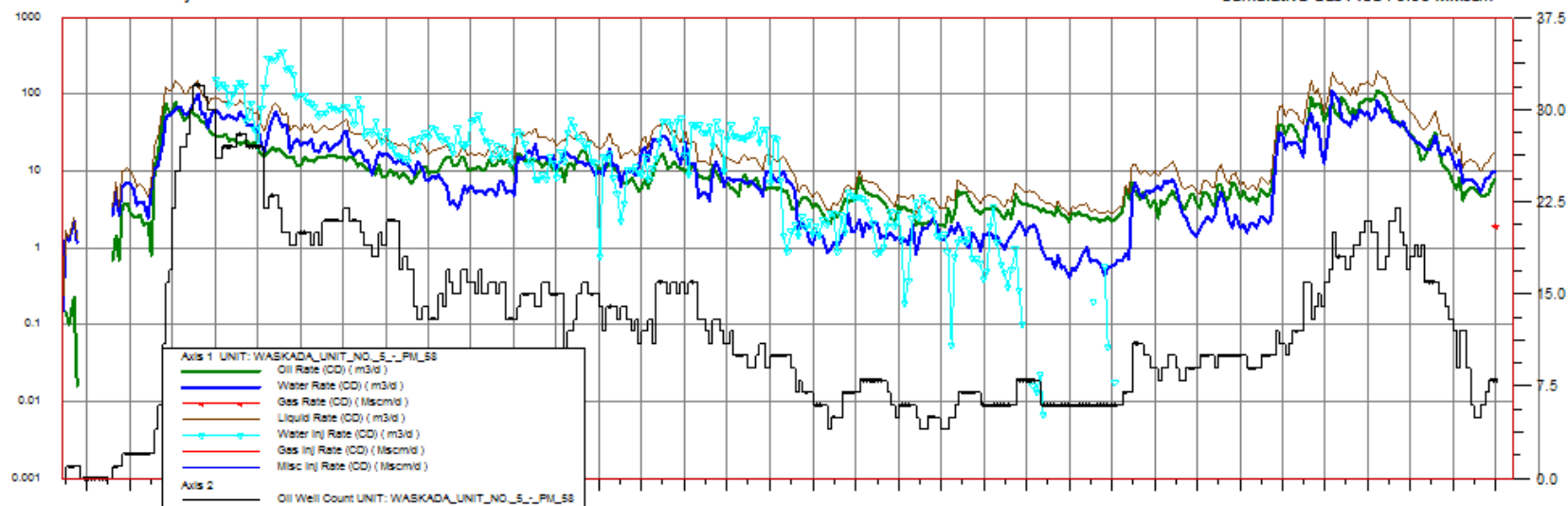
Cumulative Water Inj : 241.97 Mm3

Cumulative Misc Inj : 0.00 MMscm

Cumulative Water Prod : 186.57 Mm3

Cumulative Oil Prod : 182.67 Mm3

Cumulative Gas Prod : 0.06 MMscm



ATTACHMENT 4 –UNIT ANNUAL VOLUMES AND RATES

| Unit : Waskada Unit No 5 -- PM58 | | | | | | | | |
|----------------------------------|----------------|-------------------|-------------------|-------------------|------------------|-----------------------|----------------|---------------------|
| Rates and Volume History | | | | | | | | |
| Date | Annual Oil Prd | Annual Water Prod | Annual Water Prod | Annual Water Rate | Annual Water Inj | Annual Water Inj Rate | Annual Gas Inj | Annual Gas Inj Rate |
| | m3 | m3/d | m3 | m3/d | m3 | m3/d | Mscm | Mscm/d |
| 1/1/1981 | 15.10 | 0.04 | 196.80 | 0.54 | 0 | 0.00 | 0.00 | 0.00 |
| 1/1/1982 | 310.70 | 0.85 | 758.00 | 2.08 | 0 | 0.00 | 0.00 | 0.00 |
| 1/1/1983 | 6802.30 | 18.64 | 5551.10 | 15.21 | 0 | 0.00 | 0.00 | 0.00 |
| 1/1/1984 | 18806.00 | 51.38 | 22873.80 | 62.50 | 0 | 0.00 | 0.00 | 0.00 |
| 1/1/1985 | 9417.80 | 25.80 | 18212.20 | 49.90 | 38316 | 104.97 | 0.00 | 0.00 |
| 1/1/1986 | 6226.00 | 17.06 | 12759.10 | 34.96 | 75812 | 207.70 | 0.00 | 0.00 |
| 1/1/1987 | 5464.40 | 14.97 | 7974.00 | 21.85 | 25875 | 70.89 | 0.00 | 0.00 |
| 1/1/1988 | 4449.70 | 12.16 | 6636.20 | 18.13 | 17778 | 48.57 | 0.00 | 0.00 |
| 1/1/1989 | 3361.70 | 9.21 | 4542.00 | 12.44 | 7984 | 21.87 | 0.00 | 0.00 |
| 1/1/1990 | 4526.20 | 12.40 | 2268.00 | 6.21 | 9757 | 26.73 | 0.00 | 0.00 |
| 1/1/1991 | 4438.60 | 12.16 | 2154.80 | 5.90 | 10083 | 27.62 | 0.00 | 0.00 |
| 1/1/1992 | 4824.00 | 13.18 | 5584.10 | 15.26 | 6146 | 16.79 | 0.00 | 0.00 |
| 1/1/1993 | 4716.50 | 12.92 | 4984.20 | 13.66 | 8476 | 23.22 | 0.00 | 0.00 |
| 1/1/1994 | 3345.80 | 9.17 | 4038.60 | 11.06 | 3292 | 9.02 | 0.00 | 0.00 |
| 1/1/1995 | 4083.80 | 11.19 | 7705.30 | 21.11 | 10010 | 27.42 | 0.00 | 0.00 |
| 1/1/1996 | 3455.00 | 9.44 | 3653.40 | 9.98 | 10941 | 29.89 | 0.00 | 0.00 |
| 1/1/1997 | 2460.80 | 6.74 | 2678.30 | 7.34 | 11485 | 31.46 | 0.00 | 0.00 |
| 1/1/1998 | 1785.70 | 4.89 | 2161.30 | 5.92 | 2491 | 6.82 | 0.00 | 0.00 |
| 1/1/1999 | 1191.50 | 3.26 | 538.70 | 1.48 | 921 | 2.52 | 0.00 | 0.00 |
| 1/1/2000 | 1684.70 | 4.60 | 632.00 | 1.73 | 985 | 2.69 | 0.00 | 0.00 |
| 1/1/2001 | 954.80 | 2.62 | 593.20 | 1.63 | 900 | 2.47 | 0.00 | 0.00 |
| 1/1/2002 | 1283.70 | 3.52 | 540.40 | 1.48 | 367 | 1.00 | 0.00 | 0.00 |
| 1/1/2003 | 1228.60 | 3.37 | 554.70 | 1.52 | 328 | 0.90 | 0.00 | 0.00 |
| 1/1/2004 | 1162.00 | 3.17 | 398.70 | 1.09 | 2 | 0.00 | 0.00 | 0.00 |
| 1/1/2005 | 938.70 | 2.57 | 234.40 | 0.64 | 25 | 0.07 | 0.00 | 0.00 |
| 1/1/2006 | 1552.50 | 4.25 | 1128.90 | 3.09 | 1 | 0.00 | 0.00 | 0.00 |
| 1/1/2007 | 1514.90 | 4.15 | 1824.00 | 5.00 | 0 | 0.00 | 0.00 | 0.00 |
| 1/1/2008 | 1865.80 | 5.10 | 996.90 | 2.72 | 0 | 0.00 | 0.00 | 0.00 |
| 1/1/2009 | 3102.80 | 8.50 | 2077.90 | 5.69 | 0 | 0.00 | 0.00 | 0.00 |
| 1/1/2010 | 17419.90 | 47.73 | 10622.00 | 29.10 | 0 | 0.00 | 0.00 | 0.00 |
| 1/1/2011 | 24630.20 | 67.48 | 20939.80 | 57.37 | 0 | 0.00 | 0.00 | 0.00 |
| 1/1/2012 | 26092.60 | 71.29 | 19258.40 | 52.62 | 0 | 0.00 | 0.00 | 0.00 |
| 1/1/2013 | 7184.40 | 19.68 | 7946.40 | 21.77 | 0 | 0.00 | 0.00 | 0.00 |
| 1/1/2014 | 2134.60 | 5.85 | 3239.20 | 8.87 | 0 | 0.00 | 0.00 | 0.00 |
| Sum | 182431.80 | | 186256.80 | | 241973 | | | |

ATTACHMENT 5 – UNIT CUMULATIVE PRODUCTION AND INJECTION PLOT

PENNWEST

UNIT: WASKADA_UNIT_NO_5_-_PM_58

Cumulative Water Prod : 186.57 Mm3

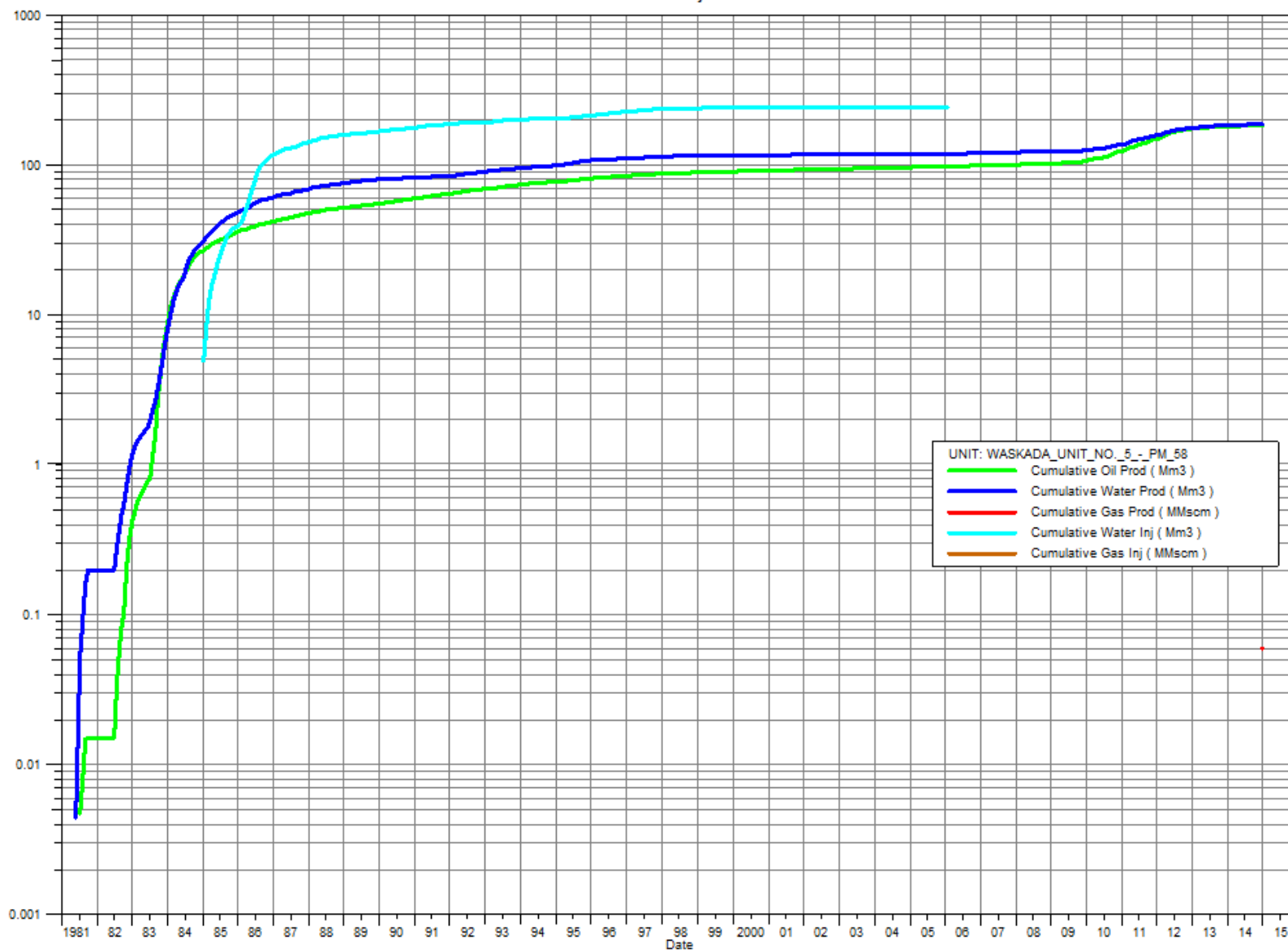
Cumulative Oil Prod : 182.67 Mm3

Cumulative Gas Prod : 0.06 MMscm

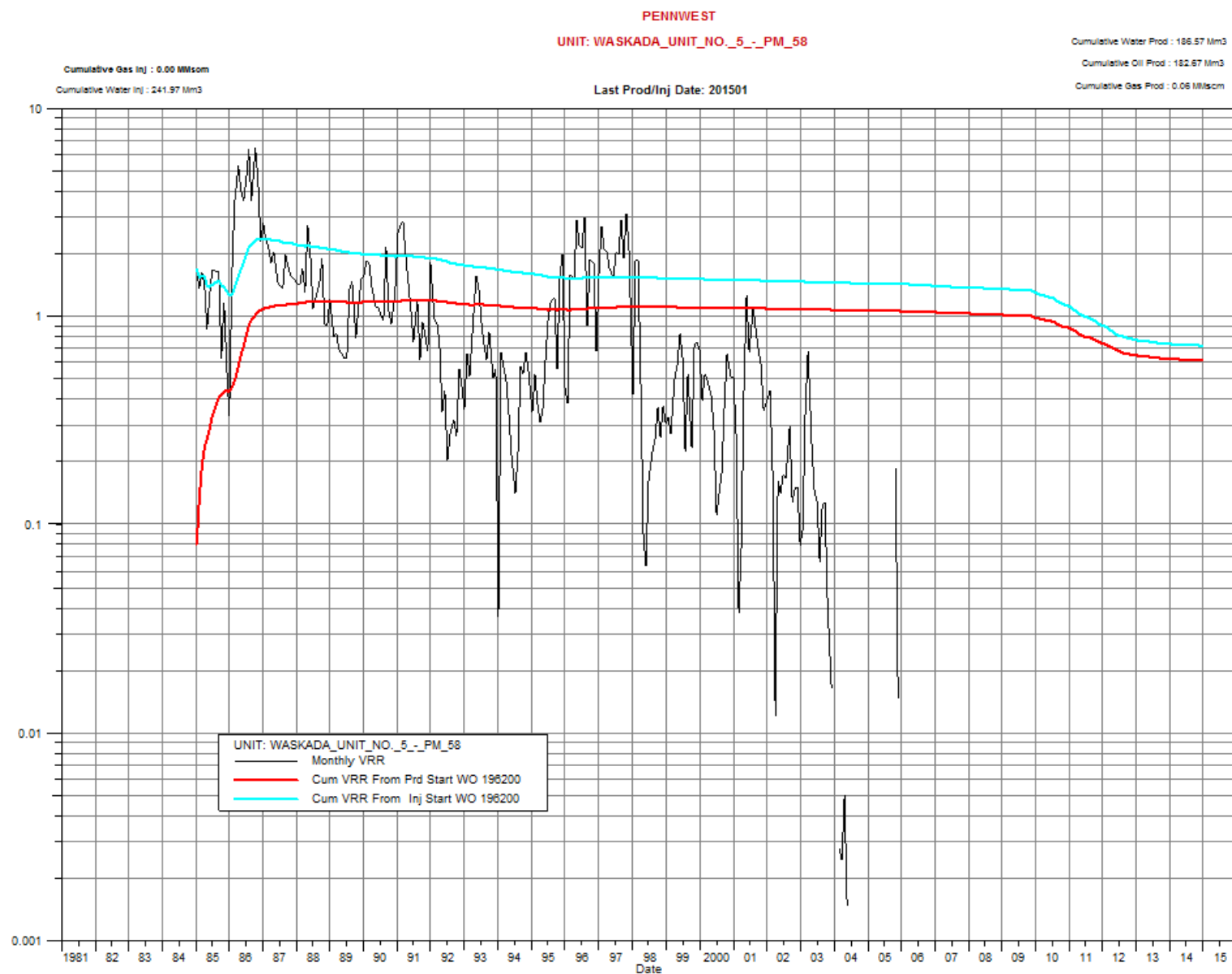
Cumulative Gas Inj : 0.00 MMscm

Cumulative Water Inj : 241.97 Mm3

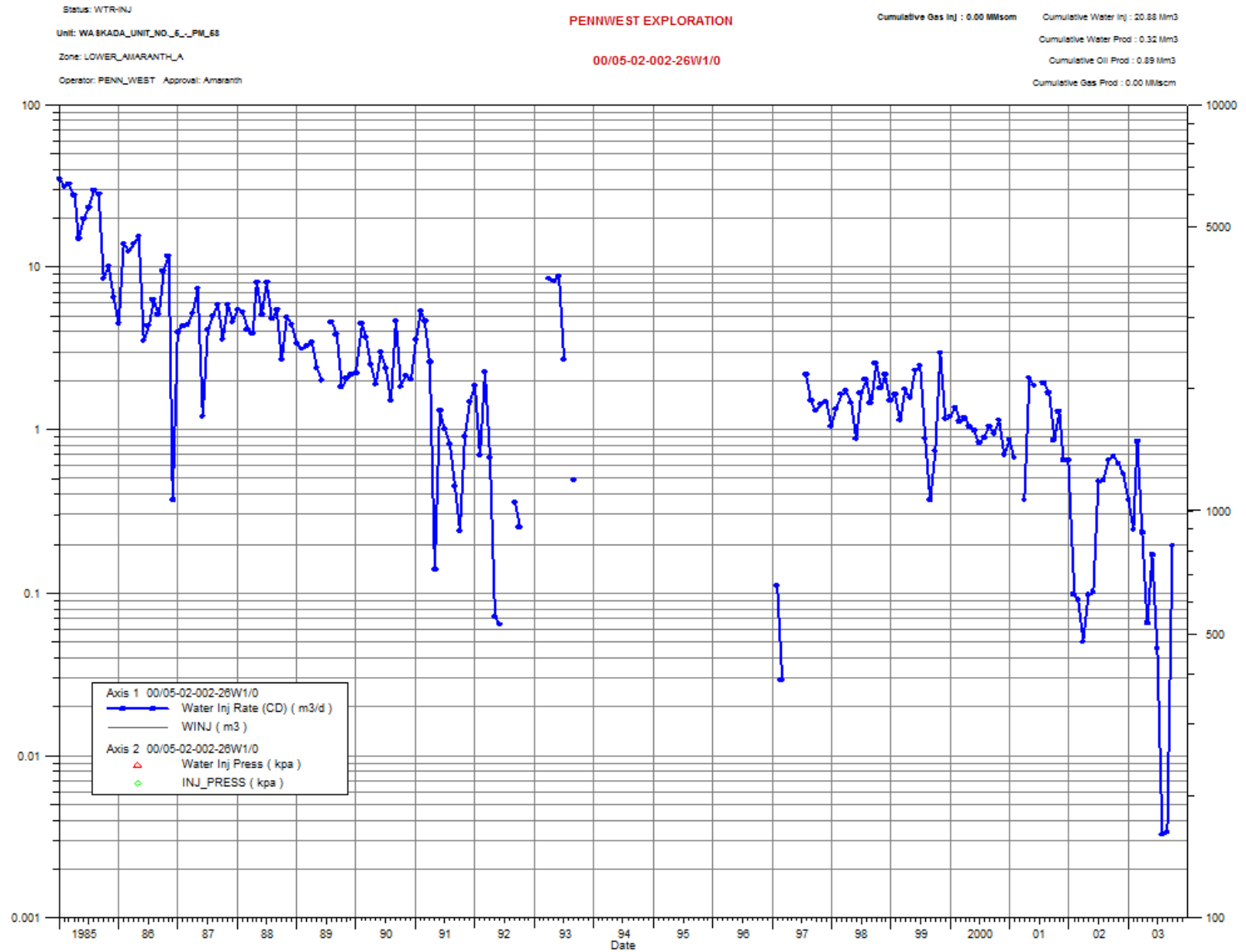
Last Prod/Inj Date: 201501



ATTACHMENT 6 – UNIT VOIDAGE REPLACEMENT RATIO PLOT



ATTACHMENT 7 – INDIVIDUAL INJECTION WELL PERFORMANCE PLOTS (9 WELLS)



Status: WTR-INJ

Unit: WA BKADA_UNIT_NO_6_-_PIL_68

Zone: LOWER_AMARANTH_A

Operator: PENN_WEST Approval: Amaranth

PENNWEST EXPLORATION

00/05-34-001-26W1/0

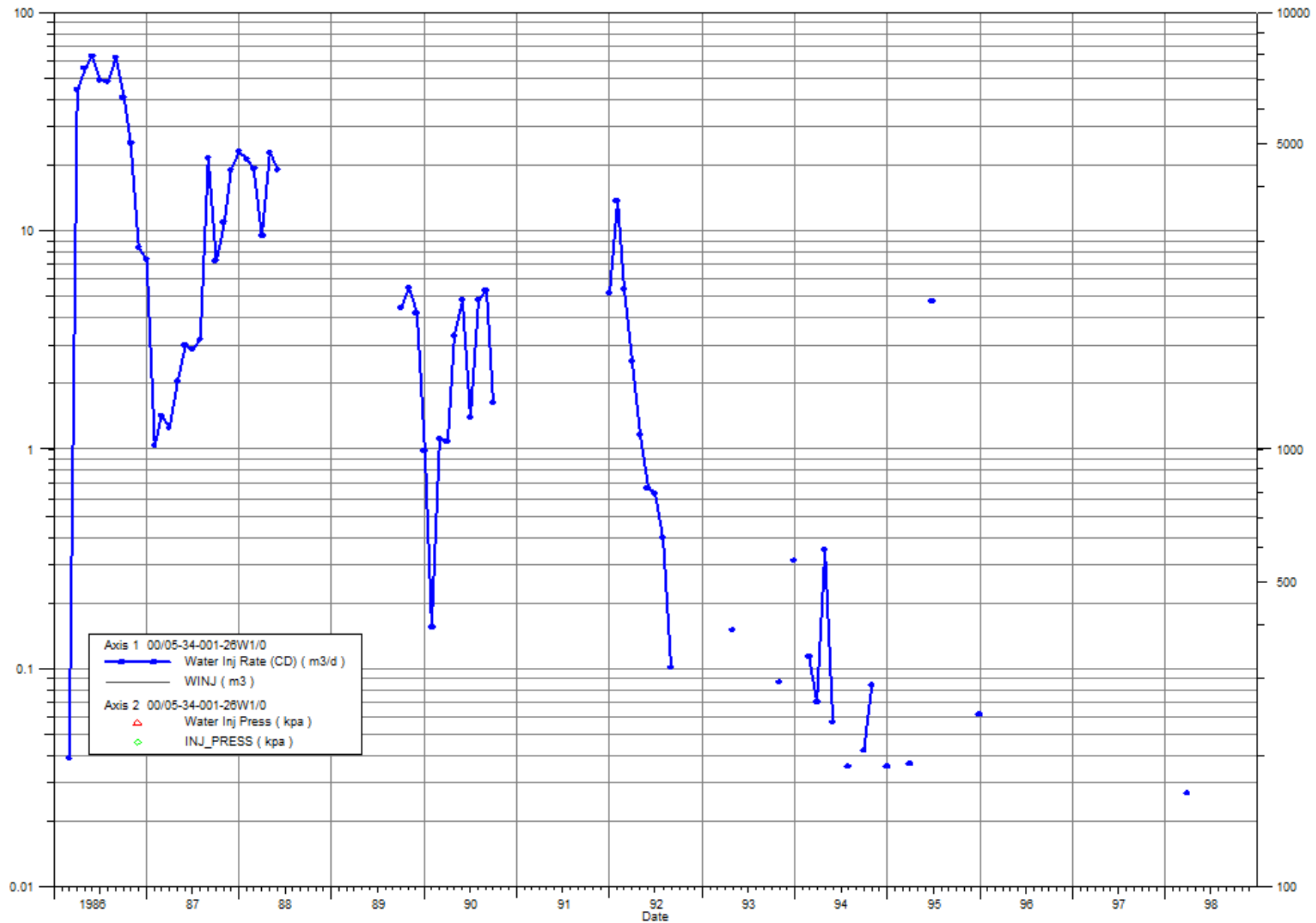
Cumulative Gas Inj : 0.00 MMscm

Cumulative Water Inj : 20.34 Mm3

Cumulative Water Prod : 4.44 Mm3

Cumulative Oil Prod : 0.82 Mm3

Cumulative Gas Prod : 0.00 MMscm



Status: WTR-INJ

Unit: WABKADA_UNIT_NO_6_-_PM_68

Zone: LOWER_AMARANTH_A

Operator: PENN_WEST Approval: Amaranth

PENNWEST EXPLORATION

00/07-02-002-26W1/0

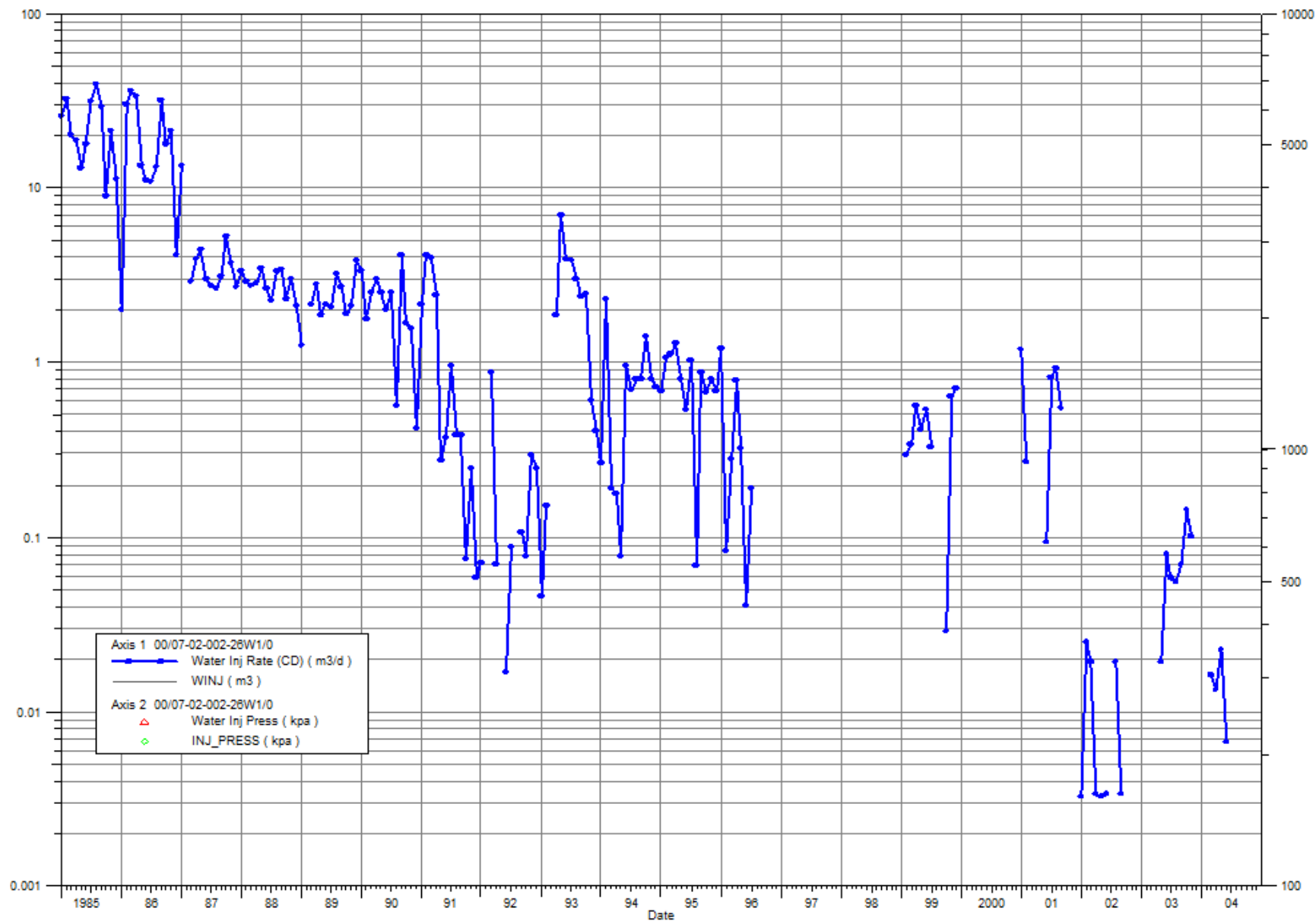
Cumulative Gas Inj : 0.00 Mm3

Cumulative Water Inj : 21.33 Mm3

Cumulative Water Prod : 0.30 Mm3

Cumulative Oil Prod : 0.72 Mm3

Cumulative Gas Prod : 0.00 Mm3



Status: SUS-WTR-INJ

Unit: WA SKADA_UNIT_NO_5_-_PM_68

Zone: LOWER_AMARANTH_A

Operator: PENN_WEST Approval: Amaranth

PENNWEST EXPLORATION

Cumulative Gas Inj : 0.00 MMscm

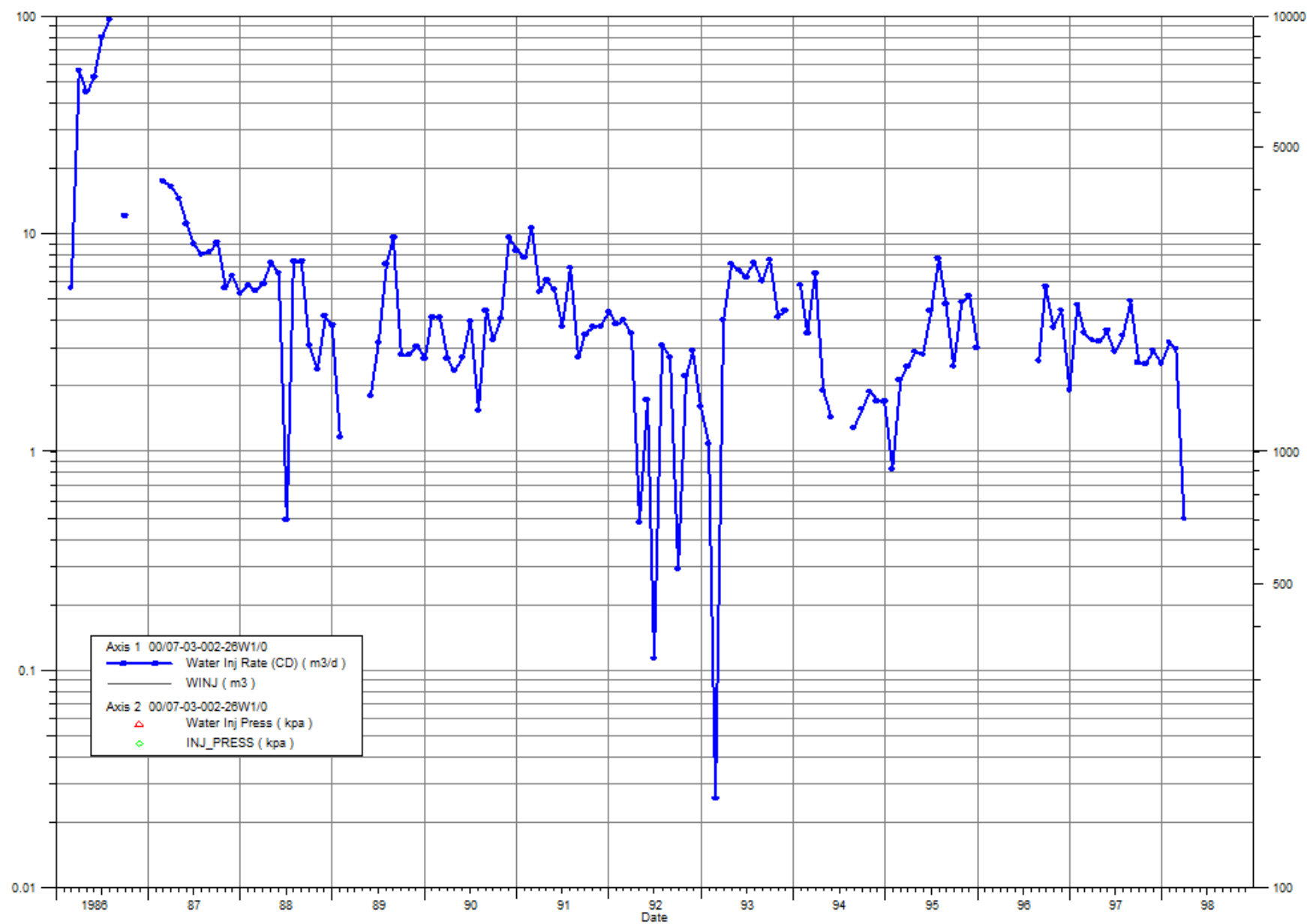
Cumulative Water Inj : 27.11 Mm3

Cumulative Water Prod : 0.72 Mm3

Cumulative Oil Prod : 1.41 Mm3

00/07-03-002-26W1/0

Cumulative Gas Prod : 0.00 MMscm



Status: WTR-INJ

Unit: WASKADA_UNIT_NO_6_-_PM_68

Zone: LOWER_AMARANTH_A

Operator: PENN_WEST Approval: Amaranth

PENNWEST EXPLORATION

00/13-34-001-26W1/0

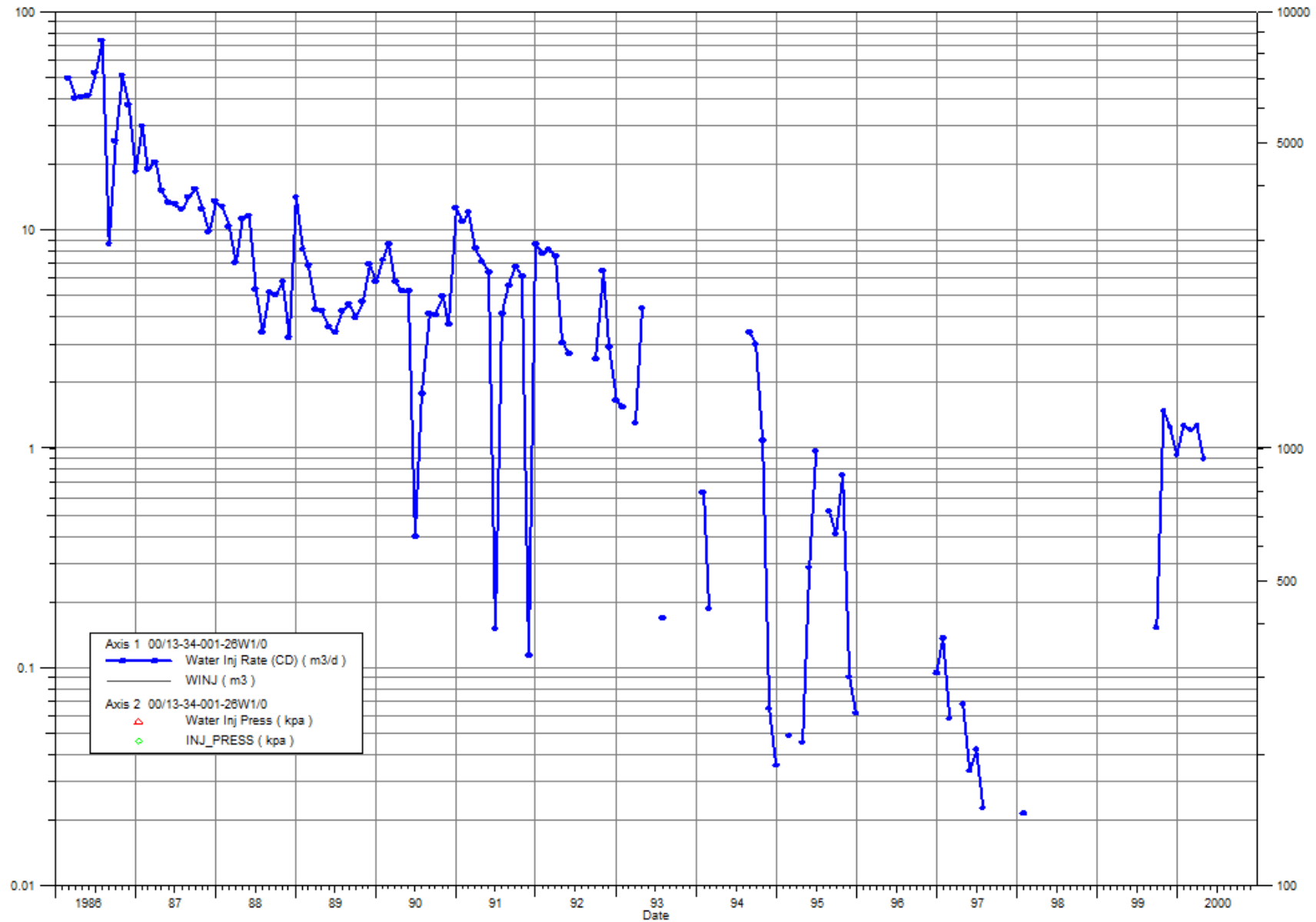
Cumulative Gas Inj : 0.00 MMscm

Cumulative Water Inj : 30.34 Mm3

Cumulative Water Prod : 2.74 Mm3

Cumulative Oil Prod : 0.81 Mm3

Cumulative Gas Prod : 0.00 MMscm



Status: WTR-INJ

Unit: WAKADA_UNIT_NO_6_L_PM_68

Zone: LOWER_AMARANTH_A

Operator: PENN_WEST Approval: Amaranth

PENNWEST EXPLORATION

00/13-35-001-26W1/0

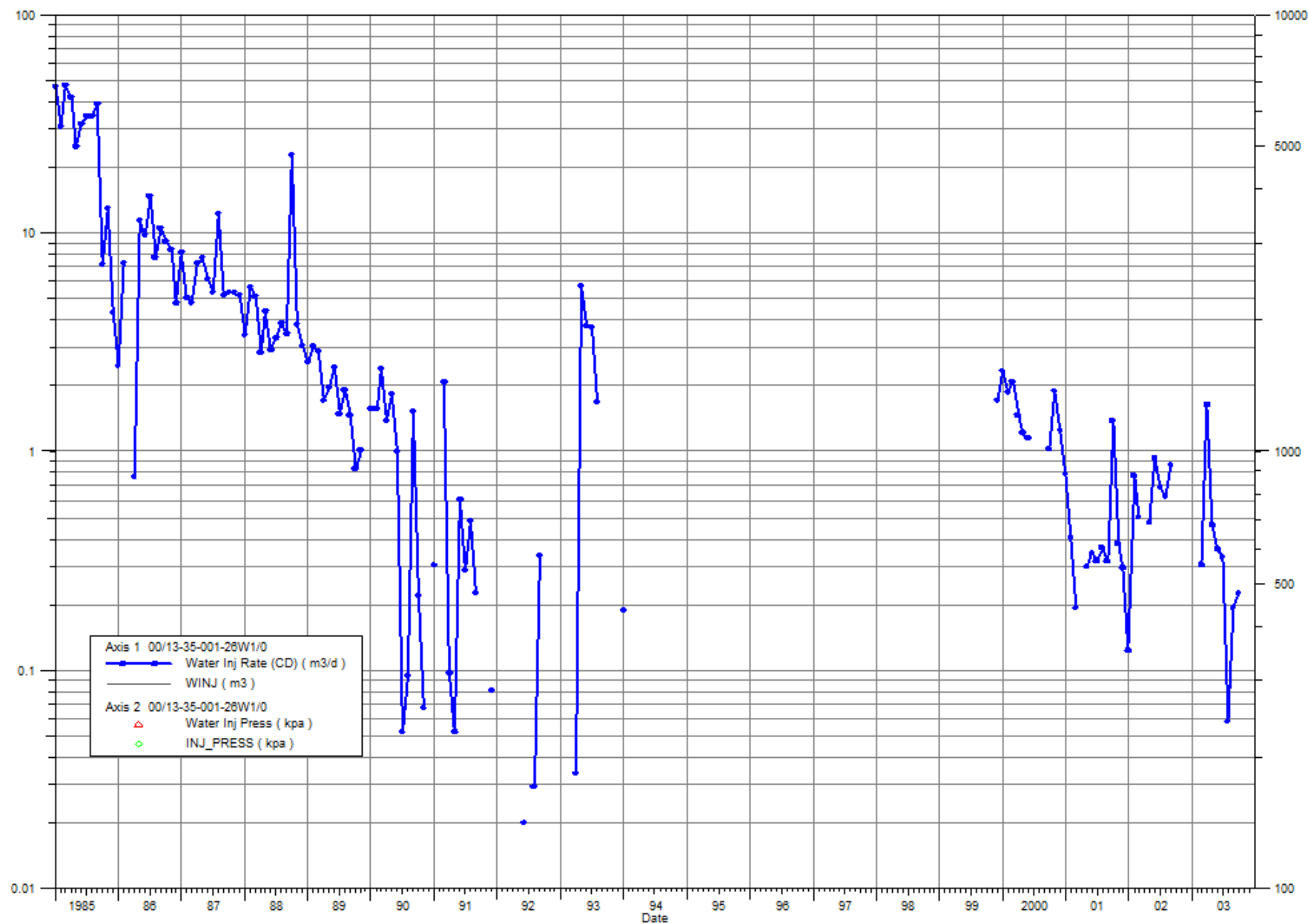
Cumulative Gas Inj : 0.00 Mm3cm

Cumulative Water Inj : 20.30 Mm3

Cumulative Water Prod : 1.40 Mm3

Cumulative Oil Prod : 0.80 Mm3

Cumulative Gas Prod : 0.00 Mm3cm



Status: SUS-WTR-INJ

Unit: WASKADA_UNIT_NO_5_-_PM_68

Zone: LOWER_AMARANTH_A

Operator: PENN_WEST Approval: Amaranth

PENNWEST EXPLORATION

00/15-02-002-26W1/0

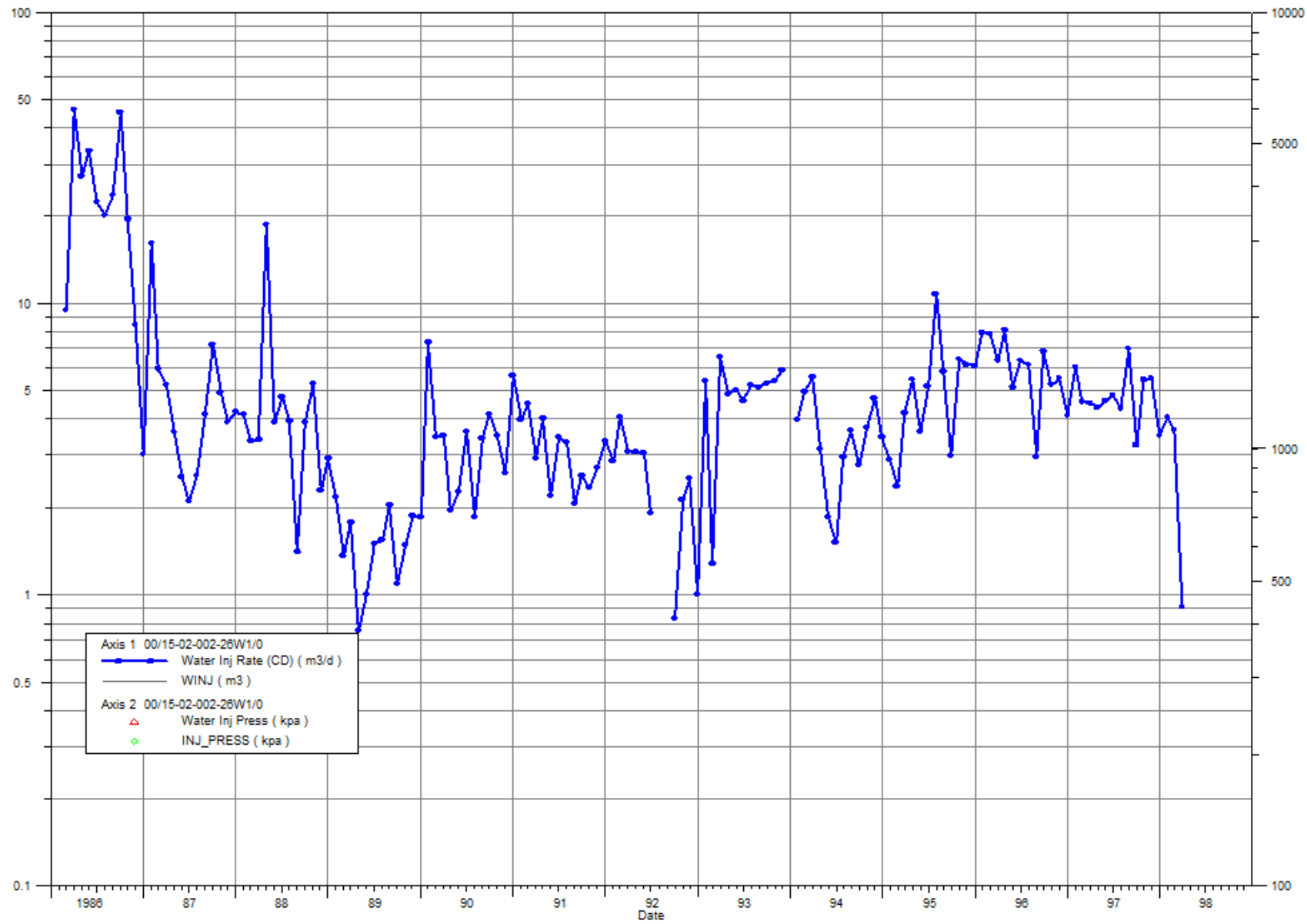
Cumulative Gas Inj : 0.00 MMsm

Cumulative Water Inj : 24.39 Mm3

Cumulative Water Prod : 0.64 Mm3

Cumulative Oil Prod : 1.04 Mm3

Cumulative Gas Prod : 0.00 MMsm



Status: SUS-WTR-INJ

Unit: WASKADA_UNIT_NO_6_-_PM_68

Zone: LOWER_AMARANTHA

Operator: PENN_WEST Approval: Amaranth

PENNWEST EXPLORATION

00/15-34-001-26W1/0

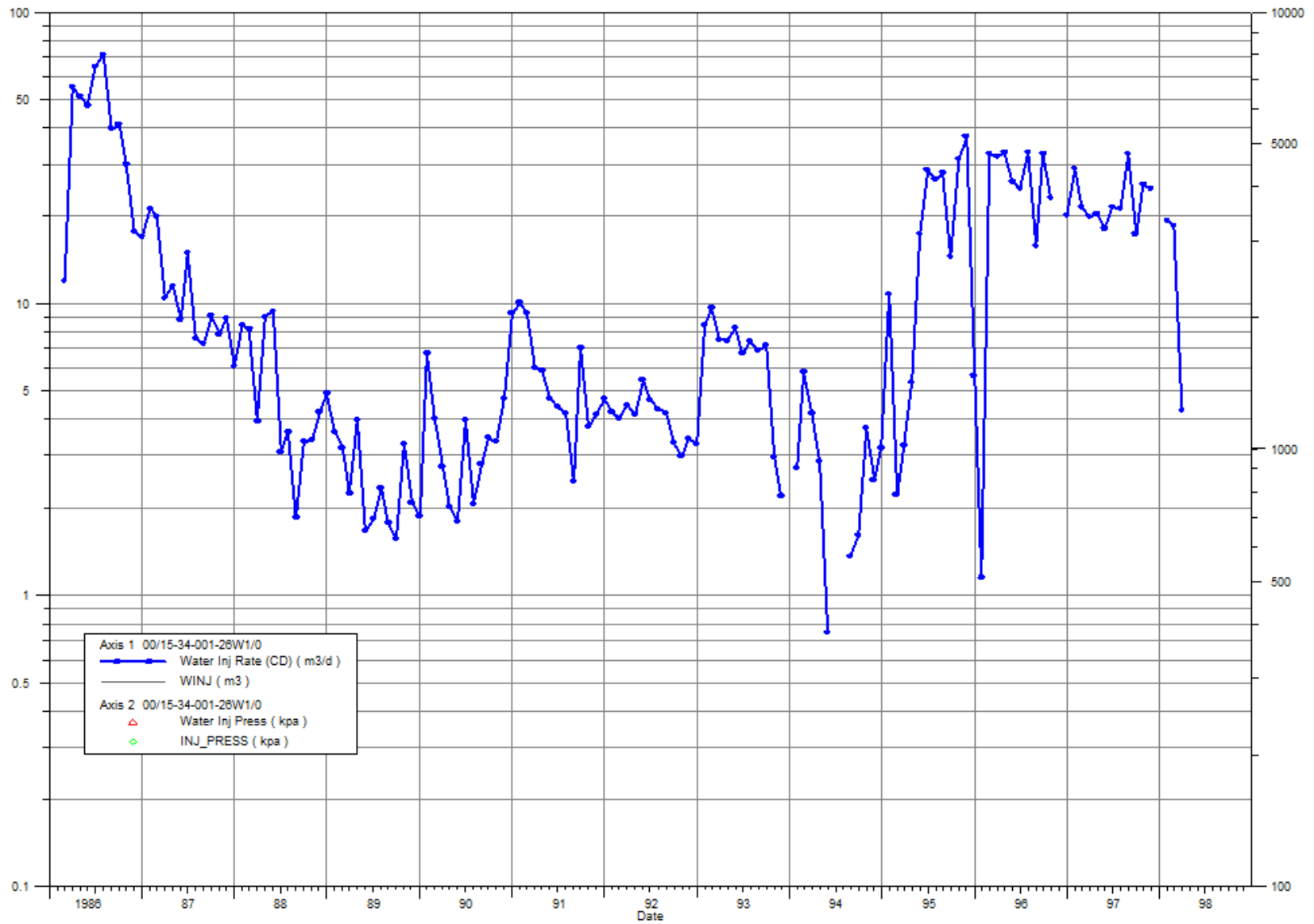
Cumulative Gas Inj : 0.00 Mm3om

Cumulative Water Inj : 52.44 Mm3

Cumulative Water Prod : 1.77 Mm3

Cumulative Oil Prod : 0.46 Mm3

Cumulative Gas Prod : 0.00 Mm3om



Status: WTR-INJ

Unit: WABKADA_UNIT_NO_5_-_PM_68

Zone: LOWER_AMARANTH_A

Operator: PENN_WEST Approval: Amaranth

PENNWEST EXPLORATION

00/15-35-001-26W1/0

Cumulative Gas Inj : 0.00 MMscf

Cumulative Water Inj : 24.85 MM3

Cumulative Water Prod : 0.28 MM3

Cumulative Oil Prod : 1.24 MM3

Cumulative Gas Prod : 0.00 MMscf

