

Virden Roselea Unit #3
2017 Annual EOR Report

Executive Summary

In 2017 oil production in the Virden Roselea Unit #3 (VRU #3) was 42 m³/d (264 bbl/d) totaling 15.1 e³m³ (95 mmbbl). Annual production inclined 24.5% from 2016 to 2017, a large change in production. By the end of 2017 cumulative oil production from the VRU #3 was 2 638 e³m³ (16.6 mmbbl). The original forecasted recovery was 1 290 e³m³ (8.1 mmbbl) on primary recovery and 2 837 e³m³ (17.9 mmbbl) total primary plus secondary recovery.

In December 2017 there were 52 producing oil wells and 18 water injectors active in the unit. In 2016, one re-entry from an existing horizontal in the Scallion formation was drilled. In 2017, six dual leg horizontal wells and three re-entries from existing horizontals were drilled within the unit.

Discussion

The VRU #3 has been under waterflood since 1967, 13 years after first production from the pool in 1954. Water injection increased the oil production rate from $\sim 100 \text{ m}^3/\text{d}$ ($\sim 629 \text{ bbl/d}$) to $\sim 225 \text{ m}^3/\text{d}$ ($1,415 \text{ bbl/d}$); however, lower than peak production from the field of $450 \text{ m}^3/\text{d}$ ($2,830 \text{ bbl/d}$). Expected ultimate oil recovery was doubled by the waterflood. As of yet, the waterflood forecast has not been exceeded as in other units.

Prior to 2013, there had been only one development well drilled in VRU #3 in the last nine years, a horizontal well drilled in 2008. In 2002 and 2003, nine horizontal wells were drilled in the unit with mixed results. In 2014, two Scallion and three Virden horizontal wells were drilled in the unit. In 2015, an additional Scallion well was drilled. In 2016, a re-entry well was drilled in the Scallion formation. In 2017, six dual leg horizontal wells and three re-entries from existing horizontals were drilled within the unit.

There have been no new wells converted to injection since 1974. Currently, potential conversions are under technical review to improve the sweep efficiency in the unit. In the Northeast segment of the unit different tracers were placed into the injectors and the produced water was monitored from the producing wells. The results showed that the reservoir is very complex with notable fracturing. A clear fracture trend can be seen in the NW-SE orientation, with water from distant injectors traveling to some wells and completely bypassing others. Therefore, there is an undisputable high permeability channel that is preferential to flow in some areas of the unit. This gives us the understanding that the waterflood is more complex than envisioned and the patterns that have been drawn in all of the units will rarely be correct. The intricacy of the reservoir and ultimately the waterflood behavior cannot be fully understood. With natural fractures the low recovery of the unit and poor sweep efficiency is understandable. An increase in the injector to producer ratio will likely be effective and change the well-established streamlines. This unit also has the lowest cum VRR of any of the units at 0.81, and increasing the amount of injection as well as balancing the flood would be beneficial. The water injection rate was $1,053 \text{ m}^3/\text{d}$ ($6,625 \text{ bbl/d}$) in 2017 and the producing WOR was $25 \text{ m}^3/\text{m}^3$. The injected water at VRU #3 is not filtered or treated in any way.

Significant events in 2017 are as follows:

- January 2017, drilled a dual leg horizontal, one leg in the Sandhill/Oolites and one leg in the Scallion, 103/08-13-010-26W1/00.

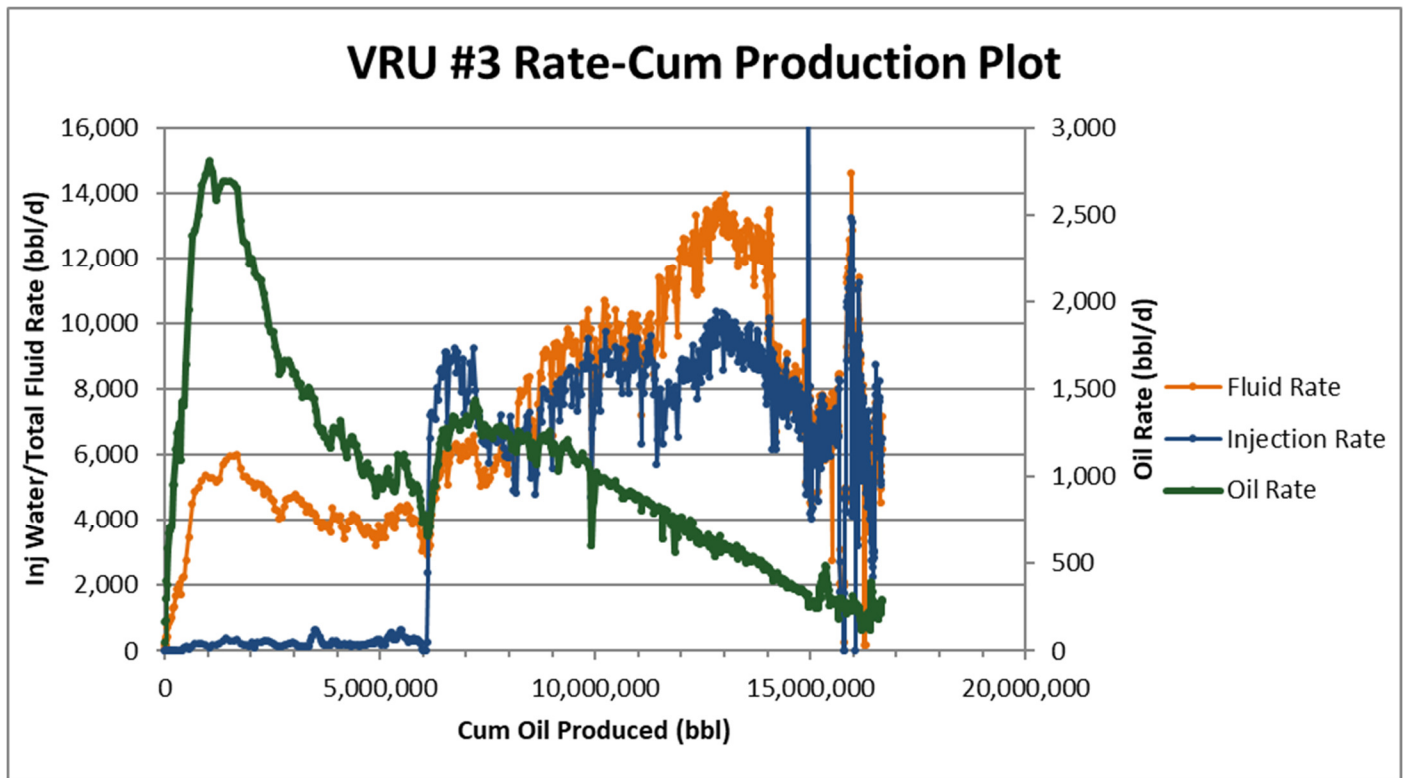
- January 2017, drilled a dual leg horizontal, one leg in the Sandhill/Oolites and one leg in the Scallion, 102/10-11-010-26W1/00.
- April 2017, deepen the 102/03-11-010-26W1/02 disposal well to the Duperow and activate for disposal.
- September 2017, re-enter the 102/13-13-010-26W1/00 and drill a second leg in the Sandhill/Oolites.
- September 2017, re-enter the 102/04-12-010-26W1/00 and drill a second leg in the Sandhill/Oolites.
- September 2017, drilled a dual leg horizontal, one leg in the Sandhill/Oolites and one leg in the Scallion, 102/03-14-010-26W1/00.
- October 2017, drilled a dual leg horizontal, one leg in the Sandhill/Oolites and one leg in the Scallion, 102/05-23-010-26W1/00.
- December 2017, drilled a dual leg horizontal, one leg in the Sandhill/Oolites and one leg in the Scallion, 103/15-07-010-25W1/00.
- December 2017, drilled a dual leg horizontal, one leg in the Sandhill/Oolites and one leg in the Scallion, 102/04-13-010-26W1/00.
- December 2017, re-enter the 102/05-13-010-26W1/00 and drill a second leg in the Sandhill/Oolites.
- December 2017, drilled a dual leg horizontal, one leg in the Sandhill/Oolites and one leg in the Scallion, 102/05-23-010-26W1/00.

It is important to note that publicly available production data does not include contribution from the newly drilled wells. Volumes quoted, and unit graphs presented above are based on public production data augmented with proprietary data, and consequently should accurately reflect all wells. The pattern data within the tables below is based solely on publicly available production data and therefore missing some production volumes. These tables will be updated in subsequent progress reports.

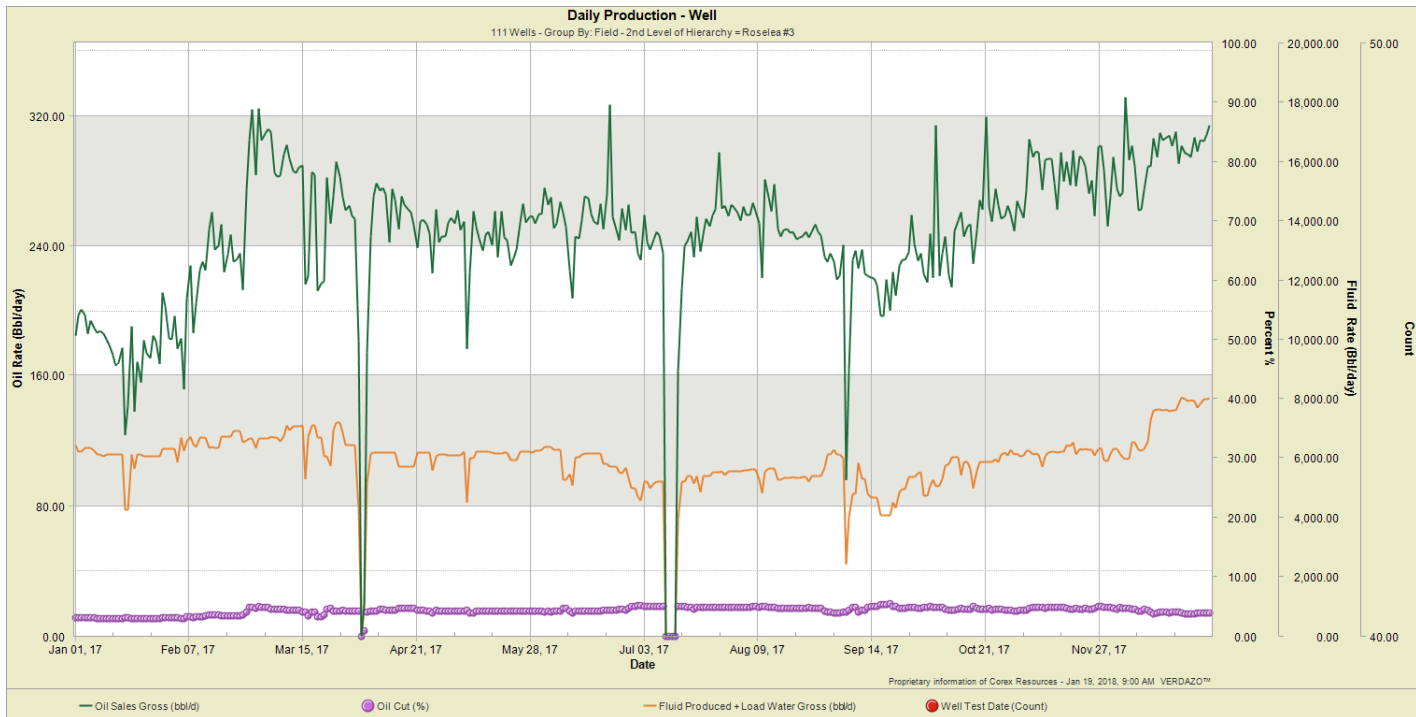
In the composite rate – cumulative oil plot below, waterflood response is clearly demonstrated at a cumulative oil production of 1000 e³m³ (6.3 MMbbl) after a pattern waterflood was initiated.

Detailed production, injection, voidage tables and plots for the total unit and each injection pattern are at the end of this report.

VRU #3 – Rate vs Cum Oil Production



VRU #3 – Rate vs Time



2017 Reservoir Pressure Surveys

Unit	UWI	License	Test Type	Date of Pressure	Duration of SI	Datum BHP
VRU #3	103/15-07-010-25W1/00	10802	BH BU	2017-12-06	2	7,463
VRU #3	102/04-12-010-26W1/00	10204	BH BU	2017-09-26	5	5,915
VRU #3	102/04-13-010-26W1/00	10779	BH BU	2017-12-14	3	5,066
VRU #3	102/05-13-010-26W1/00	4974	BH BU	2017-12-12	5	4,323
VRU #3	102/03-14-010-26W1/00	10778	BH BU	2017-10-02	3	7,441
VRU #3	102/03-14-010-26W1/00	10688	BH BU	2017-10-23	18	5,972

In 2017, six pressures were taken, giving an average reservoir pressure of 6,000 kPa. This is close to normally pressured, if a bit under pressured. In 2015, two pressure surveys were conducted within the unit, pressures close to normally pressured. In 2014, six pressure surveys were conducted giving an average pool pressure of 7 200 kPaa. Prior pressure surveys have shown that wide variations in pressure exist across the pool.

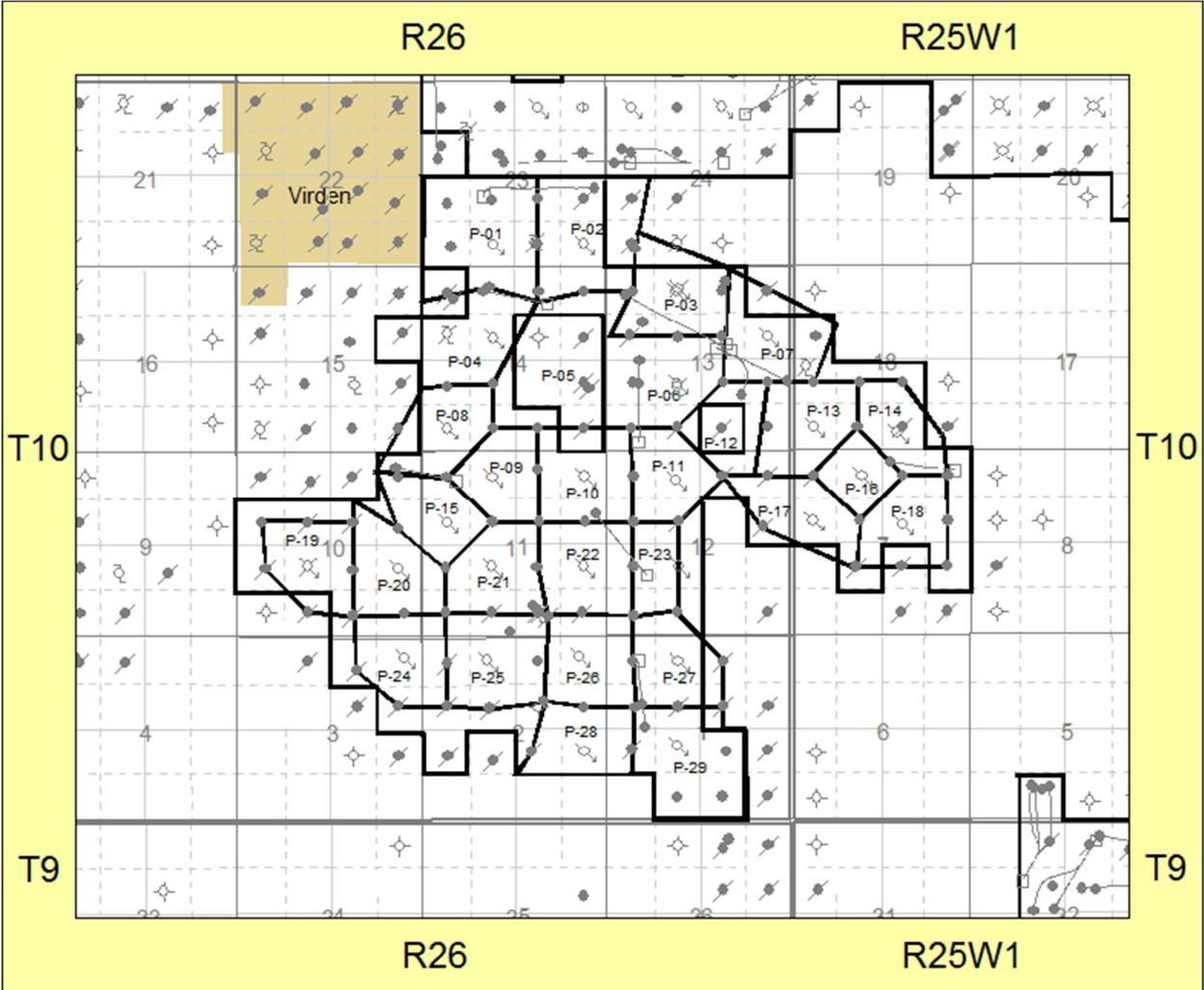
The voidage replacement ratio (VRR) in 2017 hovered around 1.00. At the end of the year the VRR was 0.92. The cumulative VRR at year end was 0.81. The high reservoir pressure is inconsistent with the cumulative VRR less than 1.0.

There is partial pressure support for the field from an aquifer on the west side of the unit and the water influx from the aquifer is not accounted for in the VRR calculation. An oil formation volume factor of $1.06 \text{ rm}^3/\text{sm}^3$ and a water formation volume factor of $1.04 \text{ rm}^3/\text{sm}^3$ were used in the VRR calculations.

2017 Well Servicing

UWI	Unit	Licence	Operation	Date	Objective
102/03-11-010-26W1/02	VRU#3	001516	Salt Water Disposal	2017-03-10	
102/13-13-010-26W1/00	VRU#3	005119	Construction	2017-03-29	
102/13-13-010-26W1/00	VRU#3	005119	Equip Only	2017-09-06	
102/13-13-010-26W1/00	VRU#3	005119	Completion	2017-09-10	SANDHILL / OOLITES
102/13-13-010-26W1/00	VRU#3	005119	Drilling - re-entry	2017-09-16	
102/05-23-010-26W1/00	VRU#3	10688	Construction	2017-03-20	
102/05-23-010-26W1/00	VRU#3	10688	Equip & Tie-In	2017-04-11	
102/05-23-010-26W1/00	VRU#3	10688	Drilling - original	2017-09-30	
102/05-23-010-26W1/00	VRU#3	10688	Initial Completion	2017-10-22	SCALLION COMPLETION
102/05-23-010-26W1/00	VRU#3	10688	Upsize Pump	2017-11-27	
CATHODIC	VRU#3	FF17VIR008	Cathodic	2017-09-06	
100/09-07-010-25W1/00	VRU#3	001150	Suspension	2017-06-21	
102/10-11-010-26W1/00	VRU#3	10623	Construction	2017-01-10	
102/10-11-010-26W1/00	VRU#3	10623	Drilling - original	2017-01-23	
102/10-11-010-26W1/00	VRU#3	10623	Initial Completion	2017-02-01	SANDHILL / OOLITES
102/10-11-010-26W1/00	VRU#3	10623	Upsize Pump	2017-03-18	
100/08-10-010-26W1/00	VRU#3	001322	Workover	2017-11-23	DEEPEN
103/15-07-010-25W1/00	VRU#3	10802	Equip & Tie-In	2017-04-10	
103/15-07-010-25W1/00	VRU#3	10802	Construction	2017-04-10	
103/15-07-010-25W1/00	VRU#3	10802	Drilling - original	2017-11-27	
103/15-07-010-25W1/00	VRU#3	10802	Initial Completion	2017-12-05	SCALLION COMPLETION
PIPELINE REPLACEMENT	VRU#3	P17VIR007	Pipelines	2017-01-23	
CATHODIC	VRU#3	FF17VIR005	Cathodic	2017-09-06	
102/05-13-010-26W1/00	VRU#3	004974	Completion	2017-11-16	SANDHILL / OOLITES
102/05-13-010-26W1/00	VRU#3	004974	Construction	2017-11-25	
102/05-13-010-26W1/00	VRU#3	004974	Drilling - re-entry	2017-12-05	
102/04-13-010-26W1/00	VRU#3	10779	Construction	2017-08-24	
102/04-13-010-26W1/00	VRU#3	10779	Equip & Tie-In	2017-09-27	
102/04-13-010-26W1/00	VRU#3	10779	Drilling - original	2017-12-07	
102/04-13-010-26W1/00	VRU#3	10779	Initial Completion	2017-12-14	SANDHILL / OOLITES
103/05-23-010-26W1/00	VRU#3	10794	Construction	2017-11-01	
PIPELINE REPLACEMENT	VRU#3	P17VIR012	Pipelines	2017-05-25	
103/08-13-010-26W1/00	VRU#3	10622	Construction	2017-01-03	
103/08-13-010-26W1/00	VRU#3	10622	Drilling - original	2017-01-10	
103/08-13-010-26W1/00	VRU#3	10622	Initial Completion	2017-01-24	SANDHILL / OOLITES
103/08-13-010-26W1/00	VRU#3	10622	Water Shut Off	2017-08-09	
100/04-12-010-26W1/00	VRU#3	001270	Cathodic	2017-09-06	
4" GROUP LINE INSTALL	VRU#3	P17VIR013	Pipelines	2017-07-10	
102/03-14-010-26W1/00	VRU#3	10778	Equip & Tie-In	2017-04-10	
102/03-14-010-26W1/00	VRU#3	10778	Construction	2017-04-10	
102/03-14-010-26W1/00	VRU#3	10778	Drilling - original	2017-09-21	
102/03-14-010-26W1/00	VRU#3	10778	Initial Completion	2017-09-29	SCALLION COMPLETION
102/03-14-010-26W1/00	VRU#3	10778	Upsize Pump	2017-11-28	
102/04-12-010-26W1/00	VRU#3	10204	Construction	2017-03-29	
102/04-12-010-26W1/00	VRU#3	10204	Equip Only	2017-08-30	
102/04-12-010-26W1/00	VRU#3	10204	Completion	2017-09-08	
102/04-12-010-26W1/00	VRU#3	10204	Drilling - re-entry	2017-09-19	
2000 BBL WATER TANK INSTALL	VRU#3	F17VIR004	Tank Install	2017-05-15	
102/05-12-010-26W1/00	VRU#3	10238	Pump Repair	2017-09-15	
100/05-13-010-26W1/00	VRU#3	001017	Inhibitor Squeeze	2017-12-19	
CATHODIC	VRU#3	FF17VIR006	Cathodic	2017-09-06	
HEADER UPGRADE	VRU#3	F17VIR009	Header Repair	2017-06-01	

Waterflood Pattern Map

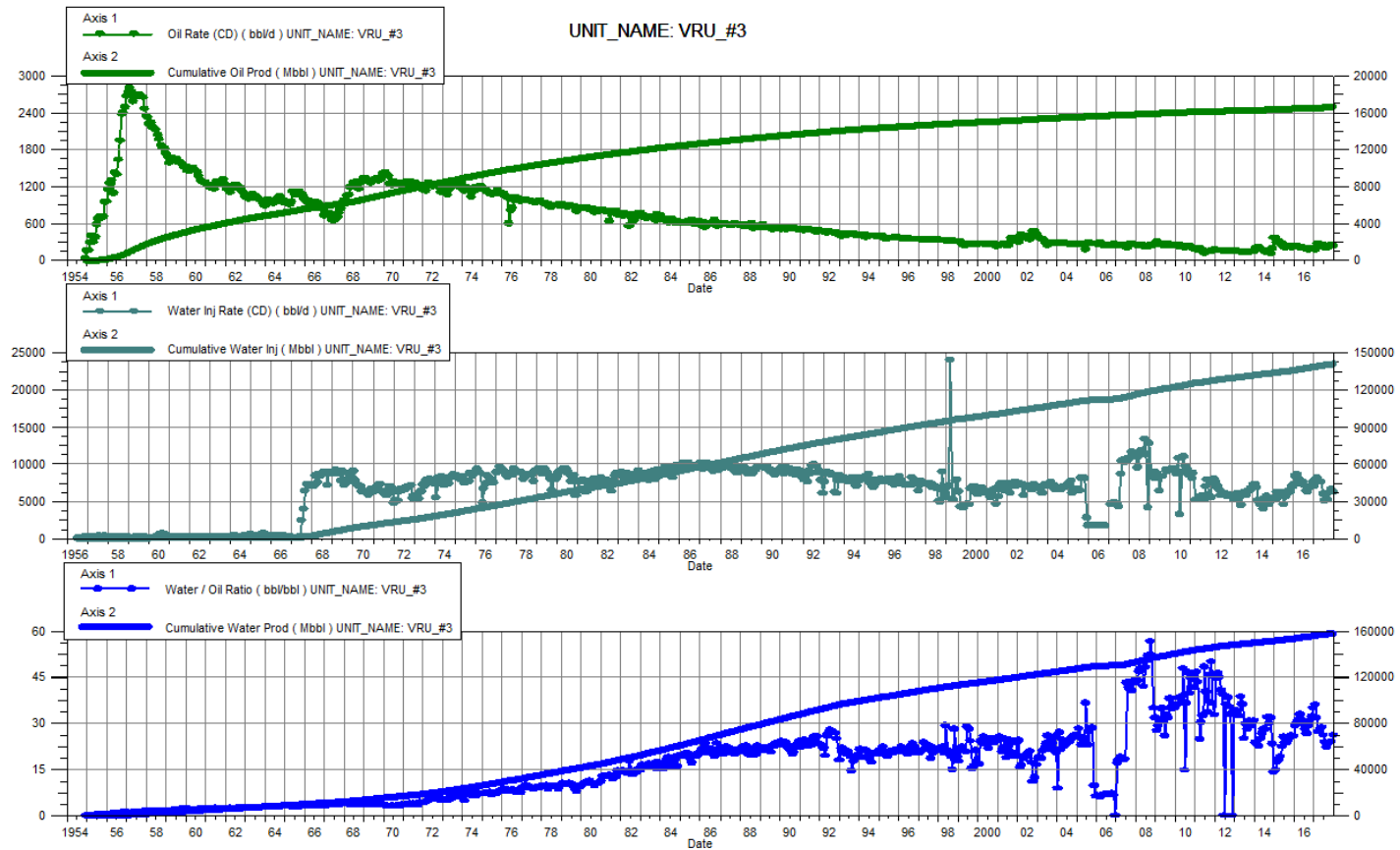


Waterflood Pattern Table

Pattern	Well
P-01	100/03-23-010-26W1/00
P-02	100/01-23-010-26W1/00
P-03	100/14-13-010-26W1/00
P-03	102/14-13-010-26W1/00
P-04	100/11-14-010-26W1/00
P-06	100/06-13-010-26W1/00
P-07	100/09-13-010-26W1/00
P-08	100/04-14-010-26W1/00
P-09	100/14-11-010-26W1/00
P-10	100/16-11-010-26W1/00
P-11	100/14-12-010-26W1/00
P-13	100/04-18-010-25W1/00
P-14	102/02-18-010-25W1/00
P-15	100/12-11-010-26W1/00
P-16	100/14-07-010-25W1/00
P-17	100/12-07-010-25W1/00
P-18	100/10-07-010-25W1/00
P-19	100/06-10-010-26W1/00
P-20	100/08-10-010-26W1/00
P-21	100/06-11-010-26W1/00
P-22	100/08-11-010-26W1/00
P-23	100/06-12-010-26W1/00
P-24	100/16-03-010-26W1/00
P-25	100/14-02-010-26W1/00
P-26	100/16-02-010-26W1/00
P-27	100/14-01-010-26W1/00
P-28	100/08-02-010-26W1/00
P-29	100/06-01-010-26W1/00

Total for VRU #3

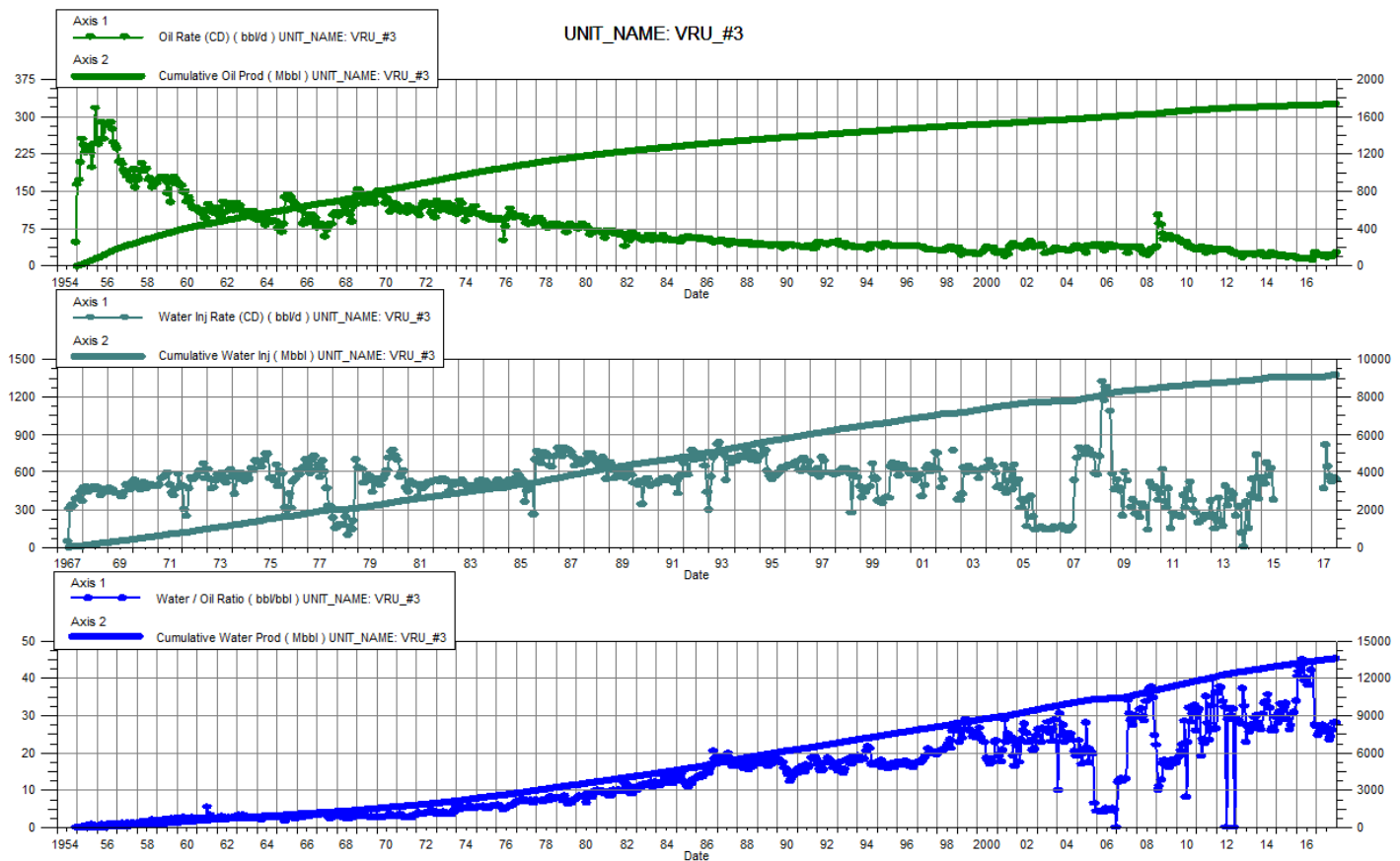
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1-31-2017	28.2	2635.46	1018.2	24764.44	1115.78	22144.2	36.10	1.07	0.81	4,965.75
2-28-2017	36.3	2636.48	1157.4	24796.85	1260.04	22179.5	31.87	1.06	0.81	5,006.27
3-31-2017	43.6	2637.83	1185.0	24833.58	1288.99	22219.4	27.21	1.05	0.81	4,961.96
4-30-2017	37.4	2638.95	1034.4	24864.61	1227.82	22256.2	27.69	1.15	0.81	4,958.55
5-31-2017	39.0	2640.16	1121.0	24899.37	1208.59	22293.7	28.74	1.04	0.81	4,865.89
6-30-2017	40.3	2641.37	1051.9	24930.92	954.64	22322.4	26.13	0.87	0.81	4,693.89
7-31-2017	33.5	2642.41	803.5	24955.83	810.96	22347.5	23.98	0.97	0.81	4,856.96
8-31-2017	39.6	2643.63	884.2	24983.25	938.51	22376.6	22.31	1.02	0.81	4,840.83
9-30-2017	34.4	2644.67	800.8	25007.27	818.80	22401.2	23.26	0.98	0.81	4,840.83
10-31-2017	39.3	2645.89	941.6	25036.46	989.28	22431.8	23.95	1.01	0.81	4,839.62
11-30-2017	39.9	2647.08	952.1	25065.02	1046.86	22463.2	23.88	1.06	0.81	4,802.51
12-31-2017	39.7	2648.31	1035.4	25097.12	993.18	22494.0	26.11	0.92	0.81	4,779.02



VRU #3

Pattern P-01 – 00/03-23-010-26W1/0

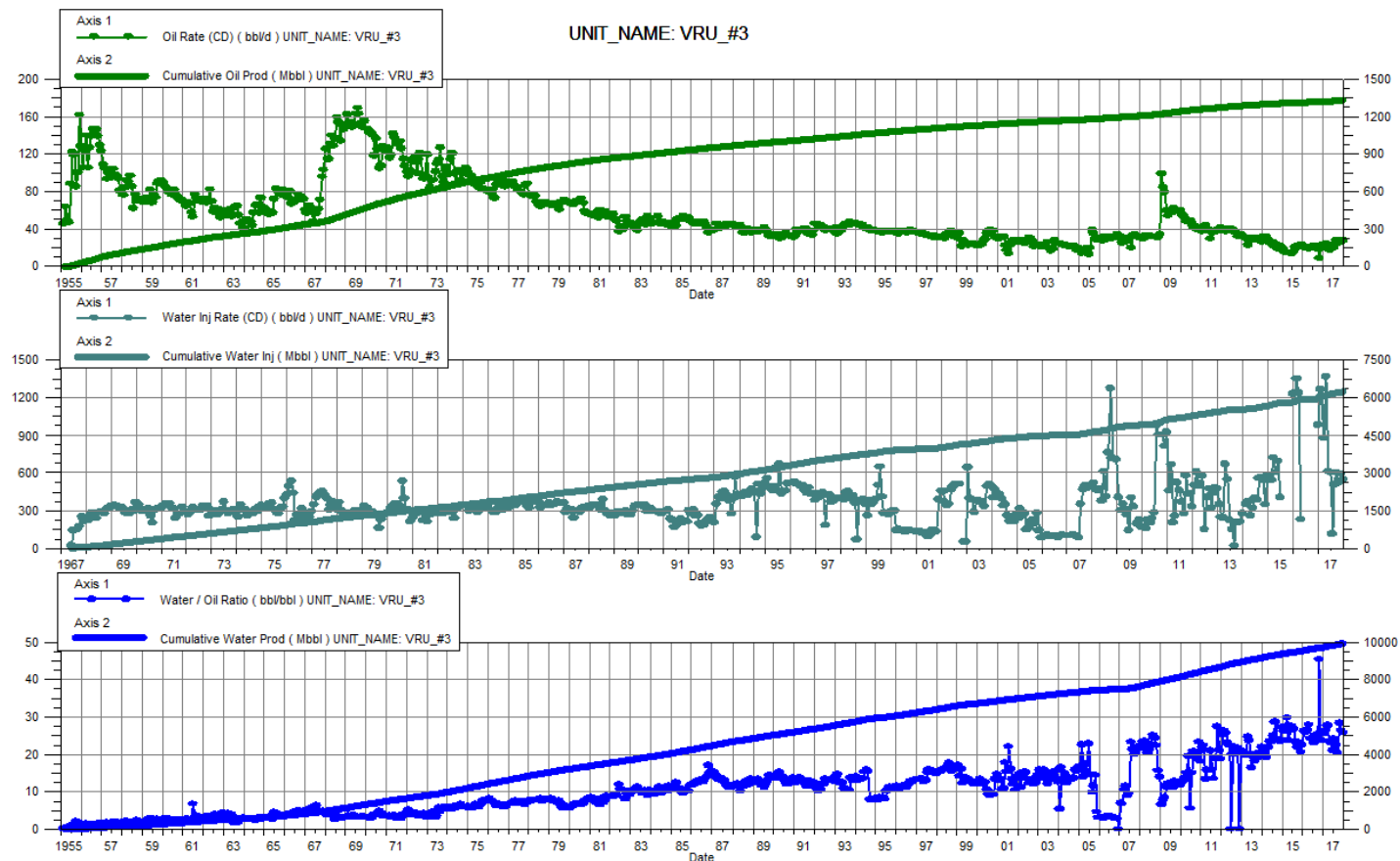
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1-31-2017	3.5	275.40	85.1	2129.31		1446.2	24.64		0.60	-
2-28-2017	3.5	275.50	89.3	2131.81		1446.2	25.22		0.60	-
3-31-2017	3.4	275.61	88.3	2134.55		1446.2	26.30		0.60	-
4-30-2017	3.1	275.70	85.4	2137.11		1446.2	27.35		0.60	-
5-31-2017	3.4	275.81	92.6	2139.98		1446.2	27.29		0.60	-
6-30-2017	3.5	275.91	90.4	2142.69	75.13	1448.5	25.54	0.80	0.60	266.67
7-31-2017	2.9	276.00	76.9	2145.08	129.79	1452.5	26.48	1.63	0.60	4,000.00
8-31-2017	3.6	276.11	83.2	2147.65	102.53	1455.7	23.47	1.18	0.60	4,000.00
9-30-2017	3.4	276.21	81.8	2150.11	89.52	1458.4	24.36	1.05	0.60	4,000.00
10-31-2017	3.3	276.31	86.3	2152.78	82.84	1460.9	26.07	0.92	0.60	4,000.00
11-30-2017	3.8	276.43	105.1	2155.94	88.67	1463.6	28.01	0.81	0.60	4,053.33
12-31-2017	4.4	276.56	122.5	2159.74	85.74	1466.2	28.08	0.68	0.60	5,600.00



VRU #3

Pattern P-02 – 00/01-23-010-26W1/0

Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1-31-2017	3.7	210.70	92.5	1545.03	201.55	959.5	25.38	2.10	0.55	5,200.00
2-28-2017	3.8	210.81	101.0	1547.86	193.92	964.9	26.40	1.85	0.55	5,200.00
3-31-2017	3.5	210.92	96.5	1550.85	139.83	969.2	27.66	1.40	0.55	5,187.10
4-30-2017	2.8	211.00	65.1	1552.80	217.70	975.8	23.40	3.21	0.55	5,173.33
5-31-2017	3.0	211.09	70.0	1554.97	97.25	978.8	23.09	1.33	0.55	4,819.35
6-30-2017	3.6	211.20	76.6	1557.27	96.16	981.7	21.05	1.20	0.55	4,813.33
7-31-2017	3.3	211.30	79.2	1559.73	18.15	982.2	24.18	0.22	0.55	5,187.10
8-31-2017	4.5	211.44	101.4	1562.87	80.75	984.7	22.45	0.76	0.55	4,800.00
9-30-2017	3.9	211.56	80.2	1565.28	96.05	987.6	20.39	1.14	0.56	4,800.00
10-31-2017	4.1	211.69	115.4	1568.85	83.53	990.2	28.34	0.70	0.56	4,800.00
11-30-2017	4.4	211.82	116.2	1572.34	94.36	993.0	26.40	0.78	0.56	4,786.67
12-31-2017	4.4	211.96	113.9	1575.87	86.95	995.7	25.79	0.74	0.56	4,409.68

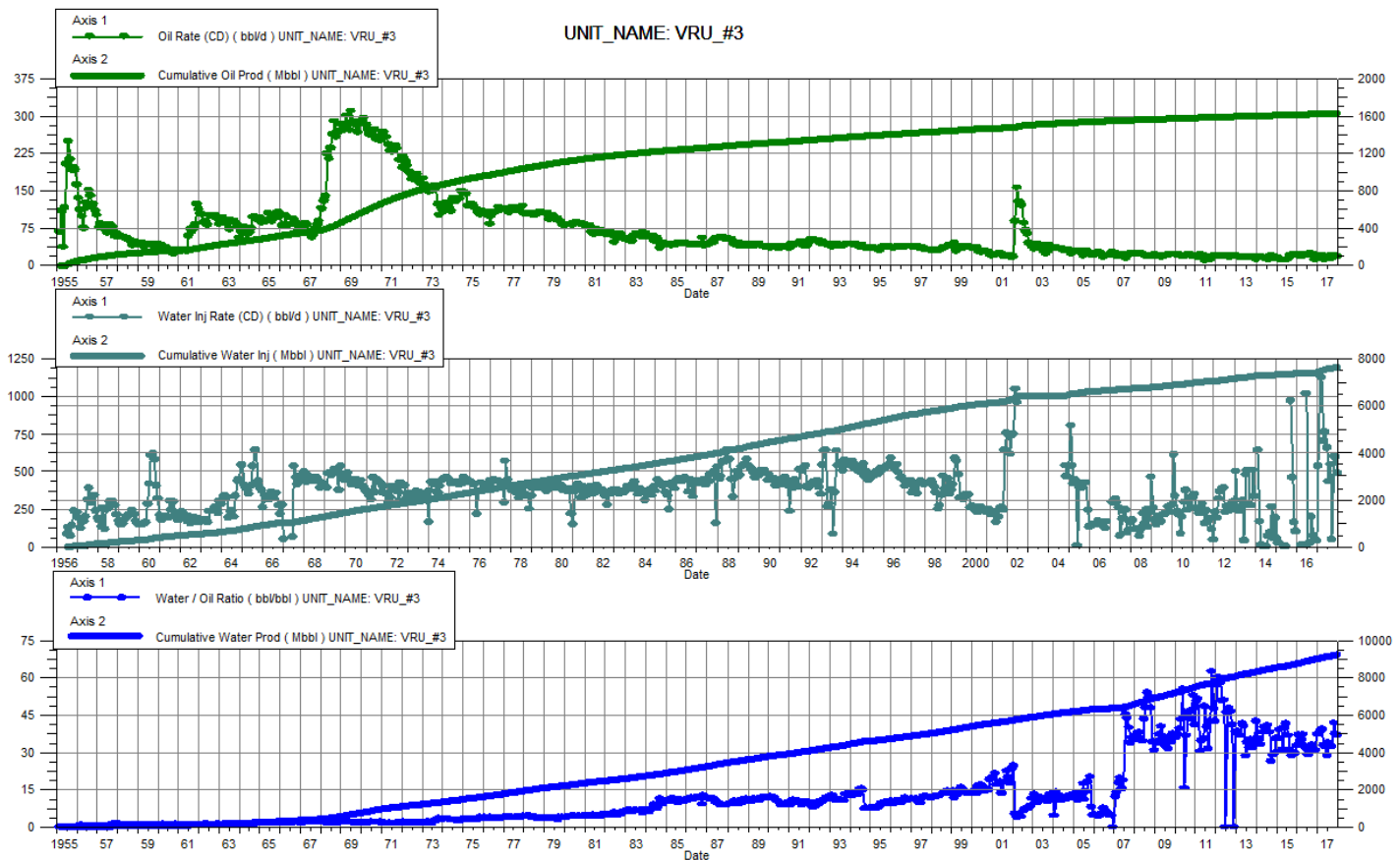


VRU #3

Pattern P-03 – 00/14-13-010-26W1/0

P-03 – 02/14-13-010-26W1/0

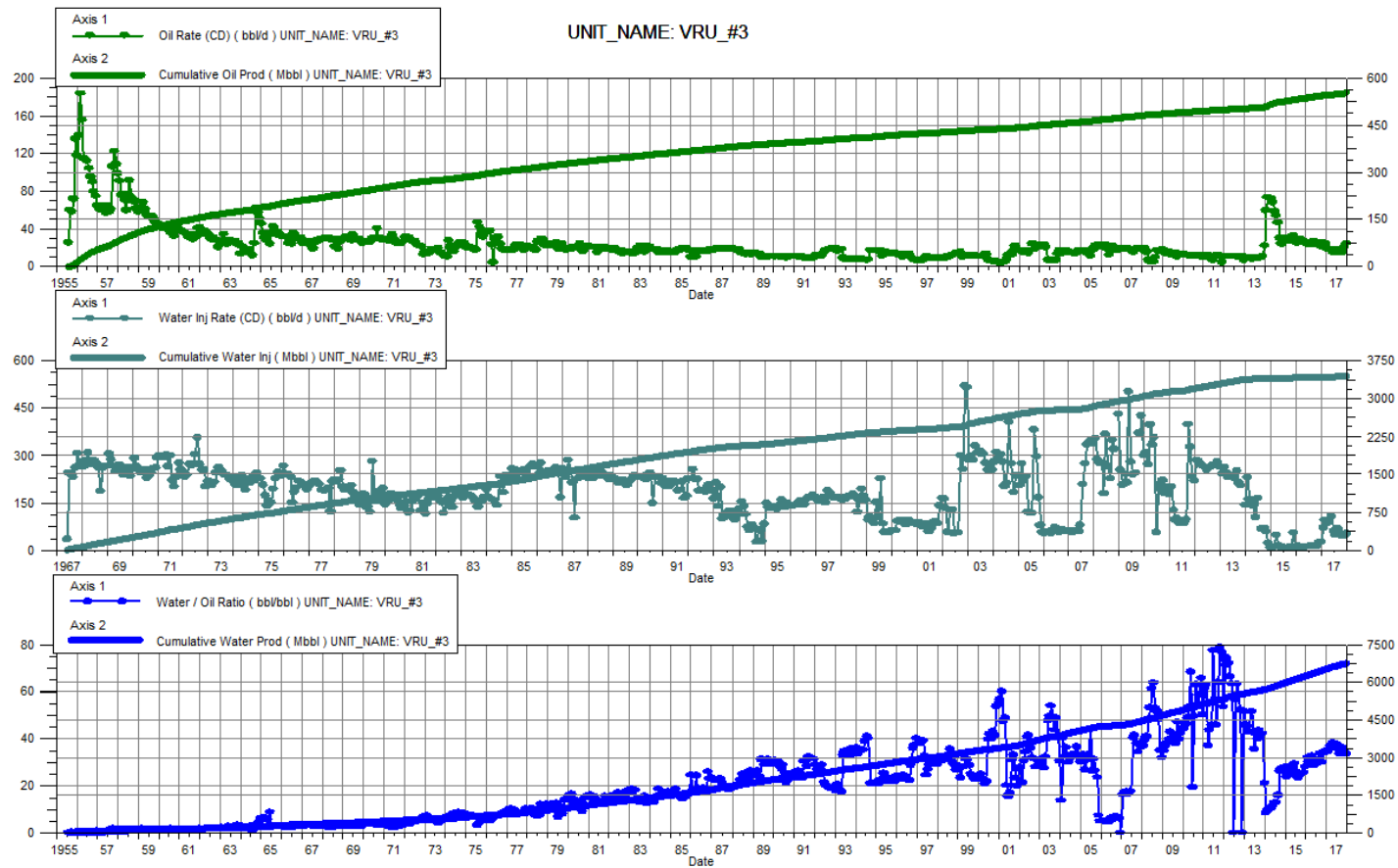
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1-31-2017	3.2	258.82	118.1	1433.48	85.46	1186.9	37.43	0.71	0.70	4,703.23
2-28-2017	3.5	258.91	133.2	1437.21	185.46	1192.1	38.26	1.36	0.70	4,792.86
3-31-2017	3.2	259.01	125.6	1441.10	179.28	1197.6	39.37	1.39	0.70	4,600.00
4-30-2017	2.0	259.07	67.3	1443.12	112.06	1201.0	32.92	1.62	0.70	4,600.00
5-31-2017	2.2	259.14	71.3	1445.33	121.83	1204.8	32.40	1.66	0.71	4,603.23
6-30-2017	2.5	259.22	69.9	1447.43	105.09	1207.9	28.48	1.45	0.71	4,693.33
7-31-2017	2.5	259.29	83.9	1450.03	68.97	1210.0	34.05	0.80	0.71	4,490.32
8-31-2017	3.2	259.39	103.6	1453.24	87.37	1212.8	32.90	0.82	0.71	4,200.00
9-30-2017	2.5	259.47	82.2	1455.70	7.48	1213.0	32.51	0.09	0.71	4,200.00
10-31-2017	2.9	259.56	122.0	1459.49	95.62	1215.9	41.82	0.77	0.71	4,200.00
11-30-2017	3.2	259.65	118.7	1463.05	95.28	1218.8	37.37	0.78	0.71	4,186.67
12-31-2017	3.1	259.75	115.5	1466.63	77.84	1221.2	36.95	0.66	0.71	3,829.03



VRU #3

Pattern P-04 – 00/11-14-010-26W1/0

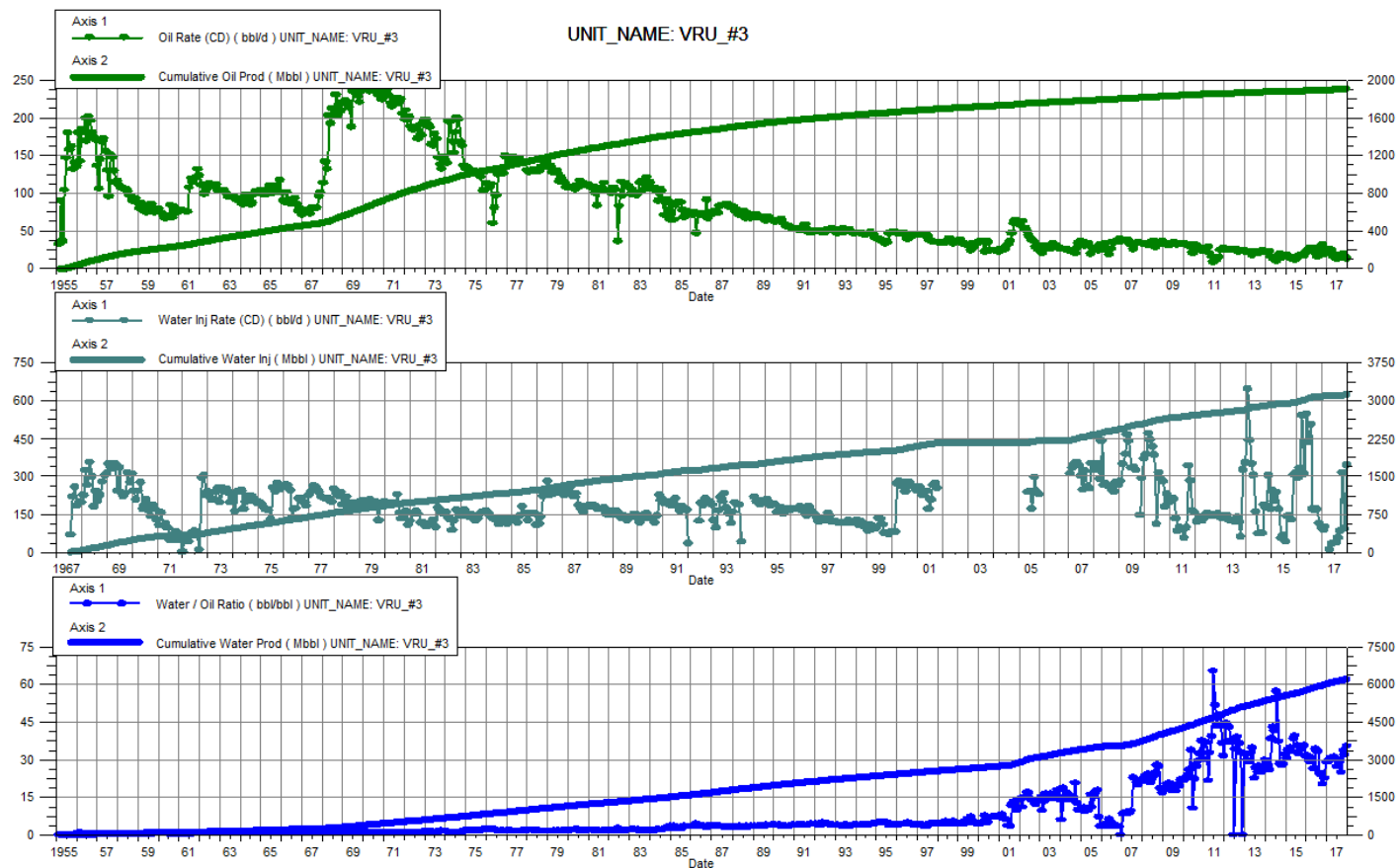
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1-31-2017	3.0	87.07	101.4	1038.38	11.23	545.4	34.37	0.11	0.48	5,590.00
2-28-2017	3.0	87.15	106.5	1041.36	15.03	545.8	35.37	0.14	0.48	5,590.00
3-31-2017	2.9	87.24	105.7	1044.64	13.66	546.3	36.90	0.13	0.48	5,590.00
4-30-2017	2.5	87.32	94.7	1047.48	14.37	546.7	38.23	0.15	0.48	5,590.00
5-31-2017	2.7	87.40	101.2	1050.61	16.98	547.2	38.17	0.16	0.48	5,590.00
6-30-2017	3.0	87.49	108.6	1053.87	9.49	547.5	35.75	0.09	0.48	5,590.00
7-31-2017	2.4	87.56	90.5	1056.68	7.64	547.7	37.52	0.08	0.48	5,590.00
8-31-2017	2.9	87.65	98.0	1059.71	10.66	548.1	33.64	0.11	0.48	5,590.00
9-30-2017	2.8	87.74	95.9	1062.59	7.98	548.3	34.70	0.08	0.48	5,590.00
10-31-2017	2.5	87.81	90.2	1065.39	7.16	548.5	36.15	0.08	0.48	5,590.00
11-30-2017	3.3	87.91	115.1	1068.84	7.26	548.8	34.82	0.06	0.47	5,567.00
12-31-2017	4.0	88.04	134.6	1073.01	8.19	549.0	33.59	0.06	0.47	4,900.00



VRU #3

Pattern P-06 – 00/06-13-010-26W1/0

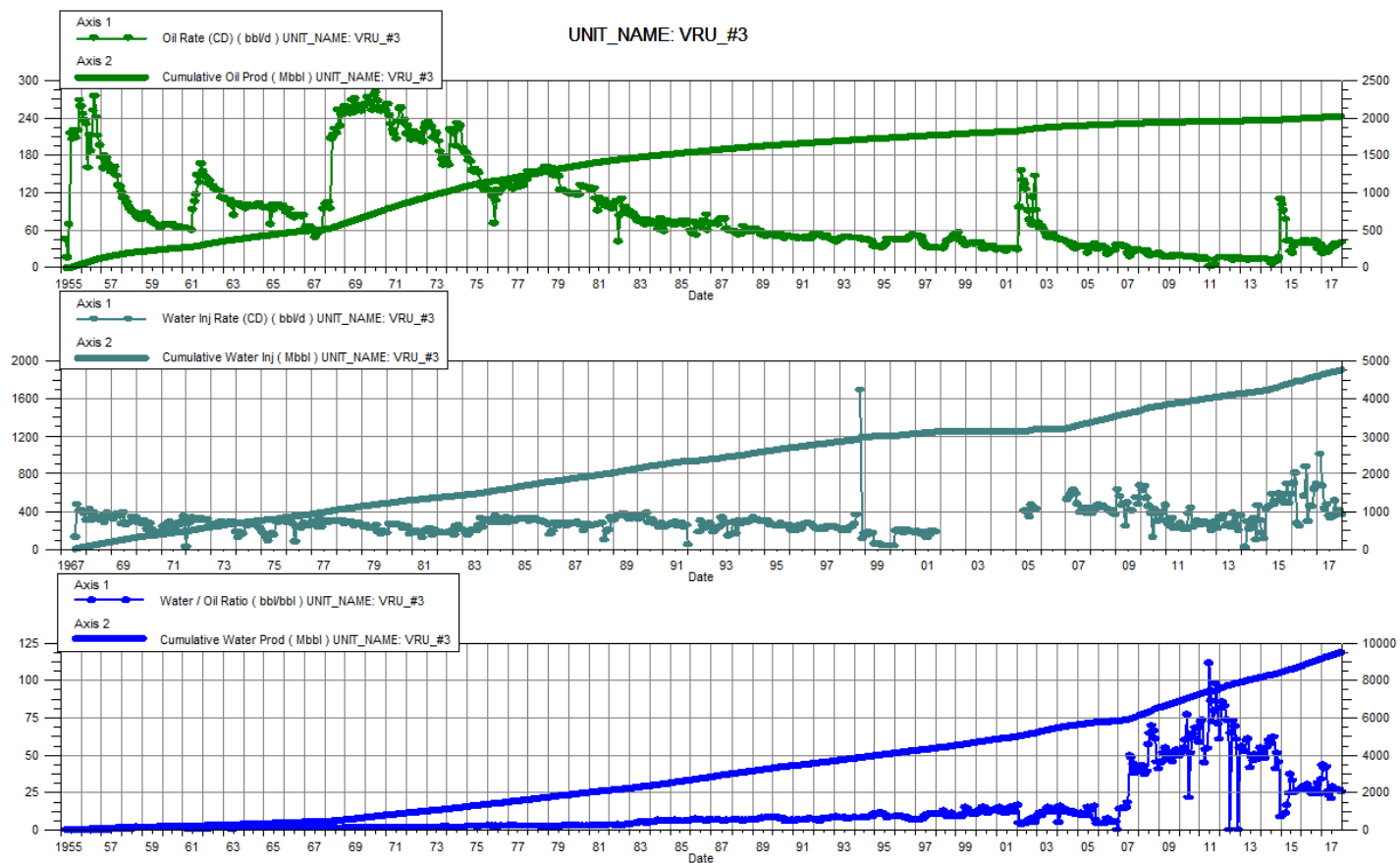
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1-31-2017	3.8	302.65	110.9	956.80	13.57	493.1	28.95	0.12	0.39	5,590.00
2-28-2017	4.1	302.77	120.6	960.18	15.88	493.5	29.63	0.13	0.39	5,590.00
3-31-2017	3.8	302.89	118.1	963.84		493.5	30.74		0.39	5,590.00
4-30-2017	2.7	302.97	83.0	966.33	1.72	493.6	30.84	0.02	0.39	5,590.00
5-31-2017	2.8	303.06	87.8	969.05	5.22	493.7	30.99	0.06	0.39	5,590.00
6-30-2017	2.1	303.12	56.7	970.75	5.75	493.9	27.19	0.10	0.39	5,590.00
7-31-2017	2.1	303.18	64.4	972.75	6.04	494.1	30.28	0.09	0.39	5,590.00
8-31-2017	2.9	303.27	82.8	975.32	8.98	494.4	28.90	0.11	0.39	5,590.00
9-30-2017	2.5	303.35	63.1	977.21	13.43	494.8	24.84	0.20	0.39	5,590.00
10-31-2017	3.2	303.45	107.9	980.55	50.12	496.3	33.65	0.45	0.39	5,590.00
11-30-2017	2.8	303.53	88.0	983.20	14.93	496.8	31.90	0.16	0.38	5,590.00
12-31-2017	2.2	303.60	77.3	985.59	55.06	498.5	35.44	0.69	0.39	5,590.00



VRU #3

Pattern P-07 – 00/09-13-010-26W1/0

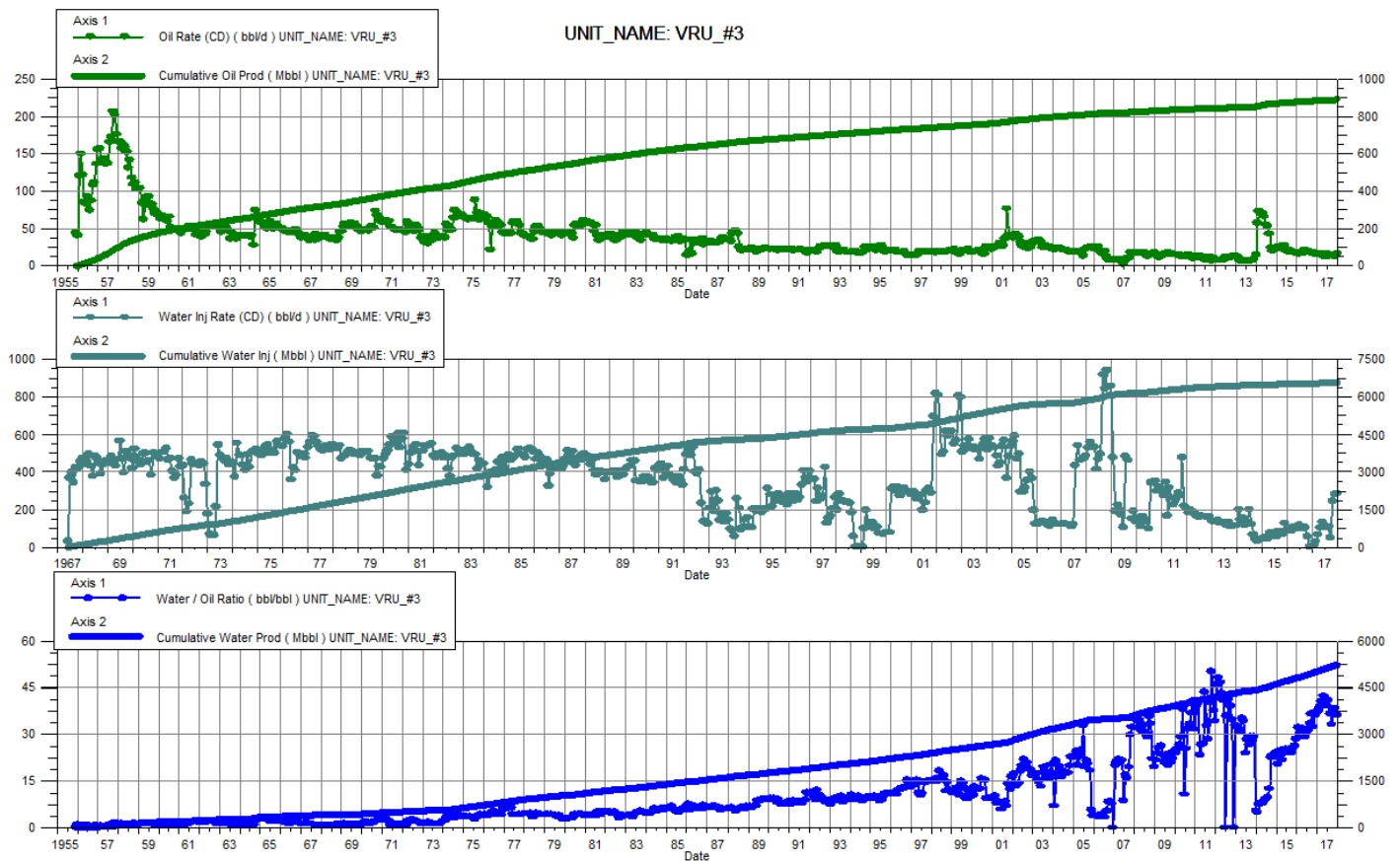
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1-31-2017	3.6	320.34	155.5	1459.24		734.7	43.27		0.41	6,000.00
2-28-2017	4.9	320.48	199.9	1464.84	161.26	739.2	40.94	0.79	0.41	5,992.86
3-31-2017	4.5	320.62	189.6	1470.72	107.37	742.5	42.22	0.55	0.41	5,793.55
4-30-2017	4.0	320.74	103.5	1473.82	68.83	744.6	25.92	0.64	0.41	5,763.33
5-31-2017	4.6	320.88	105.2	1477.08	75.72	746.9	22.95	0.69	0.41	4,925.81
6-30-2017	5.3	321.04	110.9	1480.41	56.28	748.6	20.77	0.48	0.41	5,696.67
7-31-2017	5.2	321.20	148.5	1485.01	53.49	750.3	28.60	0.35	0.41	5,600.00
8-31-2017	6.1	321.39	161.0	1490.00	55.22	752.0	26.41	0.33	0.41	5,600.00
9-30-2017	5.6	321.56	149.5	1494.49	82.54	754.5	26.79	0.53	0.41	5,600.00
10-31-2017	6.1	321.75	164.2	1499.58	59.28	756.3	27.00	0.35	0.41	5,570.97
11-30-2017	6.3	321.94	169.7	1504.67	65.83	758.3	27.02	0.37	0.41	4,706.67
12-31-2017	6.5	322.14	164.9	1509.78	57.92	760.1	25.32	0.34	0.41	4,893.55



VRU #3

Pattern P-08 – 00/04-14-010-26W1/0

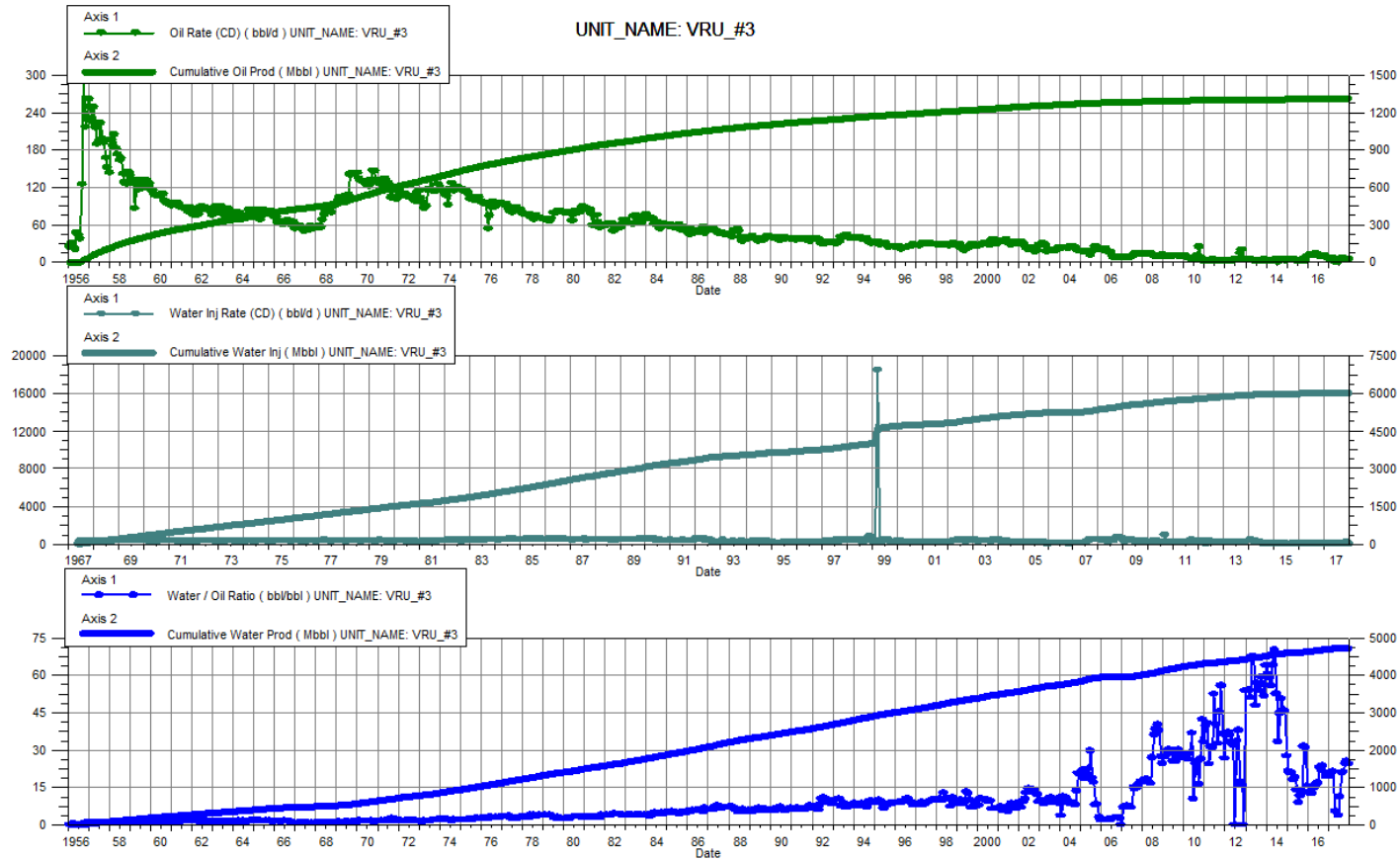
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1-31-2017	2.6	141.04	96.1	799.42	1.86	1043.7	37.66	0.02	1.11	5,050.00
2-28-2017	2.6	141.12	102.2	802.28	4.44	1043.8	38.76	0.04	1.10	5,050.00
3-31-2017	2.5	141.20	101.4	805.43	10.29	1044.1	40.51	0.10	1.10	5,050.00
4-30-2017	2.1	141.26	90.5	808.14	16.16	1044.6	42.24	0.17	1.10	5,050.00
5-31-2017	2.3	141.33	96.3	811.13	21.22	1045.3	42.12	0.22	1.09	5,050.00
6-30-2017	2.7	141.41	104.1	814.25	18.63	1045.8	39.20	0.17	1.09	5,050.00
7-31-2017	2.1	141.48	86.1	816.92	16.50	1046.3	40.98	0.19	1.09	5,050.00
8-31-2017	2.5	141.55	93.0	819.80	17.42	1046.9	36.64	0.18	1.09	5,050.00
9-30-2017	2.3	141.62	75.5	822.07	8.20	1047.1	33.08	0.11	1.08	5,050.00
10-31-2017	2.1	141.69	78.5	824.50	39.41	1048.3	38.03	0.49	1.08	5,050.00
11-30-2017	2.5	141.76	94.8	827.35	45.18	1049.7	38.24	0.46	1.08	5,065.00
12-31-2017	2.7	141.84	96.3	830.33	45.48	1051.1	36.17	0.46	1.08	5,500.00



VRU #3

Pattern P-09 – 00/14-11-010-26W1/0

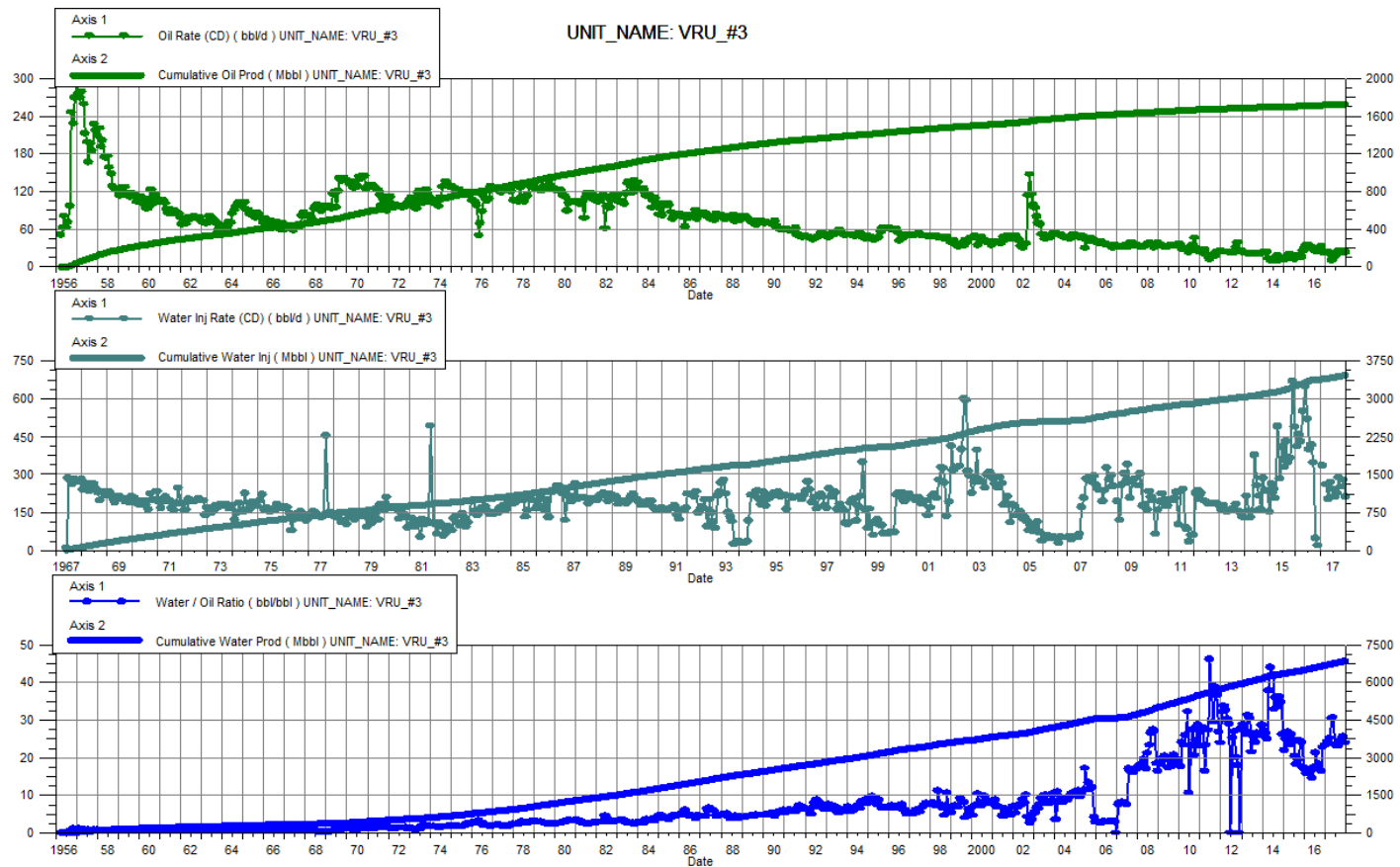
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1-31-2017	1.2	209.28	22.7	745.87	8.04	960.2	19.32	0.34	1.00	6,600.00
2-28-2017	1.3	209.32	26.5	746.62	8.45	960.5	20.75	0.30	1.00	6,600.00
3-31-2017	1.1	209.35	23.9	747.36	7.94	960.7	21.39	0.32	1.00	6,600.00
4-30-2017	0.2	209.36	1.1	747.39	9.97	961.0	5.53	7.61	1.00	6,600.00
5-31-2017	0.2	209.37	1.1	747.42	4.36	961.2	5.44	3.43	1.00	6,600.00
6-30-2017	0.3	209.38	1.2	747.46	3.35	961.3	3.68	2.23	1.00	6,600.00
7-31-2017	0.6	209.39	7.2	747.68	2.39	961.3	11.32	0.31	1.00	6,600.00
8-31-2017	1.2	209.43	24.9	748.45	8.40	961.6	20.87	0.32	1.00	6,600.00
9-30-2017	1.2	209.47	24.7	749.19	1.36	961.6	21.12	0.05	1.00	6,600.00
10-31-2017	1.1	209.50	25.9	750.00	3.68	961.7	24.52	0.14	1.00	6,600.00
11-30-2017	0.9	209.53	23.0	750.68	36.07	962.8	25.51	1.51	1.00	6,600.00
12-31-2017	0.9	209.56	22.6	751.38	4.22	963.0	24.32	0.18	1.00	6,600.00



VRU #3

Pattern P-10 – 00/16-11-010-26W1/0

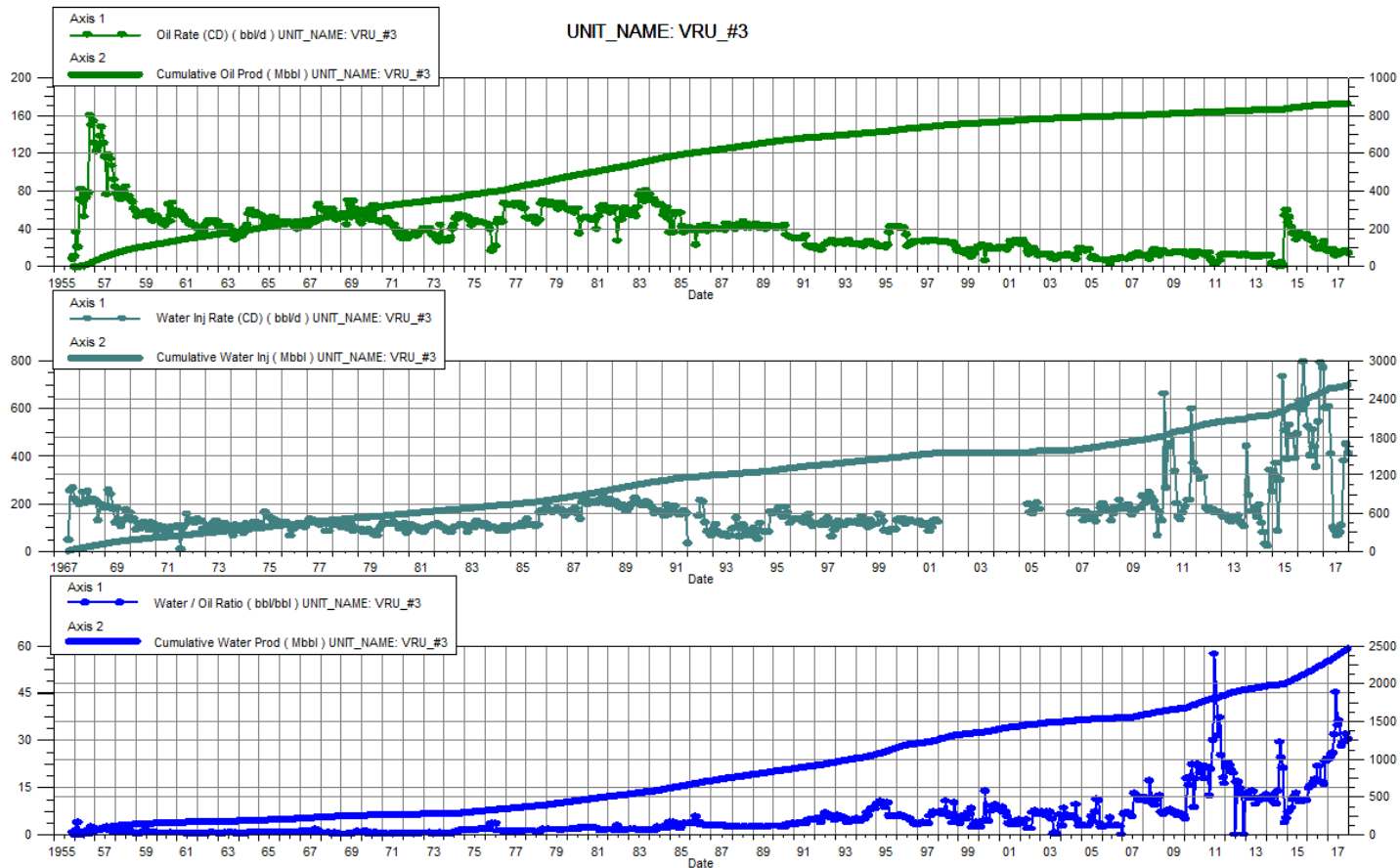
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1-31-2017	3.8	274.05	87.5	1061.66	53.29	540.9	23.23	0.58	0.40	5,000.00
2-28-2017	4.0	274.16	95.5	1064.33		540.9	24.16		0.40	5,000.00
3-31-2017	3.5	274.27	88.9	1067.09	41.42	542.2	25.12	0.45	0.40	5,000.00
4-30-2017	1.8	274.32	53.9	1068.70	32.37	543.2	30.33	0.58	0.40	5,000.00
5-31-2017	1.9	274.38	57.3	1070.48	42.72	544.5	30.64	0.72	0.40	5,000.00
6-30-2017	2.8	274.46	64.5	1072.41	38.64	545.7	23.44	0.57	0.40	5,000.00
7-31-2017	2.9	274.55	67.1	1074.49	33.35	546.7	23.20	0.48	0.40	5,000.00
8-31-2017	4.0	274.68	92.5	1077.36	36.08	547.8	23.01	0.37	0.40	5,000.00
9-30-2017	3.9	274.79	95.3	1080.22	45.77	549.2	24.54	0.46	0.40	5,000.00
10-31-2017	4.2	274.92	103.5	1083.43	39.83	550.4	24.78	0.37	0.40	5,000.00
11-30-2017	3.8	275.04	96.9	1086.33	44.35	551.7	25.51	0.44	0.40	5,000.00
12-31-2017	3.7	275.15	89.0	1089.09	33.68	552.8	23.94	0.36	0.40	5,000.00



VRU #3

Pattern P-11 – 00/14-12-010-26W1/0

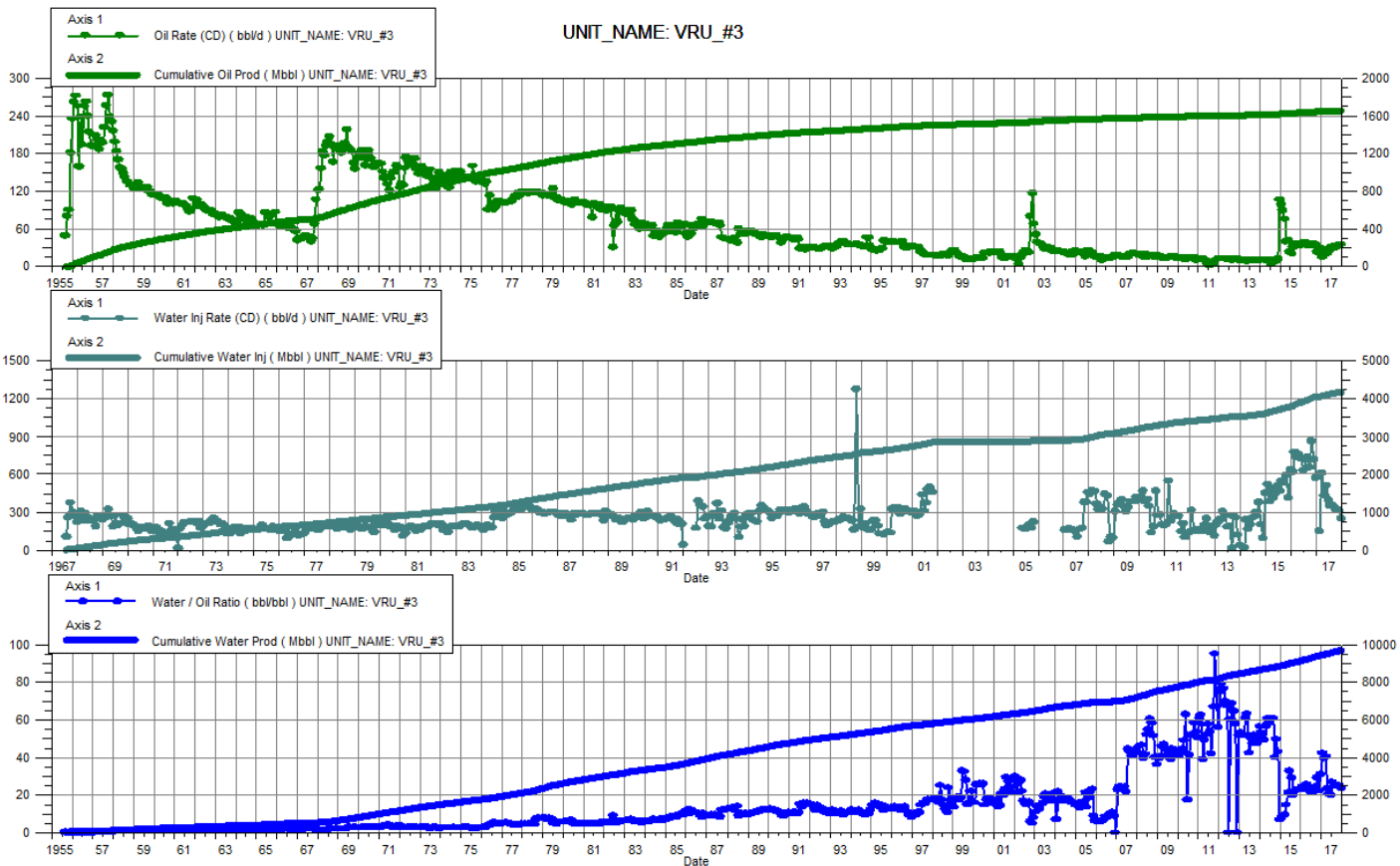
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1-31-2017	2.9	136.87	70.1	366.01	95.69	406.1	24.13	1.31	0.80	5,300.00
2-28-2017	3.0	136.96	73.3	368.06		406.1	24.84		0.80	5,300.00
3-31-2017	2.9	137.05	74.9	370.38	96.82	409.1	25.99	1.24	0.80	5,300.00
4-30-2017	2.1	137.11	67.1	372.40	65.19	411.1	31.75	0.94	0.80	5,300.00
5-31-2017	1.9	137.17	86.7	375.08	15.98	411.5	45.22	0.18	0.80	5,300.00
6-30-2017	2.6	137.25	89.0	377.75	12.88	411.9	34.58	0.14	0.80	5,300.00
7-31-2017	2.1	137.31	75.9	380.10	10.54	412.3	36.16	0.14	0.79	5,300.00
8-31-2017	2.6	137.39	73.8	382.39	12.55	412.7	27.92	0.16	0.79	5,300.00
9-30-2017	2.4	137.47	70.4	384.50	17.25	413.2	29.08	0.24	0.79	5,300.00
10-31-2017	2.7	137.55	79.0	386.95	60.52	415.0	29.66	0.74	0.79	5,300.00
11-30-2017	2.4	137.62	75.8	389.23	71.58	417.2	31.94	0.92	0.79	5,300.00
12-31-2017	2.3	137.69	70.0	391.40	65.35	419.2	30.42	0.90	0.79	5,300.00



VRU #3

Pattern P-13 – 00/04-18-010-26W1/0

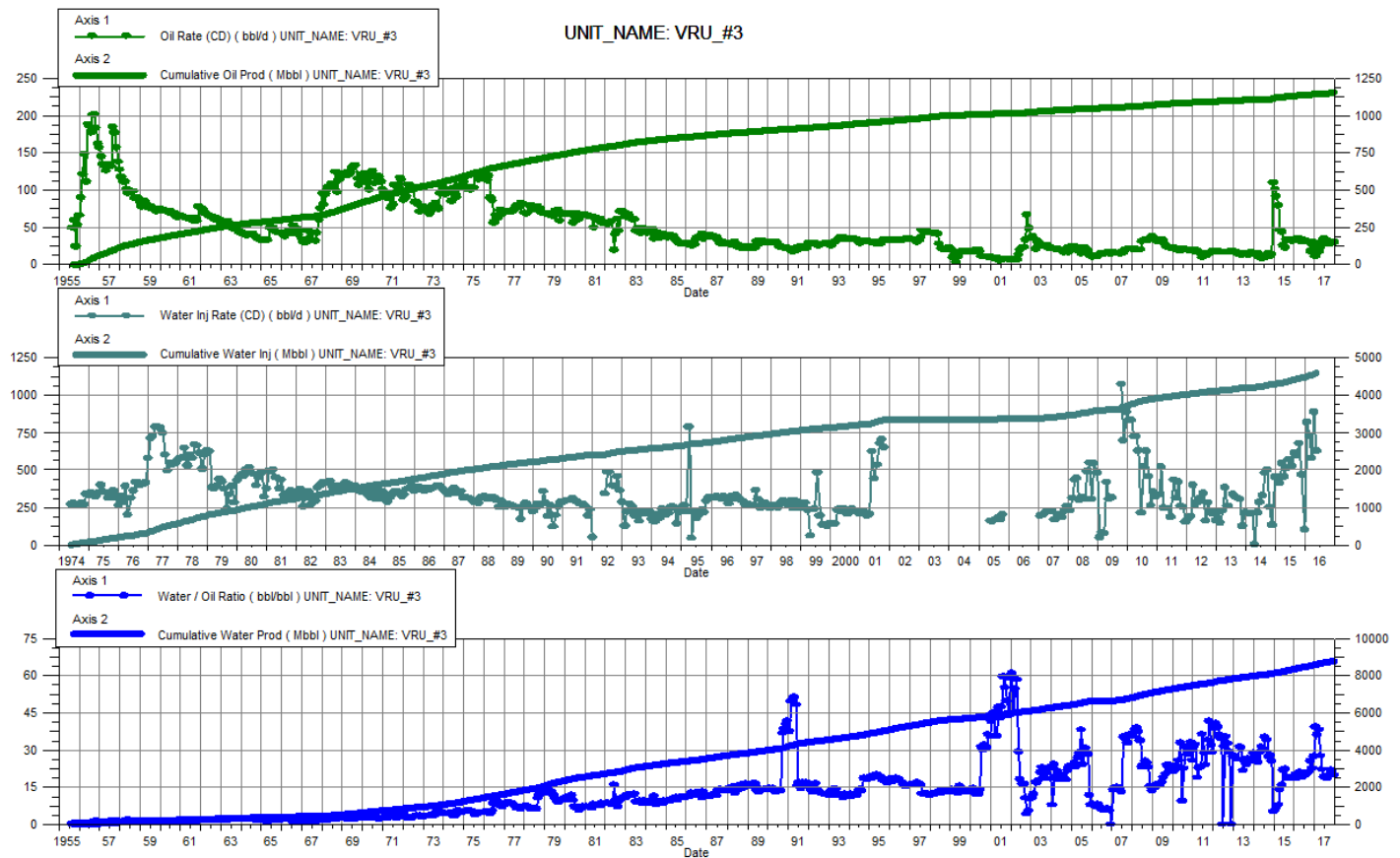
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1-31-2017	2.6	262.60	108.8	1498.87		646.4	42.37		0.37	5,400.00
2-28-2017	3.8	262.71	146.8	1502.98	23.41	647.1	39.12	0.16	0.37	5,392.86
3-31-2017	3.5	262.81	140.2	1507.33	96.82	650.1	40.59	0.67	0.37	5,190.32
4-30-2017	3.4	262.92	81.5	1509.77	67.93	652.1	23.69	0.80	0.37	5,183.33
5-31-2017	4.0	263.04	81.5	1512.30	81.65	654.7	20.45	0.95	0.37	5,000.00
6-30-2017	4.9	263.19	97.6	1515.23	62.76	656.5	20.07	0.61	0.37	5,000.00
7-31-2017	4.6	263.33	123.6	1519.06	55.76	658.3	27.02	0.44	0.37	5,000.00
8-31-2017	5.3	263.49	132.3	1523.16	55.51	660.0	25.15	0.40	0.37	5,000.00
9-30-2017	4.7	263.63	116.9	1526.67	54.35	661.6	24.80	0.45	0.37	5,000.00
10-31-2017	5.1	263.79	127.1	1530.61	49.54	663.2	24.94	0.37	0.37	5,000.00
11-30-2017	5.5	263.95	138.5	1534.76	49.83	664.7	25.32	0.35	0.37	4,993.33
12-31-2017	5.7	264.13	134.4	1538.93	40.04	665.9	23.62	0.29	0.37	4,793.55



VRU #3

Pattern P-14 – 02/02-18-010-26W1/0

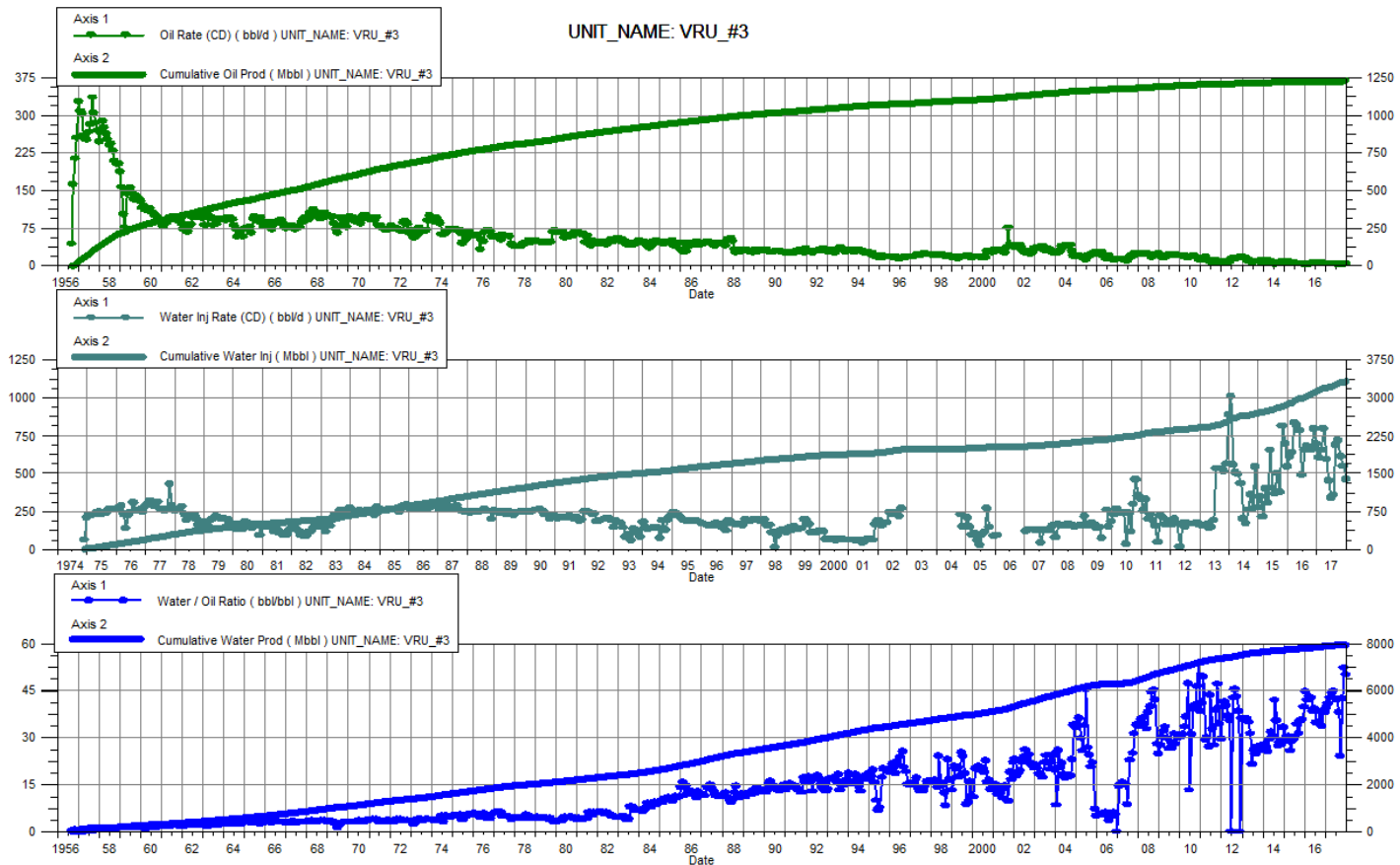
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1-31-2017	1.8	182.26	71.8	1361.88		731.0	39.25		0.47	-
2-28-2017	3.0	182.34	106.8	1364.87		731.0	36.04		0.47	-
3-31-2017	2.8	182.43	108.1	1368.22		731.0	38.12		0.47	-
4-30-2017	3.8	182.54	104.2	1371.35		731.0	27.59		0.47	-
5-31-2017	4.8	182.69	106.0	1374.64		731.0	22.17		0.47	-
6-30-2017	5.6	182.86	107.8	1377.87		731.0	19.22		0.47	-
7-31-2017	4.5	183.00	87.4	1380.58		731.0	19.44		0.47	-
8-31-2017	5.2	183.16	95.0	1383.52		731.0	18.41		0.47	-
9-30-2017	4.6	183.30	91.6	1386.27		731.0	19.74		0.47	-
10-31-2017	4.6	183.44	100.2	1389.38		731.0	21.76		0.46	-
11-30-2017	4.6	183.58	98.2	1392.32		731.0	21.38		0.46	-
12-31-2017	4.8	183.73	94.8	1395.26		731.0	19.81		0.46	-



VRU #3

Pattern P-15 – 00/12-11-010-26W1/0

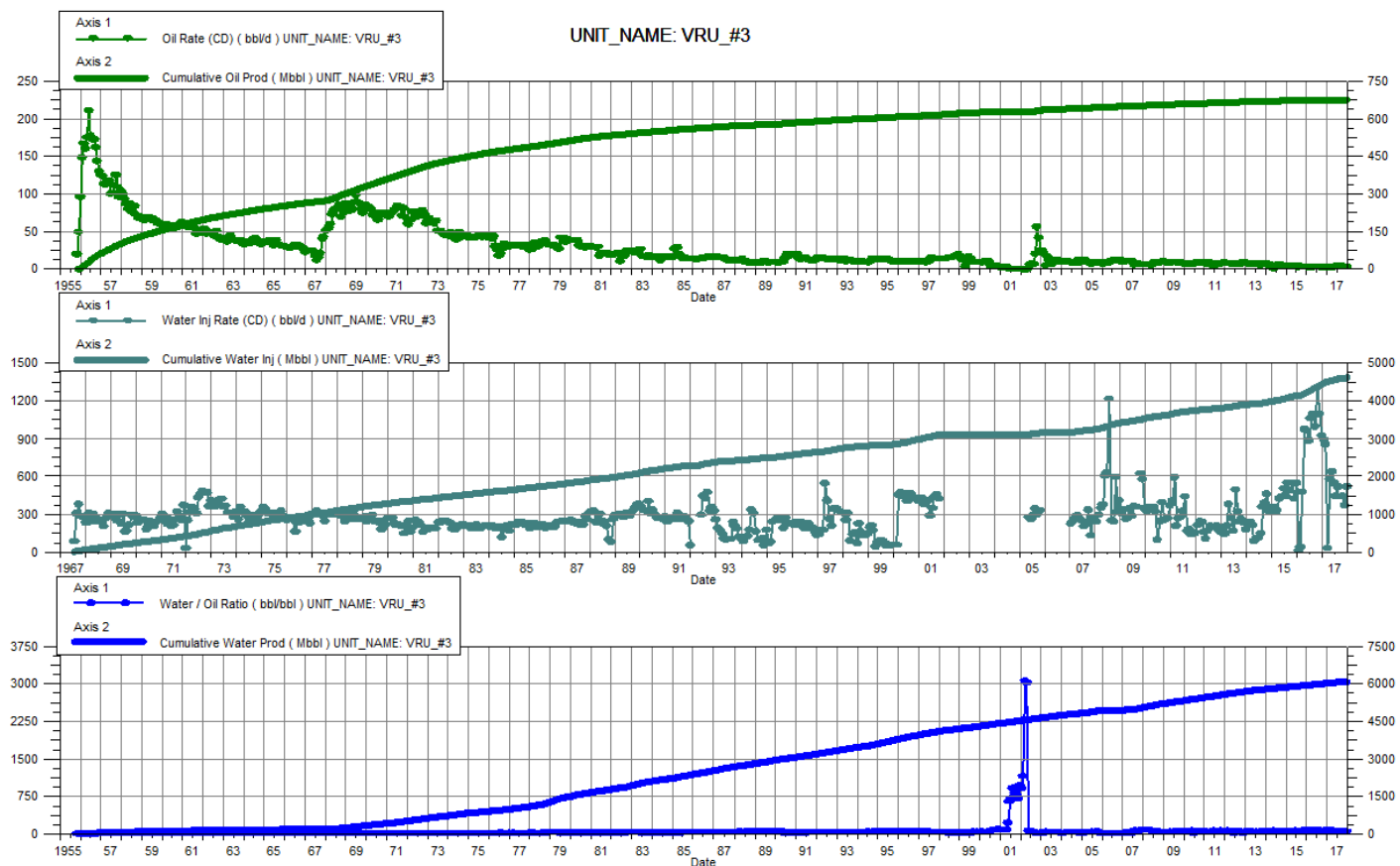
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1-31-2017	0.9	195.22	35.6	1252.51	96.23	501.2	39.54	2.64	0.35	5,400.00
2-28-2017	0.9	195.24	37.8	1253.56	104.26	504.1	40.74	2.69	0.35	5,400.00
3-31-2017	0.9	195.27	37.6	1254.73	126.81	508.0	42.65	3.30	0.35	5,400.00
4-30-2017	0.8	195.30	36.2	1255.82	94.51	510.9	44.16	2.55	0.35	5,400.00
5-31-2017	0.9	195.32	38.7	1257.02	71.84	513.1	44.79	1.81	0.35	5,400.00
6-30-2017	0.9	195.35	38.4	1258.17	53.62	514.7	42.22	1.36	0.35	5,400.00
7-31-2017	0.8	195.37	32.1	1259.16	56.82	516.5	42.14	1.73	0.35	5,400.00
8-31-2017	0.9	195.40	33.8	1260.21	109.72	519.9	37.98	3.16	0.36	5,400.00
9-30-2017	0.7	195.42	17.3	1260.73	114.36	523.3	24.07	6.36	0.36	5,400.00
10-31-2017	0.8	195.45	31.8	1261.71	97.41	526.3	42.46	2.99	0.36	5,400.00
11-30-2017	0.8	195.47	40.1	1262.92	87.00	528.9	52.11	2.13	0.36	5,400.00
12-31-2017	0.8	195.49	39.5	1264.14	73.26	531.2	49.95	1.82	0.36	5,400.00



VRU #3

Pattern P-16 – 00/14-07-010-25W1/0

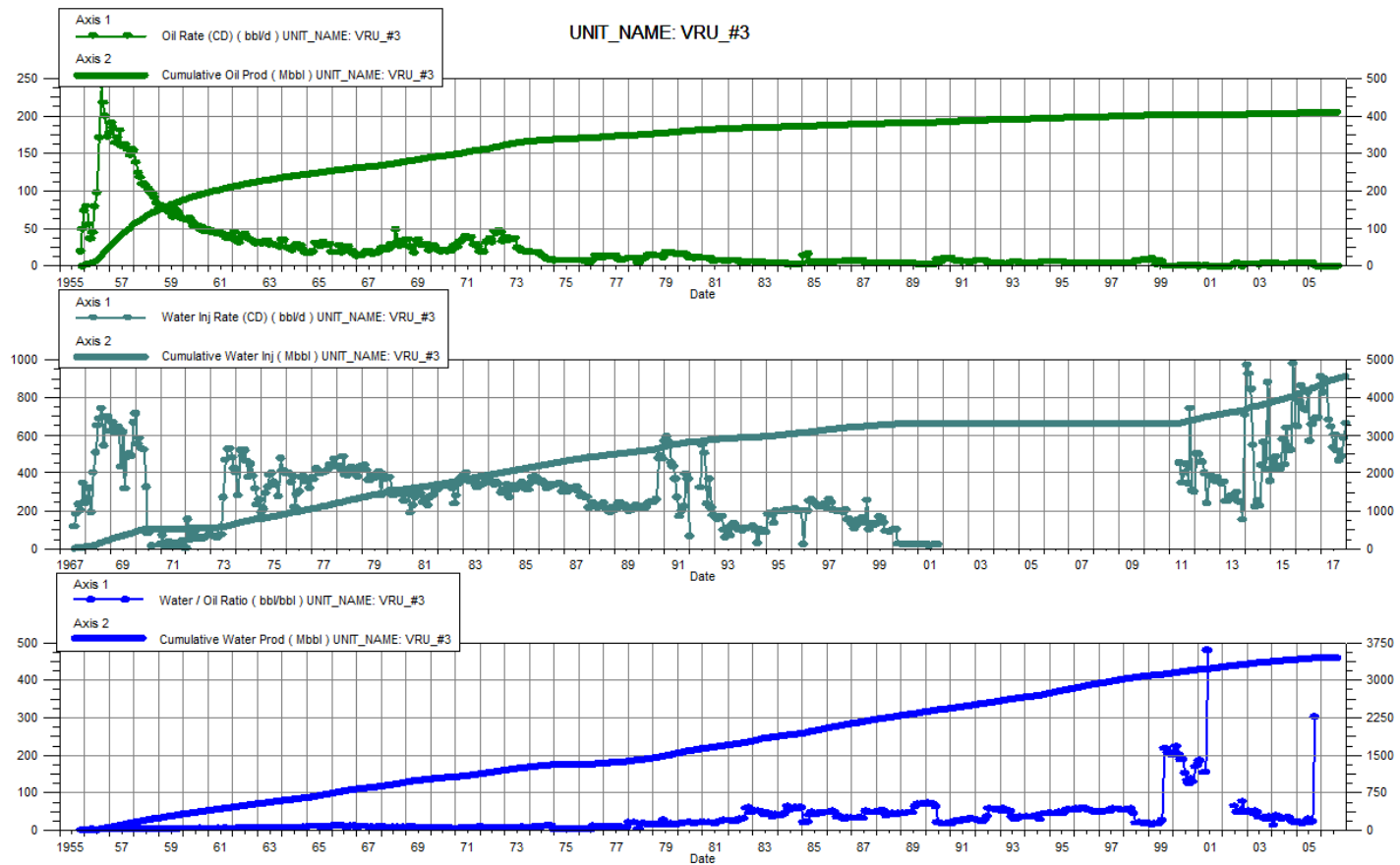
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1-31-2017	0.5	107.58	30.1	955.15	141.61	714.0	64.74	4.64	0.67	5,412.90
2-28-2017	0.5	107.59	34.1	956.11	135.84	717.8	66.39	3.92	0.67	5,792.86
3-31-2017	0.5	107.61	33.9	957.16	3.94	718.0	69.19	0.11	0.67	5,580.65
4-30-2017	0.5	107.62	32.1	958.13	91.59	720.7	71.87	2.81	0.68	5,560.00
5-31-2017	0.6	107.64	32.6	959.14	101.12	723.8	55.23	3.05	0.68	4,993.55
6-30-2017	0.7	107.66	31.3	960.08	86.80	726.4	42.90	2.71	0.68	4,800.00
7-31-2017	0.6	107.68	26.6	960.90	70.54	728.6	44.63	2.59	0.68	4,806.45
8-31-2017	0.7	107.70	28.3	961.78	81.68	731.2	40.20	2.82	0.68	5,000.00
9-30-2017	0.7	107.72	27.8	962.61		731.2	42.27		0.68	5,000.00
10-31-2017	0.6	107.74	28.9	963.51	70.26	733.3	45.70	2.38	0.68	5,000.00
11-30-2017	0.6	107.76	28.3	964.35	58.98	735.1	47.13	2.04	0.68	4,986.67
12-31-2017	0.6	107.78	27.8	965.22	82.45	737.7	45.16	2.90	0.69	4,593.55



VRU #3

Pattern P-17 – 00/12-07-010-25W1/0

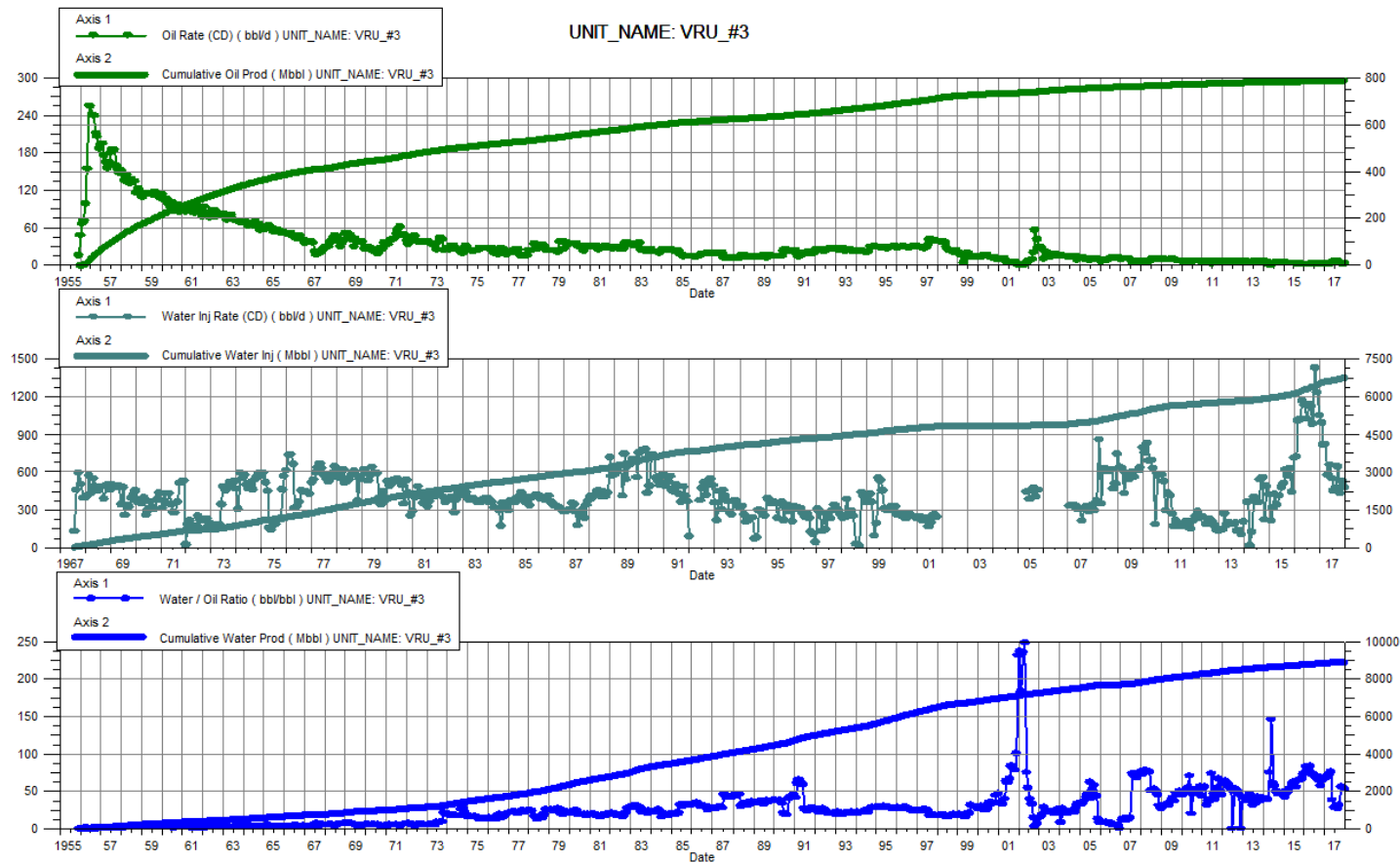
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1-31-2017		65.20		547.04	131.58	696.4			1.14	5,100.00
2-28-2017		65.20		547.04	143.70	700.4			1.14	5,100.00
3-31-2017		65.20		547.04	141.36	704.8			1.15	5,100.00
4-30-2017		65.20		547.04	108.42	708.0			1.15	5,100.00
5-31-2017		65.20		547.04	102.95	711.2			1.16	5,100.00
6-30-2017		65.20		547.04	85.43	713.8			1.16	5,100.00
7-31-2017		65.20		547.04	96.21	716.8			1.17	5,100.00
8-31-2017		65.20		547.04	82.25	719.3			1.17	5,100.00
9-30-2017		65.20		547.04	74.38	721.6			1.18	5,100.00
10-31-2017		65.20		547.04	78.00	724.0			1.18	5,100.00
11-30-2017		65.20		547.04	93.57	726.8			1.19	5,088.33
12-31-2017		65.20		547.04	105.72	730.1			1.19	4,750.00



VRU #3

Pattern P-18 – 00/10-07-010-25W1/0

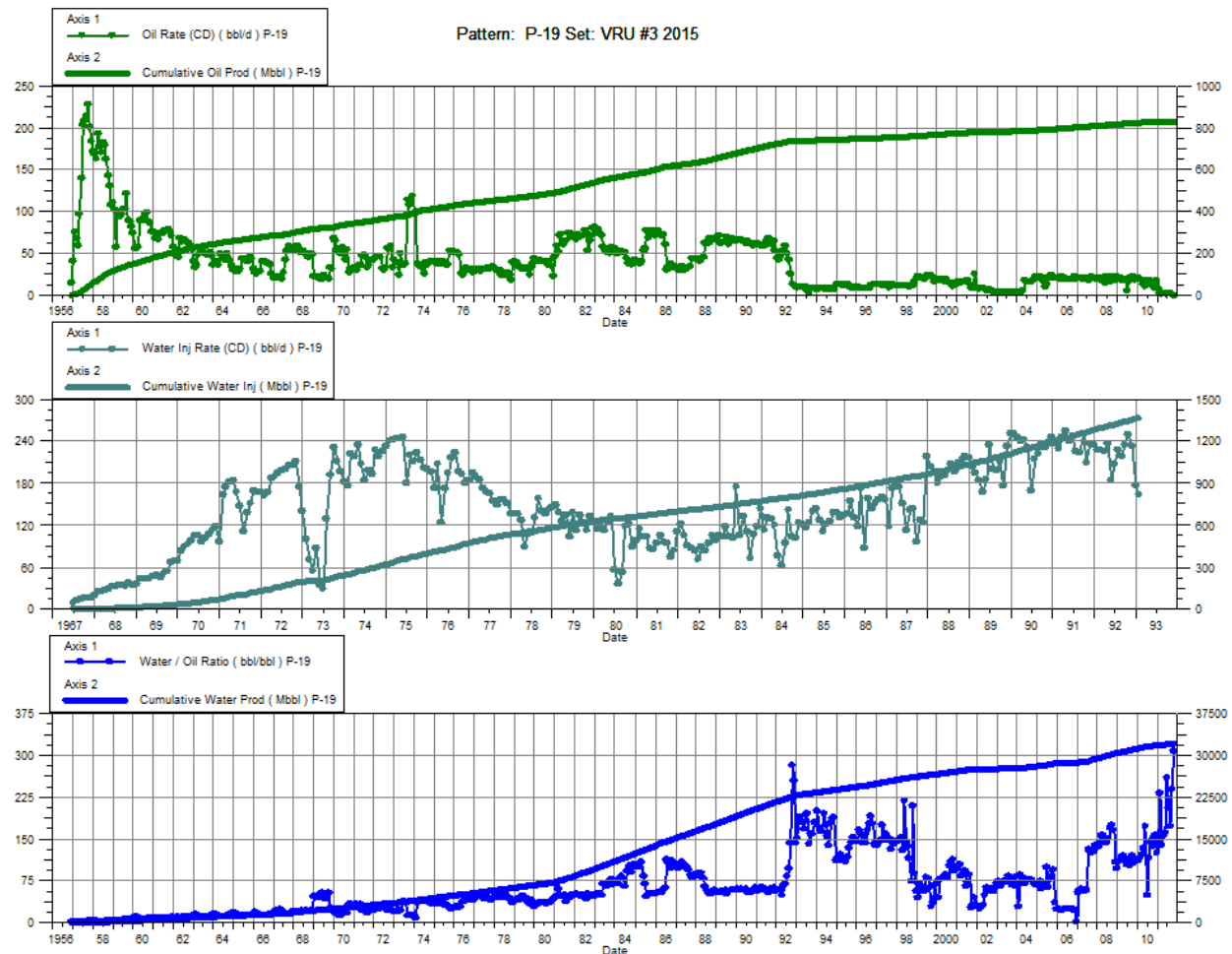
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1-31-2017	0.5	125.31	34.1	1403.12	157.70	1045.2	67.70	4.56	0.68	4,716.13
2-28-2017	0.6	125.32	38.7	1404.20	130.26	1048.9	69.84	3.32	0.69	5,192.86
3-31-2017	0.5	125.34	38.4	1405.39	130.75	1052.9	72.20	3.36	0.69	4,993.55
4-30-2017	0.5	125.35	36.2	1406.47	91.27	1055.7	75.83	2.49	0.69	4,986.67
5-31-2017	0.9	125.38	34.9	1407.56	104.77	1058.9	38.54	2.92	0.69	4,793.55
6-30-2017	1.1	125.41	32.0	1408.52	87.15	1061.5	28.57	2.63	0.69	4,603.33
7-31-2017	0.9	125.44	27.2	1409.36	71.79	1063.7	29.81	2.55	0.69	4,703.23
8-31-2017	1.1	125.48	28.9	1410.26	74.57	1066.1	26.81	2.49	0.69	4,800.00
9-30-2017	0.9	125.50	28.5	1411.11	102.38	1069.1	31.59	3.48	0.70	4,800.00
10-31-2017	0.6	125.52	30.4	1412.05	69.19	1071.3	55.81	2.23	0.70	4,800.00
11-30-2017	0.5	125.54	30.0	1412.95	83.23	1073.8	55.14	2.73	0.70	4,800.00
12-31-2017	0.6	125.55	29.5	1413.87	76.55	1076.1	52.82	2.55	0.70	4,787.10



VRU #3

Pattern P-19 – 00/06-10-010-26W1/0

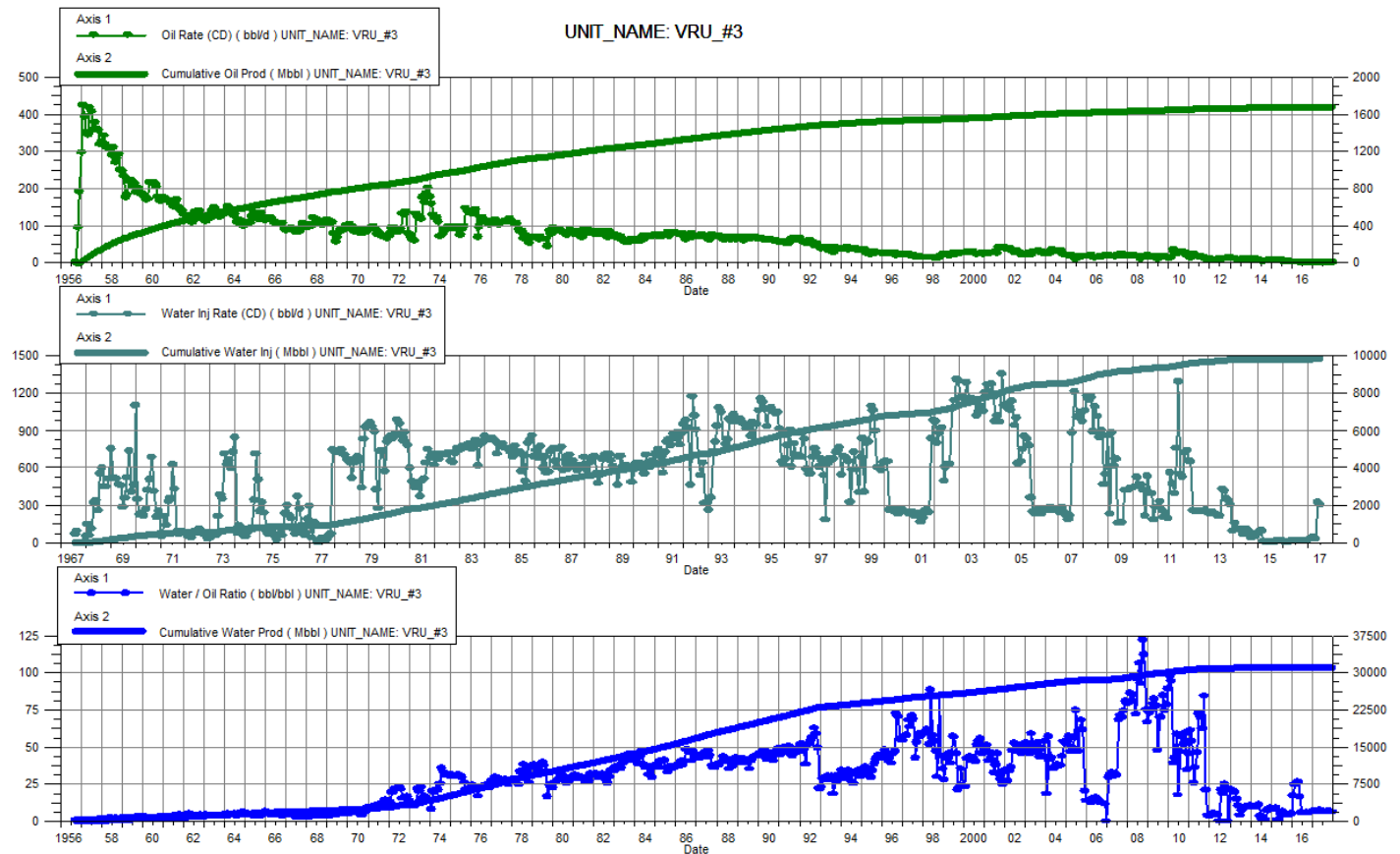
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1-31-2017	0.0	0.00	0.0	0.00		0.0	0.00	--	0.04	--
2-28-2017	0.0	0.00	0.0	0.00		0.0	0.00	--	0.04	--
3-31-2017	0.0	0.00	0.0	0.00		0.0	0.00	--	0.04	--
4-30-2017	0.0	0.00	0.0	0.00		0.0	0.00	--	0.04	--
5-31-2017	0.0	0.00	0.0	0.00		0.0	0.00	--	0.04	--
6-30-2017	0.0	0.00	0.0	0.00		0.0	0.00	--	0.04	--
7-31-2017	0.0	0.00	0.0	0.00		0.0	0.00	--	0.04	--
8-31-2017	0.0	0.00	0.0	0.00		0.0	0.00	--	0.04	--
9-30-2017	0.0	0.00	0.0	0.00		0.0	0.00	--	0.04	--
10-31-2017	0.0	0.00	0.0	0.00		0.0	0.00	--	0.04	--
11-30-2017	0.0	0.00	0.0	0.00		0.0	0.00	--	0.04	--
12-31-2017	0.0	0.00	0.0	0.00		0.0	0.00	--	0.04	--



VRU #3

Pattern P-20 – 00/08-10-010-26W1/0

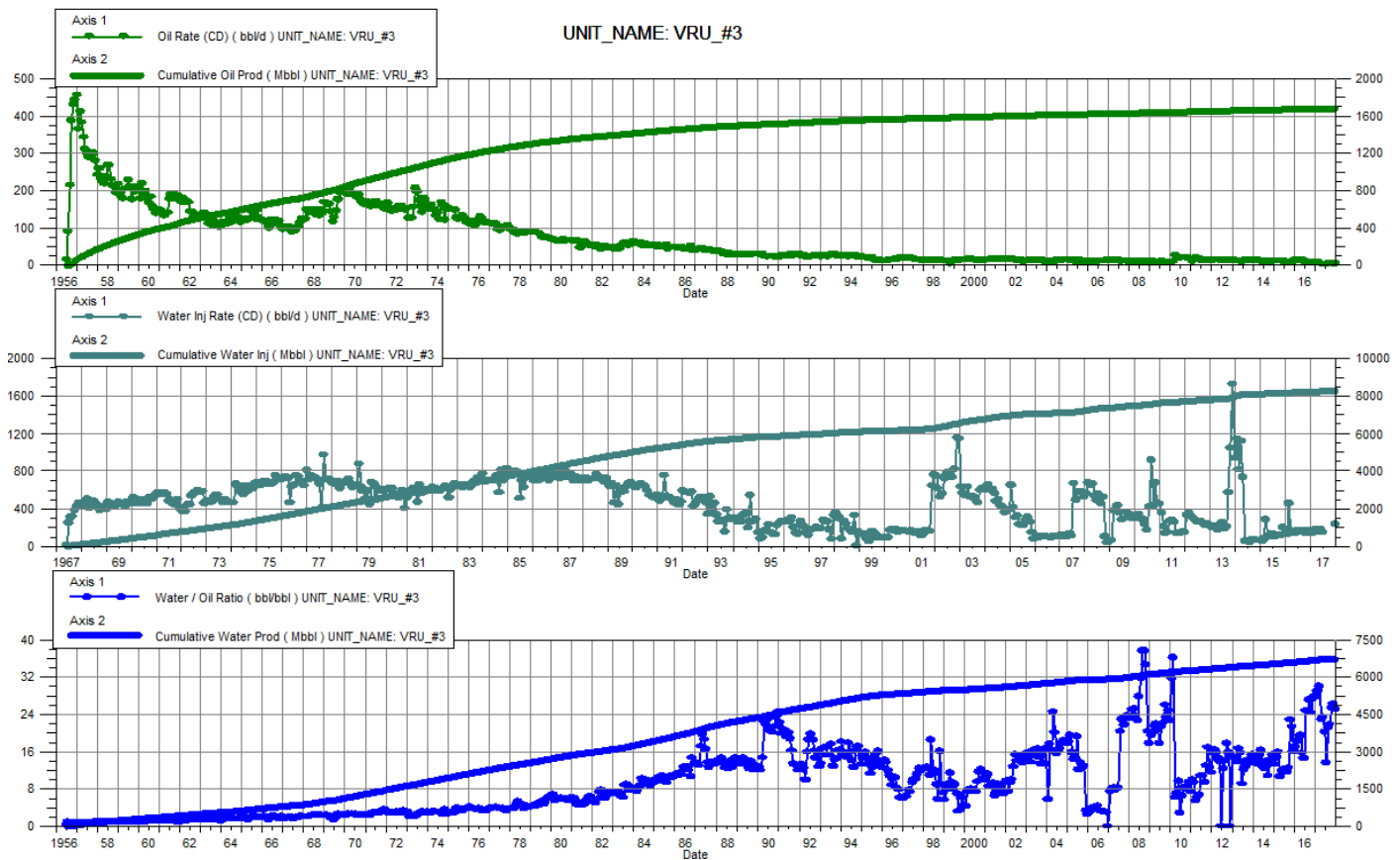
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1-31-2017	0.4	267.27	2.6	4923.05	3.77	1567.4	6.48	1.25	0.30	3,800.00
2-28-2017	0.4	267.28	2.8	4923.13	4.35	1567.5	6.68	1.37	0.30	3,800.00
3-31-2017	0.4	267.29	2.8	4923.22	6.85	1567.7	7.01	2.17	0.30	3,800.00
4-30-2017	0.4	267.31	2.7	4923.30	4.73	1567.9	7.25	1.56	0.30	3,800.00
5-31-2017	0.4	267.32	2.9	4923.38	51.67	1569.5	7.25	15.89	0.30	3,800.00
6-30-2017	0.4	267.33	2.8	4923.47	47.57	1570.9	6.75	14.59	0.30	3,800.00
7-31-2017	0.3	267.34	2.4	4923.54		1570.9	7.05		0.30	3,800.00
8-31-2017	0.4	267.35	2.6	4923.62		1570.9	6.34		0.30	3,800.00
9-30-2017	0.4	267.37	2.5	4923.70		1570.9	6.51		0.30	3,800.00
10-31-2017	0.4	267.38	2.7	4923.78		1570.9	6.64		0.30	3,800.00
11-30-2017	0.4	267.39	2.6	4923.86		1570.9	6.53		0.30	3,800.00
12-31-2017	0.4	267.40	2.6	4923.94		1570.9	6.28		0.30	3,800.00



VRU #3

Pattern P-21 – 00/06-11-010-26W1/0

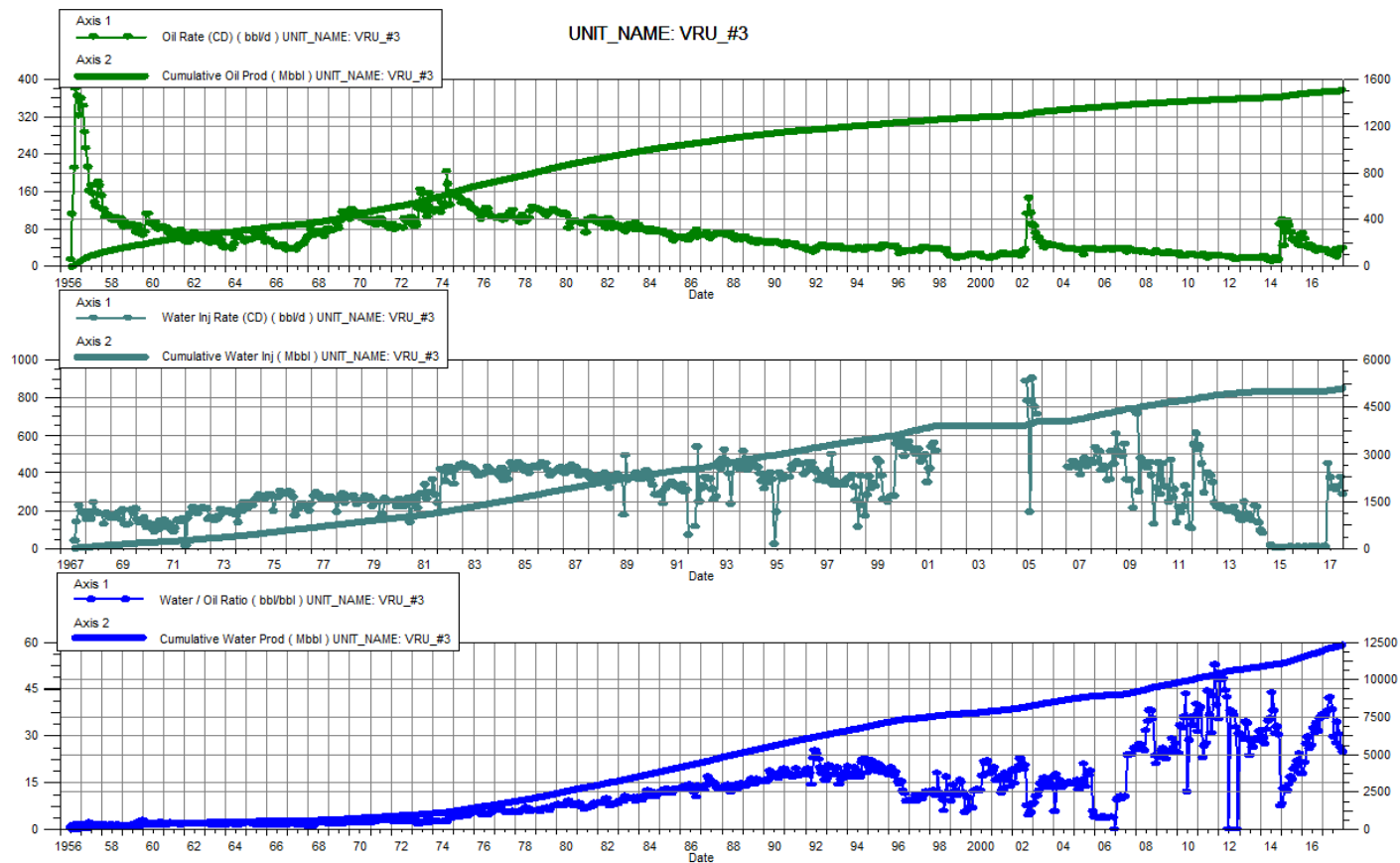
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1-31-2017	1.3	267.10	35.9	1060.09	21.35	1311.9	27.84	0.57	0.99	5,050.00
2-28-2017	1.4	267.14	40.6	1061.22	25.28	1312.6	29.06	0.60	0.98	5,050.00
3-31-2017	1.3	267.17	37.9	1062.40	28.72	1313.5	29.96	0.73	0.98	5,050.00
4-30-2017	0.7	267.19	15.0	1062.85	23.39	1314.2	22.89	1.49	0.98	5,050.00
5-31-2017	0.7	267.22	16.0	1063.34	28.40	1315.1	23.41	1.70	0.99	5,050.00
6-30-2017	0.7	267.24	14.3	1063.77	23.53	1315.8	20.18	1.57	0.99	5,050.00
7-31-2017	0.7	267.26	9.1	1064.05		1315.8	13.57		0.99	5,050.00
8-31-2017	1.3	267.30	26.5	1064.87		1315.8	21.13		0.98	5,050.00
9-30-2017	1.2	267.33	26.1	1065.66		1315.8	21.76		0.98	5,050.00
10-31-2017	1.1	267.37	27.3	1066.50		1315.8	25.29		0.98	5,050.00
11-30-2017	0.9	267.39	24.4	1067.24		1315.8	26.25		0.98	5,050.00
12-31-2017	1.0	267.42	24.0	1067.98	37.25	1317.0	25.07	1.49	0.98	5,050.00



VRU #3

Pattern P-22 – 00/08-11-010-26W1/0

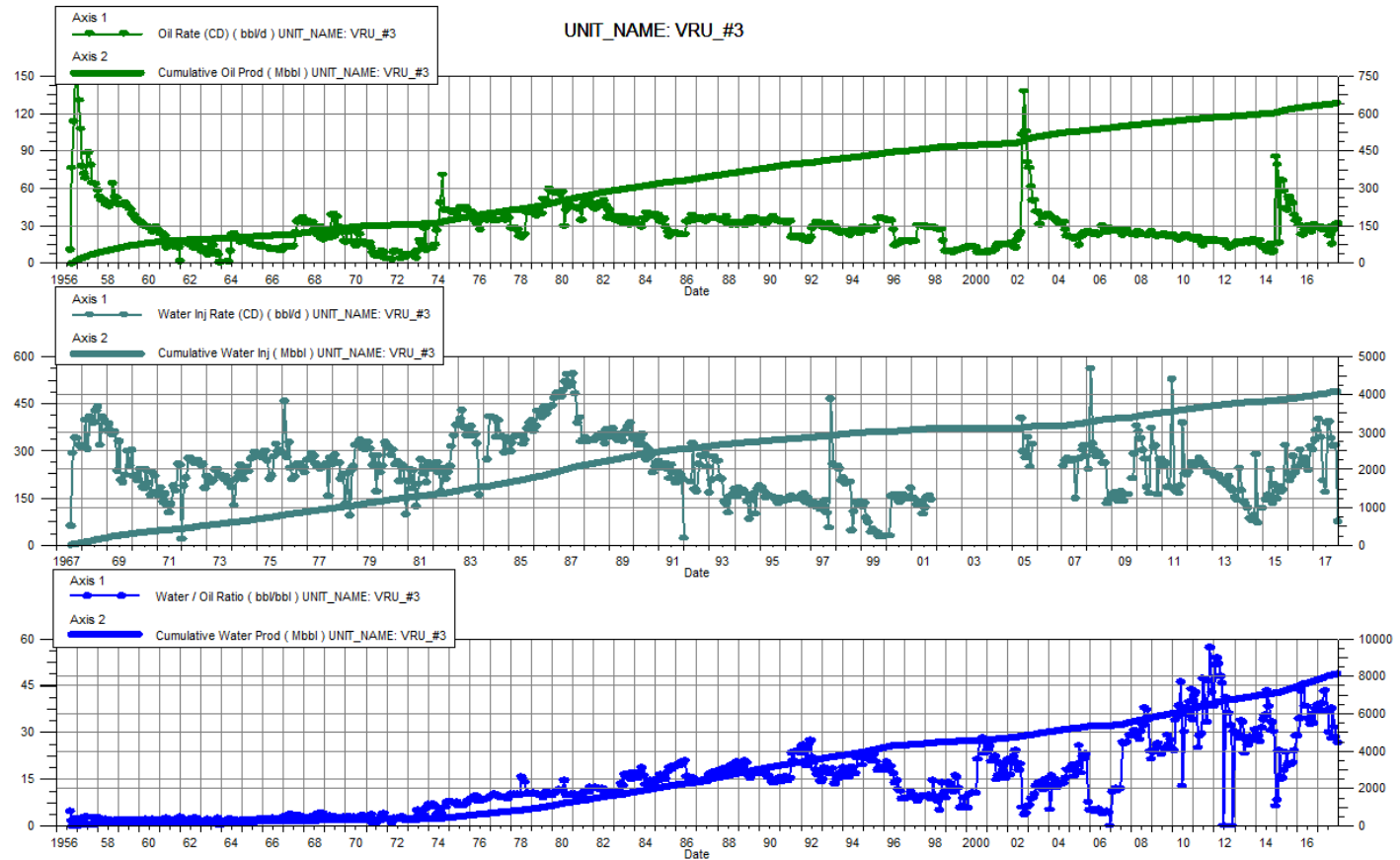
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1-31-2017	5.8	237.83	214.5	1897.98		799.1	36.79		0.37	5,800.00
2-28-2017	5.9	237.99	212.9	1903.95		799.1	36.17		0.37	5,800.00
3-31-2017	5.6	238.17	211.0	1910.49	1.35	799.2	37.68	0.01	0.37	5,800.00
4-30-2017	4.7	238.31	195.6	1916.35	1.32	799.2	41.80	0.01	0.37	5,800.00
5-31-2017	4.9	238.46	205.4	1922.72	71.65	801.4	42.26	0.34	0.37	5,800.00
6-30-2017	4.3	238.59	163.9	1927.64	59.63	803.2	38.45	0.35	0.37	5,800.00
7-31-2017	4.0	238.71	117.6	1931.29	50.91	804.8	29.52	0.42	0.37	5,800.00
8-31-2017	5.8	238.89	159.7	1936.24	52.18	806.4	27.54	0.32	0.37	5,800.00
9-30-2017	3.6	239.00	122.2	1939.90	49.55	807.9	34.41	0.39	0.37	5,800.00
10-31-2017	5.3	239.16	162.6	1944.94	52.51	809.5	30.47	0.31	0.37	5,800.00
11-30-2017	6.2	239.35	163.3	1949.84	60.25	811.3	26.36	0.36	0.37	5,786.67
12-31-2017	6.4	239.54	158.2	1954.74	45.69	812.7	24.78	0.28	0.37	5,400.00



VRU #3

Pattern P-23 – 00/06-12-010-26W1/0

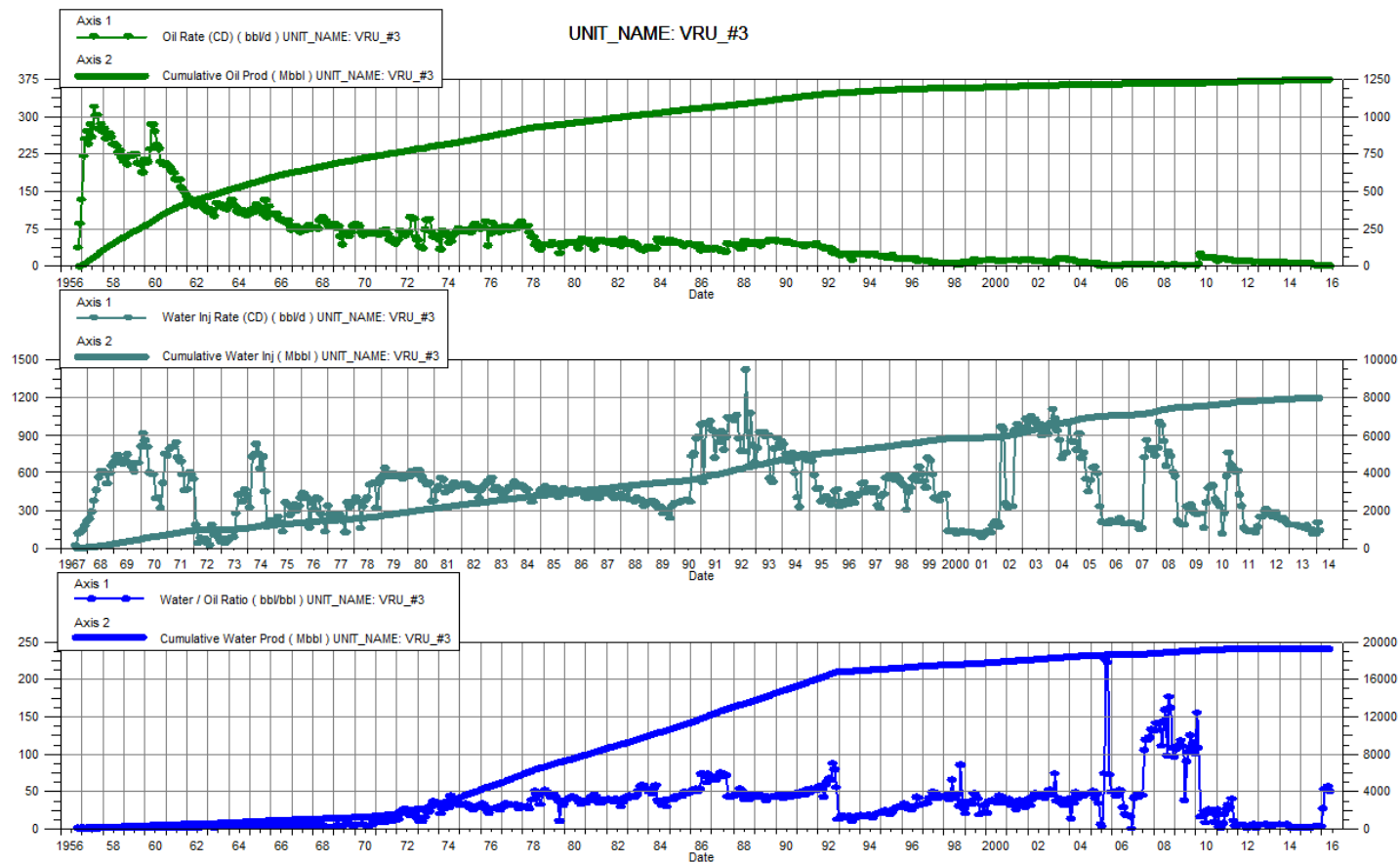
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1-31-2017	4.6	100.93	176.3	1244.77	53.30	635.5	38.77	0.30	0.47	4,900.00
2-28-2017	4.6	101.06	170.2	1249.54	58.08	637.1	36.83	0.33	0.47	4,900.00
3-31-2017	4.4	101.20	171.4	1254.85	64.10	639.1	39.22	0.36	0.47	4,900.00
4-30-2017	4.3	101.33	184.7	1260.40	54.83	640.7	42.99	0.29	0.47	4,900.00
5-31-2017	4.5	101.47	193.8	1266.40	32.42	641.8	43.34	0.16	0.47	4,900.00
6-30-2017	4.1	101.59	152.7	1270.98	26.75	642.6	36.95	0.17	0.47	4,900.00
7-31-2017	3.5	101.70	106.1	1274.27	62.07	644.5	29.95	0.57	0.47	4,900.00
8-31-2017	4.7	101.85	130.4	1278.32	62.62	646.4	27.92	0.46	0.47	4,900.00
9-30-2017	2.5	101.92	93.3	1281.11	54.20	648.0	37.75	0.57	0.47	4,900.00
10-31-2017	4.3	102.05	135.5	1285.31	50.40	649.6	31.55	0.36	0.47	4,900.00
11-30-2017	4.9	102.20	139.8	1289.51	50.48	651.1	28.43	0.35	0.47	4,900.00
12-31-2017	5.1	102.36	135.1	1293.69	11.80	651.5	26.72	0.08	0.47	4,900.00



VRU #3

Pattern P-24 – 00/16-03-010-26W1/0

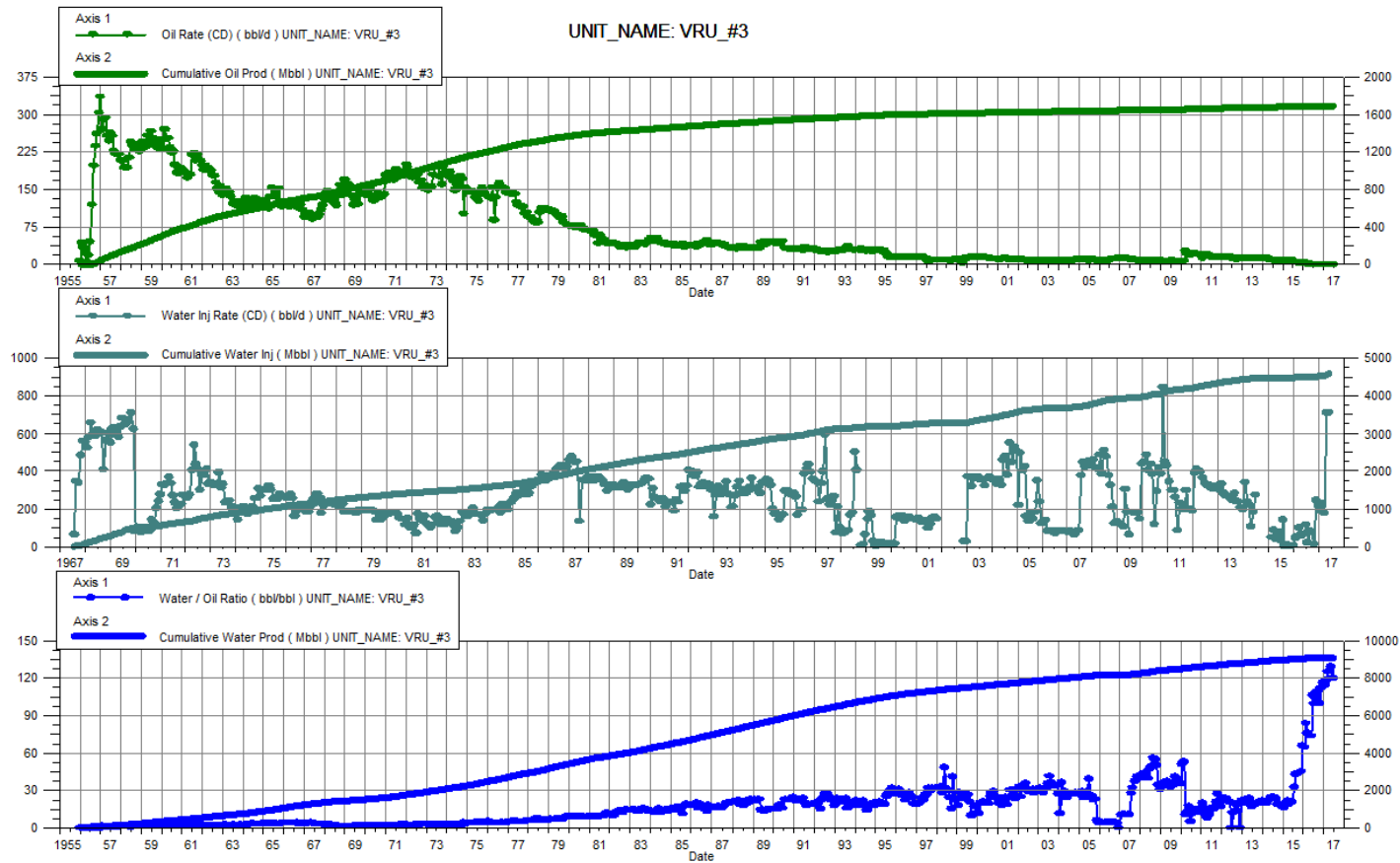
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1-31-2017		198.50		3063.25		1274.7		--	0.39	--
2-28-2017		198.50		3063.25		1274.7		--	0.39	--
3-31-2017		198.50		3063.25		1274.7		--	0.39	--
4-30-2017		198.50		3063.25		1274.7		--	0.39	--
5-31-2017		198.50		3063.25		1274.7		--	0.39	--
6-30-2017		198.50		3063.25		1274.7		--	0.39	--
7-31-2017		198.50		3063.25		1274.7		--	0.39	--
8-31-2017		198.50		3063.25		1274.7		--	0.39	--
9-30-2017		198.50		3063.25		1274.7		--	0.39	--
10-31-2017		198.50		3063.25		1274.7		--	0.39	--
11-30-2017		198.50		3063.25		1274.7		--	0.39	--
12-31-2017		198.50		3063.25		1274.7		--	0.39	--



VRU #3

Pattern P-25 – 00/14-02-010-26W1/0

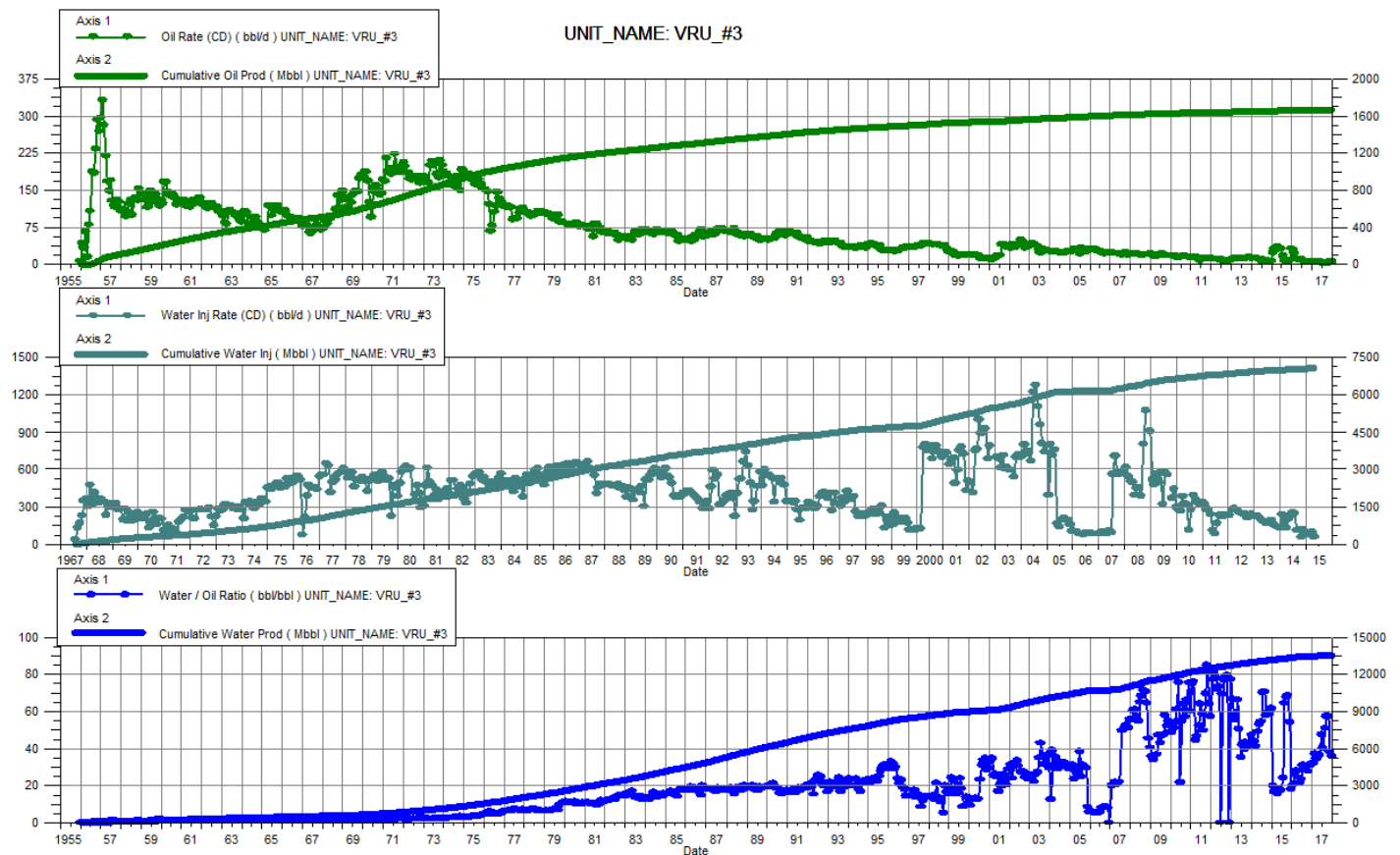
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1-31-2017	0.1	268.63	11.1	1441.02	30.50	721.9	114.47	2.73	0.42	5,000.00
2-28-2017	0.1	268.63	11.8	1441.35	36.24	722.9	117.79	3.05	0.42	5,000.00
3-31-2017	0.1	268.64	11.7	1441.71	28.27	723.7	124.97	2.40	0.42	5,000.00
4-30-2017	0.1	268.64	11.3	1442.05	113.14	727.1	125.19	9.96	0.42	5,000.00
5-31-2017	0.1	268.64	12.1	1442.42	113.12	730.6	129.17	9.29	0.43	5,000.00
6-30-2017	0.1	268.64	10.4	1442.74		730.6	120.04		0.43	5,000.00
7-31-2017		268.64		1442.74		730.6			0.42	5,000.00
8-31-2017		268.64		1442.74		730.6			0.42	5,000.00
9-30-2017		268.64		1442.74		730.6			0.42	5,000.00
10-31-2017		268.64		1442.74		730.6			0.42	5,000.00
11-30-2017		268.64		1442.74		730.6			0.42	5,000.00
12-31-2017		268.64		1442.74		730.6			0.42	5,000.00



VRU #3

Pattern P-26 – 00/16-02-010-26W1/0

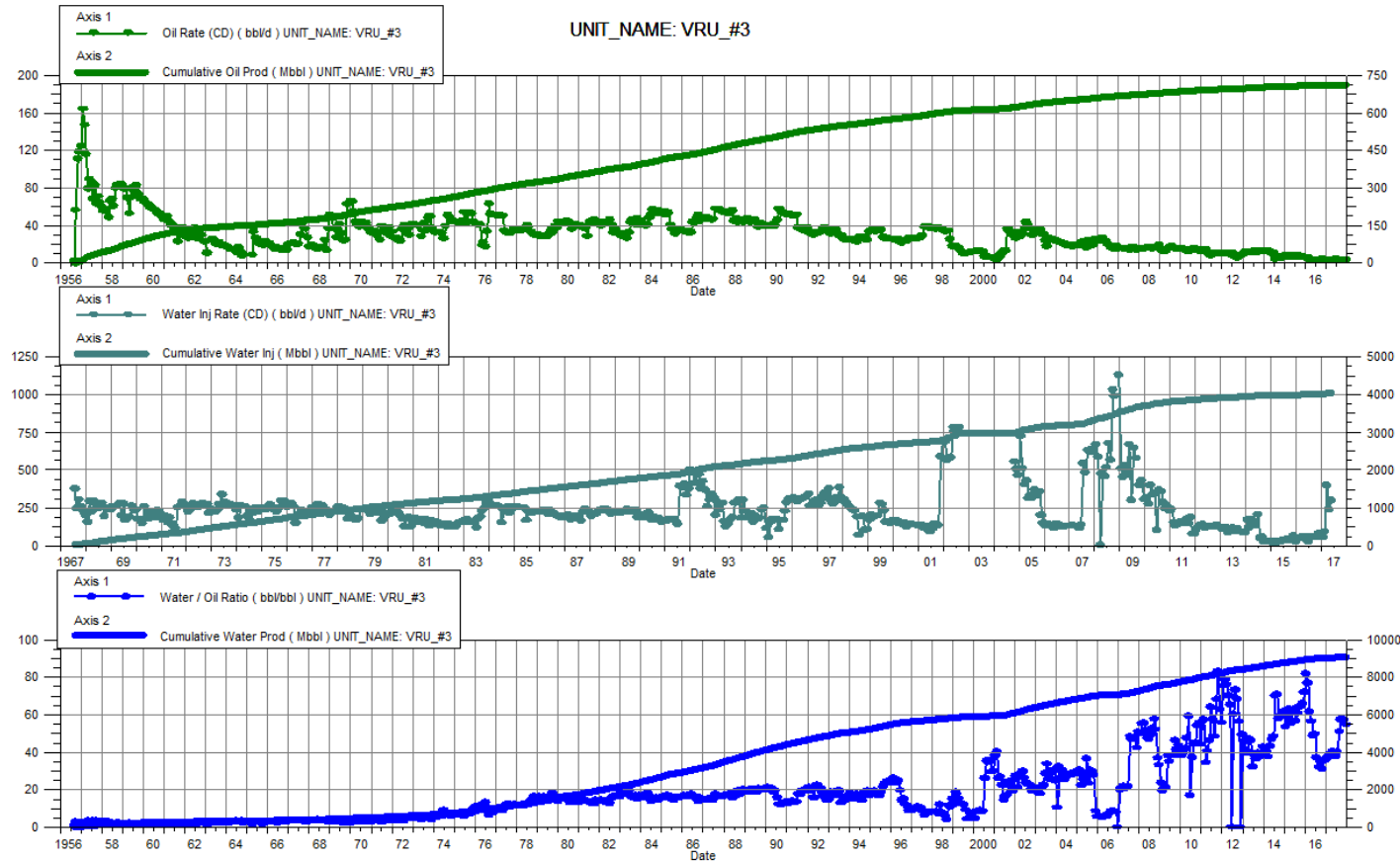
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1-31-2017	1.1	265.54	35.5	2135.60		1125.9	32.17		0.47	3,700.00
2-28-2017	1.0	265.57	37.5	2136.65		1125.9	36.96		0.47	3,700.00
3-31-2017	1.1	265.60	37.5	2137.81		1125.9	34.55		0.47	3,700.00
4-30-2017	1.0	265.63	36.1	2138.89		1125.9	35.86		0.47	3,700.00
5-31-2017	1.1	265.67	38.7	2140.09		1125.9	36.55		0.47	3,700.00
6-30-2017	0.8	265.69	36.1	2141.17		1125.9	47.65		0.47	3,700.00
7-31-2017	0.6	265.71	21.8	2141.85		1125.9	40.02		0.47	3,700.00
8-31-2017	0.6	265.73	32.7	2142.86		1125.9	50.99		0.47	3,700.00
9-30-2017	0.6	265.74	34.8	2143.91		1125.9	57.12		0.47	3,700.00
10-31-2017	0.6	265.76	34.8	2144.99		1125.9	57.37		0.47	3,700.00
11-30-2017	1.0	265.79	38.6	2146.14		1125.9	38.23		0.47	3,700.00
12-31-2017	1.1	265.83	38.0	2147.32		1125.9	36.04		0.47	3,700.00



VRU #3

Pattern P-27 – 00/14-01-010-26W1/0

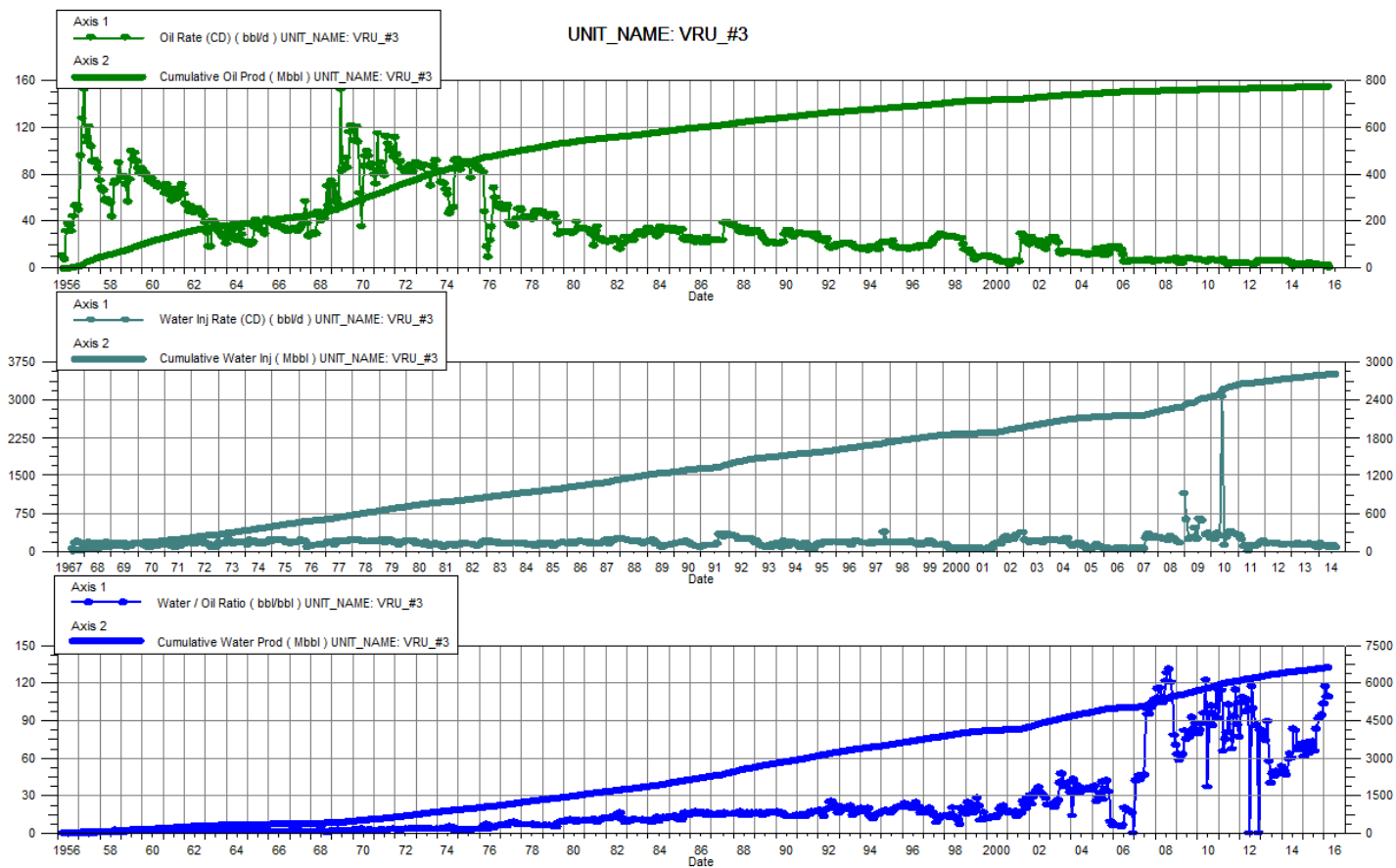
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1-31-2017	0.7	113.32	24.7	1431.58	9.04	640.6	36.35	0.36	0.41	5,400.00
2-28-2017	0.7	113.34	26.3	1432.32	14.18	641.0	37.61	0.52	0.41	5,400.00
3-31-2017	0.7	113.36	26.1	1433.13	63.40	642.9	38.93	2.37	0.42	5,400.00
4-30-2017	0.6	113.38	25.2	1433.88	38.34	644.1	40.40	1.49	0.42	5,400.00
5-31-2017	0.7	113.40	27.0	1434.72	47.73	645.6	40.45	1.72	0.42	5,400.00
6-30-2017	0.7	113.42	26.7	1435.52		645.6	37.75		0.42	5,400.00
7-31-2017	0.6	113.44	21.8	1436.20		645.6	40.02		0.42	5,400.00
8-31-2017	0.6	113.46	32.7	1437.21		645.6	50.99		0.42	5,400.00
9-30-2017	0.6	113.47	34.8	1438.26		645.6	57.12		0.42	5,400.00
10-31-2017	0.6	113.49	34.8	1439.34		645.6	57.37		0.42	5,400.00
11-30-2017	0.7	113.51	37.9	1440.47		645.6	57.13		0.42	5,400.00
12-31-2017	0.7	113.53	37.3	1441.63		645.6	54.52		0.42	5,400.00



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Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1-31-2017		123.06		1049.24		449.0			0.38	3,400.00
2-28-2017		123.06		1049.24		449.0			0.38	3,400.00
3-31-2017		123.06		1049.24		449.0			0.38	3,400.00
4-30-2017		123.06		1049.24		449.0			0.38	3,400.00
5-31-2017		123.06		1049.24		449.0			0.38	3,400.00
6-30-2017		123.06		1049.24		449.0			0.38	3,400.00
7-31-2017		123.06		1049.24		449.0			0.38	3,400.00
8-31-2017		123.06		1049.24		449.0			0.38	3,400.00
9-30-2017		123.06		1049.24		449.0			0.38	3,400.00
10-31-2017		123.06		1049.24		449.0			0.38	3,400.00
11-30-2017		123.06		1049.24		449.0			0.38	3,400.00
12-31-2017		123.06		1049.24		449.0			0.38	3,400.00



VRU #3

Pattern P-29 – 00/06-01-010-26W1/0

Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1-31-2017	2.0	171.31	36.2	2020.45		749.8	17.79		0.34	2,100.00
2-28-2017	2.0	171.37	36.9	2021.48		749.8	18.28		0.34	2,100.00
3-31-2017	2.0	171.43	38.2	2022.66		749.8	19.14		0.34	2,100.00
4-30-2017	1.5	171.47	23.0	2023.35		749.8	15.18		0.34	2,100.00
5-31-2017	1.6	171.53	25.3	2024.14		749.8	15.39		0.34	2,100.00
6-30-2017	2.1	171.59	38.9	2025.30		749.8	18.45		0.34	2,100.00
7-31-2017	1.7	171.64	30.0	2026.23		749.8	18.00		0.34	2,100.00
8-31-2017	2.0	171.70	31.9	2027.22		749.8	16.22		0.34	2,100.00
9-30-2017	1.9	171.76	31.4	2028.16		749.8	16.75		0.34	2,100.00
10-31-2017	1.9	171.82	31.7	2029.14		749.8	16.86		0.34	2,100.00
11-30-2017	2.0	171.87	32.6	2030.12		749.8	16.73		0.34	2,100.00
12-31-2017	0.6	171.89	15.9	2030.61		749.8	28.64		0.34	2,100.00

