

Viriden Roselea Unit #2
2017 Annual EOR Report

Executive Summary

In 2017 oil production in the Virden Roselea Unit #2 (VRU #2) averaged 45.8 m³/d (288 bbl/d) totaling 16.7 e³m³ (104.9 mbbbl). Annual production inclined by 0.5% from 2016 to 2017, another year of annual incline, interrupted by last year having an overall decline. By the end of 2017 cumulative oil production from the VRU #2 was 1 209 e³m³ (7.6 mmbbl). The original forecasted recovery was 270 e³m³ (1.7 mmbbl) on primary recovery and 730 e³m³ (4.6 mmbbl) total primary plus secondary recovery. It should be noted that the pool was expanded slightly after the original waterflood forecast was made; however, the waterflood has made a tremendous increase to the ultimate oil recovery and has exceeded the original expectations. That said, the unit is still at a low recovery and there is still potential to improve the performance and gain incremental reserves.

In December 2017 there were 37 producing oil wells and 9 water injectors active in the unit. In 2017, three Virden wells and two Scallion wells were drilled in the unit.

Discussion

The VRU #2 has been under waterflood since 1966, seven years after first production from the pool in 1959. Water injection increased the oil production rate from $\sim 60 \text{ m}^3/\text{d}$ ($\sim 377 \text{ bbl/d}$) to $\sim 150 \text{ m}^3/\text{d}$ (944 bbl/d), equivalent to peak production from the field. Expected ultimate oil recovery was increased by more than four times by the waterflood.

Prior to the operatorship transferring to Corex Resources very little additional development had taken place in the unit. From 1997- 2002, four horizontal wells were drilled in the unit, all with poor results. In 2013, a very successful Virden well was drilled in the unit. 2014 was very active: six horizontal wells, a disposal well, and a vertical producer were drilled and 5 vertical recompletes in the Whitewater formation were executed successfully. In 2015, one well in the Virden formation was drilled. In 2015, a poor producer, 103/16-05-011-25W1/00 was converted to injection. Currently, the pattern is being monitored for response, and some response has been seen. This is the first well to have been converted to injection since 1971. At the end of 2016 all of the old pipelines in the unit had been replaced, allowing for us to effectively set injection targets. The unit is mainly laid out in 5-spot patterns; however, there are some areas in the unit that have seen little to no waterflood support, mainly on the west side of the unit. There is the possibility of completing the remaining 5-spot patterns, but it was deemed more efficient to implement a horizontal-horizontal waterflood after drilling infill wells. This unit has a low recovery factor and very likely poor sweep efficiency. Changing the established patterns should help to recover incremental reserves, as at this point in time, there is a lot of water cycling. The water injection rate was $1,010 \text{ m}^3/\text{d}$ ($6,353 \text{ bbl/d}$) in 2017 and the producing WOR was $26 \text{ m}^3/\text{m}^3$. The injected water at VRU #2 is not filtered or treated in any way.

Significant events in 2017 are as follows:

- April 2017, perforated the Duperow formation in the 102/07-06-011-25W1/00 disposal well.
- July 2017, drill the 102/02-07-011-25W1/00 horizontal well in the Virden formation.
- July 2017, drill the 102/03-07-011-25W1/00 horizontal well in the Virden formation.
- August 2017, drill the 102/09-06-011-25W1/00 dual leg horizontal well in the Scallion formation.
- August 2017, drill the 102/10-01-011-26W1/00 horizontal well in the Virden formation.

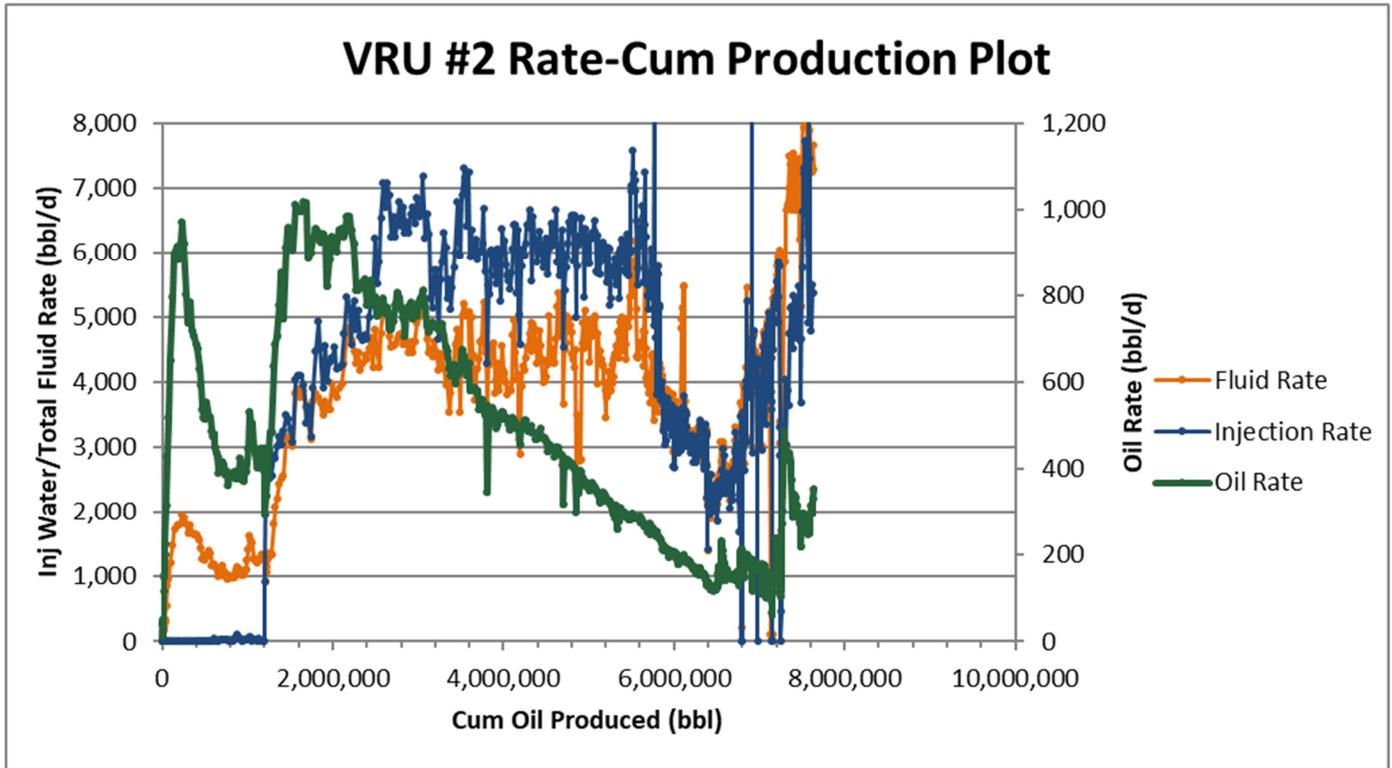
- November 2017, drill the 102/03-08-011-25W1/00 horizontal well in the Scallion formation.

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.

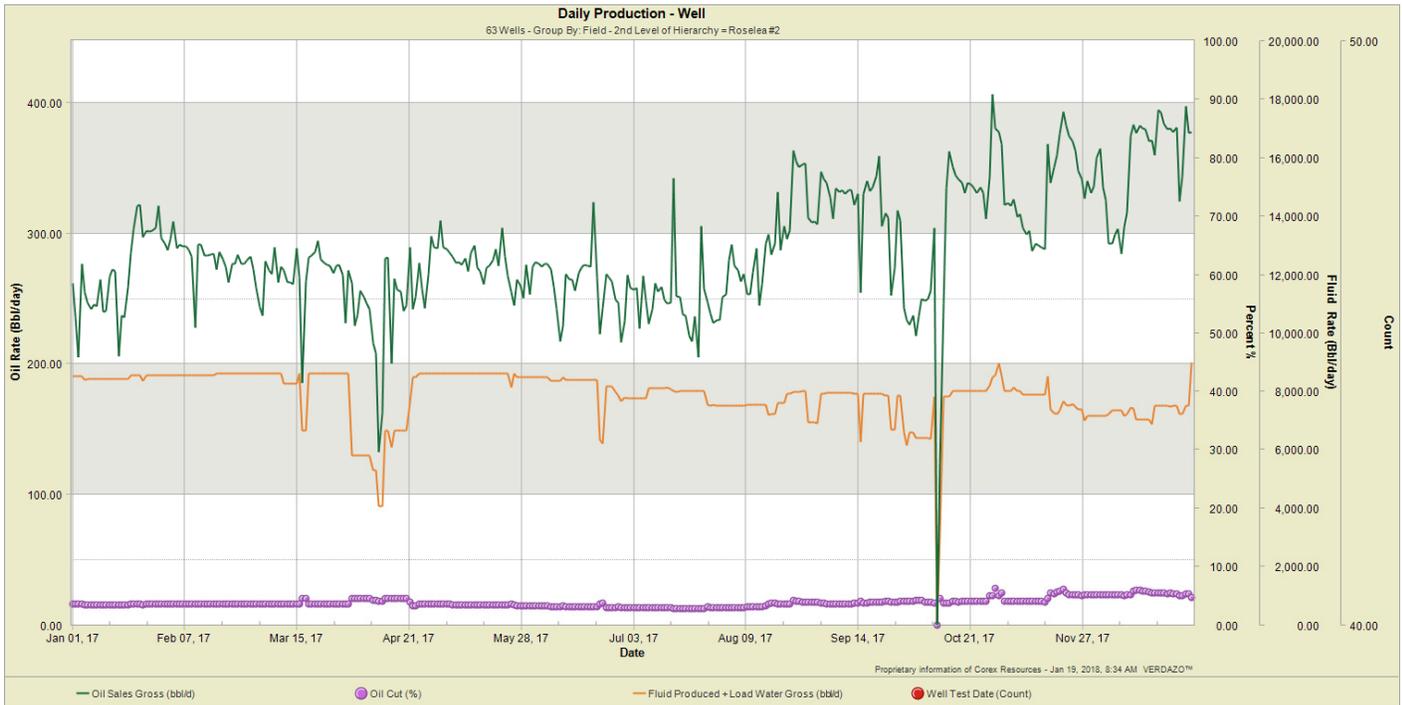
In the composite rate – cumulative oil plot below, waterflood response is clearly demonstrated at a cumulative oil production of 200 e³m³ (1.25 MMbbl).

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

VRU #2 – Rate vs Cum Oil Production



VRU #2 – Rate vs Time



2017 Reservoir Pressure Surveys

Unit	UWI	License	Test Type	Date of Pressure	Duration of SI	Datum BHP
VRU #2	102/09-06-011-25W1/00	10687	BH BU	2017-08-12	1	7,860
VRU #2	102/03-08-011-25W1/00	10799	BH BU	2017-11-22	1	9,030

In 2017, only two pressures were taken within the unit on newly drilled wells in the Scallion member, giving an average reservoir pressure of around 8,500 kPa. These wells are in close proximity to one another and were only shut in for one day, and so are unlikely to be representative of the average reservoir pressure of the entire unit. However, it is consistent with prior pressure surveys indicating that the unit is over pressured. Some injection wells have been SI to reduce the pressure in the unit, and the disposal well has allowed Corex to attempt to balance the flood by setting injection targets, lowering the overall pressure of the pool. The pool is still over pressured as vertical wells even far away from injection have high pressure and suspended wells can hold fluid to surface for years. It is hoped that the high pressure will help improve production in the new producers. We may also need to reconsider the previous notion that a significant portion of the injected water has gone out of zone. The water still may have gone out of zone, resulting in poor sweep efficiency and the overall low recovery in the unit, but it did not appear to entirely leave the system and has therefore pressured up the unit.

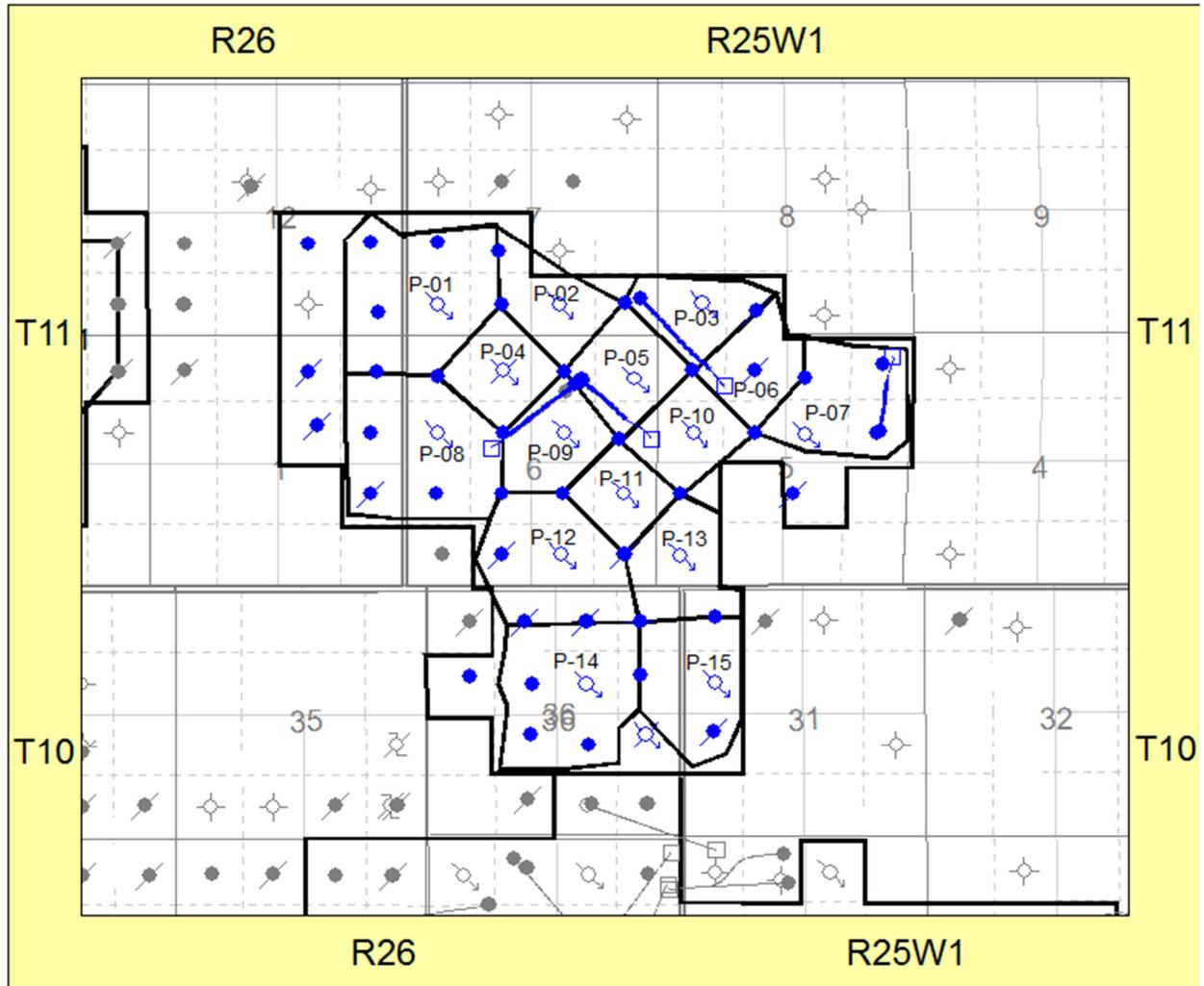
Pressures taken from 2010 and 2011 ranged from 6 000 kPaa to 11 218 kPaa. The pressures for VRU #2 taken over the years are very variable resulting in a large array of pressures and uncertainty in the average pool pressure. As the pressures vary with area, and possibly by formation, it is unlikely we will be able to record consistent pressures. As the voidage replacement ratio (VRR) has been less than one for the year so we may see a decline in the unit pressure. However, individual patterns have been over injecting or under injecting resulting in variable pressures by pattern.

The VRR in 2017 varied from 0.53 to 0.97 for a maximum. Currently, the disposal well is taking large volumes of water, enabling us to balance the flood in other areas. It is hoped that the ability to balance the patterns will result in improved sweep efficiency. The cumulative VRR at year end dropped slightly to 1.07. An oil formation volume factor of $1.06 \text{ m}^3/\text{m}^3$ and a water formation volume factor of $1.04 \text{ m}^3/\text{m}^3$ were used in the VRR calculations.

2017 Well Servicing

UWI	Unit	Licence	Operation	Date	Objective
100/11-05-011-25W1/00	VRU#2	002042	Cathodic	2017-09-27	
DEMOB INJECTION FACILITY	VRU#2	F17VIR008	Battery Upgrade	2017-06-21	
02-06-11-25 BTY	VRU#2	F17VIR006	Tank Install	2017-05-17	
HEADER REPLACEMENT	VRU#2	FF17VIR001	Header Repair	2017-08-24	
TURNAROUND	VRU#2	T17VIR004	Turnaround	2017-10-01	
100/12-05-011-25W1/00	VRU#2	001805	Cathodic	2017-09-25	
102/07-06-011-25W1/00	VRU#2	10054	Salt Water Disposal	2017-04-07	
PIPELINE REPLACEMENT	VRU#2	P17VIR006	Pipelines	2017-03-29	
100/09-01-011-26W1/00	VRU#2	002233	Tubing Repair	2017-11-14	
102/03-07-011-25W1/00	VRU#2	10677	Equip & Tie-In	2017-03-29	
102/03-07-011-25W1/00	VRU#2	10677	Construction	2017-06-01	
102/03-07-011-25W1/00	VRU#2	10677	Drilling - original	2017-07-26	
102/03-07-011-25W1/00	VRU#2	10677	Initial Completion	2017-09-29	VIRDEN COMPLETION
102/02-07-011-25W1/00	VRU#2	10676	Equip & Tie-In	2017-03-29	
102/02-07-011-25W1/00	VRU#2	10676	Construction	2017-03-29	
102/02-07-011-25W1/00	VRU#2	10676	Drilling - original	2017-07-20	
102/02-07-011-25W1/00	VRU#2	10676	Initial Completion	2017-09-13	VIRDEN COMPLETION
CATHODIC PROTECTION	VRU#2	RM17VIR013	Cathodic	2017-09-20	
102/03-08-011-25W1/00	VRU#2	10799	Construction	2017-07-26	
102/03-08-011-25W1/00	VRU#2	10799	Equip & Tie-In	2017-09-27	
102/03-08-011-25W1/00	VRU#2	10799	Drilling - original	2017-11-16	
102/03-08-011-25W1/00	VRU#2	10799	Initial Completion	2017-11-21	SCALLION COMPLETION
102/09-06-011-25W1/00	VRU#2	10687	Construction	2017-03-29	
102/09-06-011-25W1/00	VRU#2	10687	Equip & Tie-In	2017-03-30	
102/09-06-011-25W1/00	VRU#2	10687	Drilling - original	2017-08-02	
102/09-06-011-25W1/00	VRU#2	10687	Initial Completion	2017-08-12	SCALLION COMPLETION
102/10-01-011-26W1/00	VRU#2	10689	Construction	2017-03-29	
102/10-01-011-26W1/00	VRU#2	10689	Equip & Tie-In	2017-07-27	
102/10-01-011-26W1/00	VRU#2	10689	Drilling - original	2017-08-11	
102/10-01-011-26W1/00	VRU#2	10689	Initial Completion	2017-09-14	Clean-out

Waterflood Pattern Map

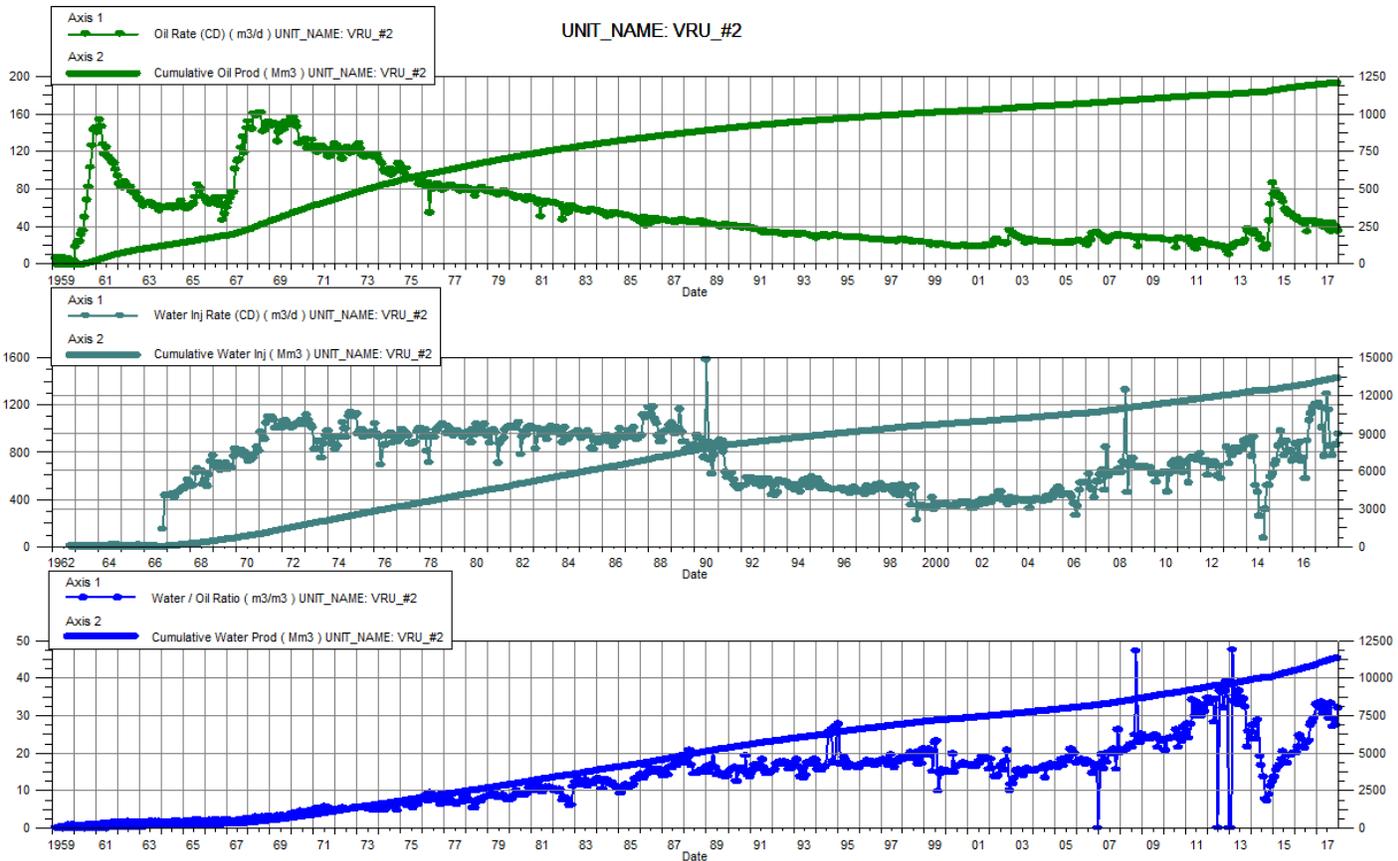


Waterflood Patterns and Corresponding Injectors

Pattern	Injection Well
P-01	100/04-07-011-25W1/00
P-02	100/02-07-011-25W1/00
P-03	100/04-08-011-25W1/00
P-04	100/14-06-011-25W1/00
P-05	100/16-06-011-25W1/00
P-06	100/14-05-011-25W1/00
P-07	100/10-05-011-25W1/00, 103/16-05-011-25W1/00
P-08	100/12-06-011-25W1/00
P-09	100/10-06-011-25W1/00
P-10	100/12-05-011-25W1/00
P-11	100/08-06-011-25W1/00
P-12	100/02-06-011-25W1/00
P-13	100/04-05-011-25W1/00
P-14	100/10-36-010-26W1/00
P-15	100/12-31-010-25W1/00

Total for Virden Roselea Unit #2

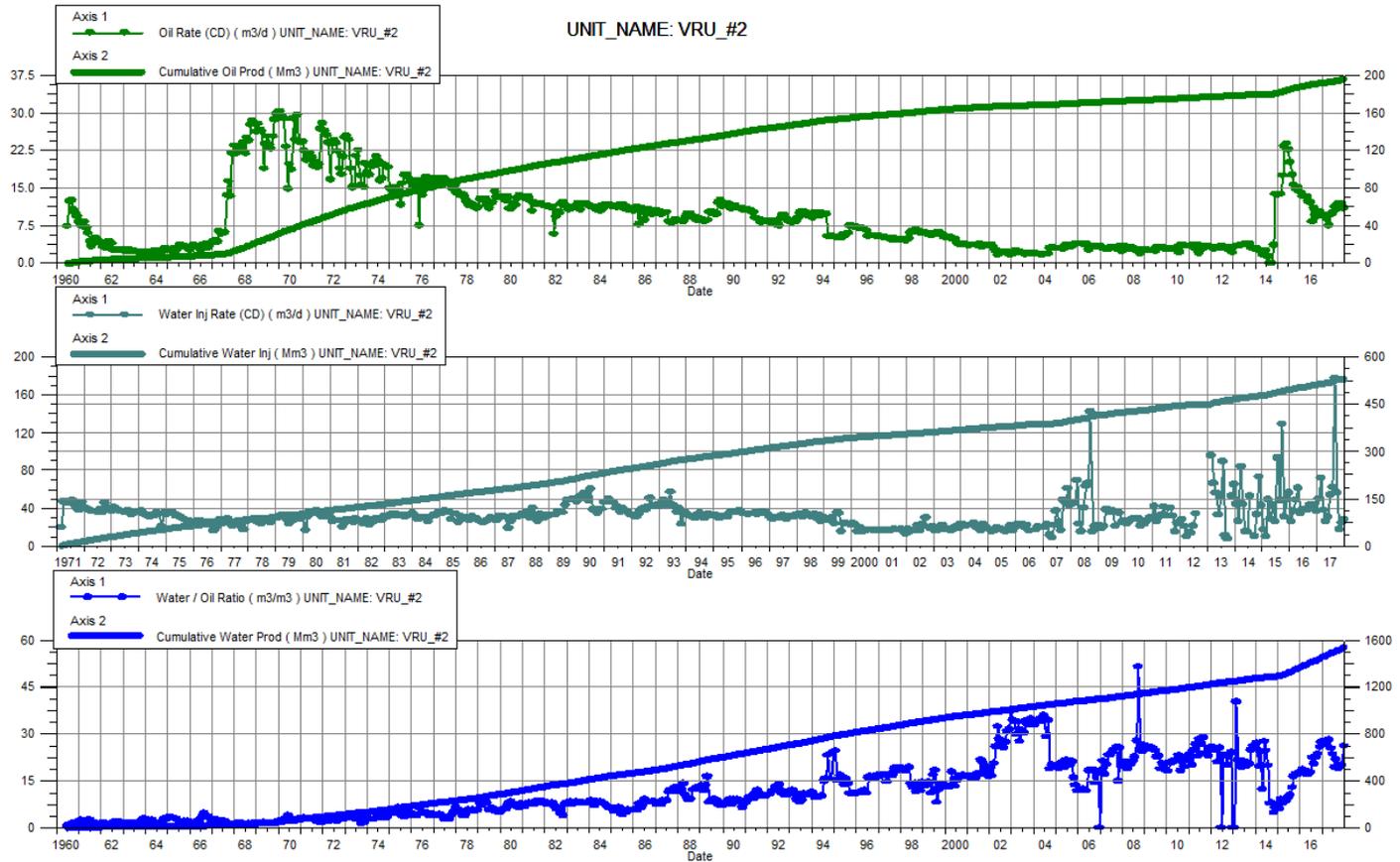
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1-31-2017	42.9	1199.82	1426.6	10943.14	1205.38	13153.9	33.29	0.82	1.08	5,590.57
2-28-2017	44.8	1201.08	1437.1	10983.38	1214.18	13187.9	32.07	0.82	1.08	5,770.33
3-31-2017	42.5	1202.40	1423.3	11027.50	1179.85	13224.5	33.47	0.80	1.08	5,803.47
4-30-2017	39.5	1203.58	1203.1	11063.60	1010.77	13254.8	30.49	0.81	1.08	5,886.67
5-31-2017	43.8	1204.94	1390.1	11106.69	766.43	13278.6	31.73	0.53	1.08	5,359.80
6-30-2017	41.5	1206.18	1299.9	11145.68	1297.82	13317.5	31.34	0.97	1.08	5,615.38
7-31-2017	39.6	1207.41	1161.3	11181.68	1162.98	13353.5	29.31	0.97	1.08	5,615.38
8-31-2017	35.1	1208.50	1162.8	11217.73	852.52	13380.0	33.16	0.71	1.08	5,579.40
9-30-2017	43.7	1209.81	1180.8	11253.15	770.62	13403.1	27.02	0.63	1.07	4,508.97
10-31-2017	38.8	1211.01	1129.5	11288.17	857.82	13429.7	29.11	0.73	1.07	4,769.23
11-30-2017	40.4	1212.22	1104.8	11321.31	864.78	13455.6	27.38	0.76	1.07	4,769.23
12-31-2017	35.5	1213.32	1135.5	11356.51	954.43	13485.2	32.03	0.82	1.07	4,769.23



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Pattern P-01 - 00/04-07-011-25W1/0

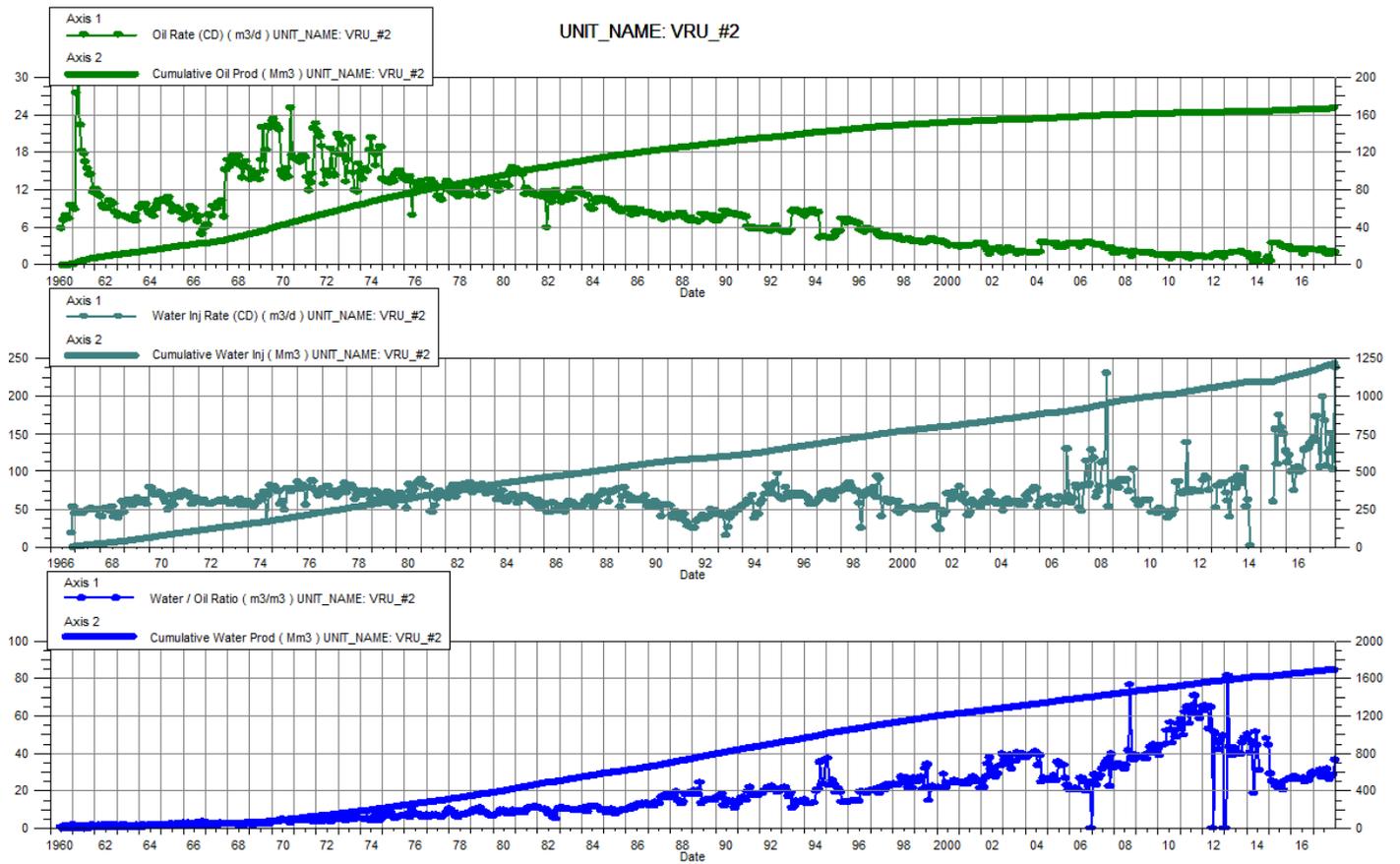
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1-31-2017	9.6	192.48	255.76	1455.6	49.93	514.9	26.76	0.19	0.31	6,996.77
2-28-2017	9.6	192.75	255.67	1462.75	72.14	516.94	26.68	0.27	0.31	6,900.00
3-31-2017	8.9	193.03	248.50	1470.46	37.49	518.11	28.01	0.15	0.31	6,906.45
4-30-2017	7.6	193.26	213.39	1476.86	26.23	518.89	28.14	0.12	0.31	7,063.33
5-31-2017	9.7	193.56	245.53	1484.47	31.20	519.86	25.3	0.12	0.31	6,009.68
6-30-2017	10.0	193.86	235.96	1491.55	54.23	521.49	23.58	0.22	0.31	6,300.00
7-31-2017	11.3	194.21	218.77	1498.33	62.30	523.42	19.35	0.27	0.31	6,300.00
8-31-2017	10.6	194.54	231.97	1505.52	177.97	528.94	21.90	0.73	0.31	6,216.13
9-30-2017	12.0	194.90	229.07	1512.39	56.40	530.63	19.05	0.23	0.31	3,700.00
10-31-2017	11.5	195.25	227.06	1519.43	17.45	531.2	19.76	0.07	0.31	3,700.00
11-30-2017	12.1	195.61	242.37	1526.70	24.02	531.89	20.12	0.09	0.31	3,700.00
12-31-2017	11.0	195.96	287.44	1535.62	27.71	532.8	26.04	0.09	0.31	3,700.00



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Pattern P-02 - 00/02-07-011-25W1/0

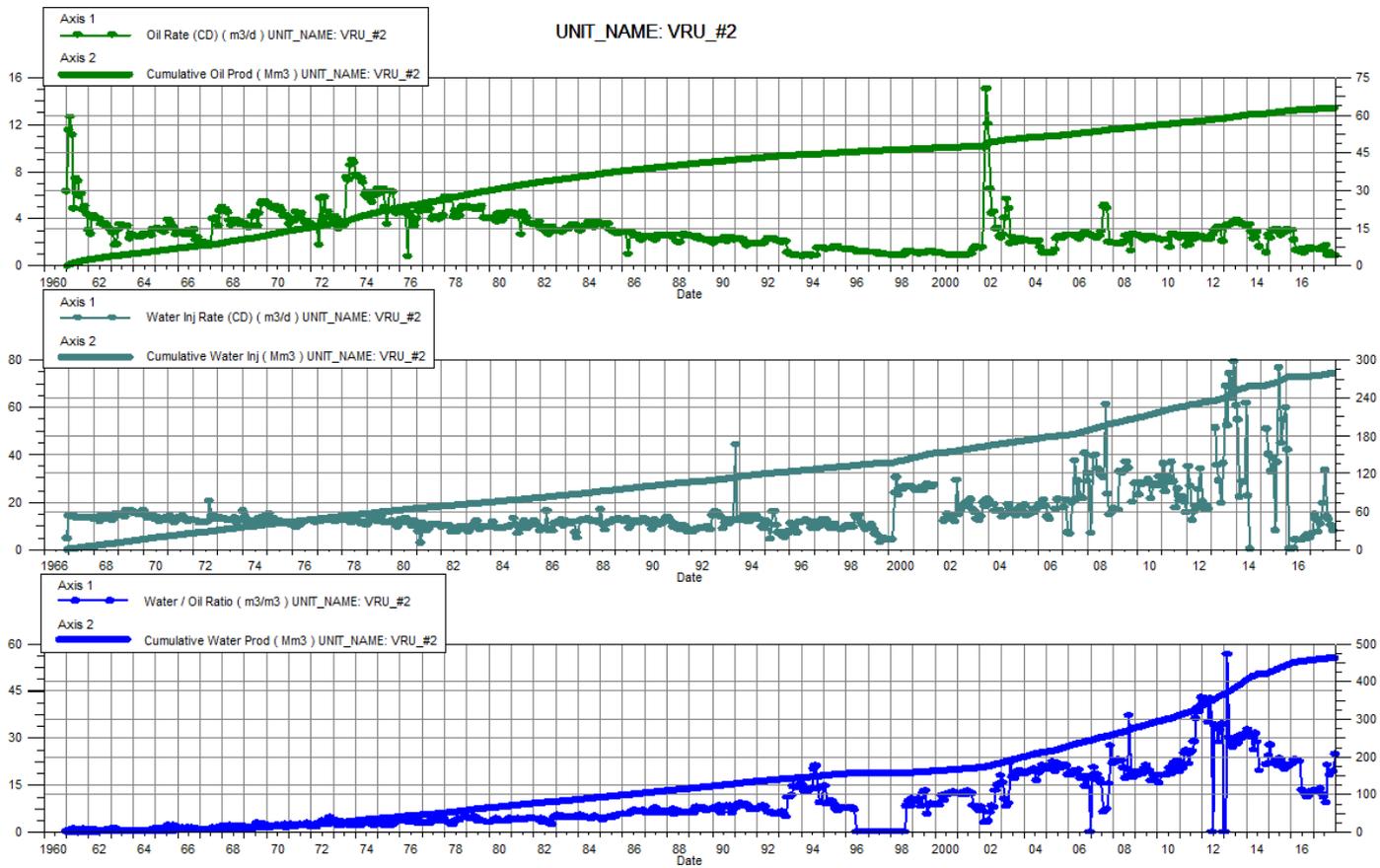
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1-31-2017	2.48	166.77	71.94	1671.20	140.13	1174.35	29.00	1.88	0.64	4,264.52
2-28-2017	2.48	166.84	71.66	1673.21	144.70	1178.40	28.96	1.95	0.64	6,207.14
3-31-2017	2.39	166.91	72.16	1675.45	173.15	1183.77	30.19	2.32	0.64	6,403.23
4-30-2017	2.43	166.98	75.26	1677.71	141.33	1188.01	30.93	1.82	0.64	6,470.00
5-31-2017	2.56	167.06	69.23	1679.85	105.97	1191.29	27.03	1.48	0.64	5,612.90
6-30-2017	2.14	167.13	62.83	1681.74	199.54	1197.28	29.31	3.07	0.65	6,000.00
7-31-2017	1.99	167.19	56.54	1683.49	167.54	1202.47	28.45	2.86	0.65	6,000.00
8-31-2017	1.85	167.25	58.39	1685.30	107.27	1205.80	31.65	1.78	0.65	5,993.55
9-30-2017	2.31	167.32	60.13	1687.10	124.70	1209.54	26.07	2.00	0.65	5,816.67
10-31-2017	1.72	167.37	48.29	1688.60	150.88	1214.21	28.03	3.02	0.65	6,300.00
11-30-2017	2.23	167.44	63.08	1690.49	102.78	1217.30	28.25	1.57	0.65	6,300.00
12-31-2017	2.04	167.50	74.45	1692.80	238.58	1224.69	36.58	3.12	0.66	6,300.00



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Pattern P-03 - 00/04-08-011-25W1/0

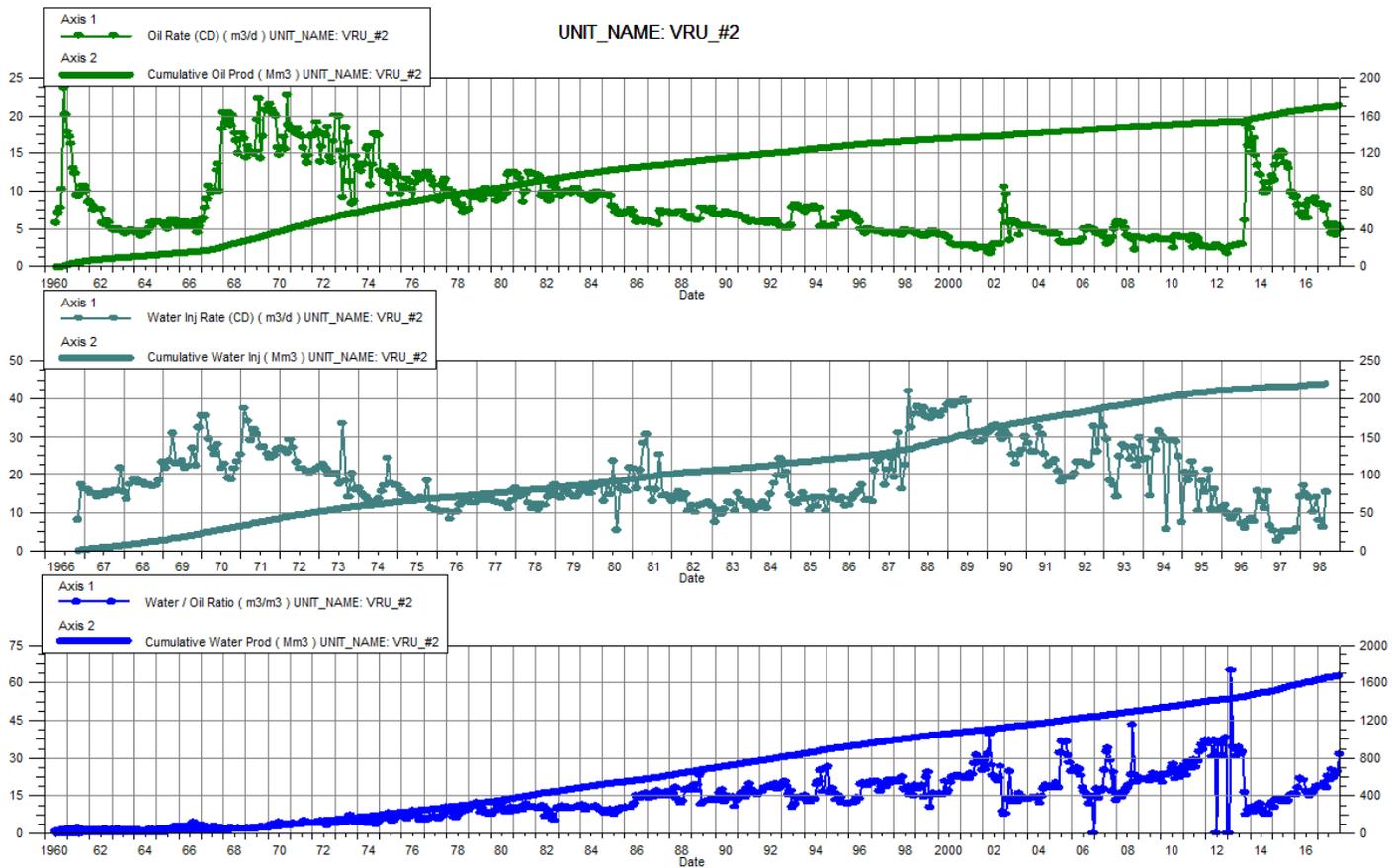
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1-31-2017	1.50	62.70	19.43	457.01	6.66	275.74	12.98	0.32	0.53	6,800.00
2-28-2017	1.49	62.75	19.35	457.55	14.73	276.15	12.96	0.71	0.53	6,800.00
3-31-2017	1.44	62.79	19.49	458.15	12.51	276.54	13.52	0.60	0.53	6,800.00
4-30-2017	1.40	62.83	19.31	458.73	7.32	276.76	13.82	0.35	0.53	6,773.33
5-31-2017	1.53	62.88	18.67	459.31	10.99	277.10	12.18	0.54	0.53	6,009.68
6-30-2017	1.66	62.93	18.29	459.86	19.37	277.68	11.04	0.97	0.53	6,300.00
7-31-2017	1.75	62.98	16.46	460.37	33.46	278.72	9.40	1.83	0.53	6,300.00
8-31-2017	0.98	63.01	21.01	461.02	13.83	279.15	21.42	0.63	0.53	6,290.32
9-30-2017	1.16	63.05	20.90	461.65	12.53	279.52	17.97	0.57	0.53	6,000.00
10-31-2017	0.93	63.08	17.88	462.20	10.12	279.84	19.18	0.54	0.53	6,000.00
11-30-2017	0.98	63.11	18.82	462.77	7.88	280.07	19.27	0.40	0.53	6,000.00
12-31-2017	0.90	63.13	22.29	463.46		280.07	24.86		0.53	6,000.00



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Pattern P-04 - 00/14-06-011-25W1/0

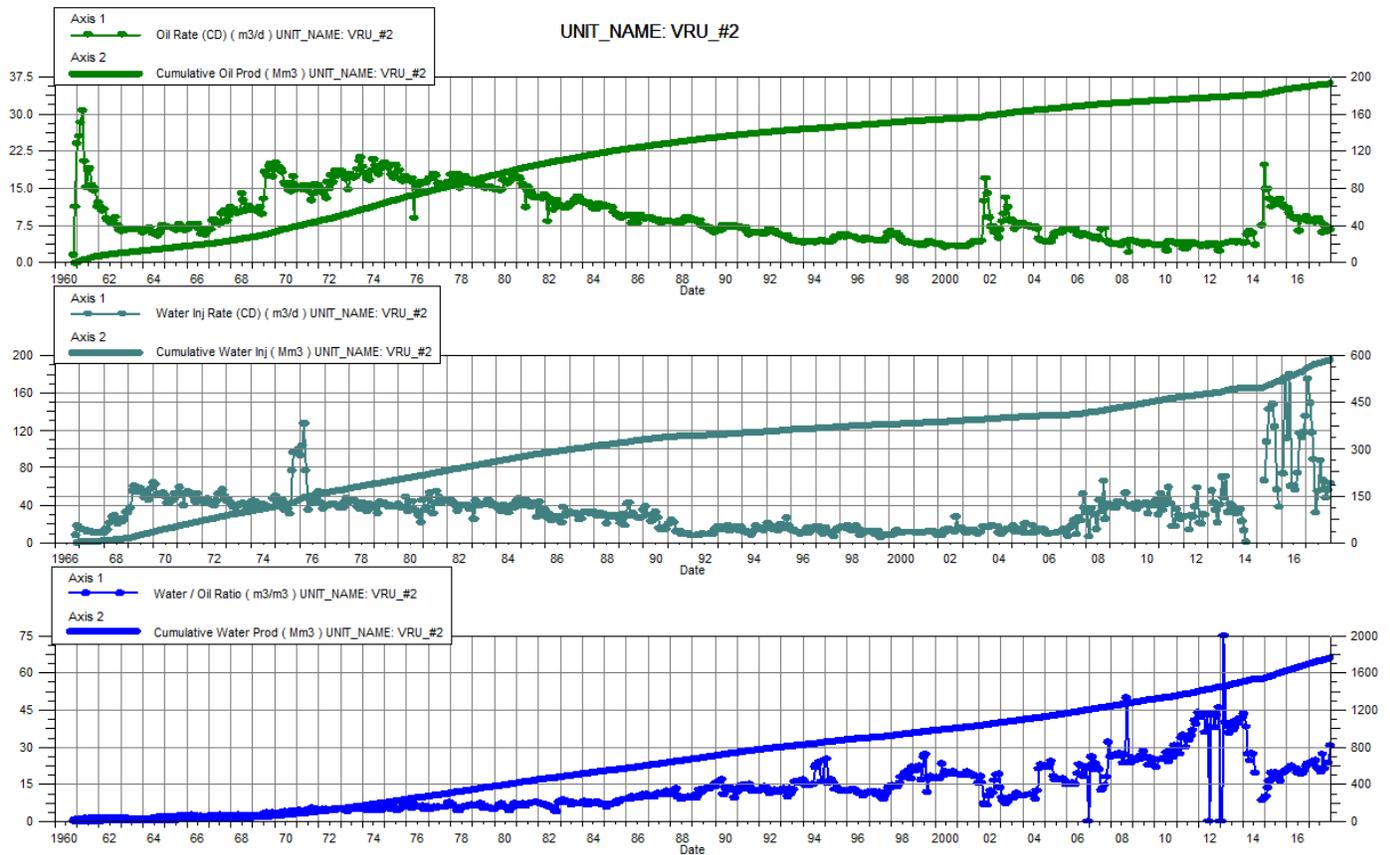
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1-31-2017	8.50	169.19	156.68	1628.43		220.82	18.43		0.12	--
2-28-2017	8.49	169.43	156.09	1632.80		220.82	18.39		0.12	--
3-31-2017	8.19	169.68	157.17	1637.67		220.82	19.19		0.12	--
4-30-2017	7.64	169.91	152.55	1642.25		220.82	19.96		0.12	--
5-31-2017	8.15	170.17	148.03	1646.84		220.82	18.16		0.12	--
6-30-2017	5.66	170.34	129.64	1650.73		220.82	22.89		0.12	--
7-31-2017	5.21	170.50	110.01	1654.14		220.82	21.13		0.12	--
8-31-2017	4.43	170.63	112.32	1657.62		220.82	25.38		0.12	--
9-30-2017	5.72	170.81	125.92	1661.40		220.82	22.03		0.12	--
10-31-2017	4.22	170.94	100.35	1664.51		220.82	23.78		0.12	--
11-30-2017	5.48	171.10	133.35	1668.51		220.82	24.35		0.12	--
12-31-2017	5.00	171.26	157.65	1673.39		220.82	31.51		0.12	--



Virден Roselea Unit No. 2

Pattern P-05 - 00/16-06-011-25W1/0

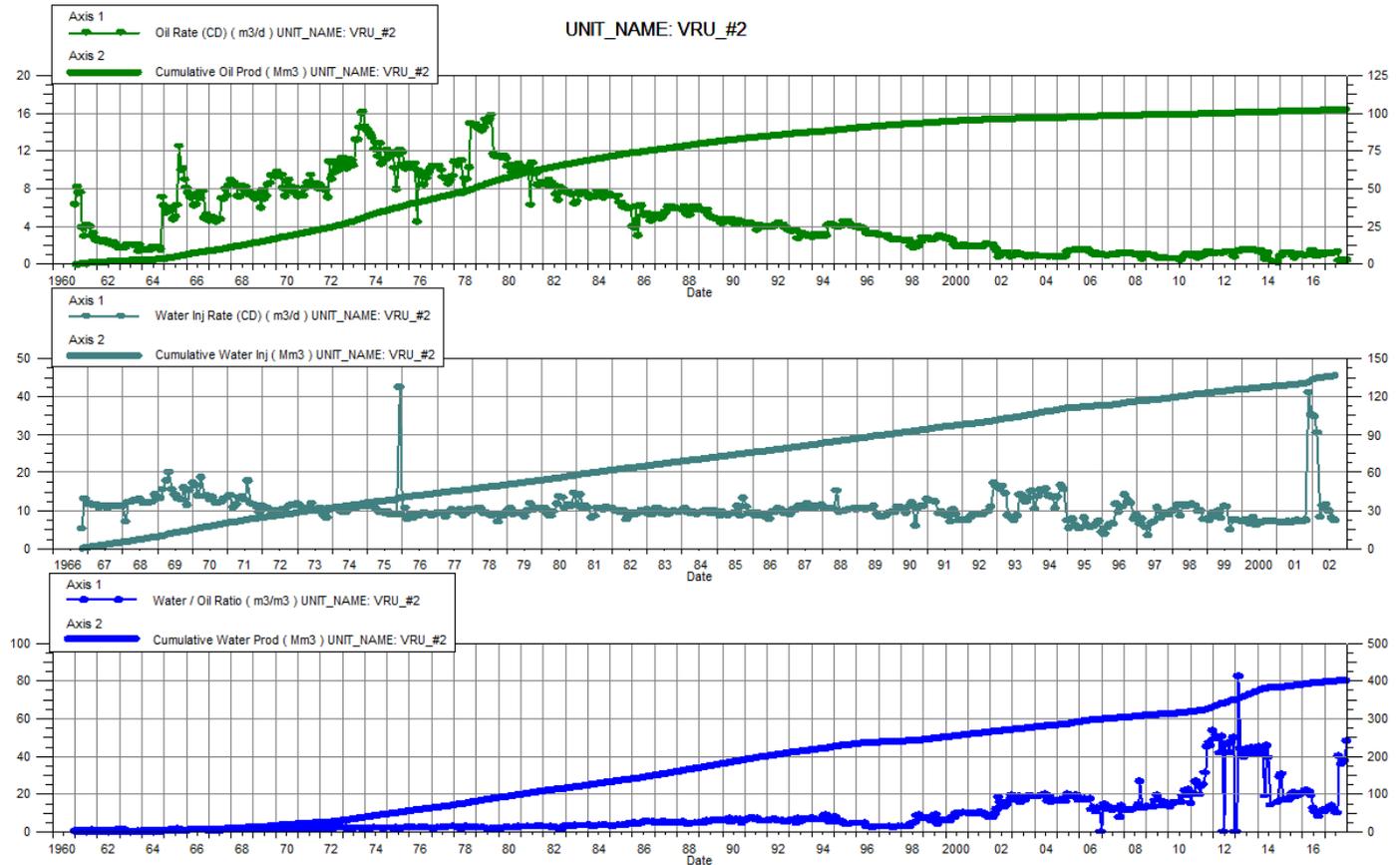
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1-31-2017	8.65	190.54	200.63	1696.36	175.41	564.38	23.18	0.84	0.30	5,503.23
2-28-2017	8.65	190.78	199.86	1701.96	149.37	568.56	23.10	0.72	0.30	5,600.00
3-31-2017	8.34	191.04	201.26	1708.19	117.54	572.21	24.14	0.56	0.30	5,609.68
4-30-2017	8.27	191.29	203.47	1714.30	88.88	574.87	24.60	0.42	0.30	5,883.33
5-31-2017	8.87	191.56	192.77	1720.27	31.60	575.85	21.73	0.16	0.30	5,425.81
6-30-2017	8.89	191.83	183.68	1725.78	55.03	577.50	20.66	0.29	0.30	6,200.00
7-31-2017	8.15	192.08	160.73	1730.77	87.55	580.22	19.73	0.52	0.30	6,200.00
8-31-2017	6.13	192.27	166.94	1735.94	56.07	581.96	27.24	0.32	0.30	6,154.84
9-30-2017	7.60	192.50	161.58	1740.79	66.27	583.94	21.27	0.39	0.30	4,800.00
10-31-2017	6.36	192.70	149.30	1745.42	47.61	585.42	23.46	0.31	0.30	4,800.00
11-30-2017	7.24	192.91	170.71	1750.54	56.48	587.11	23.58	0.32	0.30	4,800.00
12-31-2017	6.63	193.12	202.14	1756.81	63.23	589.07	30.49	0.30	0.30	4,800.00



Virден Roselea Unit No. 2

Pattern P-06 - 00/14-05-011-25W1/0

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	1.19	102.41	14.31	396.88		137.03	12.05		0.27	--
2-28-2017	1.19	102.44	14.65	397.29		137.03	12.28		0.27	--
3-31-2017	1.15	102.47	15.28	397.77		137.03	13.23		0.27	--
4-30-2017	1.14	102.51	15.80	398.24		137.03	13.82		0.27	--
5-31-2017	1.23	102.55	14.64	398.70		137.03	11.91		0.27	--
6-30-2017	1.26	102.58	13.20	399.09		137.03	10.45		0.27	--
7-31-2017	1.35	102.63	13.41	399.51		137.03	9.92		0.27	--
8-31-2017	0.44	102.64	17.69	400.06		137.03	40.04		0.27	--
9-30-2017	0.52	102.66	18.39	400.61		137.03	35.59		0.27	--
10-31-2017	0.50	102.67	18.33	401.18		137.03	36.90		0.27	--
11-30-2017	0.52	102.69	19.29	401.75		137.03	37.34		0.27	--
12-31-2017	0.47	102.70	22.85	402.46		137.03	48.18		0.27	--

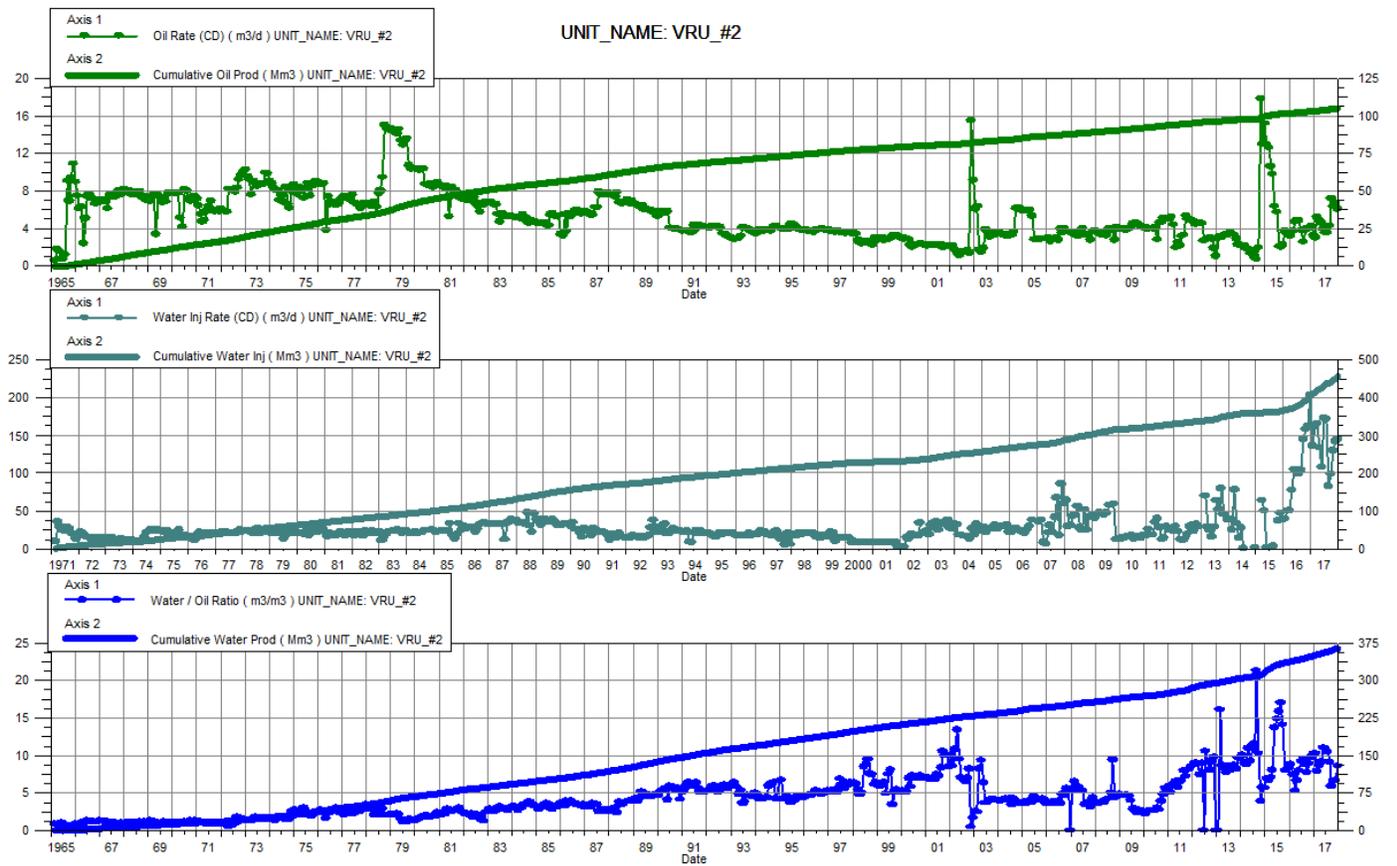


Virден Roselea Unit No. 2

Pattern P-07 - 00/10-05-011-25W1/0 &

03/16-05-011-25W1/0

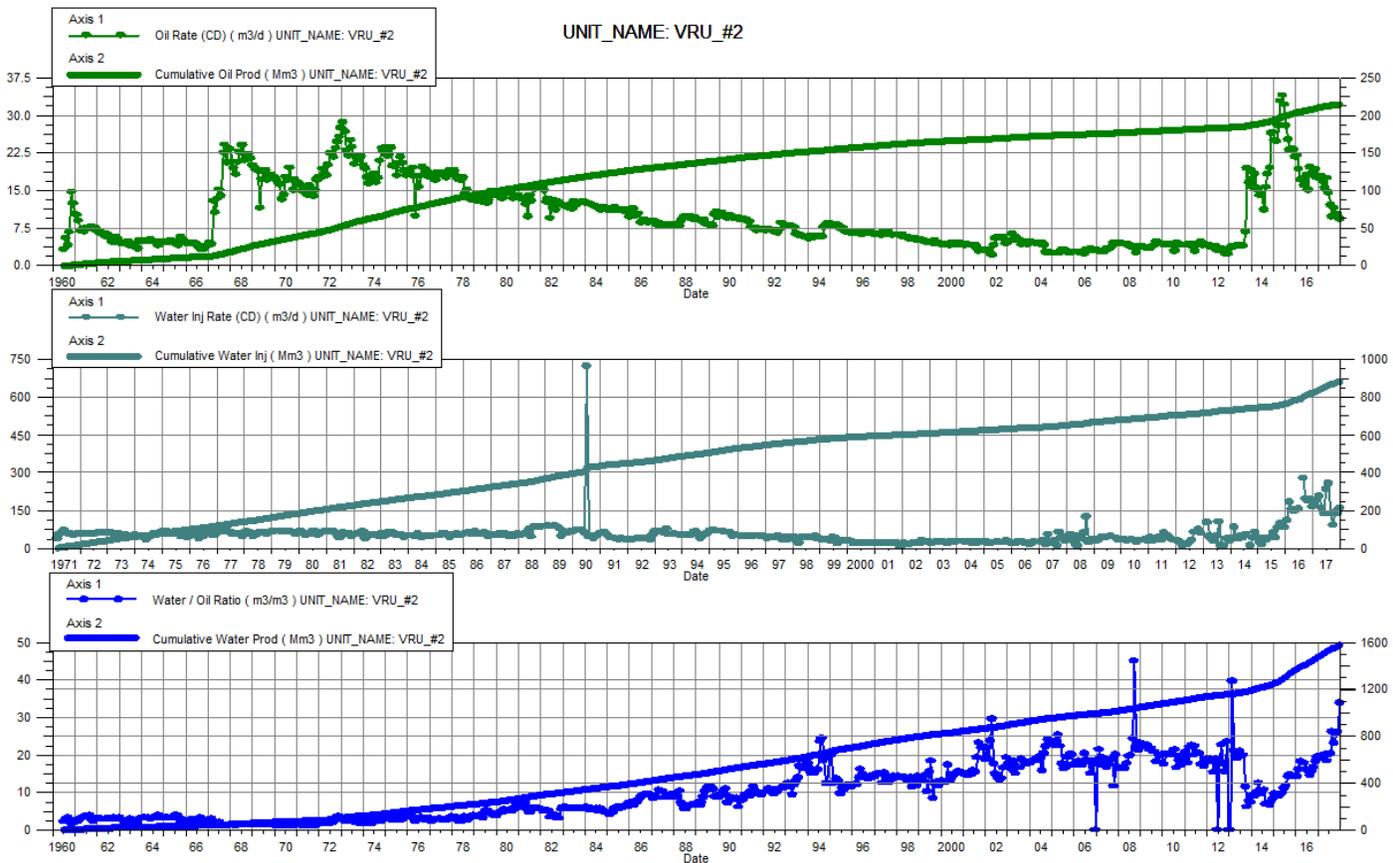
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa	Water Inj Pressure kPa
1-31-2017	3.06	103.49	31.36	348.97	136.80	410.55	10.24	3.97	0.90	5,600.00	6,303.23
2-28-2017	5.25	103.64	41.50	350.13	161.44	415.07	7.90	3.45	0.91	5,600.00	6,400.00
3-31-2017	4.96	103.79	43.19	351.47	166.19	420.22	8.70	3.45	0.92	5,600.00	6,400.00
4-30-2017	4.60	103.93	42.08	352.73	134.48	424.26	9.14	2.88	0.93	5,600.00	6,373.33
5-31-2017	3.97	104.05	43.97	354.09	108.45	427.62	11.06	2.26	0.93	5,600.00	5,593.55
6-30-2017	3.57	104.16	38.84	355.26	173.22	432.82	10.87	4.08	0.94	5,600.00	5,400.00
7-31-2017	3.61	104.27	37.92	356.43	171.99	438.15	10.51	4.14	0.95	5,600.00	5,400.00
8-31-2017	4.35	104.41	39.80	357.67	82.89	440.72	9.15	1.87	0.95	5,600.00	5,341.94
9-30-2017	7.17	104.62	42.55	358.94	98.70	443.68	5.93	1.98	0.95	5,600.00	3,606.67
10-31-2017	6.40	104.82	42.30	360.26	130.19	447.71	6.61	2.67	0.96	5,600.00	3,800.00
11-30-2017	6.70	105.02	44.52	361.59	142.62	451.99	6.64	2.78	0.96	5,600.00	3,800.00
12-31-2017	6.13	105.21	52.72	363.23	145.37	456.50	8.60	2.47	0.97	5,600.00	3,800.00



Virден Roselea Unit No. 2

Pattern P-08 - 00/12-06-011-25W1/0

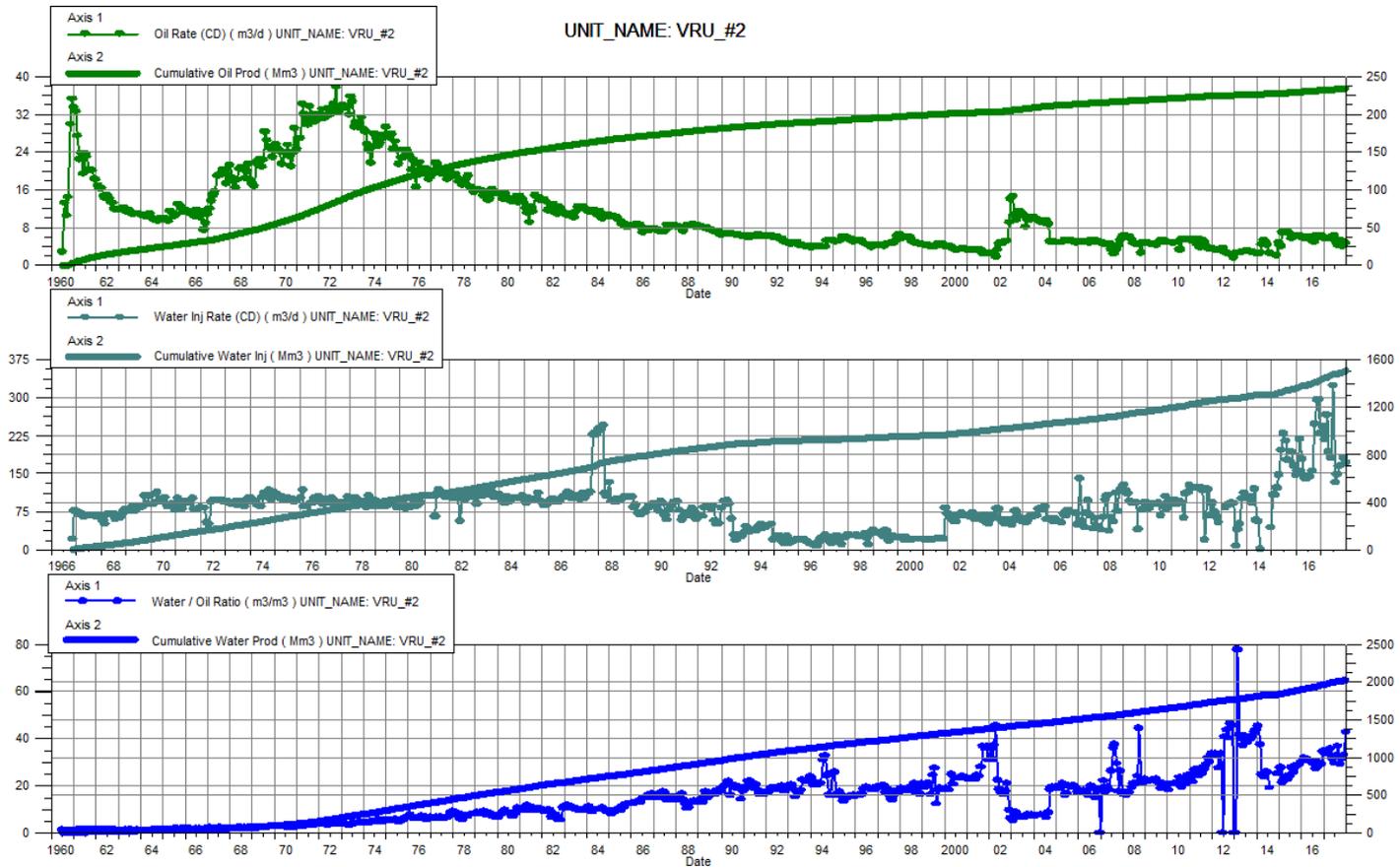
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1-31-2017	17.78	210.79	339.45	1479.29	175.51	831.53	19.09	0.49	0.49	6,800.00
2-28-2017	17.80	211.29	339.04	1488.78	192.94	836.93	19.05	0.54	0.49	6,800.00
3-31-2017	16.79	211.81	332.45	1499.09	208.72	843.41	19.80	0.60	0.49	6,812.90
4-30-2017	15.53	212.27	312.72	1508.47	159.69	848.20	20.13	0.49	0.49	7,160.00
5-31-2017	17.55	212.82	323.33	1518.49	139.93	852.53	18.42	0.41	0.49	6,006.45
6-30-2017	14.61	213.25	291.66	1527.24	235.20	859.59	19.97	0.77	0.49	6,200.00
7-31-2017	12.17	213.63	247.76	1534.92	257.85	867.58	20.35	0.99	0.50	6,200.00
8-31-2017	9.88	213.94	258.33	1542.93	136.52	871.82	26.15	0.51	0.50	6,193.55
9-30-2017	11.55	214.28	267.70	1550.96	90.87	874.54	23.18	0.33	0.49	6,020.00
10-31-2017	9.87	214.59	251.48	1558.76	143.57	878.99	25.48	0.55	0.50	6,600.00
11-30-2017	10.44	214.90	271.78	1566.91	137.73	883.12	26.04	0.49	0.49	6,600.00
12-31-2017	9.35	215.19	316.13	1576.71	159.73	888.08	33.80	0.49	0.49	6,600.00



Virден Roselea Unit No. 2

Pattern P-09 - 00/10-06-011-25W1/0

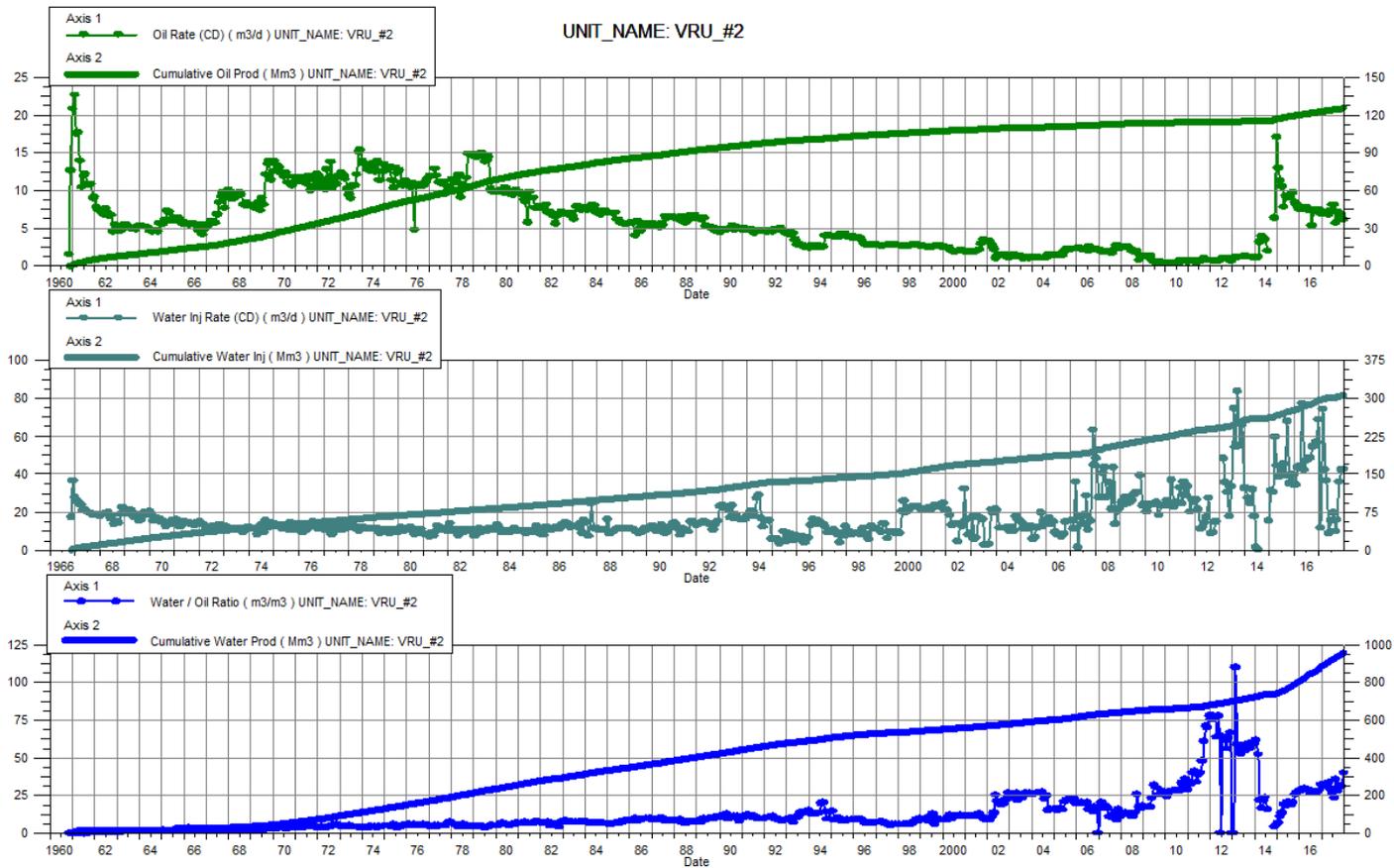
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1-31-2017	5.90	232.69	198.86	1964.08	243.15	1444.45	33.71	1.19	0.66	6,600.00
2-28-2017	5.90	232.85	198.10	1969.63	217.26	1450.54	33.60	1.06	0.66	6,603.57
3-31-2017	5.68	233.03	199.48	1975.81	266.25	1458.79	35.10	1.30	0.66	6,700.00
4-30-2017	5.80	233.20	208.03	1982.05	193.78	1464.60	35.87	0.91	0.66	6,676.67
5-31-2017	6.13	233.39	191.83	1988.00	181.69	1470.24	31.28	0.92	0.66	6,006.45
6-30-2017	6.29	233.58	185.85	1993.57	325.29	1479.99	29.53	1.69	0.66	6,200.00
7-31-2017	4.80	233.73	157.78	1998.47	132.83	1484.11	32.85	0.82	0.66	6,200.00
8-31-2017	4.33	233.86	159.21	2003.40	148.71	1488.72	36.80	0.91	0.66	6,096.77
9-30-2017	5.47	234.03	160.08	2008.20	164.49	1493.66	29.25	0.99	0.67	3,066.67
10-31-2017	4.09	234.15	129.32	2012.21	166.41	1498.82	31.62	1.25	0.67	5,000.00
11-30-2017	5.19	234.31	170.98	2017.34	181.75	1504.27	32.96	1.03	0.67	5,000.00
12-31-2017	4.75	234.46	202.45	2023.62	172.35	1509.61	42.64	0.83	0.67	5,000.00



Virден Roselea Unit No. 2

Pattern P-10 - 00/12-05-011-25W1/0

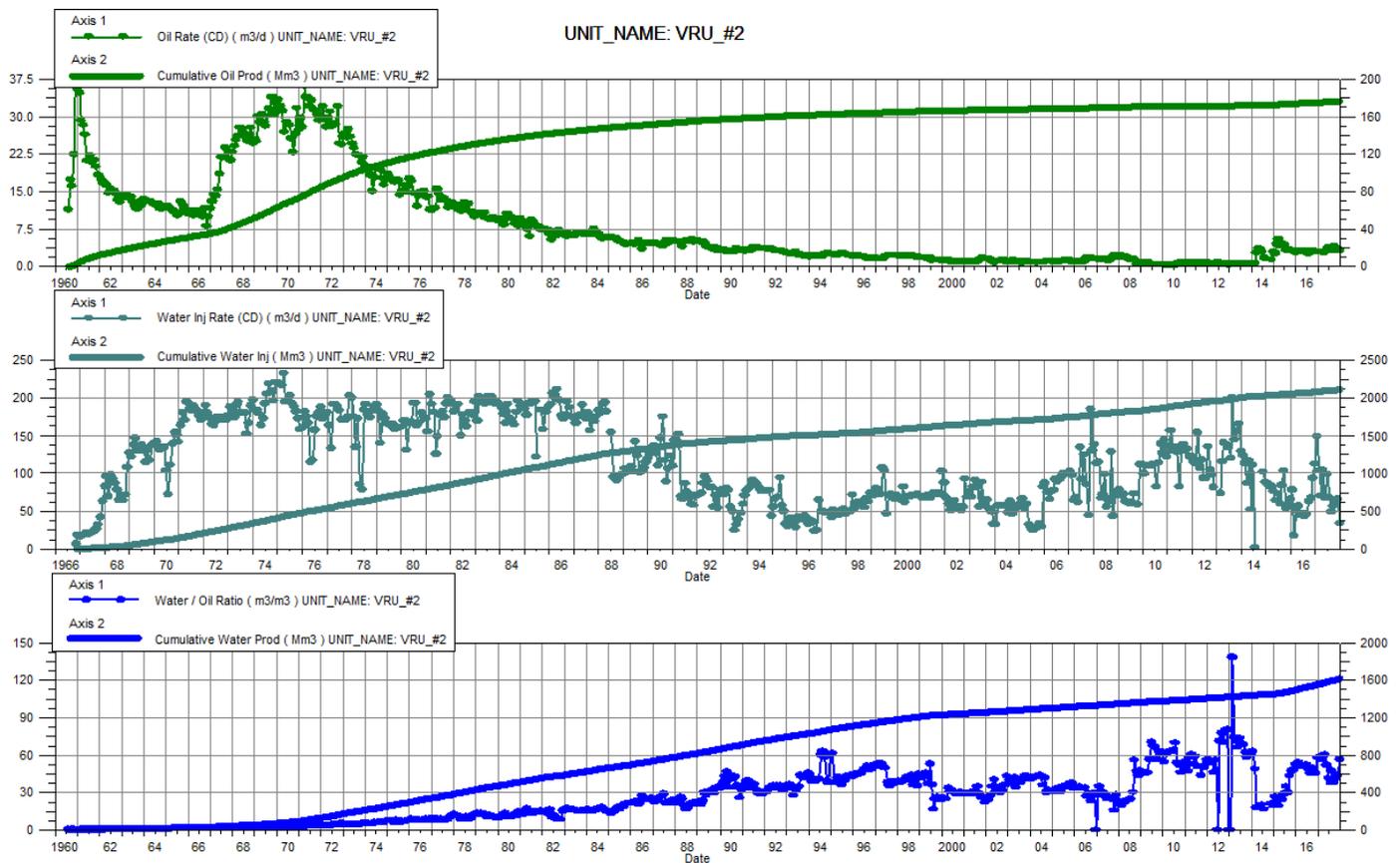
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1-31-2017	7.20	123.36	227.28	886.02	11.52	296.94	31.58	0.05	0.29	6,803.23
2-28-2017	7.20	123.56	226.80	892.37	74.54	299.03	31.48	0.32	0.29	6,900.00
3-31-2017	6.94	123.78	228.92	899.46	42.50	300.35	32.98	0.18	0.29	6,903.23
4-30-2017	6.85	123.98	229.60	906.35	36.46	301.44	33.54	0.15	0.29	6,966.67
5-31-2017	7.39	124.21	219.27	913.15	8.77	301.71	29.68	0.04	0.29	6,945.16
6-30-2017	8.16	124.46	213.90	919.57	15.43	302.18	26.22	0.07	0.29	6,300.00
7-31-2017	8.15	124.71	189.59	925.44	19.62	302.78	23.28	0.10	0.29	6,300.00
8-31-2017	5.68	124.89	203.20	931.74	9.80	303.09	35.77	0.05	0.29	6,219.35
9-30-2017	7.13	125.10	201.20	937.78	15.67	303.56	28.23	0.08	0.29	3,800.00
10-31-2017	6.18	125.29	193.73	943.78	35.96	304.67	31.34	0.18	0.28	3,800.00
11-30-2017	6.84	125.50	213.17	950.18	42.29	305.94	31.17	0.19	0.28	3,800.00
12-31-2017	6.15	125.69	244.76	957.77	42.74	307.27	39.79	0.17	0.28	3,800.00



Virден Roselea Unit No. 2

Pattern P-11 - 00/08-06-011-25W1/0

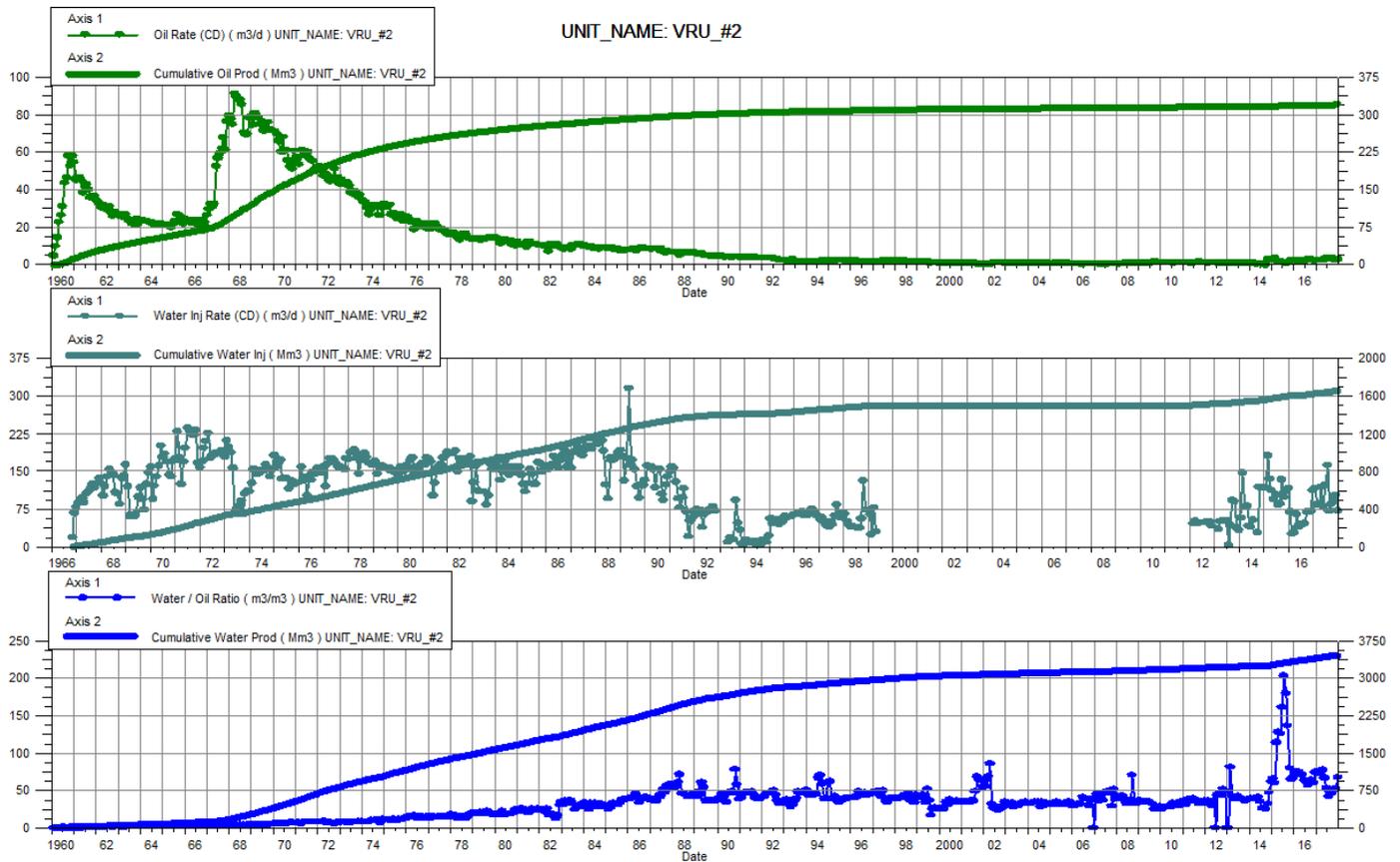
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1-31-2017	3.08	175.70	174.89	1555.24	149.78	2091.21	56.83	0.84	1.21	4,400.00
2-28-2017	3.08	175.78	174.22	1560.12	103.50	2094.11	56.59	0.58	1.20	4,400.00
3-31-2017	2.96	175.87	175.43	1565.56	70.04	2096.28	59.18	0.39	1.20	4,406.45
4-30-2017	2.99	175.96	179.36	1570.94	104.10	2099.40	60.05	0.57	1.20	4,586.67
5-31-2017	3.24	176.06	168.80	1576.17	67.38	2101.49	52.17	0.39	1.20	4,261.29
6-30-2017	4.03	176.18	167.53	1581.20	98.94	2104.46	41.54	0.58	1.20	6,100.00
7-31-2017	3.92	176.31	148.46	1585.80	68.01	2106.57	37.88	0.45	1.19	6,100.00
8-31-2017	3.32	176.41	157.47	1590.68	48.76	2108.08	47.44	0.30	1.19	6,038.71
9-30-2017	4.04	176.53	155.44	1595.34	56.40	2109.77	38.44	0.35	1.19	4,200.00
10-31-2017	3.25	176.63	137.14	1599.60	60.69	2111.65	42.13	0.43	1.19	4,200.00
11-30-2017	3.71	176.74	162.91	1604.48	66.52	2113.65	43.87	0.40	1.18	4,200.00
12-31-2017	3.29	176.84	185.25	1610.23	33.24	2114.68	56.36	0.18	1.18	4,200.00



Virден Roselea Unit No. 2

Pattern P-12 - 00/02-06-011-25W1/0

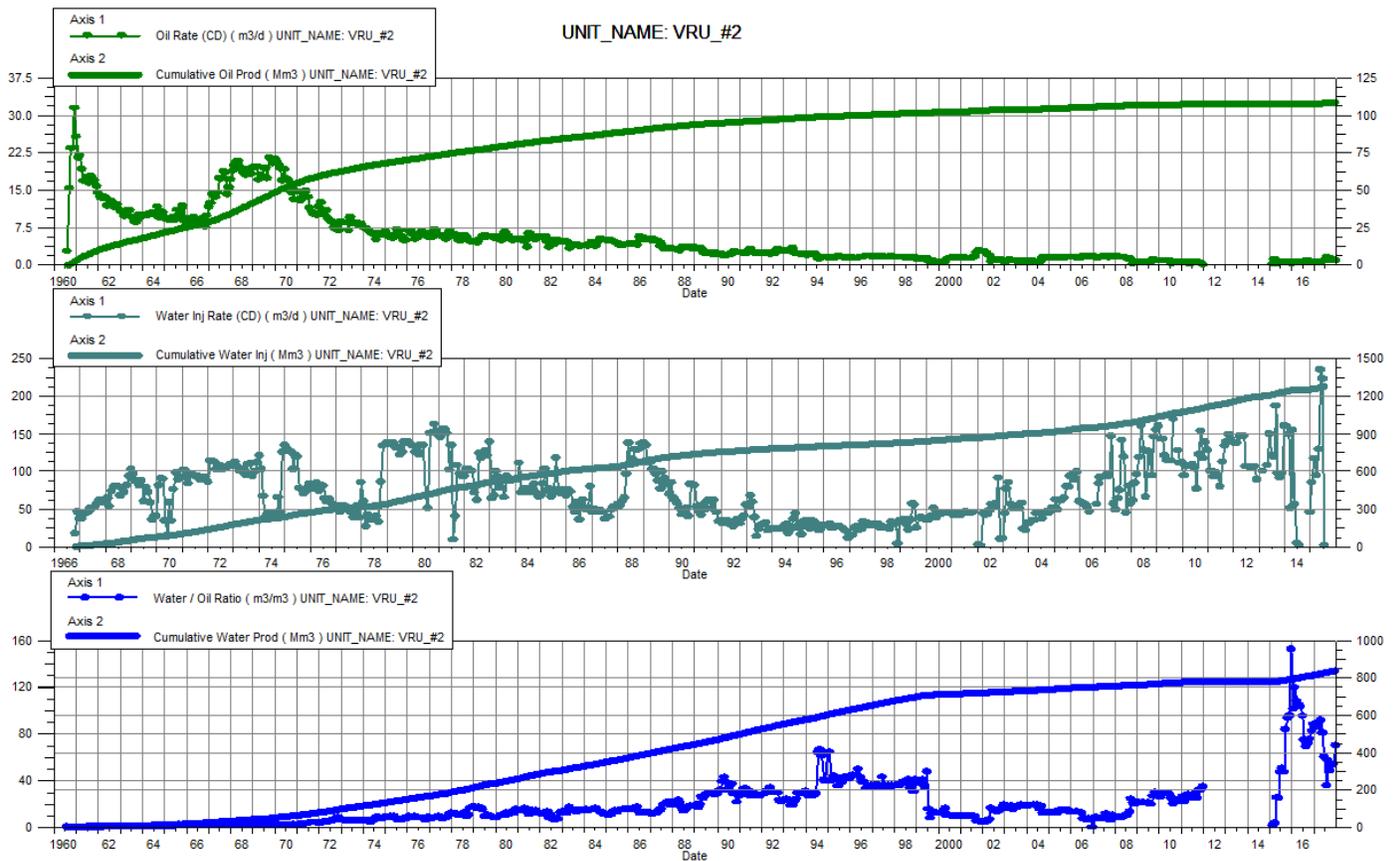
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1-31-2017	2.73	319.80	199.26	3394.05	116.50	1629.59	72.93	0.58	0.44	5,806.45
2-28-2017	2.74	319.88	198.50	3399.61	83.56	1631.93	72.56	0.42	0.44	6,003.57
3-31-2017	2.63	319.96	199.88	3405.80	85.47	1634.58	75.94	0.42	0.44	6,103.23
4-30-2017	2.69	320.04	208.45	3412.05	118.49	1638.13	77.59	0.56	0.44	6,173.33
5-31-2017	2.88	320.13	192.22	3418.01	80.45	1640.63	66.65	0.41	0.44	5,406.45
6-30-2017	3.47	320.23	186.88	3423.62	121.57	1644.27	53.91	0.64	0.44	5,600.00
7-31-2017	3.69	320.35	156.95	3428.49	161.84	1649.29	42.57	1.01	0.44	5,600.00
8-31-2017	3.22	320.45	156.93	3433.35	70.70	1651.48	48.79	0.44	0.44	5,587.10
9-30-2017	3.56	320.55	164.69	3438.29	84.60	1654.02	46.22	0.50	0.44	5,206.67
10-31-2017	2.76	320.64	142.48	3442.71	94.95	1656.96	51.54	0.65	0.44	5,400.00
11-30-2017	3.38	320.74	176.80	3448.01	102.71	1660.05	52.26	0.57	0.44	5,400.00
12-31-2017	2.99	320.83	201.91	3454.27	71.49	1662.26	67.52	0.35	0.44	5,400.00



Virден Roselea Unit No. 2

Pattern P-13 - 00/04-05-011-25W1/0

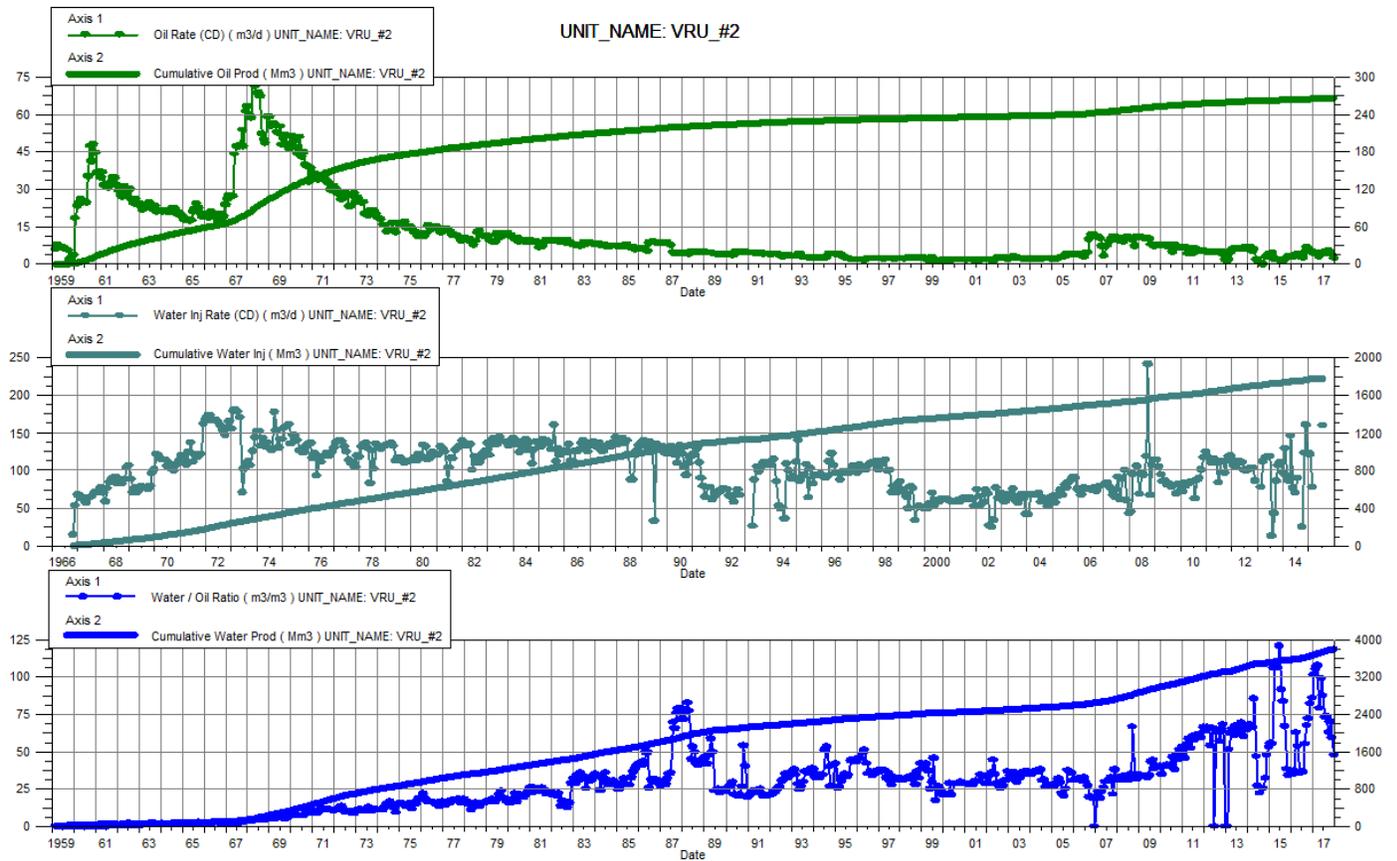
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1-31-2017	0.8	108.32	68.48	814.93		1285.3	86.0		1.39	3,800.00
2-28-2017	0.8	108.35	68.22	816.84		1285.3	85.3		1.39	3,800.00
3-31-2017	0.8	108.37	68.70	818.97		1285.3	89.5		1.38	3,800.00
4-30-2017	0.7	108.39	68.05	821.01		1285.3	91.6		1.38	3,800.00
5-31-2017	0.8	108.42	65.80	823.05		1285.3	80.6		1.38	3,800.00
6-30-2017	1.1	108.45	63.53	824.96		1285.3	60.3		1.37	3,800.00
7-31-2017	1.6	108.50	56.43	826.71		1285.3	35.8		1.37	3,800.00
8-31-2017	1.1	108.53	62.88	828.66		1285.3	57.2		1.37	3,800.00
9-30-2017	1.3	108.57	65.14	830.61		1285.3	48.6		1.37	3,800.00
10-31-2017	1.2	108.61	63.40	832.58		1285.3	53.7		1.36	3,800.00
11-30-2017	1.2	108.65	66.75	834.58		1285.3	54.1		1.36	3,800.00
12-31-2017	1.0	108.68	71.39	836.79		1285.3	70.0		1.36	3,800.00



Virден Roselea Unit No. 2

Pattern P-14 - 00/10-36-010-26W1/0

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	4.60	265.99	465.98	3668.85		1786.49	101.30		0.45	3,000.00
2-28-2017	4.42	266.12	464.81	3681.87		1786.49	105.13		0.45	3,000.00
3-31-2017	4.15	266.25	446.00	3695.69		1786.49	107.43		0.45	3,000.00
4-30-2017	3.26	266.34	256.74	3703.40		1786.49	78.67		0.45	3,000.00
5-31-2017	4.52	266.48	445.69	3717.21		1786.49	98.69		0.45	3,000.00
6-30-2017	4.73	266.63	413.20	3729.61		1786.49	87.42		0.45	3,000.00
7-31-2017	5.11	266.78	373.27	3741.18		1786.49	73.05		0.45	3,000.00
8-31-2017	4.47	266.92	329.27	3751.39		1786.49	73.65		0.44	3,000.00
9-30-2017	5.42	267.09	340.14	3761.59		1786.49	62.79		0.44	3,000.00
10-31-2017	4.85	267.24	338.62	3772.09		1786.49	69.89		0.44	3,000.00
11-30-2017	3.92	267.35	232.27	3779.06		1786.49	59.20		0.44	3,000.00
12-31-2017	2.41	267.43	115.34	3782.63		1786.49	47.86		0.44	3,000.00



Virден Roselea Unit No. 2

Pattern P-15 - 00/12-31-010-25W1/0

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	0.69	113.63	13.03	974.67		483.90	18.87		0.44	--
2-28-2017	0.69	113.65	12.98	975.03		483.90	18.83		0.44	--
3-31-2017	0.66	113.67	13.07	975.44		483.90	19.67		0.44	--
4-30-2017	0.68	113.69	13.63	975.85		483.90	20.15		0.44	--
5-31-2017	0.71	113.71	12.52	976.24		483.90	17.72		0.44	--
6-30-2017	0.76	113.73	12.27	976.60		483.90	16.07		0.44	--
7-31-2017	0.81	113.76	11.31	976.95		483.90	13.91		0.44	--
8-31-2017	0.66	113.78	12.17	977.33		483.90	18.41		0.44	--
9-30-2017	0.71	113.80	13.34	977.73		483.90	18.78		0.44	--
10-31-2017	0.63	113.82	13.08	978.14		483.90	20.79		0.44	--
11-30-2017	0.66	113.84	13.77	978.55		483.90	20.97		0.44	--
12-31-2017	0.60	113.86	16.31	979.06		483.90	27.03		0.44	--

