

Daly Unit #1
2015 Annual EOR Report

Executive Summary

In 2015 oil production in the Daly Unit #1 was 93.4 m³/d (587 bbl/d) totaling 34.1 e³m³ (214.3 mmbbl). Annual production was up 261% from 2014 to 2015, a huge change with the addition of four Daly wells, and continual production from the previous Daly wells drilled in 2014. By the end of 2015 cumulative oil production from the Daly Unit #1 was 1 345.2 e³m³ (8.46 mmbbl).

Prior to Corex operatorship there had been no drilling activity in the unit since the 1970's when all of the water injectors were drilled and the waterflood was initiated. However, in 2014 four horizontals were drilled in the Middle Daly formation, and another 4 wells were drilled in 2015 to set up a waterflood pilot area. In December 2015 there were 31 producing oil wells and 5 water injectors active in the unit.

Discussion

The Daly Unit #1 has been under waterflood since 1969, 17 years after initial production in 1952. Water injection increased the oil production rate from $\sim 50 \text{ m}^3/\text{d}$ (314 bbl/d) just prior to injection to $\sim 140 \text{ m}^3/\text{d}$ (880 bbl/d) peak production after injection.

With further horizontal drilling in the unit the unit production was up again this year, with a year over year average production rate increase of 261%. Prior to development the unit had a relatively flat decline of 5.4%.

Significant events in 2015:

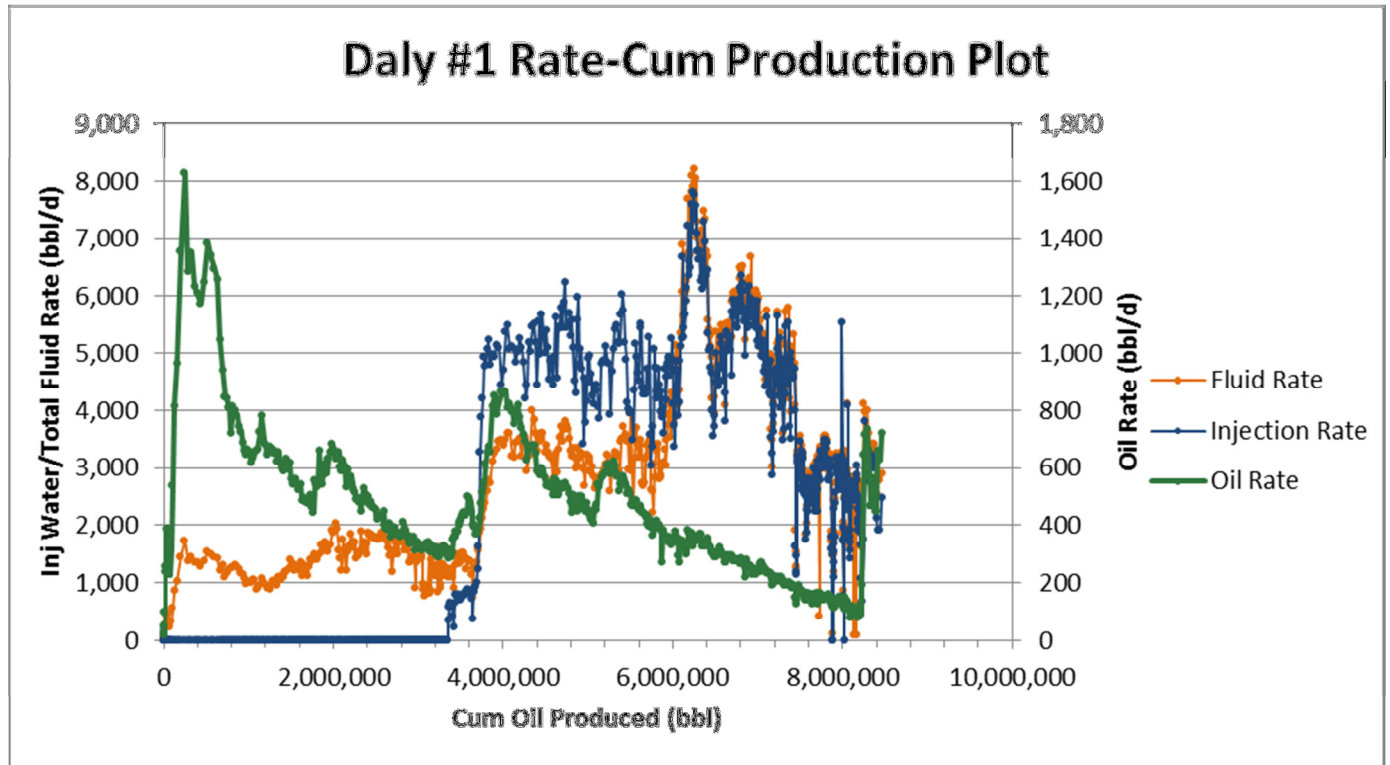
- March 2015, recompleat 100/01-05-010-28W1/00 and 100/07-05-010-28W1/00 in the Flossie formation. Sanded off when fracing 100/07-05-010-28W1/00.
- August 2015, drill 103/04-10-010-28W1/00 horizontal well in the Middle Daly formation.
- August 2015, drill 102/04-10-010-28W1/00 horizontal well in the Middle Daly formation.
- September 2015, frac the 102/09-04-010-28W1/00 Birdbear disposal well.
- September 2015, drill 103/13-03-010-28W1/00 horizontal well in the Middle Daly formation.
- September 2015, drill 104/13-03-010-28W1/00 horizontal well in the Middle Daly formation.

In the past the waterflood performed quite well. However, we believe that further injector conversions in a line drive orientation targeting the Crinoid will be successful in recovering incremental reserves. The horizontal Daly wells have been drilled in a pilot area to facilitate a possible horizontal-horizontal waterflood after primary depletion and when the patterns have been established. Thus far, the Flossie development has not progressed past recompletions in the vertical wells. The average injection rate for the unit is $338 \text{ m}^3/\text{d}$ (2 125 bbl/d) (Note: An error in geoScout production data for the month of May shows no injection in any of the wells for the entirety of the month, as such, the injection volume for the year was divided by 11 months) and with new drills the WOR dropped to $5 \text{ m}^3/\text{m}^3$. The injected water at Daly Unit #1 is not filtered or treated in any way.

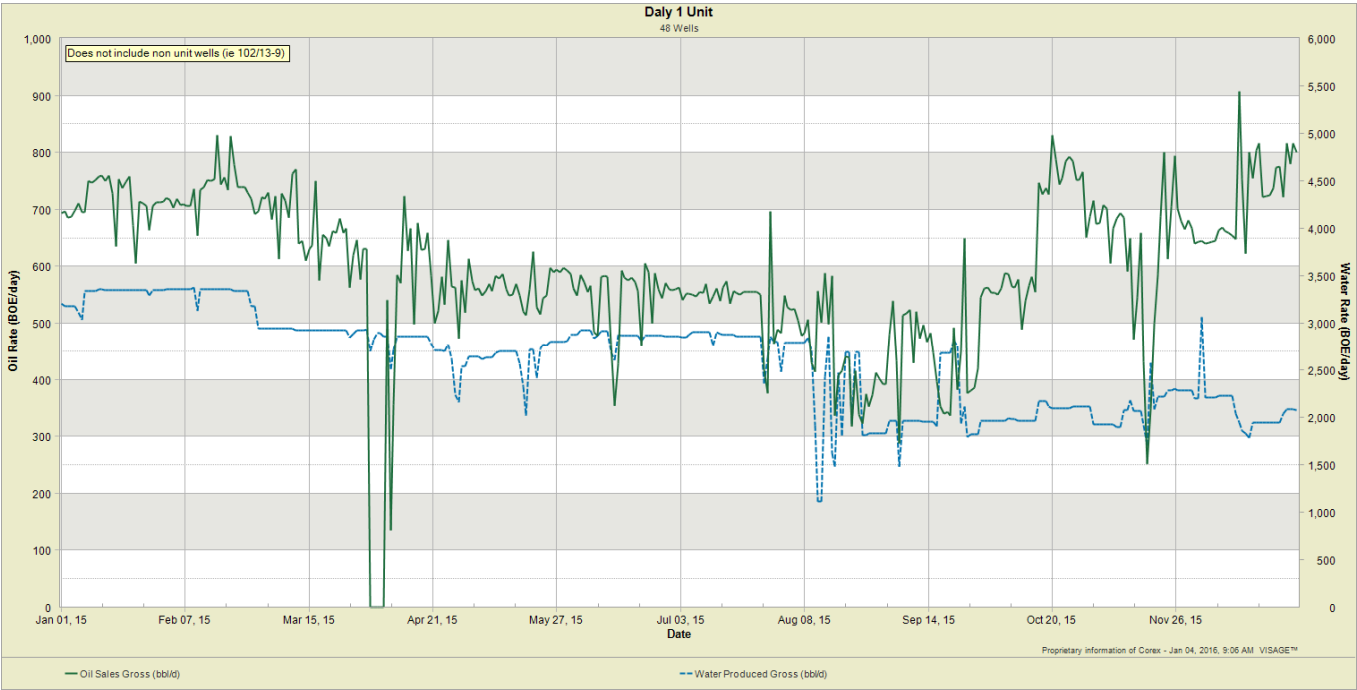
In the composite rate – cumulative oil plot below, waterflood response is clearly demonstrated at a cumulative oil production of $550 \text{ e}^3\text{m}^3$ (3.5 MMbbl). Waterflood response was very good and as a result expected ultimate oil recovery was increased by approximately 1.5 times the estimated primary recovery.

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

Daly #1 – Rate vs Cum Oil Production



Daly #1 – Rate vs Time



2015 Reservoir Pressure Surveys

Unit	UWI	License	Test Type	Date of Pressure	Duration of SI (days)	Datum BHP (kPaa)
Daly #1	100/01-05-010-28W1/00	321	BH BU	4/23/2015	59	6,354

Prior pressure surveys have shown that the water injection has increased the average reservoir pressure above the original pool pressure. Only one pressure was gathered this year. Here the wellbore was SI for quite some time and the area seems to be normally pressured. 15 AWS pressures were taken in 2010 and 2011. These pressures typically ranged between 8,000 kPaa and 9,000 kPaa, with some atypical pressures being outside that range. The initial reservoir pressure is estimated at 6,585 kPaa and the bubble point pressure as 1,517 kPaa.

In the unit we have observed some very low pressures in Daly Unit #1. It is believed that these pressures originate in the Crinoidal zone and that they may be due to a lack of pressure support. There is a low pressured Crinoid horizontal, 102/12-10-010-28W1/00, just above the unit that is anomalous. When we re-entered the old verticals to perform uphole recompletions we noticed that the Crinoidal zone was low pressure, specifically in the NE section of the unit. Later returning to the recompletions for other work it was found that this pressure had spread through the zones giving an overall low pressure for the well. With new Crinoid wells to be drilled it is intended to convert some wells to injection to help to provide pressure support and hopefully improve the sweep efficiency in that area of the unit.

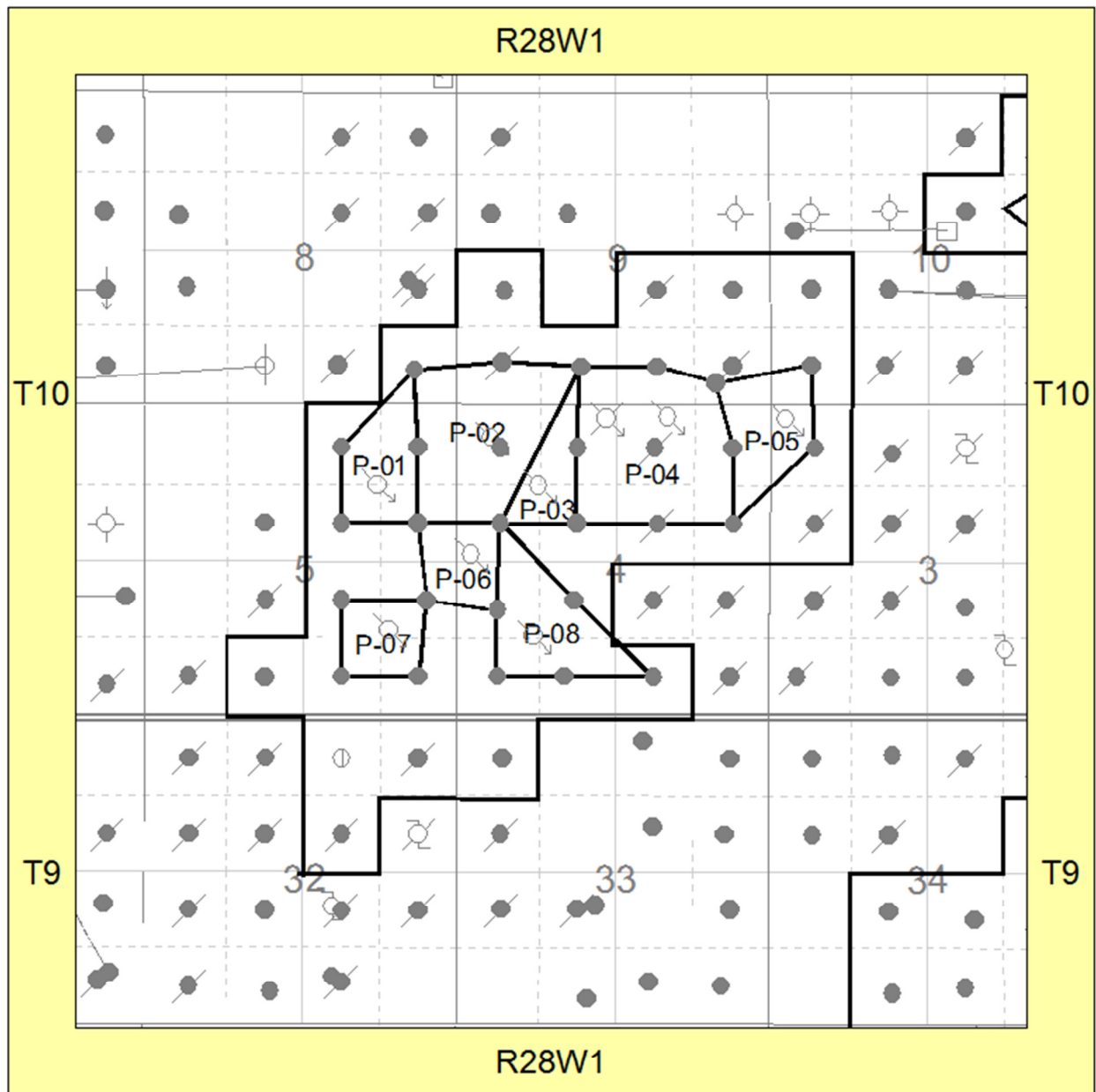
The voidage replacement ratio (VRR) in 2015 fell to 0.59 as the year progressed, this is due to the drilling that went on towards the end of the year where injectors were shut in; the average for the year was 0.63. The cumulative VRR at year end was 0.93 (Note: Due to the error in geoScout data for the month of May the actual Cum VRR may differ slightly). 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.

The high reservoir pressure is inconsistent with the cumulative voidage replacement ratio of 0.93. There is partial pressure support for the field from an aquifer on the south west side of the field, mainly in the crinoidal zone. Any water influx from this aquifer is not accounted for in the VRR calculation.

2015 Well Servicing

UWI	Licence	Unit	Operation	Date	Objective
100/01-05-010-28W1/00	000321	DU#1	Recompletion	20-FEB-15	
100/07-05-010-28W1/00	000322	DU#1	Recompletion	26-FEB-15	
100/07-05-010-28W1/00	000322	DU#1	Wellhead Repair	02-JAN-15	
100/16-05-010-28W1/00	000264	DU#1	Pump Repair	02-DEC-15	
100/16-05-010-28W1/00	000264	DU#1	In Line Inspection	22-JUL-15	
102/04-10-010-28W1/00	10162	DU#1	Equip & Tie-In	29-SEP-15	
102/04-10-010-28W1/00	10162	DU#1	Initial Completion	09-SEP-15	DALY COMPLETION
102/04-10-010-28W1/00	10162	DU#1	Construction	10-AUG-15	
102/04-10-010-28W1/00	10162	DU#1	Drilling - original	22-AUG-15	
103/04-10-010-28W1/00	10163	DU#1	Equip & Tie-In	29-SEP-15	
103/04-10-010-28W1/00	10163	DU#1	Initial Completion	10-SEP-15	DALY COMPLETION
103/04-10-010-28W1/00	10163	DU#1	Construction	10-AUG-15	
103/04-10-010-28W1/00	10163	DU#1	Drilling - original	16-AUG-15	
103/05-10-010-28W1/00	10034	DU#1	Pump Repair	18-NOV-15	
103/13-03-010-28W1/00	10164	DU#1	Drilling - original	10-SEP-15	
103/13-03-010-28W1/00	10164	DU#1	Construction	03-SEP-15	
103/13-03-010-28W1/00	10164	DU#1	Equip & Tie-In	22-OCT-15	
103/13-03-010-28W1/00	10164	DU#1	Initial Completion	27-SEP-15	DALY COMPLETION
104/13-03-010-28W1/00	10165	DU#1	Equip & Tie-In	20-OCT-15	
104/13-03-010-28W1/00	10165	DU#1	Initial Completion	28-SEP-15	DALY COMPLETION
104/13-03-010-28W1/00	10165	DU#1	Construction	03-SEP-15	
104/13-03-010-28W1/00	10165	DU#1	Drilling - original	15-SEP-15	
TANK INSTALL	F15-DAL-02	DU#1	Battery Upgrade	22-FEB-15	

Waterflood Pattern Map

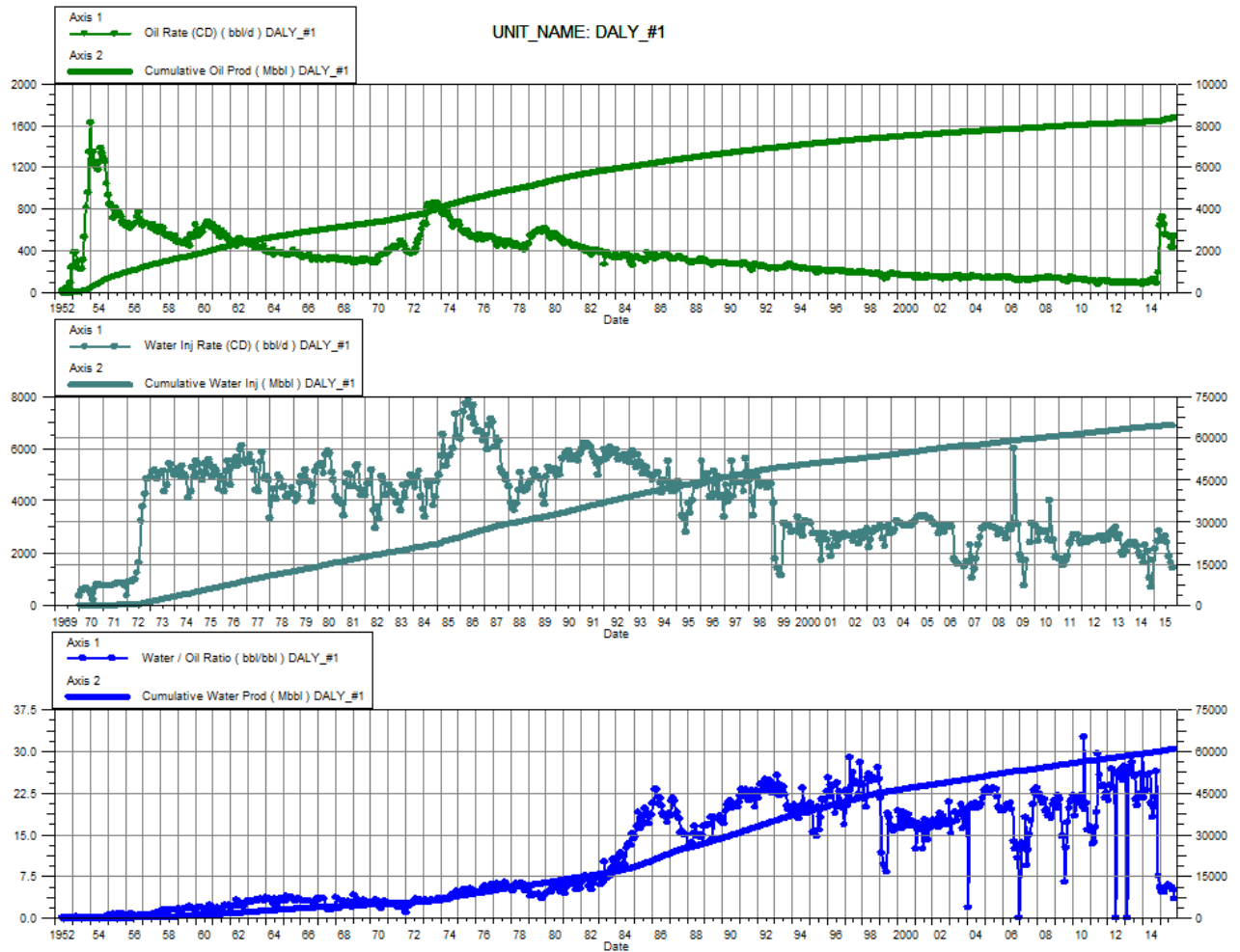


Waterflood Patterns and Corresponding Injectors

Pattern	Well
P-05	102/13-03-010-28W1/00
P-04	102/14-04-010-28W1/00
P-04	102/15-04-010-28W1/00
P-03	102/12-04-010-28W1/02
P-02	102/13-04-010-28W1/00
P-01	102/15-05-010-28W1/00
P-06	103/12-04-010-28W1/00
P-07	102/08-05-010-28W1/00
P-08	102/05-04-010-28W1/00

Total for Daly Unit #1

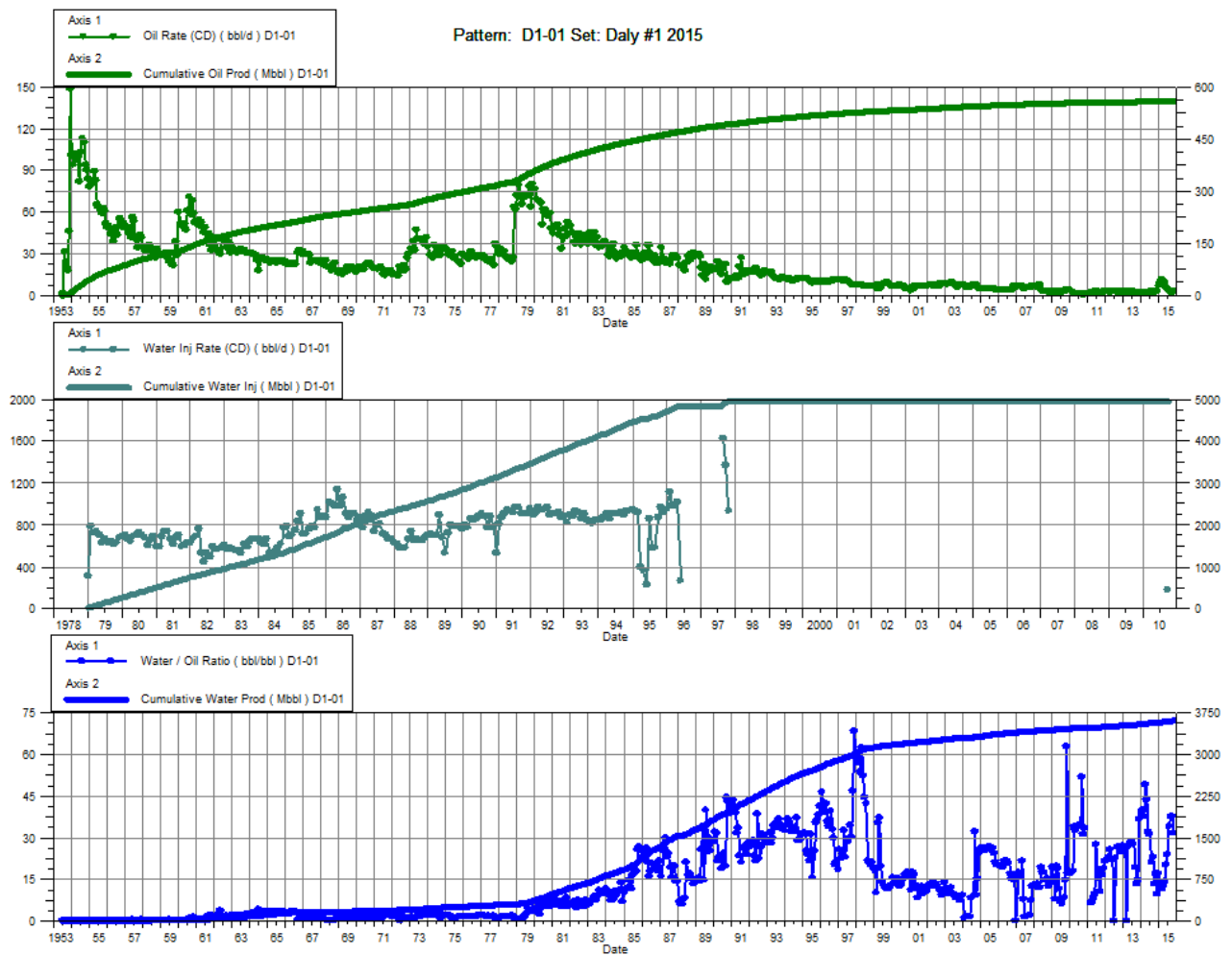
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1/31/2015	112.80	1314.44	549.16	9572.74	347.37	10222.43	4.87	0.52	0.94	7,230
2/28/2015	115.70	1317.68	531.98	9587.63	395.06	10233.50	4.60	0.61	0.94	8,132
3/31/2015	104.41	1320.92	484.91	9602.67	453.39	10247.55	4.64	0.77	0.94	7,815
4/30/2015	88.98	1323.59	480.88	9617.09	394.60	10259.39	5.40	0.69	0.94	7,400
5/31/2015	89.22	1326.36	490.82	9632.31		10259.39	5.50		0.93	7,400
6/30/2015	85.87	1328.93	517.13	9647.82	420.74	10272.01	6.02	0.70	0.93	7,400
7/31/2015	84.37	1331.55	480.34	9662.71	385.17	10283.95	5.69	0.68	0.93	7,400
8/31/2015	70.07	1333.72	383.87	9674.61	298.87	10293.22	5.48	0.66	0.93	7,400
9/30/2015	69.82	1335.81	346.67	9685.01	256.49	10300.91	4.97	0.61	0.93	7,400
10/31/2015	103.38	1339.02	325.45	9695.10	227.54	10307.96	3.15	0.53	0.93	7,400
11/30/2015	97.95	1341.96	344.54	9705.44	250.31	10315.47	3.52	0.56	0.93	7,400
12/31/2015	98.29	1345.00	406.95	9718.05	297.39	10324.69	4.14	0.59	0.93	7,408



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Pattern P-01 - 02/15-05-010-28W1/0

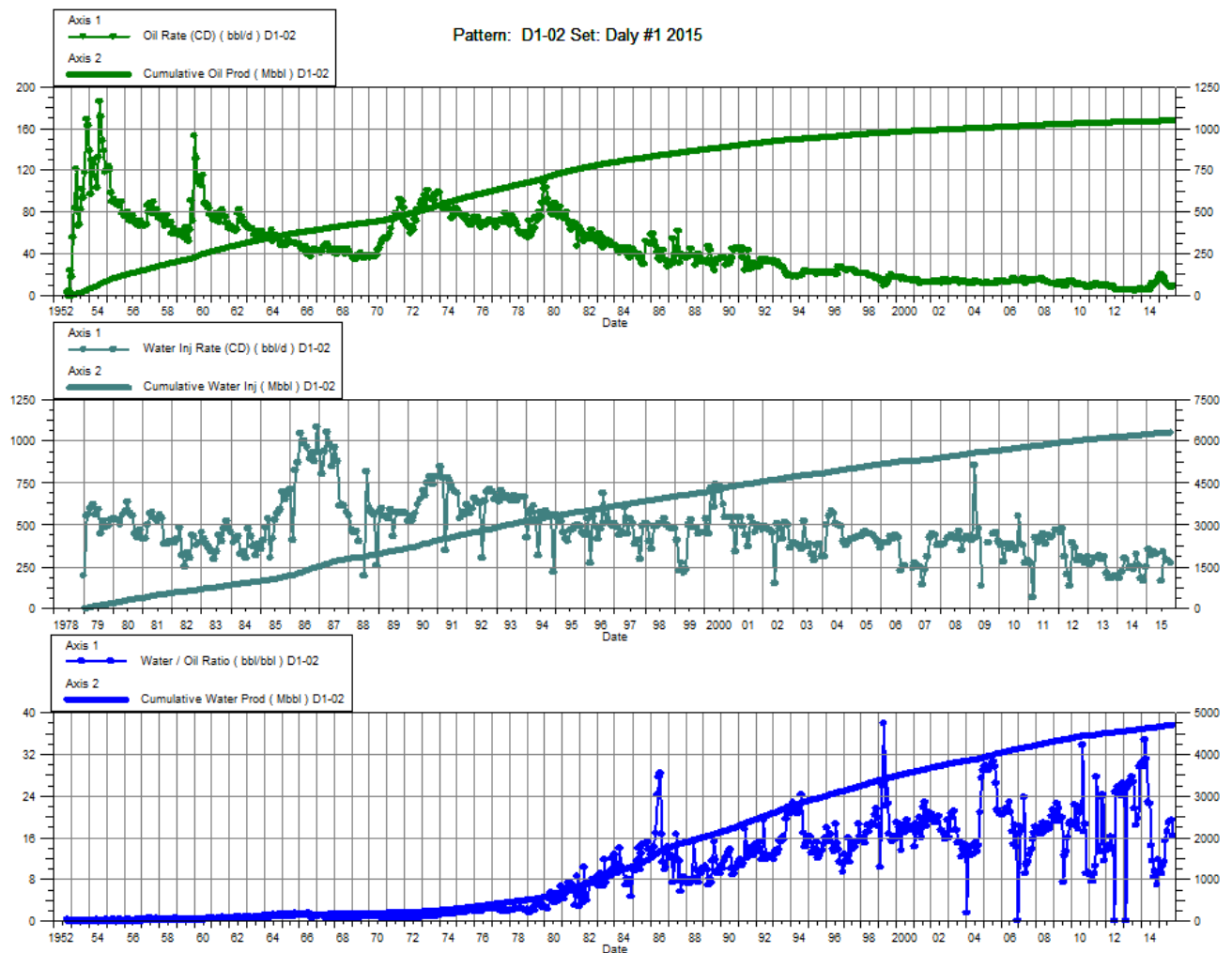
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacement Ratio	Water Inj Pressure kPg
1/31/2015	1.59	88.90	20.04	568.96		790.33	12.59		1.20	--
2/28/2015	1.79	88.95	20.28	569.53		790.33	11.31		1.20	--
3/31/2015	1.61	89.00	20.95	570.18		790.33	13.05		1.20	--
4/30/2015	1.54	89.05	21.66	570.83		790.33	14.10		1.20	--
5/31/2015	0.99	89.08	20.10	571.45		790.33	20.38		1.19	--
6/30/2015	0.77	89.10	18.22	572.00		790.33	23.76		1.19	--
7/31/2015	0.48	89.12	16.26	572.50		790.33	34.13		1.19	--
8/31/2015	0.39	89.13	14.64	572.96		790.33	37.80		1.19	--
9/30/2015	0.41	89.14	15.37	573.42		790.33	37.43		1.19	--
10/31/2015	0.47	89.16	14.88	573.88		790.33	31.63		1.19	--
11/30/2015	0.47	89.17	15.35	574.34		790.33	33.01		1.19	--
12/31/2015	0.21	89.18	8.14	574.59		790.33	38.35		1.19	--



Daly Unit No. 1

Pattern P-02 - 02/13-04-010-28W1/0

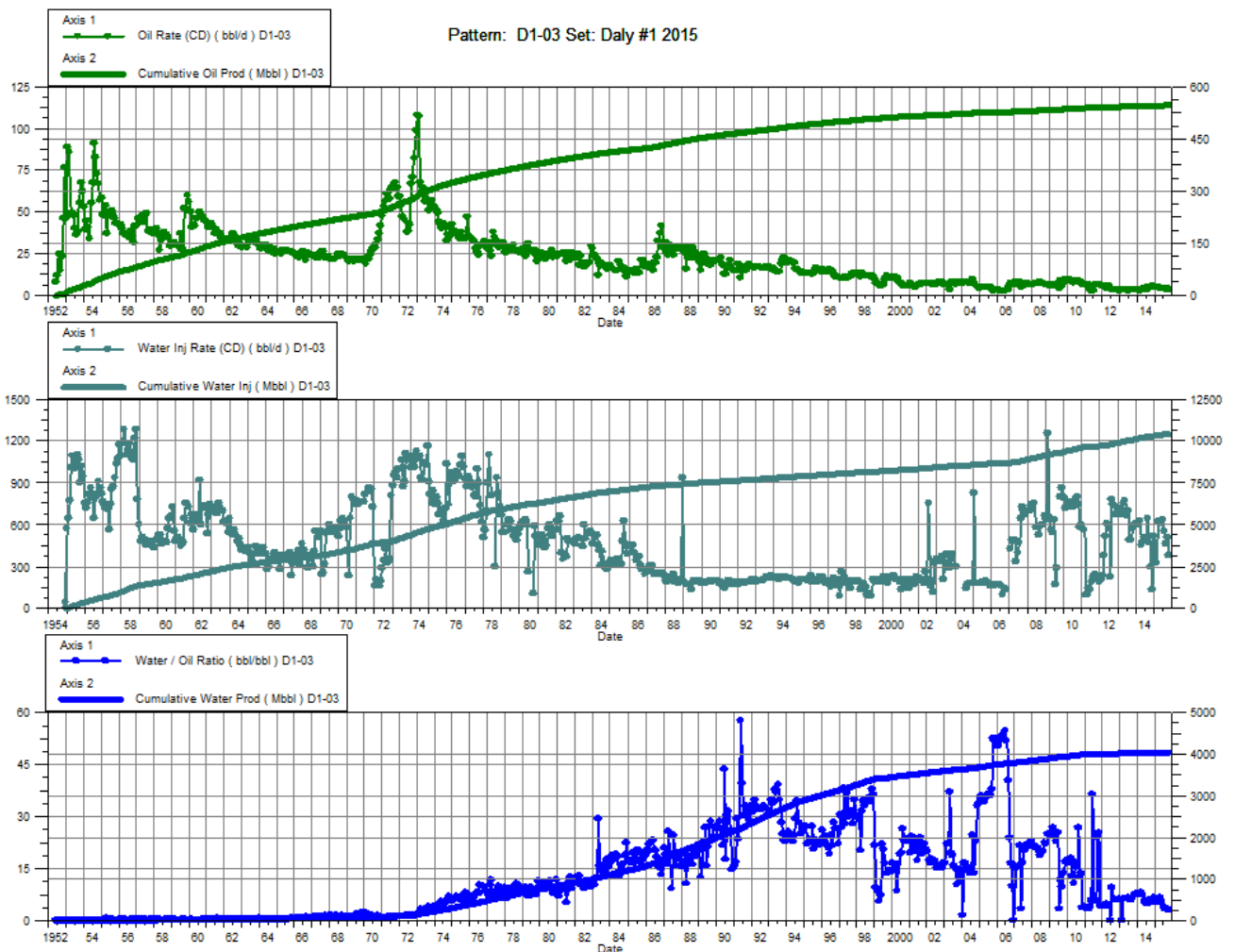
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacement Ratio	Water Inj Pressure kPg
1/31/2015	3.02	166.47	29.09	742.03	55.82	993.63	9.64	1.74	1.09	7,232
2/28/2015	3.22	166.56	29.02	742.84	50.31	995.04	9.02	1.56	1.09	8,186
3/31/2015	2.88	166.65	29.97	743.77	53.39	996.70	10.40	1.62	1.09	7,787
4/30/2015	2.79	166.73	31.19	744.71	51.54	998.24	11.19	1.52	1.09	7,400
5/31/2015	2.07	166.80	32.06	745.70		998.24	15.45		1.09	7,400
6/30/2015	1.77	166.85	30.36	746.61	25.55	999.01	17.11	0.79	1.09	7,400
7/31/2015	1.45	166.89	27.38	747.46	54.12	1000.69	18.92	1.88	1.09	7,400
8/31/2015	1.35	166.94	25.79	748.26	46.02	1002.11	19.17	1.70	1.09	7,400
9/30/2015	1.37	166.98	26.38	749.05	45.02	1003.46	19.28	1.62	1.09	7,400
10/31/2015	1.55	167.02	25.37	749.84	43.16	1004.80	16.41	1.60	1.09	7,400
11/30/2015	1.33	167.06	23.76	750.55	44.17	1006.13	17.89	1.76	1.09	7,400
12/31/2015	1.29	167.10	21.08	751.20	52.00	1007.74	16.35	2.32	1.09	7,410



Daly Unit No. 1

Pattern P-03 - 02/12-04-010-28W1/2

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 Replacement Ratio	Water Inj Pressure kPg
1/31/2015	0.85	86.77	4.65	641.64	71.79	1639.32	5.49	13.02	2.25	7,226
2/28/2015	0.85	86.80	4.49	641.76	52.16	1640.78	5.30	9.75	2.25	7,993
3/31/2015	0.76	86.82	4.63	641.91	99.61	1643.87	6.11	18.43	2.25	7,787
4/30/2015	0.74	86.84	4.88	642.05	97.22	1646.78	6.60	17.25	2.25	7,400
5/31/2015	0.69	86.86	3.83	642.17		1646.78	5.53		2.25	7,400
6/30/2015	0.68	86.88	2.70	642.25	101.40	1649.82	4.00	29.90	2.26	7,400
7/31/2015	0.64	86.90	2.19	642.32	88.19	1652.56	3.45	31.06	2.26	7,400
8/31/2015	0.59	86.92	2.06	642.39	73.14	1654.82	3.50	27.50	2.26	7,400
9/30/2015	0.64	86.94	2.22	642.45	81.11	1657.26	3.49	28.24	2.27	7,400
10/31/2015	0.55	86.96	1.58	642.50	59.74	1659.11	2.87	27.94	2.27	7,400
11/30/2015	0.28	86.97	0.75	642.52	79.05	1661.48	2.62	76.22	2.27	7,400
12/31/2015	0.61	86.99	2.20	642.59	84.48	1664.10	3.59	29.91	2.28	7,410

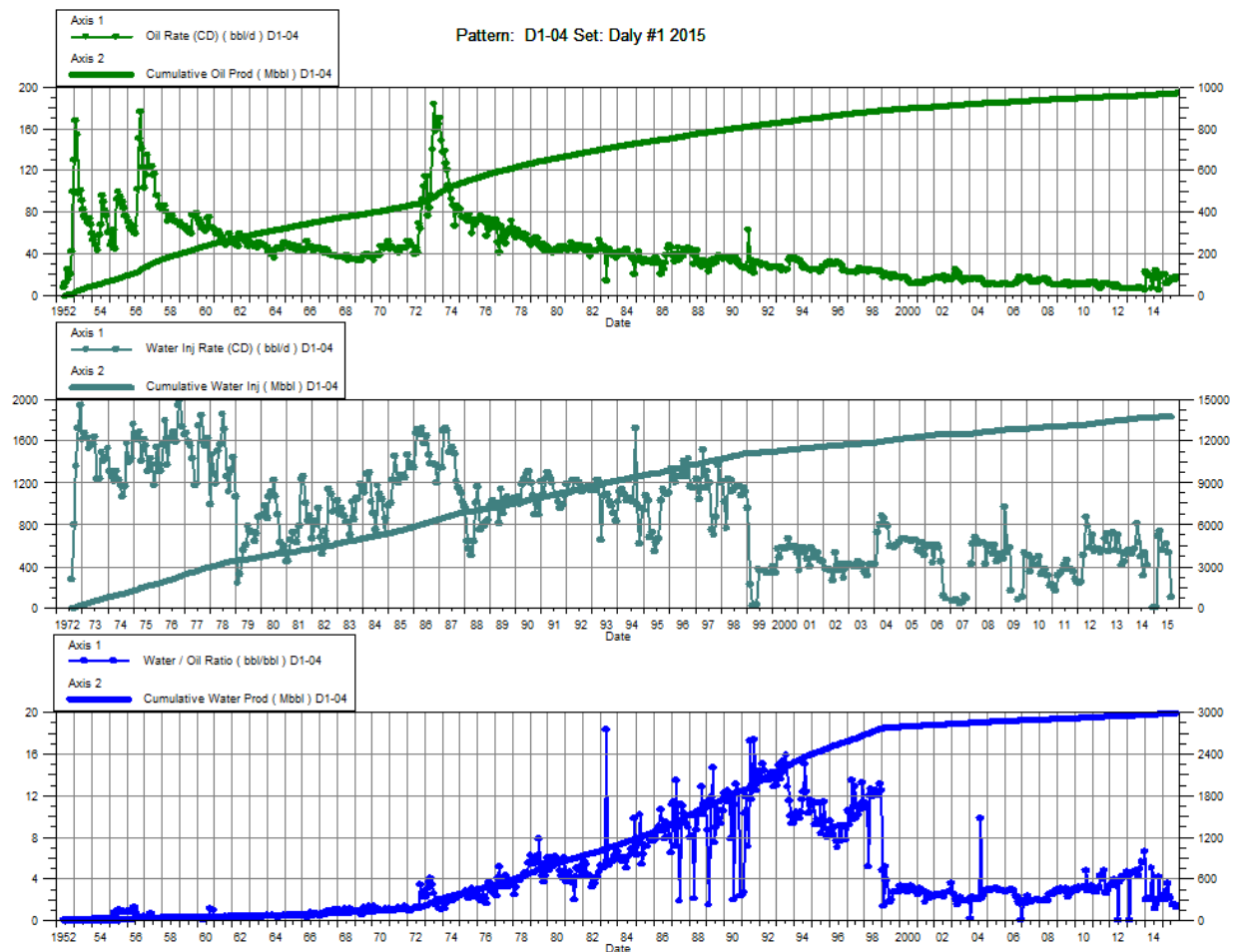


Daly Unit No. 1

Pattern P-04 - 02/14-04-010-28W1/0

P-04 - 02/15-04-010-28W1/0

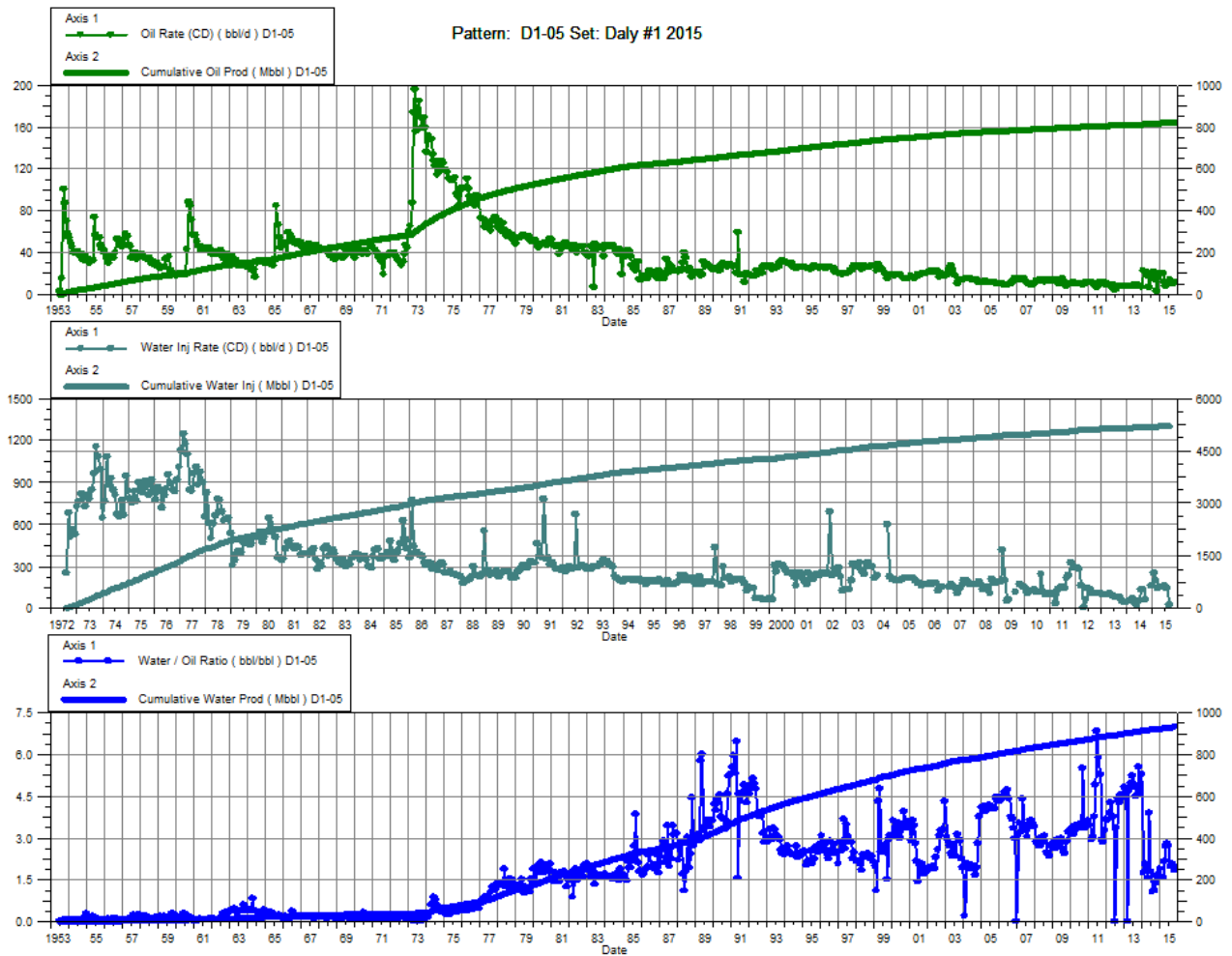
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacement Ratio	Water Inj Pressure kPg
1/31/2015	3.23	153.87	6.51	474.10	0.15	2180.11	2.02	0.02	3.46	7,232
2/28/2015	3.22	153.96	6.29	474.27	109.30	2183.17	1.95	11.42	3.46	8,186
3/31/2015	1.90	154.02	5.43	474.44	118.00	2186.82	2.86	16.03	3.46	7,787
4/30/2015	1.80	154.08	6.33	474.63	88.26	2189.47	3.51	10.81	3.47	7,400
5/31/2015	2.15	154.14	5.07	474.79		2189.47	2.36		3.47	7,400
6/30/2015	2.24	154.21	4.55	474.92	98.79	2192.44	2.03	14.46	3.47	7,400
7/31/2015	2.68	154.29	4.09	475.05	83.52	2195.02	1.53	12.24	3.47	7,400
8/31/2015	2.58	154.37	3.88	475.17	16.95	2195.55	1.51	2.60	3.47	7,400
9/30/2015	2.53	154.45	3.78	475.28		2195.55	1.49		3.47	7,400
10/31/2015	2.85	154.54	3.35	475.39		2195.55	1.18		3.47	7,400
11/30/2015	2.52	154.61	2.42	475.46		2195.55	0.96		3.47	7,400
12/31/2015	2.93	154.70	4.42	475.60		2195.55	1.51		3.47	7,400



Daly Unit No. 1

Pattern P-05 - 02/13-03-010-28W1/0

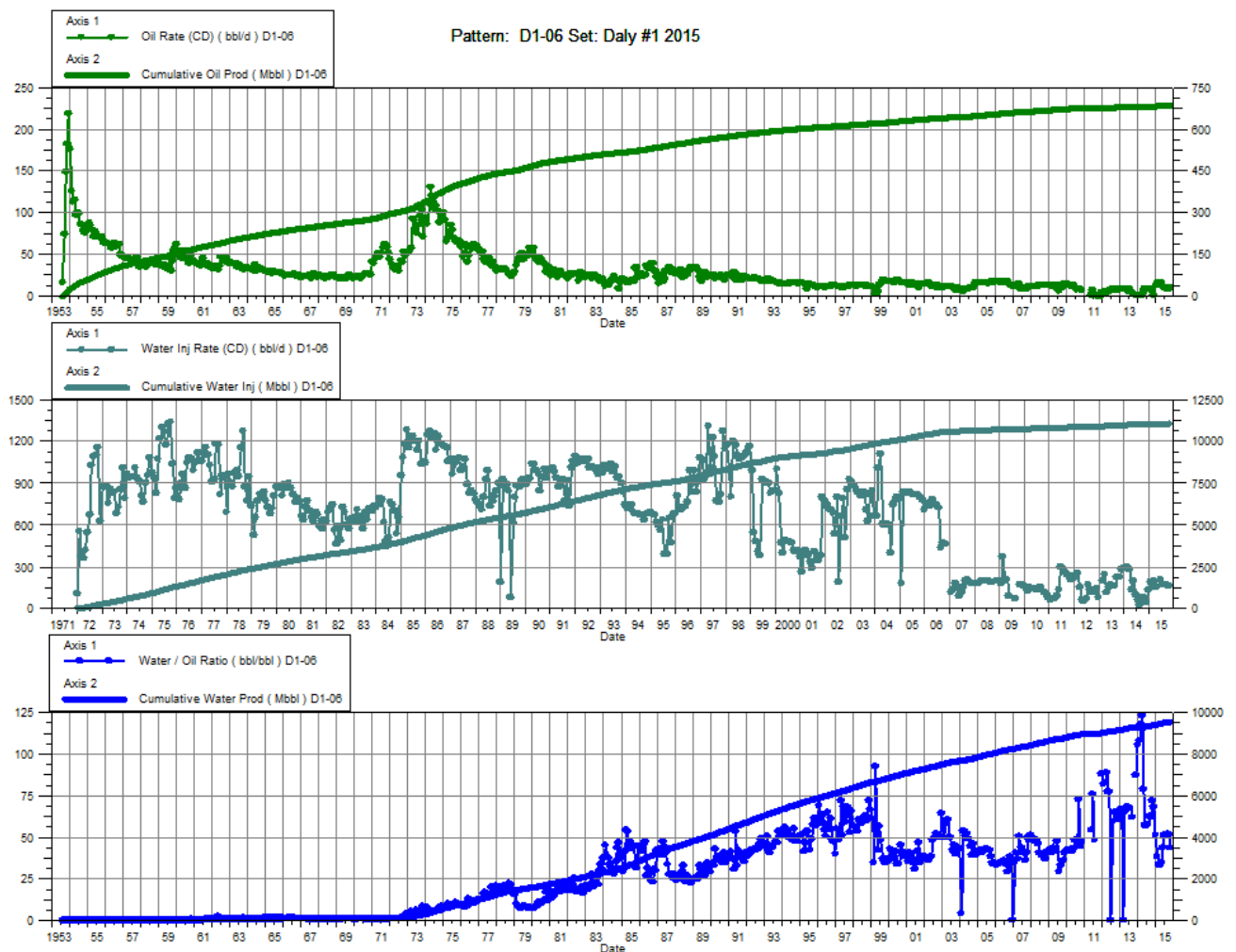
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacement Ratio	Water Inj Pressure kPg
1/31/2015	3.23	130.26	5.22	147.14	39.54	824.96	1.62	4.65	2.95	7,226
2/28/2015	3.23	130.35	5.04	147.28	31.07	825.83	1.56	3.73	2.95	7,993
3/31/2015	1.90	130.41	4.15	147.41	22.63	826.54	2.18	3.72	2.95	7,787
4/30/2015	1.33	130.45	3.58	147.51	23.71	827.25	2.70	4.81	2.95	7,400
5/31/2015	1.51	130.50	4.21	147.64		827.25	2.79		2.95	7,400
6/30/2015	1.71	130.55	4.60	147.78	25.35	828.01	2.70	4.00	2.95	7,400
7/31/2015	2.18	130.62	4.26	147.91	21.71	828.68	1.95	3.35	2.95	7,400
8/31/2015	1.95	130.68	4.01	148.04	4.01	828.81	2.05	0.67	2.95	7,400
9/30/2015	1.63	130.73	3.22	148.13		828.81	1.98		2.95	7,400
10/31/2015	1.91	130.79	3.52	148.24		828.81	1.84		2.94	7,400
11/30/2015	1.90	130.84	2.69	148.32		828.81	1.41		2.94	7,400
12/31/2015	2.23	130.91	2.58	148.40		828.81	1.16		2.94	7,400



Daly Unit No. 1

Pattern P-06 - 03/12-04-010-28W1/0

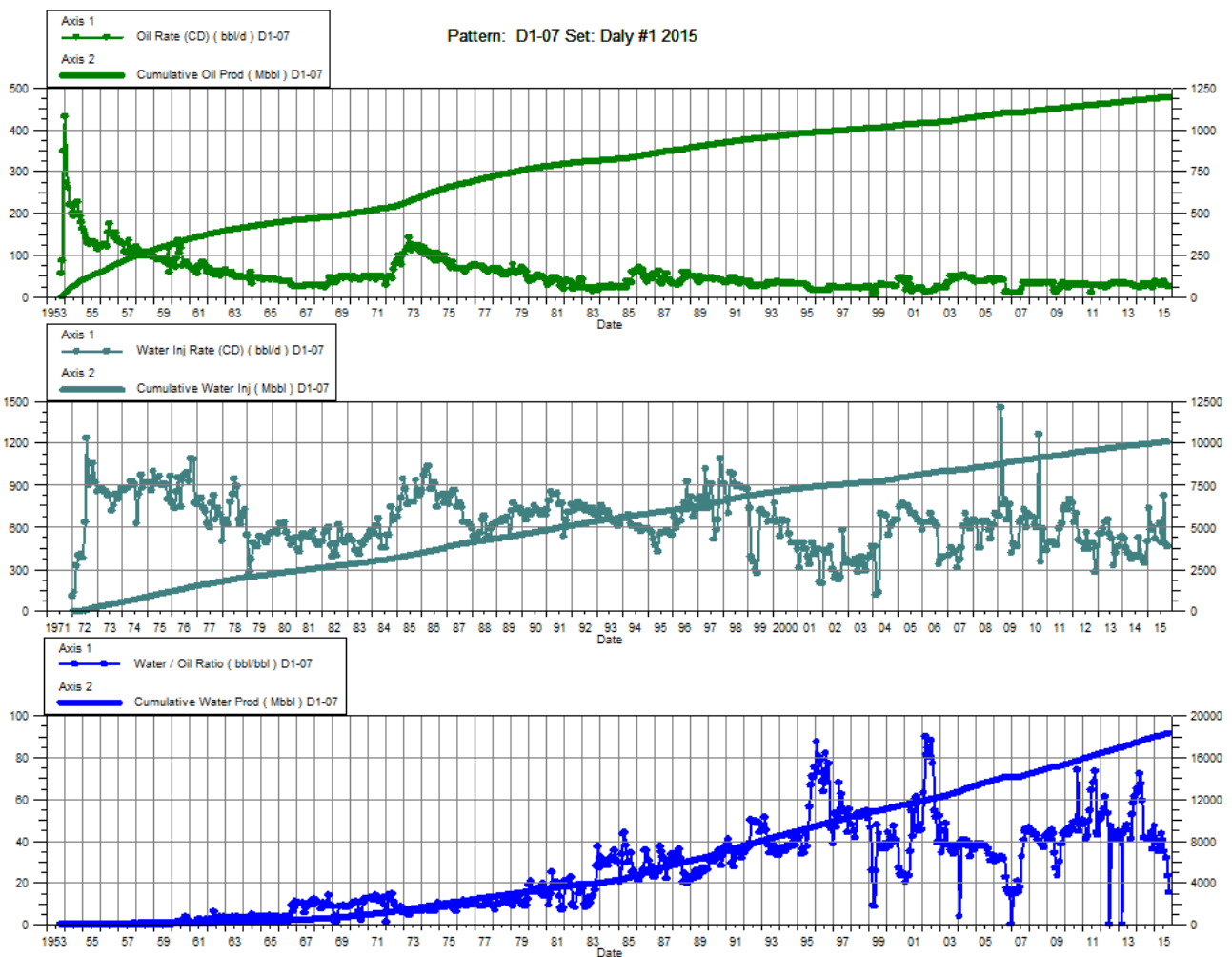
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacement Ratio	Water Inj Pressure kPg
1/31/2015	2.47	108.68	93.70	1498.39	29.51	1752.30	37.97	0.31	1.09	7,232
2/28/2015	2.66	108.76	90.40	1500.92	27.93	1753.08	33.97	0.30	1.09	8,186
3/31/2015	2.61	108.84	86.86	1503.62	30.95	1754.04	33.25	0.35	1.09	7,787
4/30/2015	2.52	108.92	87.25	1506.23	24.44	1754.77	34.61	0.27	1.09	7,400
5/31/2015	1.75	108.97	76.96	1508.62		1754.77	43.87		1.08	7,400
6/30/2015	1.55	109.02	78.84	1510.98	32.76	1755.75	51.02	0.41	1.08	7,400
7/31/2015	1.50	109.06	75.90	1513.34	27.22	1756.60	50.69	0.35	1.08	7,400
8/31/2015	1.33	109.10	68.80	1515.47		1756.60	51.82		1.08	7,400
9/30/2015	1.46	109.15	74.98	1517.72	26.22	1757.38	51.21	0.34	1.08	7,400
10/31/2015	1.66	109.20	72.11	1519.95	25.05	1758.16	43.33	0.34	1.08	7,400
11/30/2015	1.56	109.25	69.90	1522.05	27.51	1758.98	44.90	0.39	1.08	7,400
12/31/2015	1.39	109.29	78.10	1524.47	46.52	1760.43	56.20	0.59	1.08	7,410



Daly Unit No. 1

Pattern P-07 - 02/08-05-010-28W1/0

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 Replacement Ratio	Water Inj Pressure kPg
1/31/2015	5.94	189.29	238.67	2867.19	117.72	1587.82	40.20	0.48	0.52	7,232
2/28/2015	5.81	189.45	228.62	2873.59	92.11	1590.40	39.37	0.39	0.52	8,179
3/31/2015	5.10	189.61	176.70	2879.07	95.75	1593.37	34.63	0.53	0.52	7,594
4/30/2015	4.87	189.76	180.88	2884.50	82.04	1595.83	37.12	0.44	0.52	7,400
5/31/2015	4.47	189.89	192.68	2890.47		1595.83	43.13		0.52	7,400
6/30/2015	5.62	190.06	227.51	2897.30	99.06	1598.80	40.52	0.43	0.52	7,400
7/31/2015	6.10	190.25	212.07	2903.87	78.34	1601.23	34.79	0.36	0.52	7,400
8/31/2015	4.52	190.39	142.98	2908.30	131.70	1605.31	31.61	0.89	0.52	7,400
9/30/2015	4.21	190.52	96.74	2911.20	76.57	1607.61	22.99	0.76	0.52	7,400
10/31/2015	4.16	190.65	64.74	2913.21	73.51	1609.89	15.56	1.07	0.52	7,400
11/30/2015	4.13	190.77	67.08	2915.22	72.46	1612.06	16.26	1.02	0.52	7,400
12/31/2015	4.28	190.90	85.62	2917.88	77.57	1614.47	20.00	0.86	0.52	7,413



Daly Unit No. 1

Pattern P-08 - 02/05-04-010-28W1/0

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 Replacement Ratio	Water Inj Pressure kPg
1/31/2015	1.91	199.28	42.29	997.48	32.85	988.22	22.09	0.74	0.82	7,232
2/28/2015	1.91	199.33	41.88	998.66	32.18	989.13	21.94	0.73	0.82	8,200
3/31/2015	1.71	199.38	43.26	1000.00	33.06	990.15	25.28	0.74	0.82	8,174
4/30/2015	1.73	199.43	43.41	1001.30	27.40	990.97	25.09	0.61	0.82	7,400
5/31/2015	2.21	199.50	38.93	1002.51		990.97	17.64		0.82	7,400
6/30/2015	2.25	199.57	39.02	1003.68	37.83	992.11	17.30	0.92	0.82	7,400
7/31/2015	2.20	199.64	35.98	1004.79	32.07	993.10	16.37	0.84	0.82	7,400
8/31/2015	2.31	199.71	36.77	1005.93	27.05	993.94	15.94	0.69	0.82	7,400
9/30/2015	2.36	199.78	36.73	1007.04	27.58	994.77	15.55	0.71	0.82	7,400
10/31/2015	2.73	199.86	35.21	1008.13	26.07	995.58	12.91	0.69	0.82	7,400
11/30/2015	2.70	199.95	36.33	1009.22	27.12	996.39	13.47	0.69	0.82	7,400
12/31/2015	2.75	200.03	43.54	1010.57	36.82	997.53	15.84	0.79	0.82	7,413

