



March 2nd, 2011

Manitoba Science, Technology, Energy and Mines
Box 1359, 227 King Street West
Virden, Manitoba
R0M 2C0

Attn: Jennifer Abel
Chief Petroleum Engineer

Re: South Pierson Unit No. 1 2010 Waterflood Progress Report

Please find the attached 2010 Waterflood Progress Report for South Pierson Unit No.1.

If you have any questions or concerns, please contact the undersigned at (403) 386-5335.

Yours truly,

Brittany Trask, E.I.T.
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Canadian Natural Resources

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South Pierson Unit No. 1 2010 Waterflood Progress Report

It was another busy year for Canadian Natural Resources Limited (CNRL) in the Pierson area. Results from reduced spacing and waterflooding South Pierson Unit No. 1 encouraged plans to further develop the offsetting lands to the northwest in a similar manner. South Pierson Unit No. 2 was applied for and approval was received effective November 1, 2010 to develop a waterflood project with horizontal producers, vertical injectors and a potentially a few horizontal injectors.

South Pierson Unit No. 1 continued to stay on trend with the flattening decline that was observed last year and although water cuts bounced around a bit they remained quite low. On an individual well basis, most producers have essentially maintained or even increased their oil production rate over the last year and out of the seventy eight producers, less than fifteen of the wells saw oil rates drop more than 0.32 m³/day in 2010. The drops in production can be attributed to various reasons including: pump failures that are indentified to be fixed, production getting back on trend after being serviced or wells that have not yet stabilized from initially higher production rates. In addition to regular operations, CNRL was able drill and complete an infill Spearfish horizontal well within the unit boundaries in an area that had not been drilled on 20 acre spacing due to Wildlife Management Area constraints. Initial results from this well have been quite positive with oil production rates close to 100 bbl/d and water cuts dropping below 50%.

A map of the unit is provided in **Figure A.1** that highlights the wells that were stimulated in 2008 and 2009 with a red star and the wells that were stimulated in 2010 with a green star. **Figure A.2** is a plot of the overall production and injection in the unit over the life of the field, annotated with significant events during the development of the unit. **Figure A.3** is a plot that shows the forecasted production for the unit. It is hard to estimate exactly how the unit would have performed on primary production because waterflood commenced before the entire unit was drilled on 40 acre spacing, but the orange dotted line suggests that only 450 e³m³ would have been recovered without waterflooding. Prior to down spacing to a 20 acre waterflood it is estimated that only 700 e³m³ would have been recovered with a 40 acre waterflood. Since the unit was down spaced, it is now anticipated that over 1, 000 e³m³ will be recovered. The calculated original oil in place is 4,339 e³m³ so going from primary production to a 40 acre waterflood and eventually to the current 20 acre waterflood increased the recovery factor from approximately 10% to 16% to over 23%, respectively.

A monthly summary of the oil production rate, injection rate, water oil ratio (WOR), gas oil ratio (GOR), monthly voidage replacement ratio (VRR) and the cumulative VRR for each pattern and the overall project can be found in **Table B.1** as well as **Figures B.1 – B.38**. From this information it can be observed that there are no unusually large increases in WOR's concluding that breakthrough has not occurred yet in any of the wells. It can also be concluded that the benefits of waterflooding are being observed through stabilizing or increasing oil production rates at individual wells. It should be noted that the GOR's are obtained from public data and therefore are not updated until the end of the year.

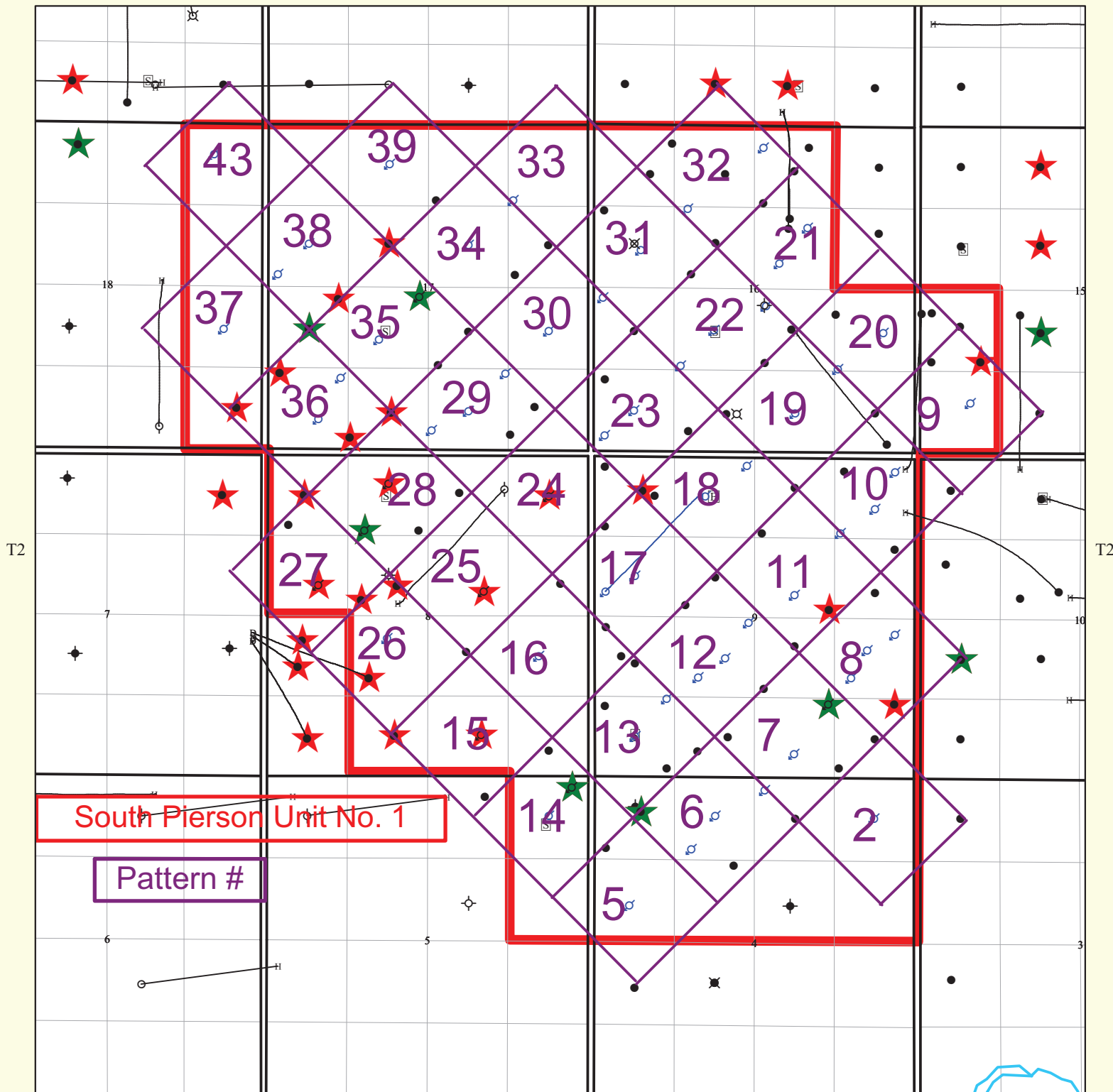
The cumulative oil, gas and water volumes produced and the water injected up to the end of the year for each pattern and the overall project can be found in **Table C.1** and in **Figures C.1 – C.38**.

In **Table D.1** and **Figures D.1 – D.62** the average monthly wellhead injection pressure and the average daily injection rate for each well is tabulated and plotted. With the results that were seen from stimulating injectors in 2008 and 2009, several more stimulations were tried throughout the field in 2010 with not as much success as was anticipated. However, the stimulations were carried out slightly differently than before in that they were only bullheaded with the solvent instead of spotting it and the solvent itself was of different chemical makeup. For future stimulations, the solvent will likely be spotted and a new chemical solvent will be tried with the hope that there will be continued success in increasing injection in order to make the targeted VRR's.

There were no pressure surveys completed in the unit during 2010 to report on. Provided in **Table E.1** is a list of every well servicing job that was completed in 2010. Plots for each of the wells that were stimulated in 2010 can be found in **Figures E.1 – E.6**.

R30

R29W1



R30

R29W1

WELL LEGEND

Bottom Hole Locations:

- Location
- ⊗ Service or Drain
- ⊕ Dry & Abandoned
- ⊗ Abandoned Service
- ◇ Suspended
- Oil
- ◆ Abandoned Oil
- ⊕ Injection

Surface Hole Locations:

- Directional
- Horizontal

WELL LISTS

- ★ Pierson Stim Jobs
- ★ Pierson Stim Jobs - 2010

Canadian Natural Resources L

South Pierson Unit No. 1 2010 Progress Report



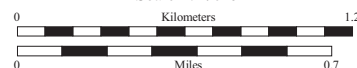
Created in AccuMap™
Product of IHS
Datum: NAD27
Vol. 21 No. 02, Feb 15 2011
(403) 770-4646

Author: Brittany Trask
Date: March 1, 2011
File: Pierson - 2009 Progress Report
Scale: 1 : 27049
Projection: Stereographic
Center: N49.11372 W101.31935

Grid Information:
DLS: IHS Enhanced Grid
NTS: Theoretical Grid
FPS: Theoretical Grid
US: IHS US Grid

DLS Version Information:
AB: ATS 2.6
BC: PRB 2.0
SK: STS 2.5
MB: ML107

Scale 1:27049



South Pierson Unit No 1 Production History

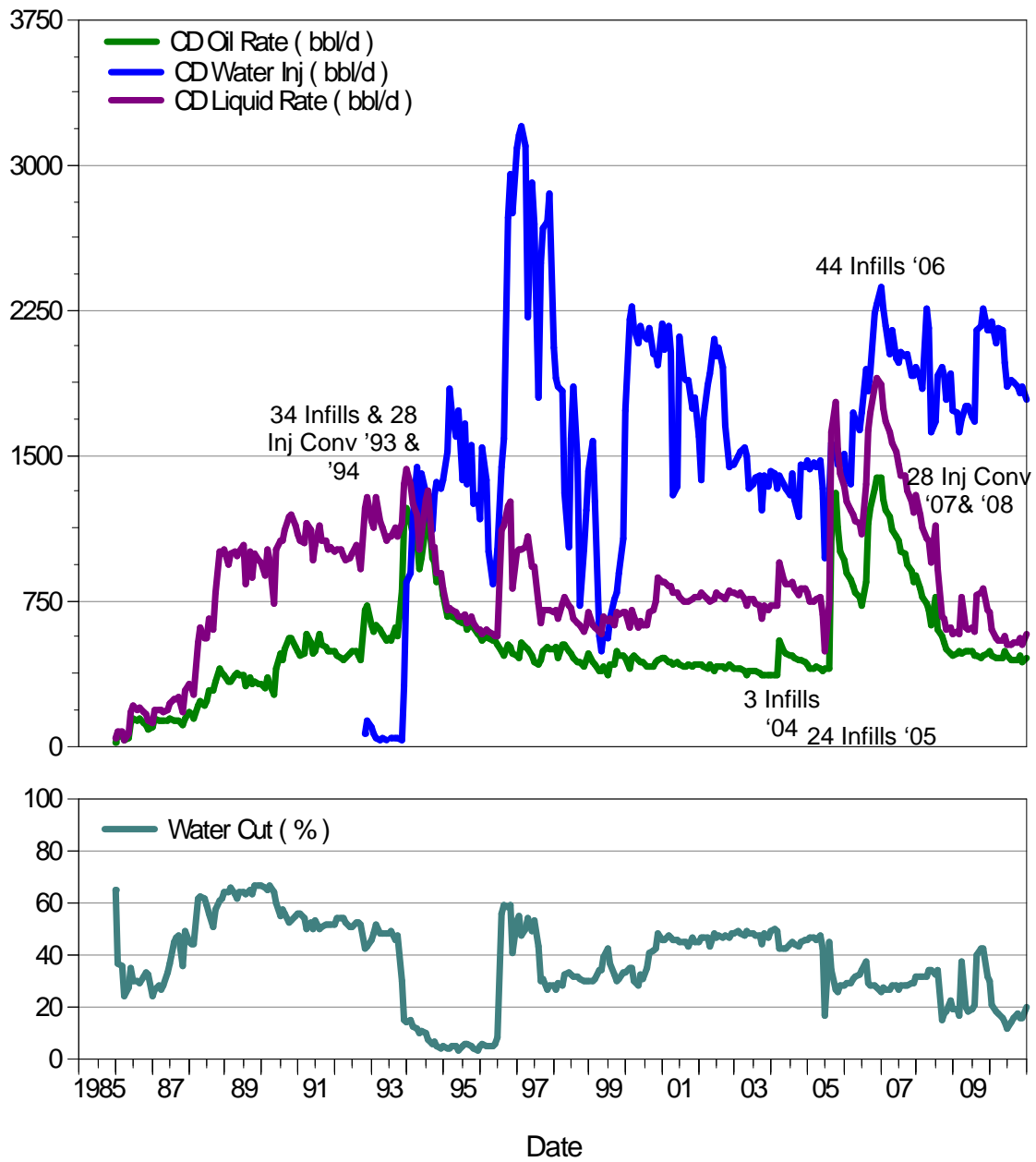


Figure A.2 – Overall Production History for South Pierson Unit No. 1

South Pierson Unit No. 1 - Forecast

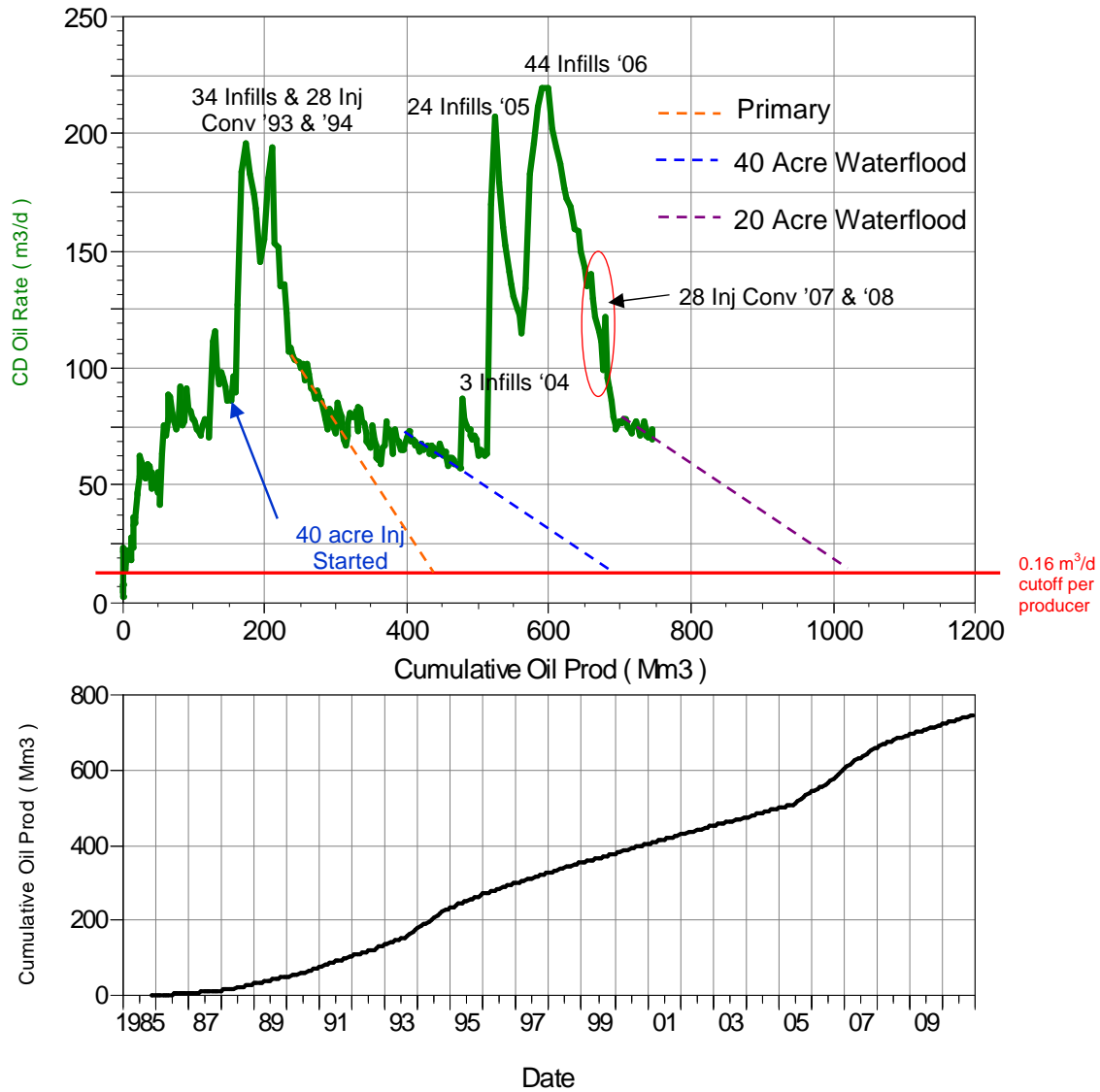


Figure A.3 – Overall Production Forecast for South Pierson Unit No. 1

TABLE B.1: MONTHLY PRODUCTION, INJECTION AND VRR BY PATTERN

	Month	CD Oil Rate (m ³ /d)	CD Water Inj Rate (m ³ /d)	Gas Oil Ratio m ³ /m ³	Water Oil Ratio m ³ /m ³	Monthly VRR	Cum VRR
OVERALL UNIT	January	74.45	348.16	66.55	0.27	3.204	1.202
	February	71.54	330.66	68.34	0.23	3.258	1.206
	March	71.89	342.77	78.3	0.21	3.397	1.211
	April	73.04	341.64	76.8	0.19	3.382	1.216
	May	76.85	314.04	71.14	0.16	3.019	1.221
	June	73.55	294.42	67.98	0.14	3.019	1.224
	July	70.69	300.91	48.1	0.17	3.136	1.229
	August	70.62	298.74	51.98	0.19	3.068	1.233
	September	70.71	295.58	37.57	0.21	2.989	1.237
	October	73.8	289.22	61.98	0.19	2.830	1.240
	November	69.34	294.71	0	0.19	3.078	1.244
	December	72.83	283.66	0	0.26	2.695	1.248
PATTERN: P-02	January	0.9	0.02	104.5	0.15	0.013	0.633
	February	0.89	0	95.77	0.14	0.001	0.631
	March	0.65	0	149.07	0.13	0.002	0.629
	April	0.9	0.01	112.04	0.1	0.009	0.626
	May	0.85	0.01	121.33	0.1	0.009	0.624
	June	0.88	0.07	121.79	0.04	0.062	0.622
	July	0.97	0.01	73.03	0.01	0.007	0.619
	August	1.19	0	62.5	0.06	0.003	0.616
	September	1.15	0.01	58.91	0.07	0.008	0.613
	October	1.06	0.01	121.86	0.07	0.007	0.610
	November	0.98	0.02	0	0.08	0.012	0.608
	December	1.02	0	0	0.05	0.003	0.605
PATTERN: P-05	January	0.36	1.12	165.16	0.71	1.660	0.838
	February	0.57	1.34	129.69	0.57	1.337	0.841
	March	0.61	1.22	162.48	0.34	1.309	0.844
	April	0.56	1.18	146.45	0.27	1.440	0.848
	May	0.5	1.1	195.2	0.25	1.517	0.851
	June	0.46	1.11	197.44	0.28	1.663	0.855
	July	0.48	1.16	198.64	0.29	1.644	0.859
	August	0.43	1.21	317.84	0.31	1.851	0.863
	September	0.42	1.19	306.32	0.36	1.812	0.867
	October	0.43	1.1	277.67	0.38	1.639	0.871
	November	0.36	1.17	0	0.43	2.033	0.876
	December	0.34	1.17	0	0.42	2.108	0.880
PATTERN: P-06	January	2.41	2.78	82.83	0.07	0.909	0.619
	February	2.67	3.04	66.27	0.08	0.896	0.620
	March	2.46	2.68	73.51	0.04	0.884	0.621
	April	2.5	3.05	67.91	0.05	0.984	0.623
	May	2.55	2.95	58.28	0.03	0.949	0.624
	June	2.67	3.04	54.91	0.01	0.949	0.625
	July	2.48	3.11	48.69	0.02	1.030	0.626
	August	2.43	3.1	60.74	0.04	1.036	0.628
	September	2.71	2.57	56.65	0.14	0.713	0.628
	October	2.77	2.42	73.82	0.13	0.658	0.628
	November	2.5	2.64	0	0.11	0.810	0.629
	December	2.36	2.55	0	0.11	0.830	0.629
	January	2.31	2.41	55.9	0.03	0.860	0.222
	February	2.31	2.75	51.51	0.02	0.983	0.223
	March	2.28	2.6	56.91	0	0.954	0.224
	April	2.42	2.74	53.77	0.02	0.933	0.225

TABLE B.1: MONTHLY PRODUCTION, INJECTION AND VRR BY PATTERN

	Month	CD Oil Rate (m ³ /d)	CD Water Inj Rate (m ³ /d)	Gas Oil Ratio m ³ /m ³	Water Oil Ratio m ³ /m ³	Monthly VRR	Cum VRR
PATTERN: P-07	May	2.33	2.54	47.75	0.03	0.898	0.226
	June	2.37	2.48	49.21	0.01	0.875	0.227
	July	2.5	2.5	36.7	0.02	0.827	0.228
	August	2.83	2.32	42.2	0.03	0.671	0.229
	September	2.62	2.19	40.98	0.04	0.680	0.229
	October	2.6	2.07	61.8	0.03	0.651	0.230
	November	2.69	2.02	0	0.02	0.619	0.231
	December	2.83	1.99	0	0.02	0.583	0.231
PATTERN: P-08	January	2.15	98.43	68.16	0.11	35.281	2.369
	February	1.63	77.21	77.26	0.18	34.591	2.396
	March	1.53	80.41	90.33	0.02	43.564	2.426
	April	1.94	74.42	39.5	0.04	31.164	2.453
	May	1.92	68.64	49.92	0.05	28.883	2.479
	June	1.89	64.25	67.31	0.04	27.476	2.502
	July	1.86	64.08	46.71	0.05	27.741	2.525
	August	2.11	67.2	68.15	0.1	24.754	2.550
	September	1.6	66.08	61.03	0.07	32.928	2.574
	October	2.22	65.82	80.82	0.06	23.740	2.597
	November	2.08	68.16	0	0.05	26.409	2.621
	December	2.1	73.42	0	0.06	27.891	2.648
PATTERN: P-09	January	2.89	4.91	58.93	0.27	1.164	0.838
	February	2.72	5.5	63.32	0.29	1.367	0.839
	March	2.55	5.31	119.41	0.31	1.389	0.841
	April	2.61	5.22	195.74	0.29	1.353	0.843
	May	2.6	5.36	176.65	0.24	1.444	0.844
	June	2.52	4.58	107.35	0.22	1.293	0.846
	July	2.6	5.11	60.76	0.23	1.382	0.847
	August	2.71	5.48	82.32	0.23	1.424	0.849
	September	2.78	5	68.83	0.21	1.279	0.850
	October	2.86	4.71	55.74	0.24	1.150	0.851
	November	2.48	5.03	0	0.32	1.342	0.853
	December	2.25	4.94	0	0.33	1.441	0.854
PATTERN: P-10	January	2.48	5.69	45.56	0.02	1.906	1.156
	February	2.52	6.03	50.64	0.01	1.988	1.157
	March	1.83	6	73.69	0.01	2.727	1.159
	April	2.21	5.85	45.17	0.03	2.159	1.161
	May	4.26	7.14	23.65	0.03	1.377	1.161
	June	4.38	7.23	26.27	0.02	1.362	1.162
	July	3.22	7.36	26.31	0.01	1.900	1.164
	August	1.66	7.32	72.51	0.02	3.648	1.167
	September	2.4	7.24	49.28	0.01	2.502	1.169
	October	2.65	6.93	58.14	0.01	2.171	1.171
	November	2.33	6.59	0	0.01	2.349	1.173
	December	2.22	6.28	0	0.01	2.357	1.175
PATTERN: P-11	January	2.31	1.91	49.25	0.03	0.682	2.254
	February	2.33	1.99	56.26	0.02	0.707	2.253
	March	2.92	1.92	49.45	0.02	0.543	2.250
	April	2.84	2	38.44	0.02	0.579	2.248
	May	2.65	1.73	41.64	0.04	0.527	2.246
	June	2.55	1.65	42.78	0.08	0.509	2.243
	July	2.62	1.69	28.67	0.03	0.529	2.241
	August	2.66	1.68	30.28	0.02	0.523	2.239

TABLE B.1: MONTHLY PRODUCTION, INJECTION AND VRR BY PATTERN

	Month	CD Oil Rate (m ³ /d)	CD Water Inj Rate (m ³ /d)	Gas Oil Ratio m ³ /m ³	Water Oil Ratio m ³ /m ³	Monthly VRR	Cum VRR
	September	2.59	1.7	17.72	0.01	0.546	2.237
	October	3.14	1.64	26.73	0.01	0.435	2.234
	November	3.17	1.85	0	0.01	0.486	2.232
	December	3.3	1.83	0	0.01	0.462	2.229
PATTERN: P-12	January	2.41	15.72	40.12	0.02	5.406	0.769
	February	2.35	16.98	44.07	0.01	6.026	0.775
	March	2.89	17.01	40.96	0.01	4.906	0.780
	April	2.77	15.91	41.14	0.01	4.791	0.785
	May	2.61	15.1	38.05	0.03	4.753	0.790
	June	2.57	13.5	39.57	0.06	4.204	0.795
	July	2.69	13.6	30.28	0.03	4.145	0.799
	August	2.81	13.96	41.68	0.02	4.107	0.803
	September	2.61	13.78	22.05	0.02	4.362	0.808
	October	2.77	12.34	23.03	0.02	3.682	0.811
	November	2.87	12.89	0	0.02	3.701	0.815
	December	3.02	12.63	0	0.02	3.446	0.819
PATTERN: P-13	January	3.16	1.93	68.11	0.03	0.499	1.840
	February	3	2.2	66.73	0.06	0.589	1.838
	March	2.9	1.8	78.16	0.04	0.507	1.835
	April	2.84	1.78	88.35	0.02	0.515	1.832
	May	2.99	1.73	72.49	0.01	0.483	1.829
	June	3.15	1.58	53.38	0.01	0.419	1.826
	July	2.99	1.49	45.28	0.02	0.412	1.823
	August	2.85	1.73	54.33	0.02	0.501	1.820
	September	2.75	4.16	47.88	0.02	1.250	1.819
	October	2.61	3.68	97.77	0.02	1.165	1.818
	November	2.37	3.34	0	0.01	1.170	1.817
	December	2.37	3.56	0	0.01	1.246	1.816
PATTERN: P-14	January	1.39	3.38	67.94	0.08	1.922	0.944
	February	1.58	3.59	65.16	0.13	1.728	0.945
	March	0.75	3.48	160.17	0.1	3.636	0.947
	April	1.57	3.17	67.98	0.03	1.660	0.948
	May	1.6	3.28	86.15	0.01	1.706	0.949
	June	1.49	3.04	95.29	0.02	1.684	0.951
	July	1.55	2.99	78.81	0.03	1.590	0.952
	August	1.53	3.58	83.47	0.01	1.952	0.953
	September	1.49	5.21	64.88	0.01	2.919	0.956
	October	1.2	5.4	96.17	0.02	3.724	0.959
	November	1.03	5.1	0	0.02	4.082	0.962
	December	1.22	5.32	0	0.02	3.594	0.965
PATTERN: P-15	January	2.25	4.3	42.2	0.07	1.510	0.464
	February	2.16	4.21	43.37	0.07	1.550	0.467
	March	1.51	3.97	77.46	0.08	2.069	0.471
	April	2.28	5.8	54.17	0.05	2.048	0.477
	May	2.29	4.8	52.04	0.06	1.678	0.482
	June	2.26	3.93	55.02	0.06	1.393	0.485
	July	2.35	4.05	34.99	0.05	1.383	0.488
	August	2.36	4.05	23.94	0.06	1.379	0.492
	September	2.29	3.81	8.73	0.06	1.329	0.495
	October	2.02	3.55	21.57	0.04	1.427	0.498
	November	1.81	3.58	0	0.03	1.619	0.501
	December	2.12	3.25	0	0.06	1.223	0.503

TABLE B.1: MONTHLY PRODUCTION, INJECTION AND VRR BY PATTERN

	Month	CD Oil Rate (m ³ /d)	CD Water Inj Rate (m ³ /d)	Gas Oil Ratio m ³ /m ³	Water Oil Ratio m ³ /m ³	Monthly VRR	Cum VRR
PATTERN: P-16	January	3.46	3.13	61.95	0.01	0.754	1.123
	February	2.97	2.74	60.52	0.01	0.774	1.123
	March	3.02	2.97	68.11	0.02	0.813	1.122
	April	2.93	3.04	80.37	0.02	0.858	1.122
	May	2.83	3.14	78.74	0.01	0.927	1.122
	June	2.86	3.08	55.36	0.01	0.897	1.121
	July	3.06	3.13	33.74	0.01	0.855	1.121
	August	3.1	3.4	21.08	0.01	0.918	1.121
	September	3.03	2.62	16.52	0.02	0.717	1.120
	October	2.92	2.47	76.22	0.02	0.701	1.119
	November	2.76	2.76	0	0.02	0.827	1.119
	December	2.93	2.72	0	0.02	0.763	1.118
PATTERN: P-17	January	3.13	4.57	73.4	0.03	1.199	0.687
	February	3.15	5.4	56.47	0.01	1.425	0.688
	March	2.58	4.88	78.65	0.02	1.558	0.690
	April	3.47	5.38	59.28	0.01	1.286	0.691
	May	4.38	4.76	48.21	0.02	0.896	0.692
	June	3.48	4.06	60.54	0.05	0.943	0.693
	July	3.11	3.88	34.28	0.02	1.036	0.693
	August	3.12	4.43	29.72	0.01	1.185	0.695
	September	3.28	5.74	26.19	0.02	1.452	0.696
	October	3.59	5.33	48.34	0.01	1.233	0.698
	November	3.48	5.71	0	0.03	1.346	0.699
	December	3.5	5.16	0	0.04	1.202	0.701
PATTERN: P-18	January	2.77	10.18	84.38	0.44	2.257	0.535
	February	3.05	10.45	80.73	0.35	2.220	0.536
	March	3.76	9.23	82.96	0.17	1.809	0.538
	April	3.58	9.01	88.03	0.15	1.879	0.539
	May	3.47	9.05	88.37	0.15	1.953	0.540
	June	3.32	9.14	93.19	0.17	2.020	0.542
	July	3.34	9.23	61.28	0.15	2.054	0.543
	August	3.36	9.8	78.86	0.15	2.167	0.545
	September	3.28	10.65	65.04	0.15	2.423	0.546
	October	3.42	10.39	56.04	0.15	2.269	0.548
	November	3.53	10.24	0	0.15	2.159	0.549
	December	3.72	10.01	0	0.15	2.012	0.551
PATTERN: P-19	January	2.27	9.84	30.61	0.5	2.573	1.931
	February	2.28	9.96	29.82	0.47	2.642	1.933
	March	1.32	8.81	66.23	0.45	4.081	1.936
	April	1.73	8.36	52.45	0.29	3.253	1.939
	May	3.88	8.68	28.92	0.12	1.713	1.938
	June	4.03	8.95	30.4	0.11	1.710	1.937
	July	2.87	9.21	24.16	0.17	2.360	1.938
	August	1.29	9.47	71.34	0.41	4.580	1.942
	September	2.03	9.73	43.06	0.25	3.321	1.945
	October	2.21	9.67	36.46	0.24	3.064	1.947
	November	1.86	9.35	0	0.28	3.405	1.950
	December	1.65	8.97	0	0.32	3.610	1.953
	January	1.72	1.88	36.95	0.05	0.879	0.233
	February	1.71	2.02	34.91	0.04	0.956	0.235
	March	1.69	1.9	142.32	0.04	0.916	0.237
	April	1.41	1.9	308.43	0.04	1.102	0.239

TABLE B.1: MONTHLY PRODUCTION, INJECTION AND VRR BY PATTERN

	Month	CD Oil Rate (m ³ /d)	CD Water Inj Rate (m ³ /d)	Gas Oil Ratio m ³ /m ³	Water Oil Ratio m ³ /m ³	Monthly VRR	Cum VRR
PATTERN: P-20	May	1.27	1.91	291.58	0.04	1.224	0.241
	June	1.31	1.85	112.68	0.03	1.155	0.243
	July	1.19	1.89	66.44	0.04	1.299	0.245
	August	1.31	1.64	71.25	0.04	1.016	0.246
	September	1.46	1.55	46.87	0.04	0.870	0.248
	October	1.61	2.12	38.18	0.03	1.080	0.250
	November	1.2	1.96	0	0.02	1.344	0.252
	December	1.25	1.44	0	0.03	0.940	0.254
PATTERN: P-21	January	1.52	9.3	71.13	0.03	5.006	1.520
	February	1.48	10.49	44.71	0.03	5.830	1.531
	March	1.68	9.47	47.6	0.03	4.643	1.541
	April	1.52	7.93	50.27	0.02	4.290	1.549
	May	1.42	7.42	54.1	0.02	4.329	1.556
	June	1.54	6.2	69.84	0.02	3.338	1.561
	July	1.5	6.88	42.03	0.03	3.770	1.568
	August	1.54	7.89	24.08	0.05	4.131	1.575
	September	1.41	8.47	4.73	0.05	4.853	1.584
	October	1.49	7.56	64.36	0.06	4.043	1.591
	November	1.43	7.92	0	0.07	4.396	1.598
	December	1.58	7.15	0	0.03	3.705	1.605
PATTERN: P-22	January	1.69	5.12	51.9	0.67	1.629	0.621
	February	1.77	6	44.95	0.61	1.888	0.624
	March	1.85	5.01	56.72	0.34	1.775	0.626
	April	1.73	5.29	49.23	0.3	2.061	0.629
	May	1.72	5.04	52.16	0.24	2.045	0.632
	June	2	4.68	54.98	0.21	1.668	0.634
	July	2.14	4.49	32.85	0.23	1.486	0.636
	August	2.02	4.33	30.35	0.26	1.477	0.638
	September	1.96	4.33	28.06	0.26	1.527	0.640
	October	1.94	4.63	47.36	0.27	1.635	0.642
	November	1.78	5.49	0	0.3	2.068	0.645
	December	1.87	4.99	0	0.29	1.807	0.647
PATTERN: P-23	January	3.41	5.98	36.42	0.45	1.068	1.196
	February	3.31	6.35	40.72	0.41	1.196	1.196
	March	2.79	6.17	69.55	0.33	1.455	1.197
	April	2.85	7.3	70.05	0.26	1.762	1.198
	May	3.25	6.98	56.59	0.18	1.567	1.199
	June	2.98	6.26	62.57	0.19	1.520	1.200
	July	2.98	6.39	45.75	0.21	1.533	1.201
	August	3.16	6.5	66.12	0.23	1.449	1.201
	September	2.74	6.78	54.24	0.23	1.739	1.203
	October	2.66	6.35	47.01	0.23	1.682	1.204
	November	2.75	6.59	0	0.23	1.679	1.205
	December	2.75	5.97	0	0.24	1.517	1.205
PATTERN: P-24	January	3.22	10.17	38.56	0.13	2.396	0.414
	February	3.03	11.65	46.55	0.11	2.956	0.421
	March	1.5	10.82	107.83	0.23	5.052	0.428
	April	2.67	9.84	67.08	0.1	2.854	0.434
	May	4.06	8.94	44.07	0.05	1.780	0.439
	June	2.98	7.84	61.47	0.05	2.113	0.443
	July	2.58	8.32	34.68	0.07	2.569	0.448
	August	2.75	8.59	33.74	0.08	2.457	0.454

TABLE B.1: MONTHLY PRODUCTION, INJECTION AND VRR BY PATTERN

	Month	CD Oil Rate (m ³ /d)	CD Water Inj Rate (m ³ /d)	Gas Oil Ratio m ³ /m ³	Water Oil Ratio m ³ /m ³	Monthly VRR	Cum VRR
	September	2.49	8.6	42.24	0.17	2.540	0.458
	October	2.84	7.88	47.43	0.08	2.184	0.463
	November	3	7.95	0	0.06	2.122	0.467
	December	3.14	7.33	0	0.42	1.447	0.471
PATTERN: P-25	January	1.75	0.1	60.54	0.06	0.046	0.363
	February	1.76	0.26	54.31	0.05	0.118	0.362
	March	2.04	0.15	56.89	0.07	0.059	0.361
	April	1.81	0.11	68.27	0.07	0.048	0.361
	May	1.56	0.09	75.34	0.06	0.048	0.360
	June	1.63	0.08	66.12	0.05	0.038	0.359
	July	1.87	0.12	35.39	0.04	0.053	0.358
	August	1.94	0.16	30.82	0.04	0.068	0.357
	September	1.89	0.3	26.44	0.06	0.129	0.357
	October	1.94	0.35	38.75	0.05	0.146	0.356
	November	1.86	0.3	0	0.06	0.130	0.355
	December	2.86	0.27	0	1.62	0.033	0.352
PATTERN: P-26	January	2.98	2.92	75.03	0.52	0.572	0.991
	February	2.48	3.28	96.08	0.47	0.795	0.990
	March	4.16	3.17	64.55	0.3	0.513	0.987
	April	3.76	3.03	89.62	0.23	0.566	0.984
	May	3.32	3.07	89.61	0.26	0.639	0.982
	June	3.31	3.01	80.71	0.27	0.622	0.980
	July	3.48	3.27	58.09	0.27	0.643	0.978
	August	3.27	3.33	61.36	0.26	0.705	0.977
	September	3.11	3.27	34.82	0.25	0.731	0.976
	October	2.81	3.08	35.35	0.17	0.807	0.975
	November	2.28	3.03	0	0.11	1.024	0.975
	December	2.91	3.92	0	0.2	0.969	0.975
PATTERN: P-27	January	1.14	1.2	132.86	0.6	0.586	0.490
	February	0.72	1.51	160.89	0.66	1.130	0.492
	March	2.15	1.64	61.12	0.25	0.531	0.492
	April	2.3	1.34	70.26	0.17	0.426	0.492
	May	1.9	1.35	71.82	0.19	0.513	0.492
	June	1.8	0.94	68.12	0.23	0.368	0.491
	July	1.74	0.68	78.17	0.24	0.271	0.490
	August	1.69	0.3	135.97	0.23	0.126	0.488
	September	1.65	0.03	87.59	0.21	0.014	0.485
	October	1.64	0.07	82.31	0.19	0.032	0.483
	November	1.43	0.05	0	0.17	0.025	0.481
	December	1.4	0.02	0	0.15	0.013	0.479
PATTERN: P-28	January	2.66	3.69	66.14	0.19	1.008	0.516
	February	2.28	3.93	70.95	0.15	1.289	0.521
	March	2.04	3.87	76.01	0.13	1.439	0.526
	April	1.76	3.22	92.5	0.12	1.404	0.530
	May	1.52	3.47	109.7	0.12	1.744	0.535
	June	1.59	3.16	100.26	0.12	1.518	0.539
	July	1.34	3.73	68.03	0.11	2.139	0.545
	August	1.64	3.61	57.99	0.12	1.681	0.550
	September	1.69	3.21	10.35	0.12	1.451	0.554
	October	1.49	3.03	84.77	0.11	1.565	0.558
	November	1.39	2.96	0	0.11	1.640	0.562
	December	1.39	3.05	0	0.1	1.708	0.567

TABLE B.1: MONTHLY PRODUCTION, INJECTION AND VRR BY PATTERN

	Month	CD Oil Rate (m ³ /d)	CD Water Inj Rate (m ³ /d)	Gas Oil Ratio m ³ /m ³	Water Oil Ratio m ³ /m ³	Monthly VRR	Cum VRR
PATTERN: P-29	January	1.53	6.49	45.74	0.06	3.383	0.291
	February	1.66	6.63	71.54	0.04	3.236	0.299
	March	1.79	6.5	69.79	0.02	3.000	0.308
	April	1.63	5.58	84.23	0.02	2.828	0.315
	May	1.54	5.17	89.1	0.02	2.788	0.322
	June	1.62	4.65	68.56	0.02	2.374	0.328
	July	1.63	5.14	42.16	0.02	2.610	0.335
	August	1.7	4.94	32.83	0.02	2.400	0.341
	September	1.26	4.86	11.24	0.21	2.753	0.347
	October	1.53	4.65	63.22	0.07	2.416	0.353
	November	1.78	4.52	0	0.02	2.096	0.359
	December	1.89	4.34	0	0.02	1.897	0.364
PATTERN: P-30	January	1.59	39.88	44.25	0.39	15.966	8.466
	February	1.64	38.21	49.4	0.3	15.563	8.492
	March	1.69	44.65	64.44	0.31	17.660	8.529
	April	1.57	54.74	69.88	0.3	23.354	8.582
	May	1.48	43.77	68.16	0.26	20.401	8.623
	June	1.47	44.82	67.08	0.16	22.721	8.665
	July	1.52	45.66	49.34	0.25	20.797	8.707
	August	1.57	34.04	74.28	0.33	14.262	8.728
	September	1.37	26.24	57.96	0.37	12.337	8.740
	October	1.69	30.42	61.04	0.38	11.465	8.751
	November	1.7	30.47	0	0.33	11.839	8.763
	December	1.72	19.04	0	0.29	7.469	8.758
PATTERN: P-31	January	1.46	7.74	68.95	0.51	3.108	0.568
	February	1.51	8.44	59.59	0.39	3.537	0.577
	March	1.7	7.86	60.33	0.37	2.971	0.586
	April	1.79	7.78	40.62	0.3	2.933	0.594
	May	1.72	7.43	38.55	0.25	3.005	0.602
	June	1.69	6.81	49.78	0.17	2.972	0.610
	July	1.78	7	36.78	0.23	2.776	0.617
	August	1.67	7.27	24.58	0.31	2.899	0.625
	September	1.64	7.2	16.28	0.33	2.899	0.632
	October	1.66	6.91	54.8	0.36	2.679	0.640
	November	1.53	7.19	0	0.37	3.018	0.647
	December	1.74	6.35	0	0.3	2.450	0.653
PATTERN: P-32	January	2.93	3.53	73.87	0.55	0.696	0.152
	February	2.97	3.69	57.09	0.44	0.761	0.155
	March	3.17	3.28	53.38	0.43	0.638	0.157
	April	2.61	3.32	52.01	0.6	0.712	0.159
	May	2.66	3.07	47.92	0.6	0.644	0.161
	June	2.75	2.83	66.36	0.57	0.586	0.163
	July	2.64	3.1	52.18	0.59	0.658	0.165
	August	2.89	3.14	16.45	0.63	0.598	0.167
	September	2.86	3.06	0	0.63	0.588	0.169
	October	2.77	2.95	70.41	0.64	0.582	0.171
	November	2.58	3.32	0	0.65	0.698	0.173
	December	2.69	3.15	0	0.58	0.662	0.175
	January	0.52	0.04	98.13	1.4	0.028	0.061
	February	0.53	0.01	81.94	1.04	0.004	0.061
	March	0.49	0.01	102.77	1.19	0.007	0.060
	April	0.61	0.01	73.37	0.83	0.007	0.060

TABLE B.1: MONTHLY PRODUCTION, INJECTION AND VRR BY PATTERN

	Month	CD Oil Rate (m ³ /d)	CD Water Inj Rate (m ³ /d)	Gas Oil Ratio m ³ /m ³	Water Oil Ratio m ³ /m ³	Monthly VRR	Cum VRR
PATTERN: P-33	May	0.62	0.02	65.27	0.67	0.017	0.060
	June	0.38	0.02	109.65	0.67	0.023	0.060
	July	0.37	0.01	88.94	1.03	0.017	0.060
	August	0.37	0.03	71.27	1.34	0.029	0.060
	September	0.36		43.78	1.43		0.059
	October	0.41	0	88.76	1.4	0.002	0.059
	November	0.4	0.01	0	1.34	0.009	0.059
	December	0.43	0	0	1.19	0.002	0.059
PATTERN: P-34	January	1.33	0.06	200	3.11	0.010	0.039
	February	1.35	0.04	223.47	2.68	0.009	0.039
	March	1.11	0.1	214.44	4	0.017	0.039
	April	1.39	0.04	136.28	3.08	0.007	0.039
	May	1.1	0.02	172.67	3.34	0.004	0.039
	June	0.72	0.02	272.94	2.75	0.007	0.038
	July	0.98	0.02	120.59	3.07	0.004	0.038
	August	1.11	0.07	156.02	3.31	0.014	0.038
	September	1.02	0.2	128.06	3.59	0.041	0.038
	October	1.44	0	94.36	2.84	0.000	0.038
	November	1.3	0.01	0	2.99	0.002	0.038
	December	1.33	0.16	0	2.79	0.031	0.038
PATTERN: P-35	January	1.33	3.09	98.55	0.17	1.700	1.873
	February	1.33	3.32	108.8	0.16	1.850	1.873
	March	1.42	3.05	103.47	0.11	1.647	1.872
	April	1.27	2.75	105.33	0.11	1.667	1.872
	May	1.19	2.57	108.62	0.11	1.659	1.872
	June	1.11	2.45	88.1	0.07	1.751	1.871
	July	1.06	2.38	53.79	0.06	1.783	1.871
	August	1.27	2.69	45.17	0.09	1.659	1.871
	September	1.4	2.38	20.91	0.2	1.221	1.869
	October	1.4	2.11	96.09	0.14	1.133	1.868
	November	1.37	2.94	0	0.13	1.635	1.867
	December	1.51	3.45	0	0.1	1.770	1.867
PATTERN: P-36	January	2.94	2.85	62.89	0.17	0.712	0.844
	February	2.5	2.93	72.55	0.13	0.884	0.844
	March	2.35	2.74	69.59	0.11	0.899	0.845
	April	1.92	2.57	61.28	0.11	1.032	0.846
	May	1.79	2.61	64.11	0.1	1.130	0.847
	June	1.59	2.21	75.35	0.11	1.065	0.848
	July	1.25	2.15	61.05	0.23	1.206	0.850
	August	1.62	2.49	55.8	0.12	1.172	0.852
	September	1.9	2.17	11.39	0.2	0.818	0.851
	October	1.81	2.15	62.89	0.14	0.892	0.852
	November	1.69	1.92	0	0.13	0.861	0.852
	December	1.6	1.95	0	0.1	0.941	0.852
PATTERN: P-37	January	0.8	0.14	87.35	0.12	0.137	0.540
	February	0.84	0.2	89.46	0.08	0.189	0.539
	March	1.03	0.17	68.64	0.07	0.130	0.536
	April	0.73	0.16	32.04	0.11	0.164	0.535
	May	0.68	0.21	34.2	0.11	0.231	0.534
	June	0.48	0.17	59.54	0.11	0.284	0.533
	July	0.48	0.23	47.46	0.44	0.291	0.532
	August	0.56	0.17	18.81	0.13	0.232	0.531

TABLE B.1: MONTHLY PRODUCTION, INJECTION AND VRR BY PATTERN

	Month	CD Oil Rate (m ³ /d)	CD Water Inj Rate (m ³ /d)	Gas Oil Ratio m ³ /m ³	Water Oil Ratio m ³ /m ³	Monthly VRR	Cum VRR
	September	0.78	0.24	5.31	0.32	0.202	0.529
	October	0.86	0.28	37.49	0.19	0.235	0.528
	November	0.79	0.2	0	0.18	0.187	0.526
	December	1.15	0.19	0	1.15	0.070	0.521
PATTERN: P-38	January	0.35	0.02	215.6	0.45	0.032	0.215
	February	0.33	0.15	219.25	0.45	0.273	0.215
	March	0.33	0.02	214.81	0.43	0.042	0.215
	April	0.28	0.03	206.59	0.45	0.056	0.215
	May	0.25	0.01	226.84	0.49	0.018	0.214
	June	0.16	0.01	209.68	0.37	0.052	0.214
	July	0.13	0.01	127.39	0.31	0.064	0.214
	August	0.29		72.63	0.28		0.214
	September	0.52		31.85	0.5		0.213
	October	0.5	0	124.8	0.34	0.000	0.212
	November	0.46		0	0.32		0.212
	December	0.48	0	0	0.24	0.005	0.211
PATTERN: P-39	January	0.49	66.42	117.74	0.11	105.107	15.377
	February	0.47	60.33	122.87	0.09	99.729	15.497
	March	0.14	72.42	443.18	0.22	362.934	15.677
	April	0.46	72.09	103.83	0.07	125.508	15.836
	May	0.36	65.84	145.41	0.07	144.768	15.988
	June	0.31	60.91	187.5	0.07	157.906	16.125
	July	0.35	62.29	83.92	0.06	143.957	16.269
	August	0.36	63.76	107.62	0.05	143.041	16.415
	September	0.4	65.55	64.05	0.06	130.248	16.558
	October	0.55	62.2	23.43	0.05	90.971	16.689
	November	0.49	62.15	0	0.05	102.485	16.819
	December	0.52	62.19	0	0.04	97.804	16.951
PATTERN: P-43	January	0.2	0	0	0.1	0.012	2.820
	February	0.18		0	0.11		2.676
	March	0.18	0.03	0	0.12	0.112	2.539
	April	0.14		0	0.4		2.424
	May	0.11	0.01	0	0.52	0.041	2.330
	June	0.11	0.02	0	0.52	0.092	2.250
	July	0.07	0	0	1	0.022	2.185
	August	0.3	0.04	0	0.33	0.086	2.014
	September	0.29	0.03	0	0.27	0.071	1.880
	October	0.13		0	0.32		1.821
	November	0.1		0	0.32		1.778
	December	0.09		0	0.33		1.739

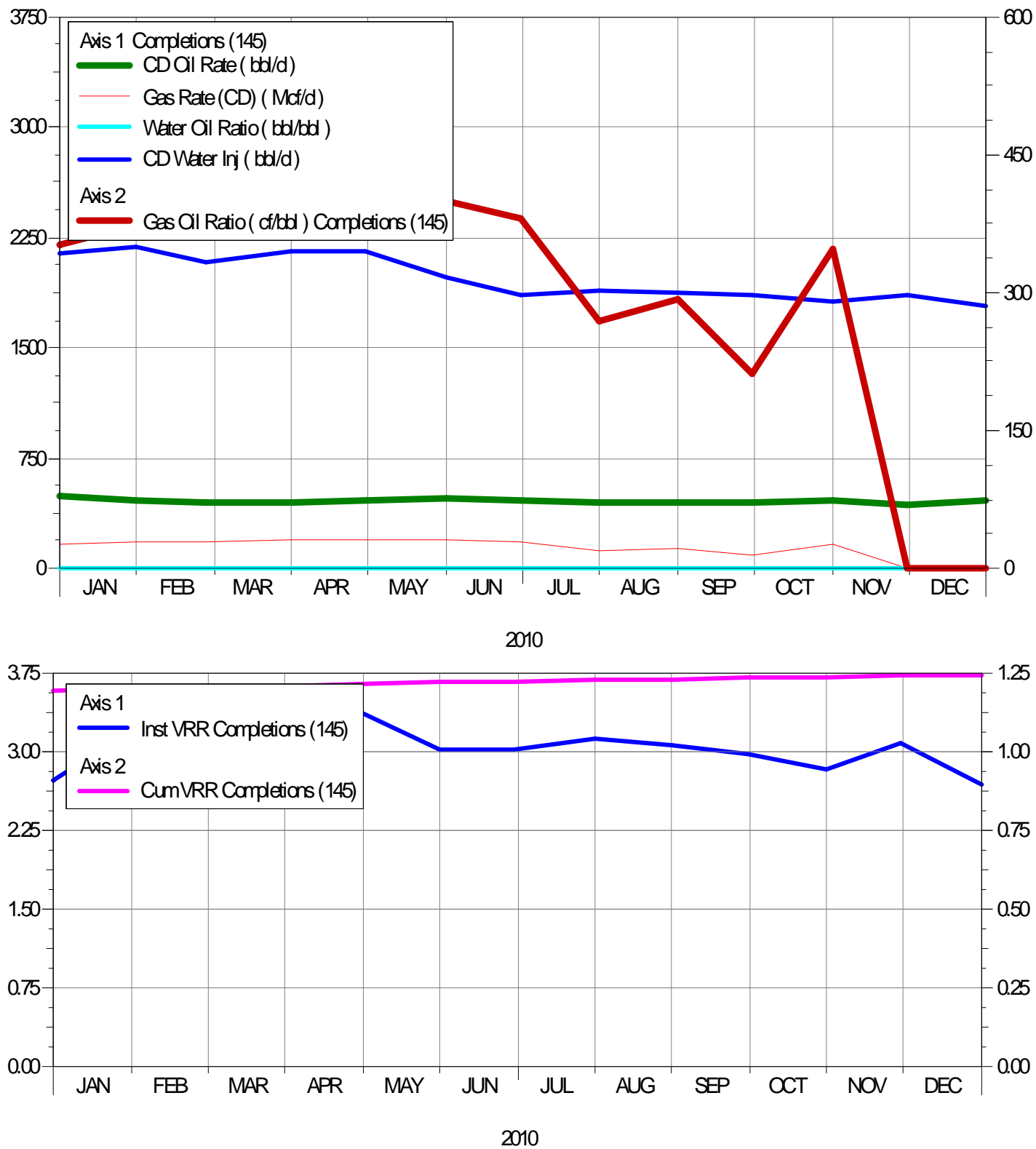


Figure B.1: 2010 Monthly Production, Injection and VRR for Overall Unit

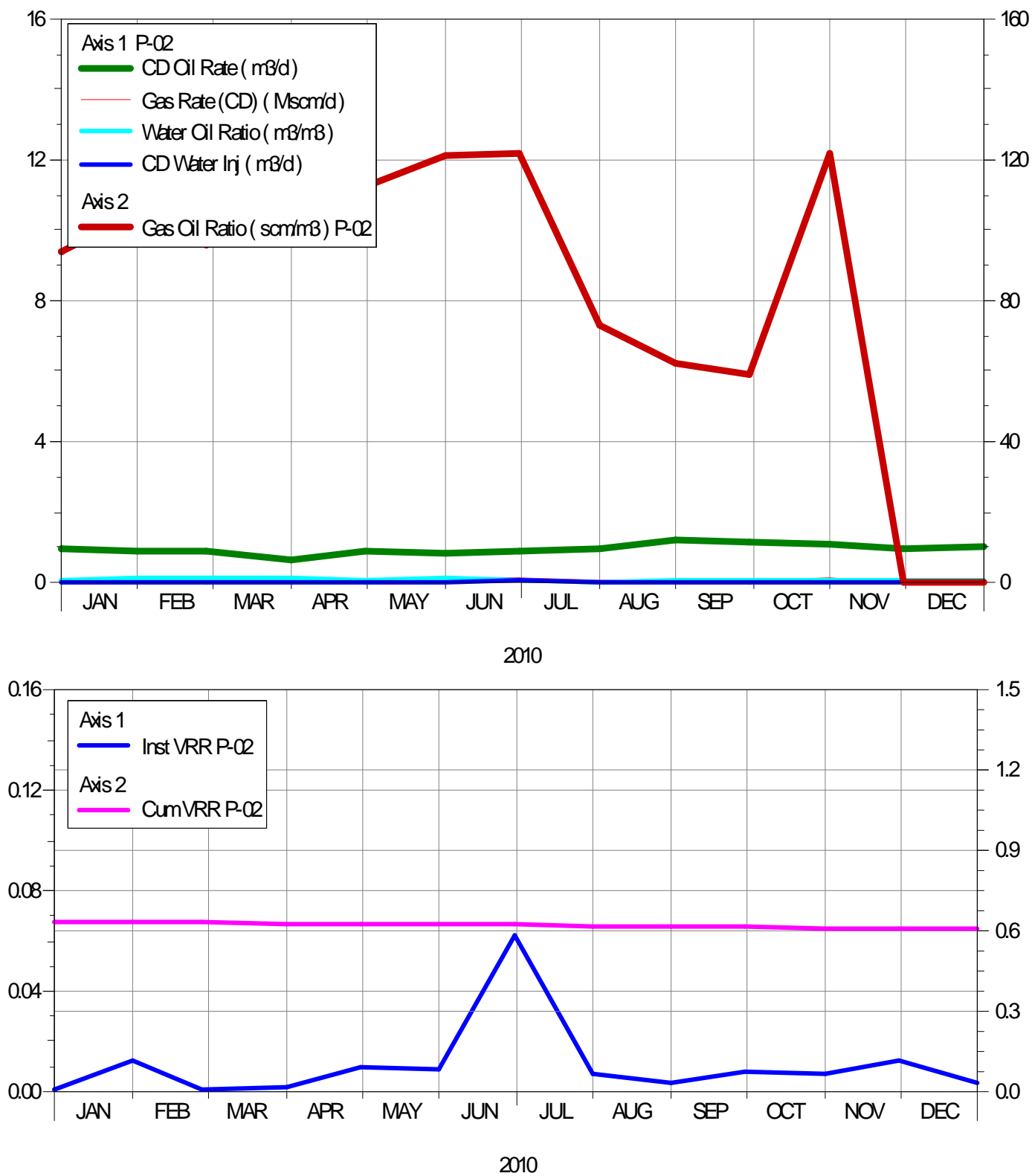
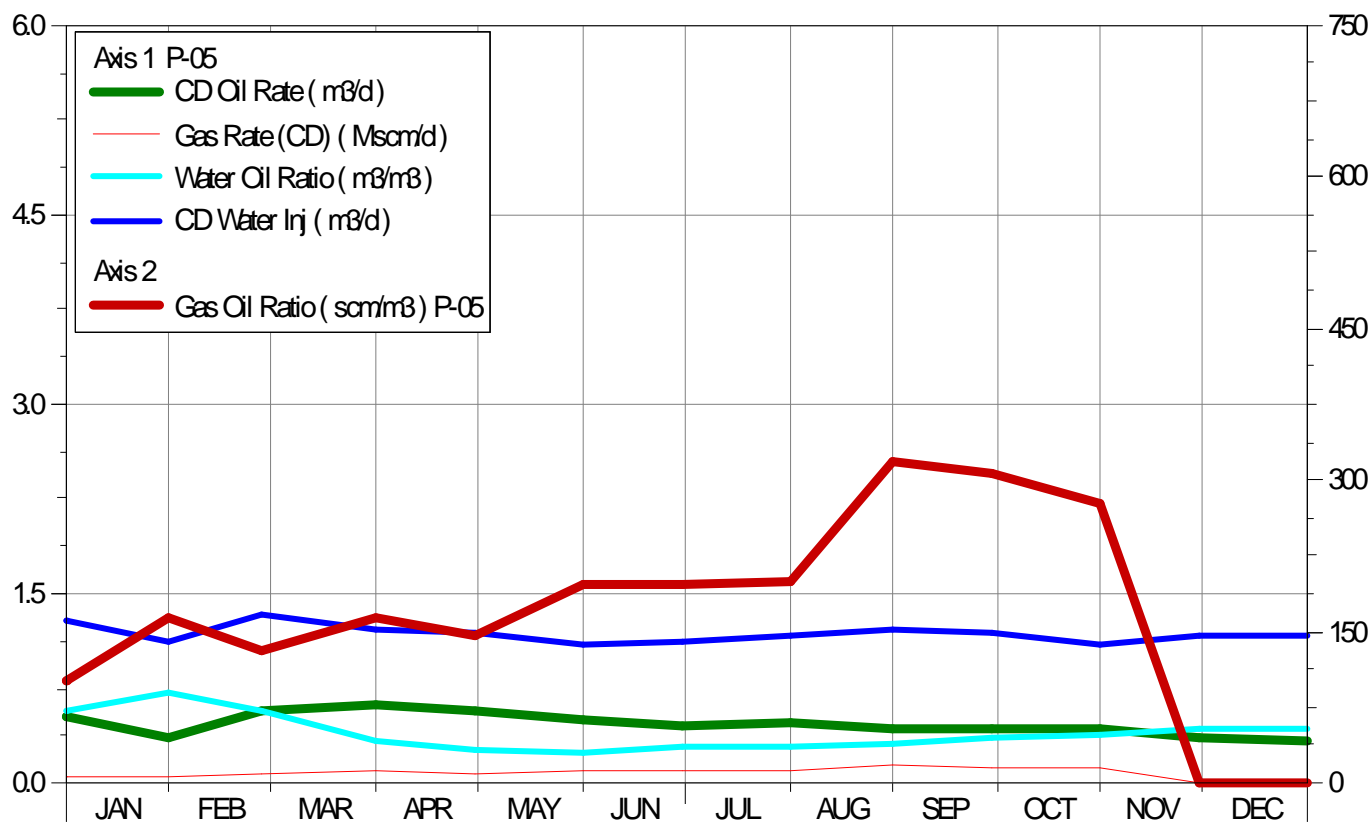
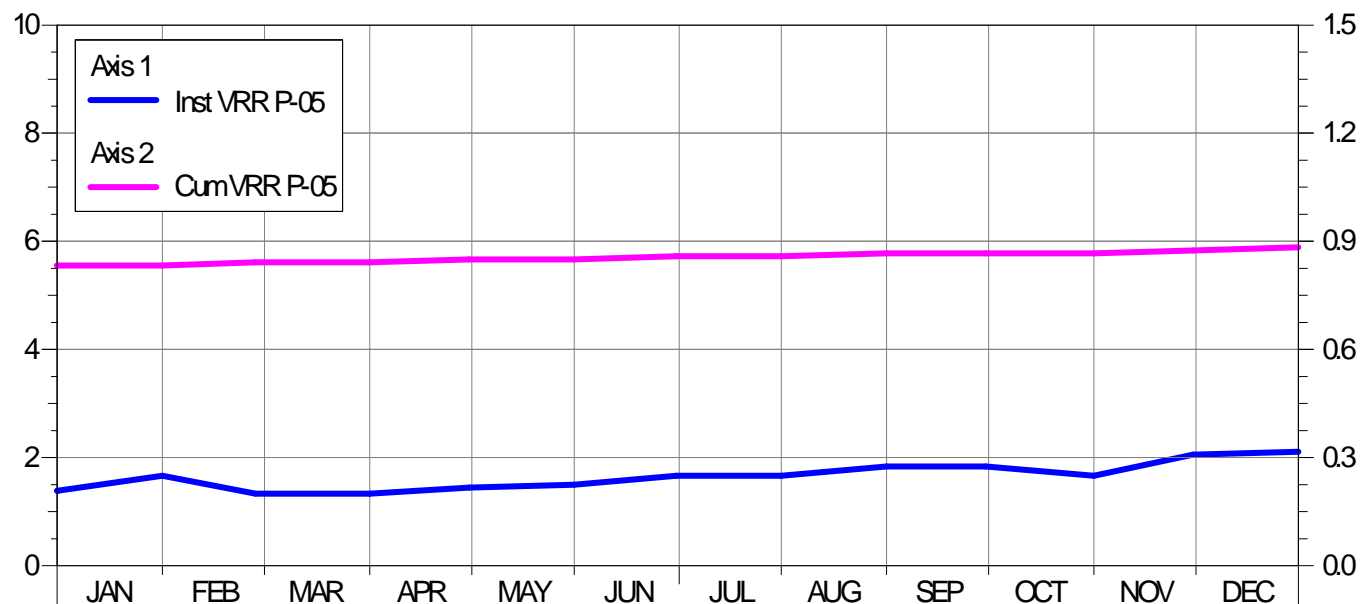


Figure B.2: 2010 Monthly Production, Injection and VRR for Pattern 2



2010



2010

Figure B.3: 2010 Monthly Production, Injection and VRR for Pattern 5

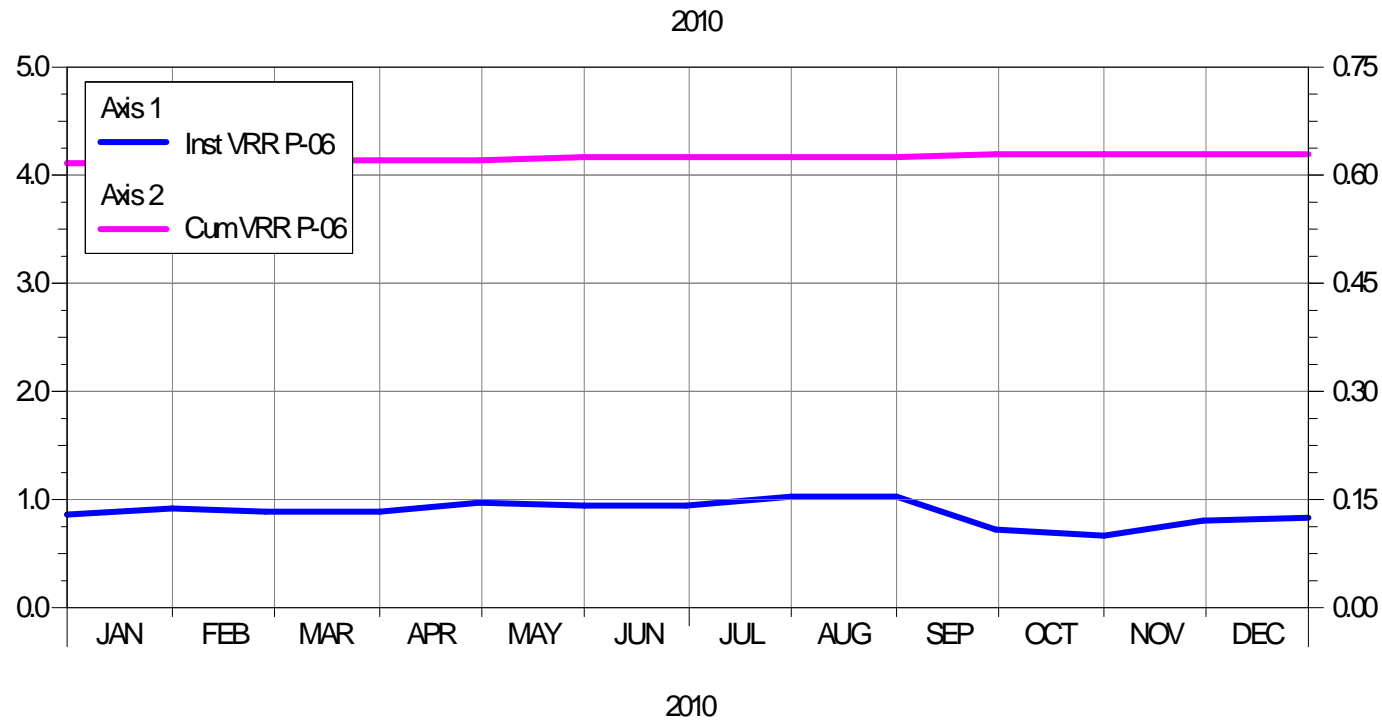
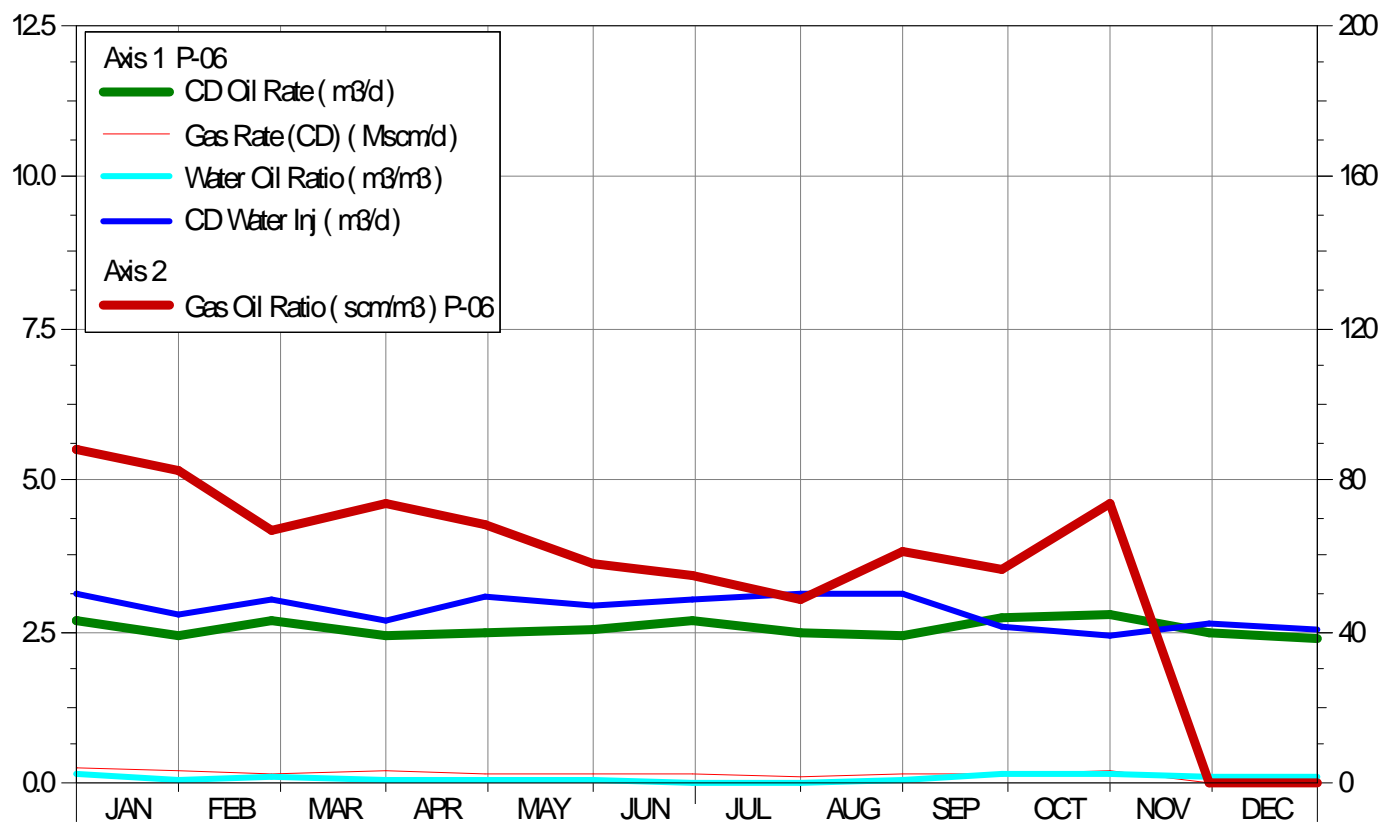


Figure B.4: 2010 Monthly Production, Injection and VRR for Pattern 6

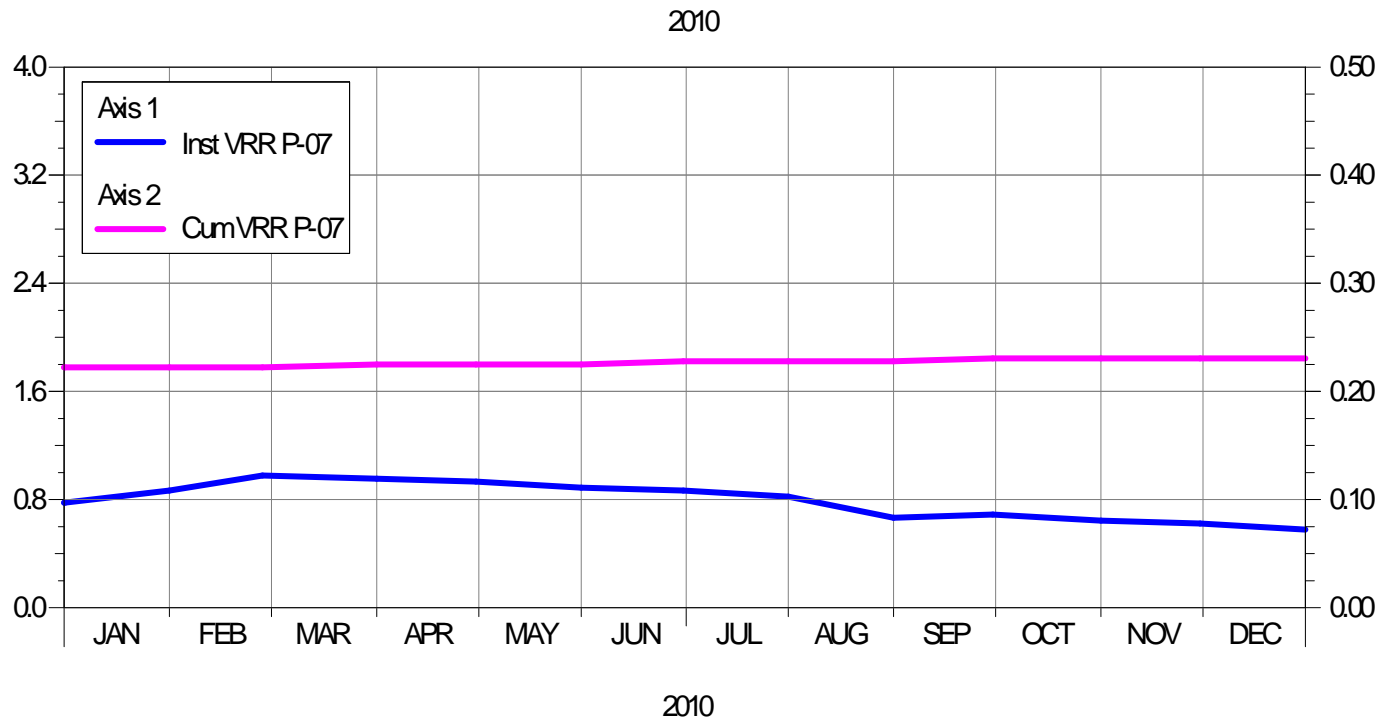
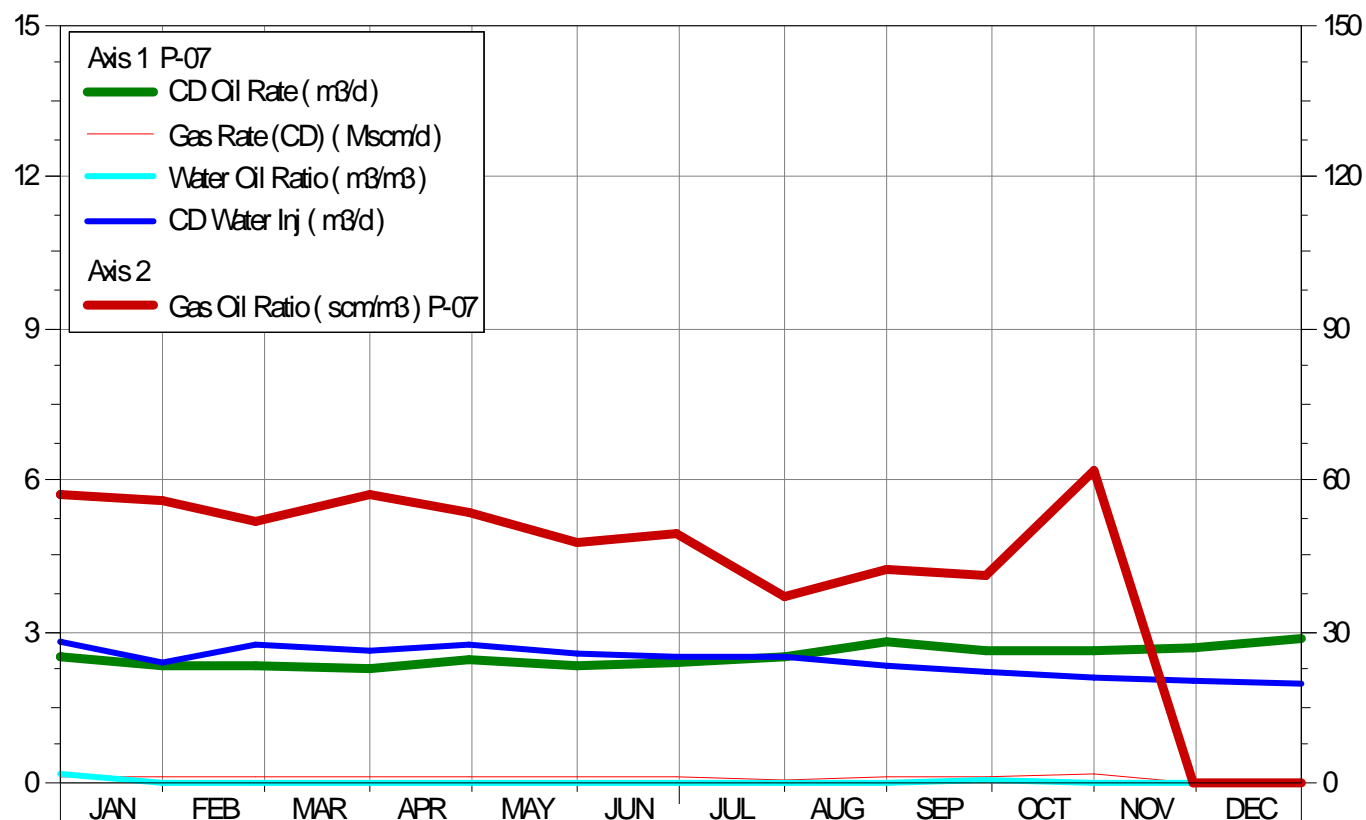
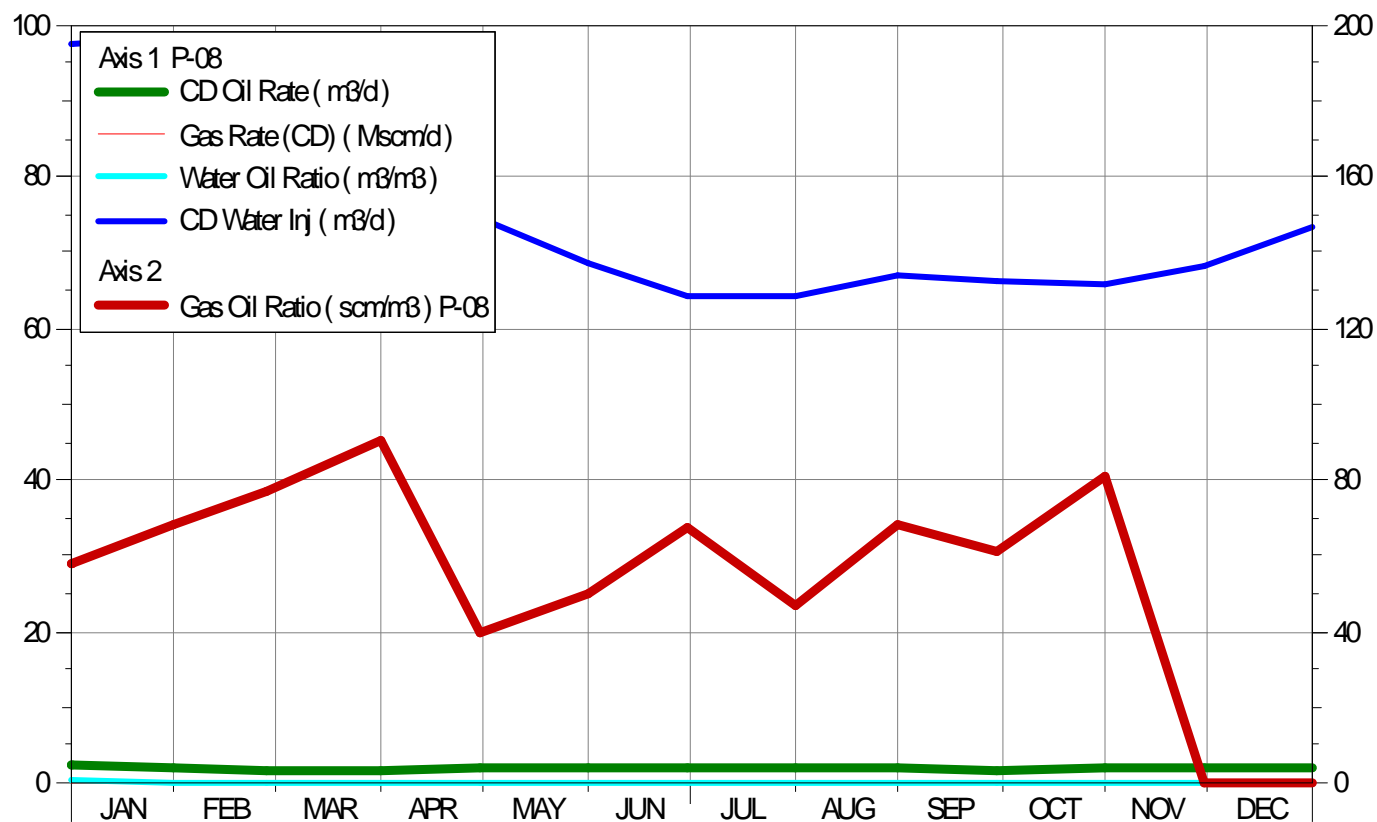
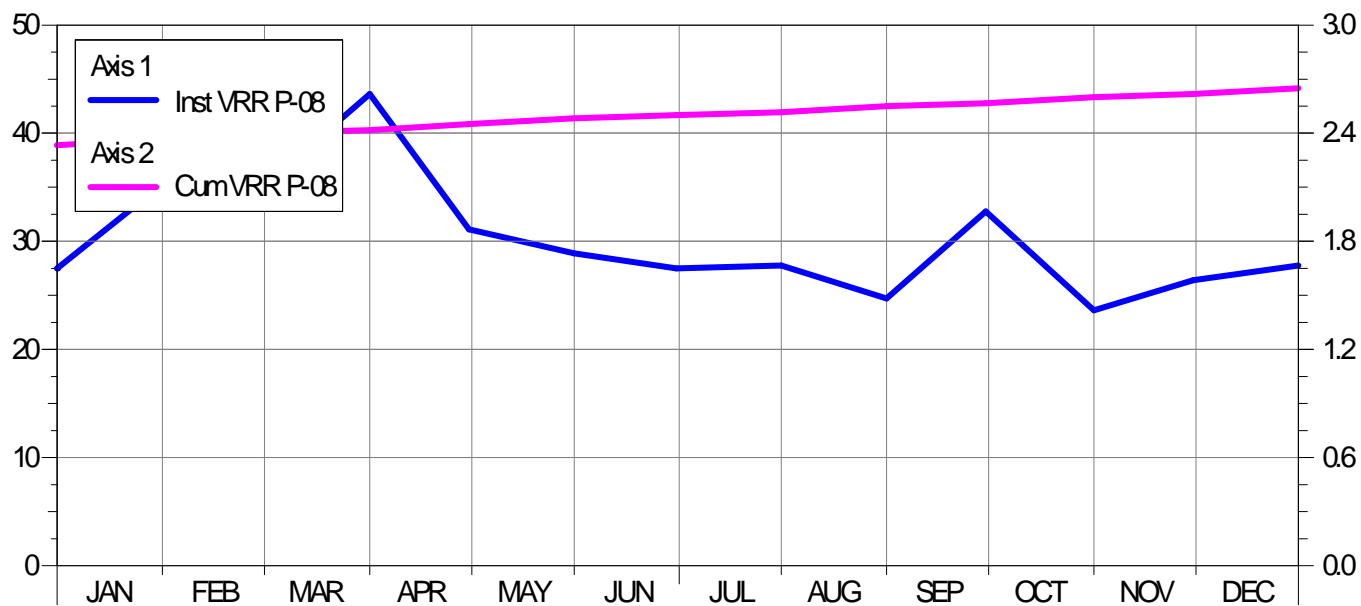


Figure B.5: 2010 Monthly Production, Injection and VRR for Pattern 7



2010



2010

Figure B.6: 2010 Monthly Production, Injection and VRR for Pattern 8

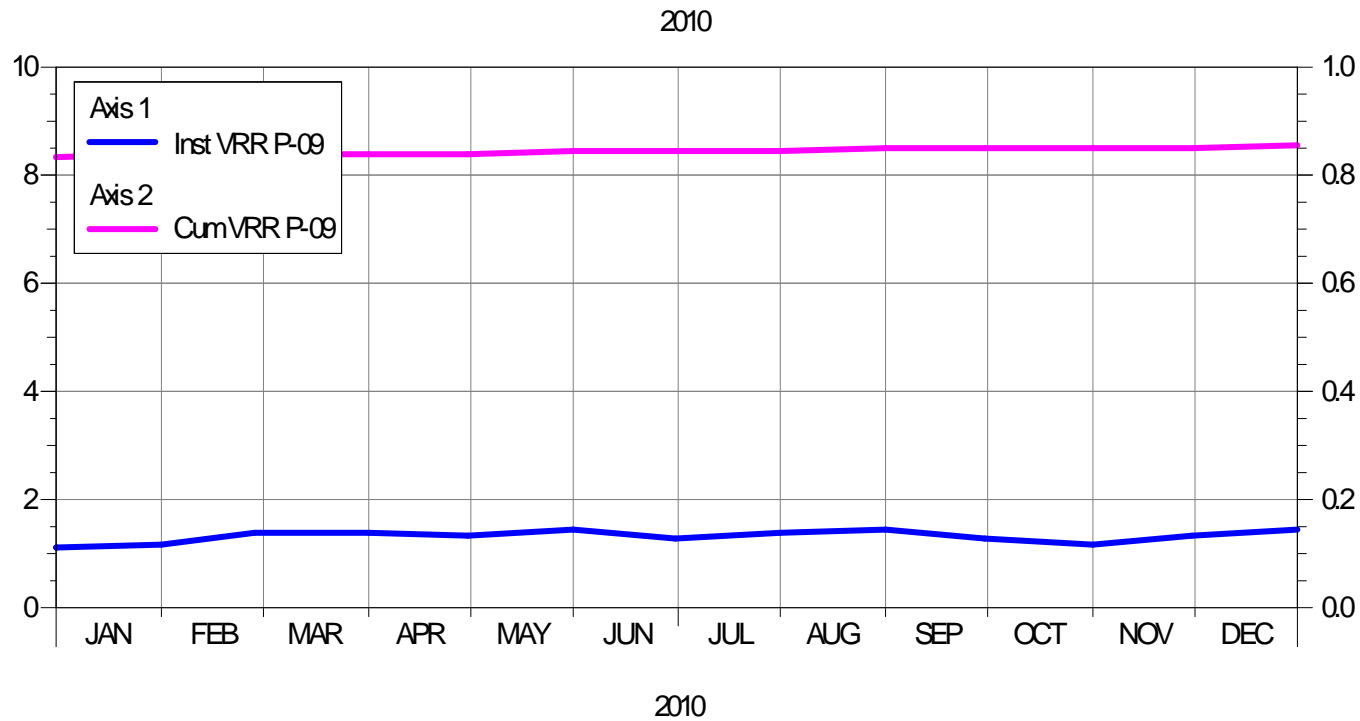
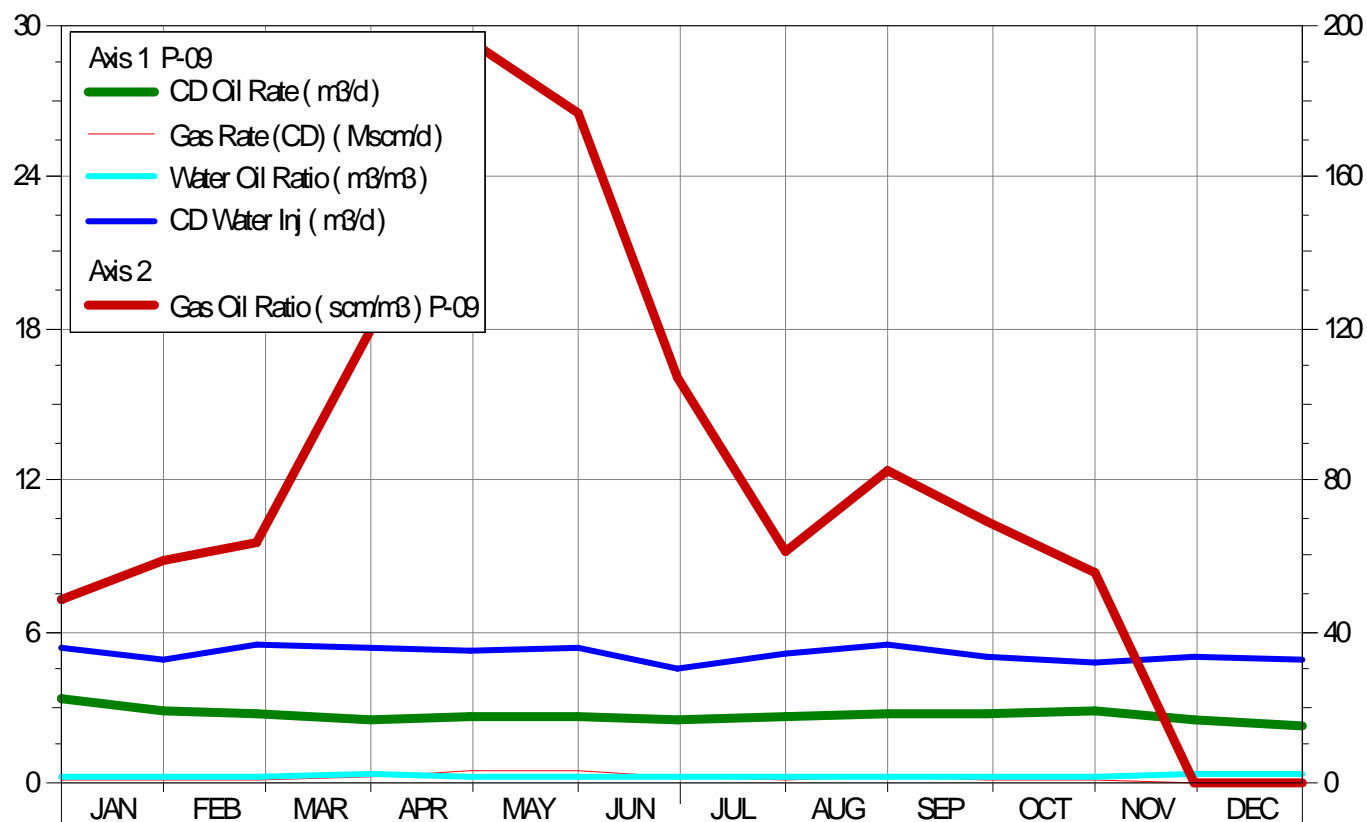


Figure B.7: 2010 Monthly Production, Injection and VRR for Pattern 9

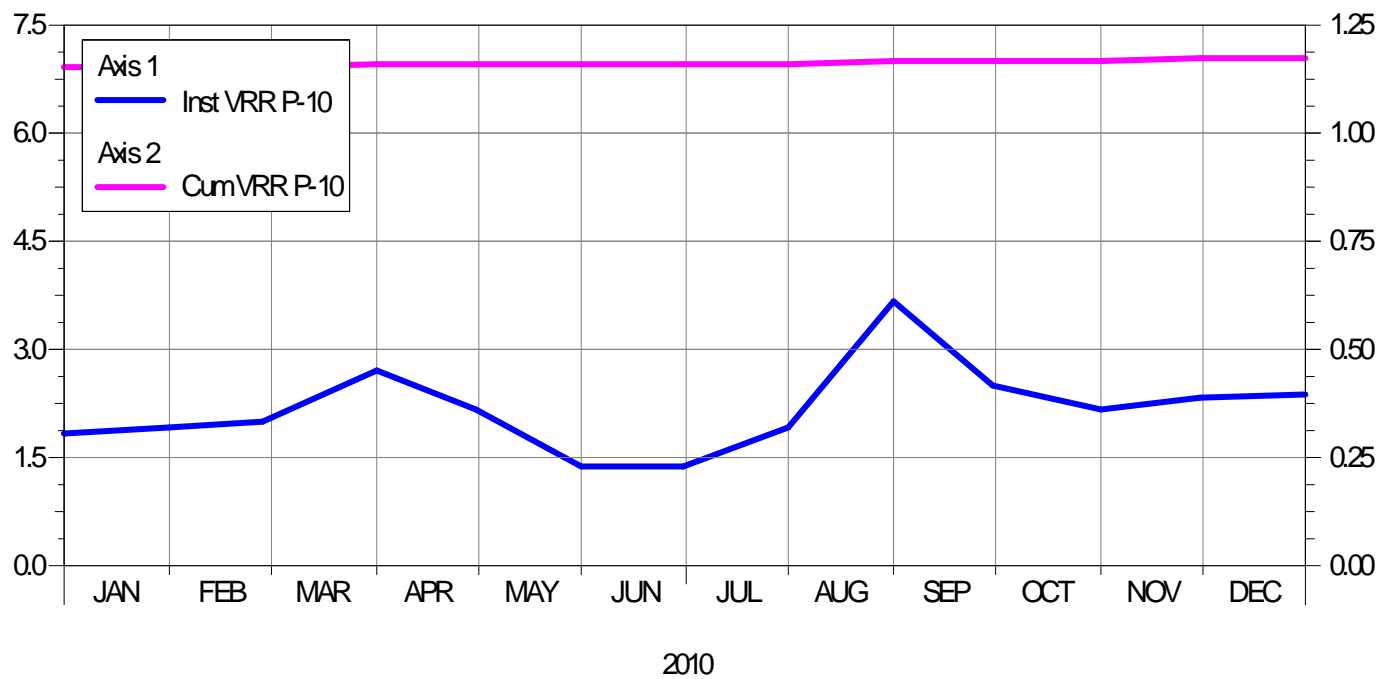
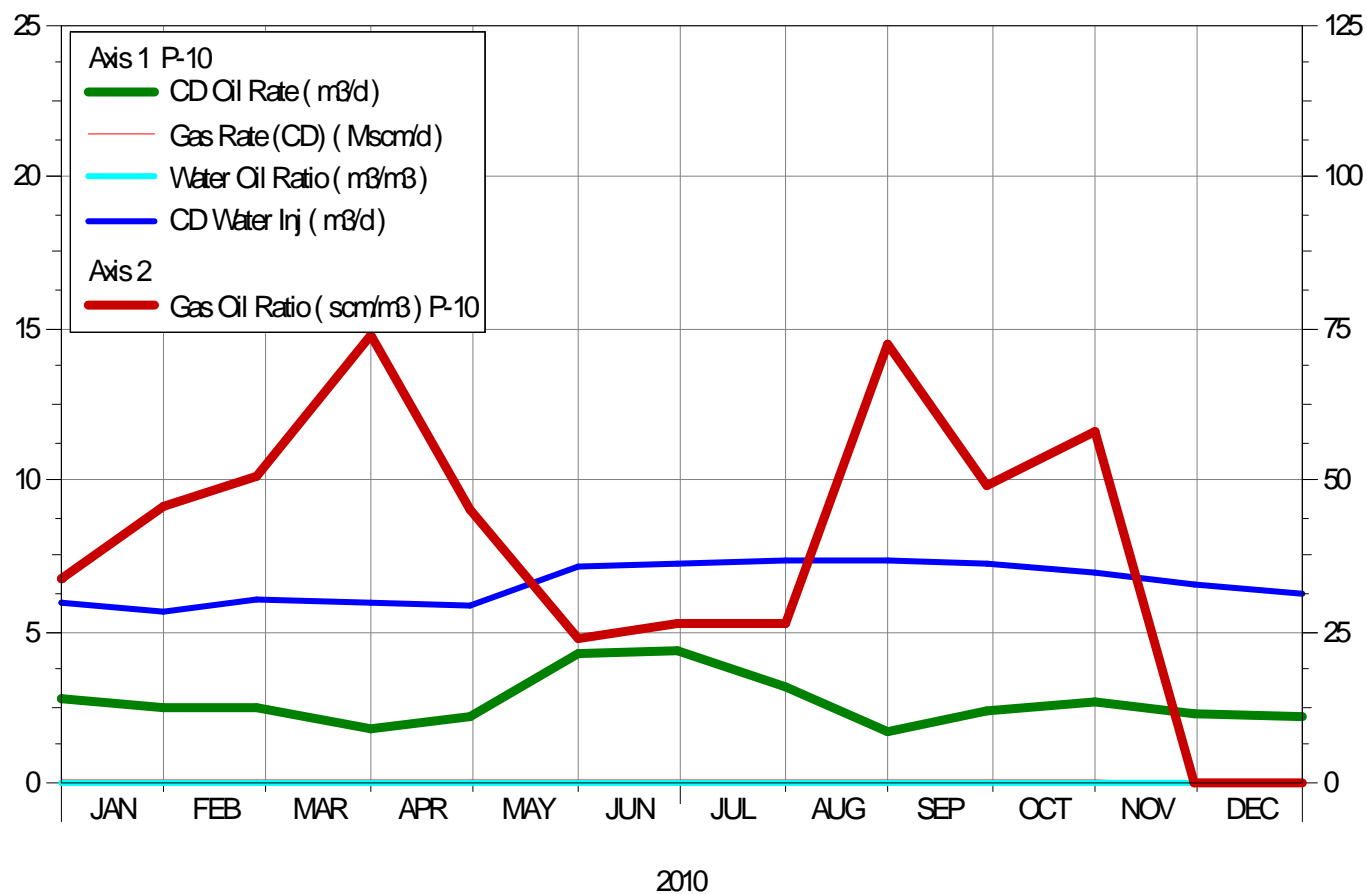


Figure B.8: 2010 Monthly Production, Injection and VRR for Pattern 10

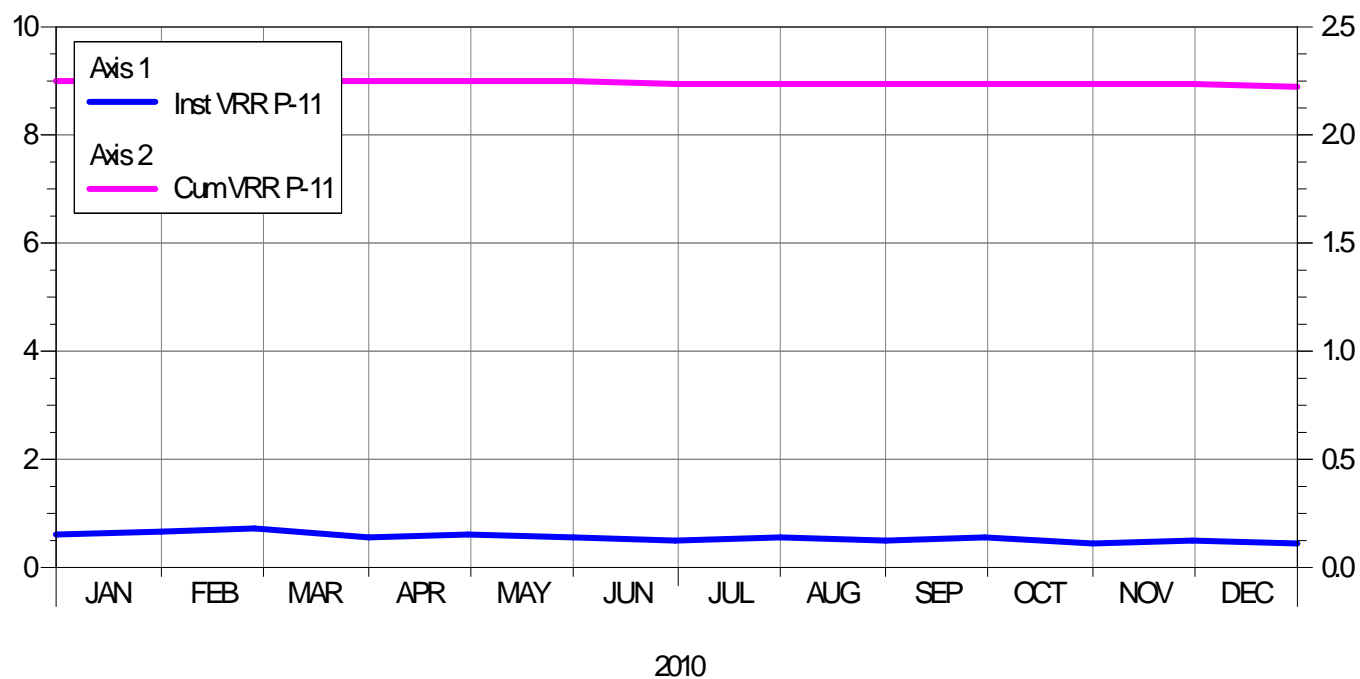
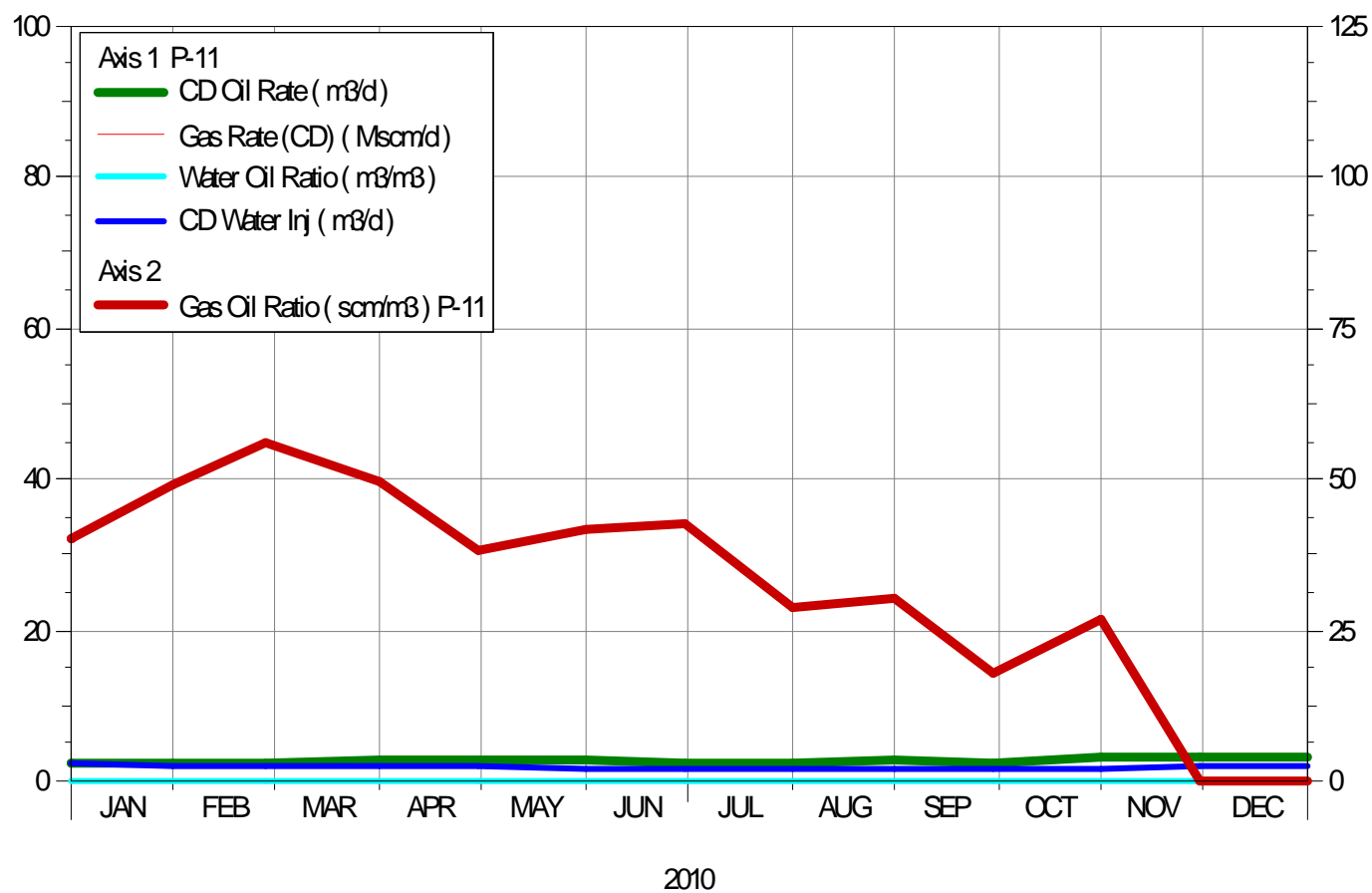


Figure B.9: 2010 Monthly Production, Injection and VRR for Pattern 11

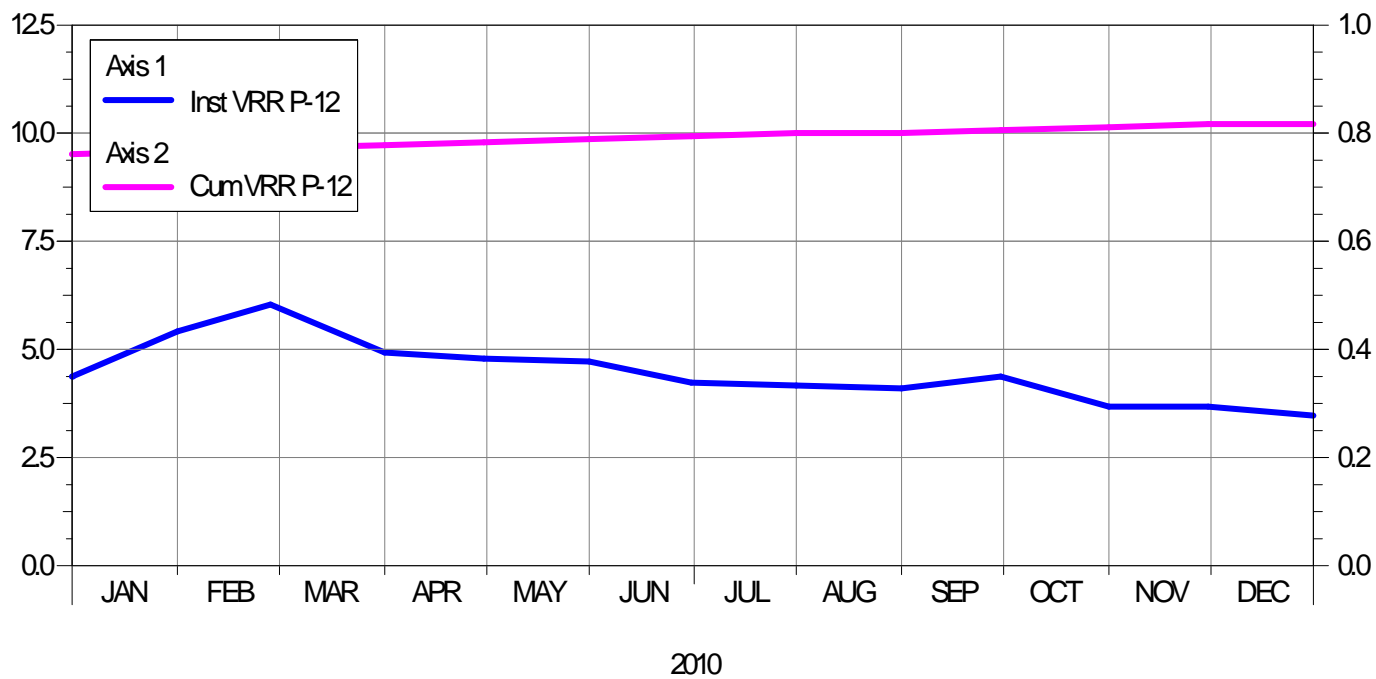
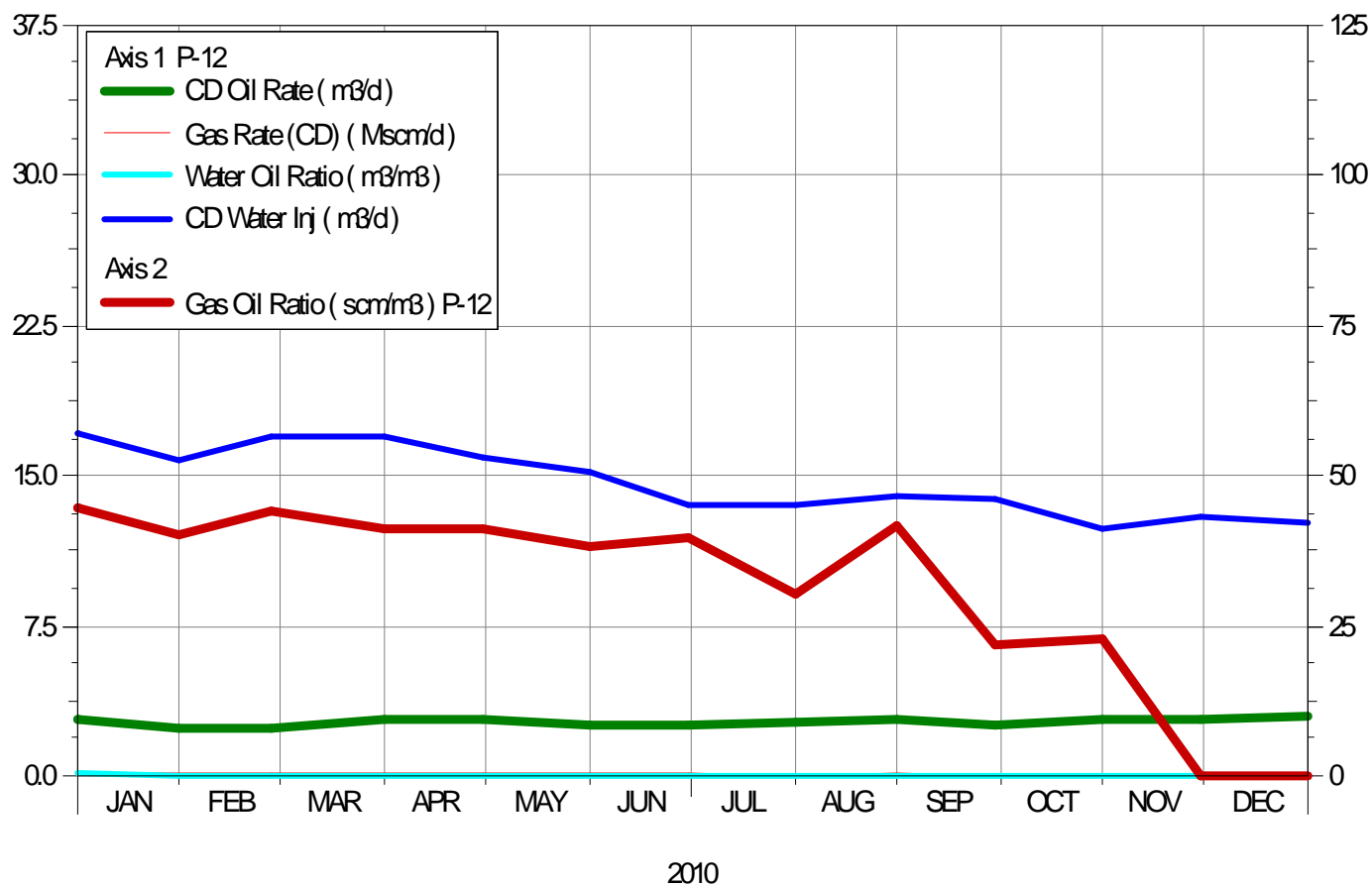


Figure B.10: 2010 Monthly Production, Injection and VRR for Pattern 12

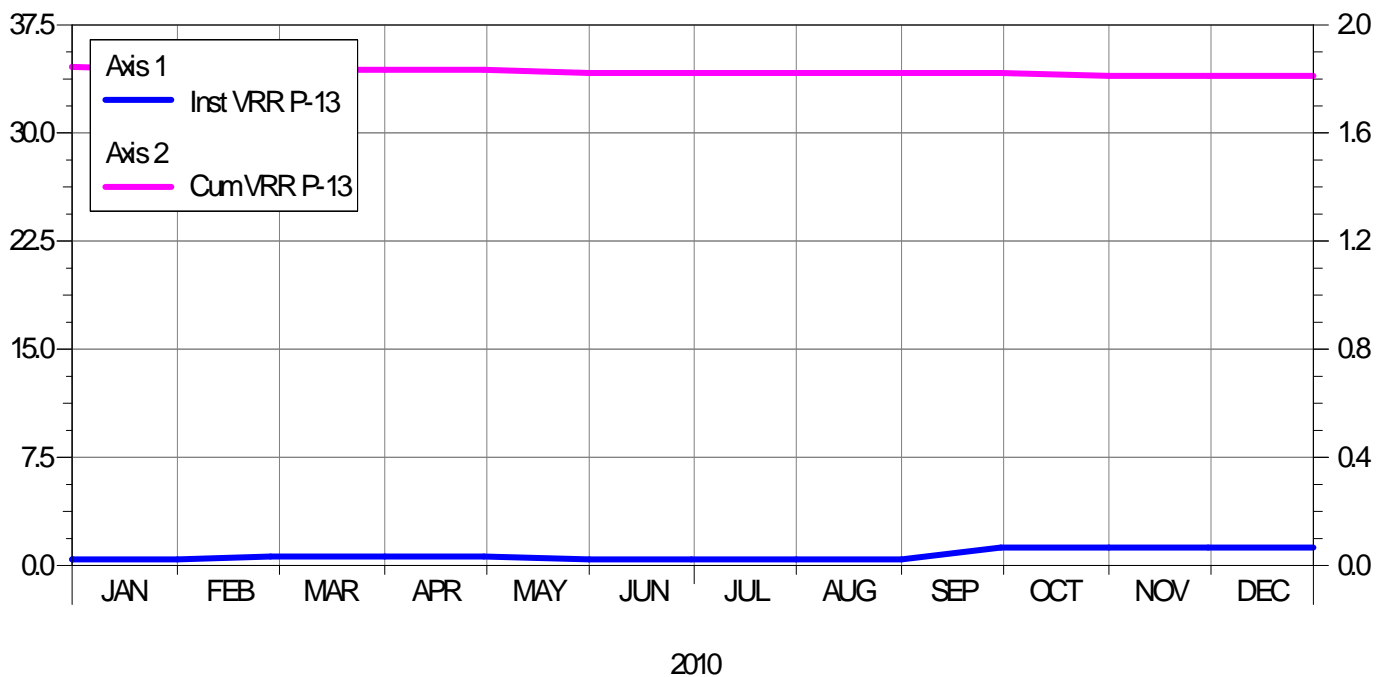
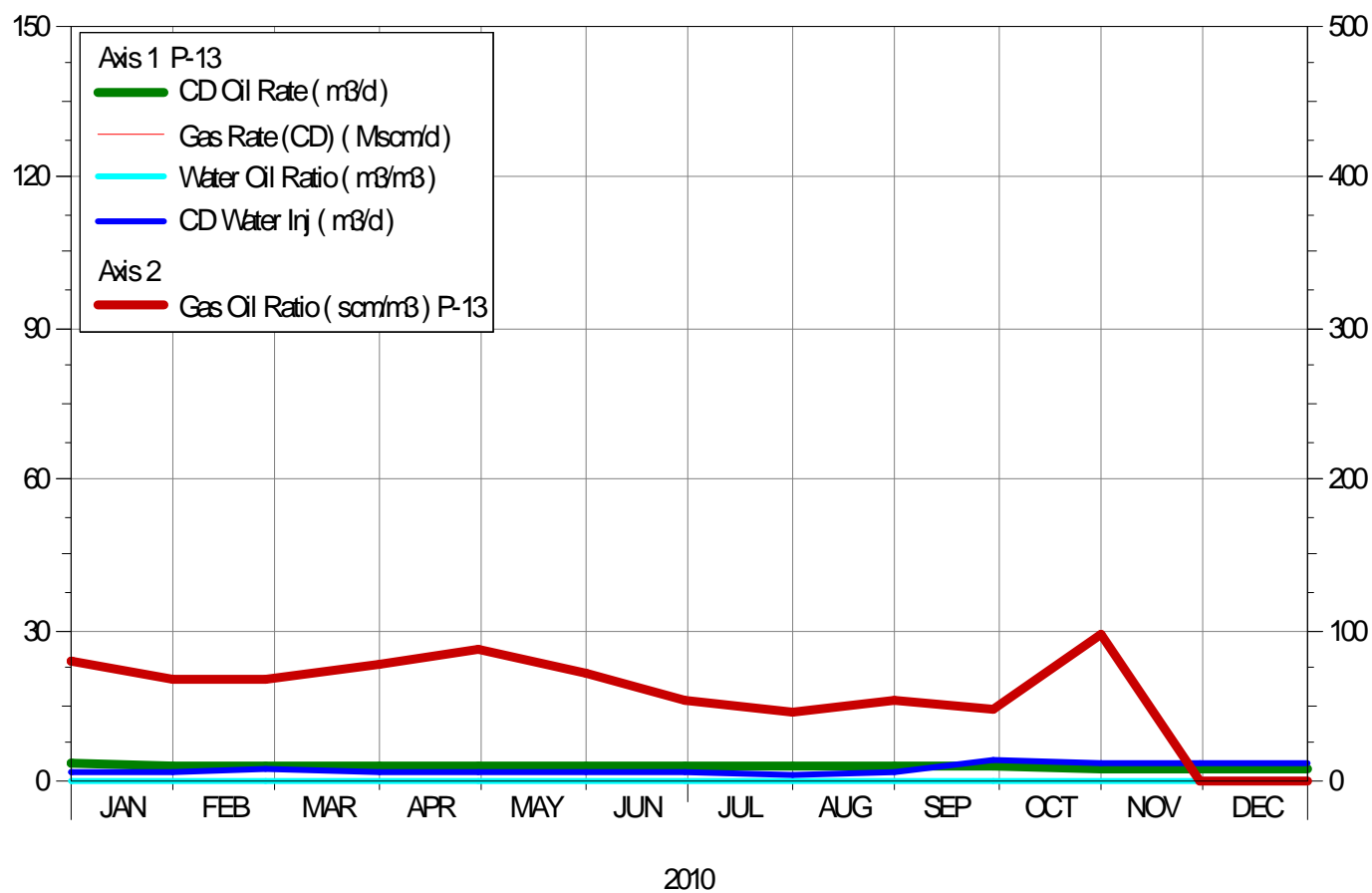


Figure B.11: 2010 Monthly Production, Injection and VRR for Pattern 13

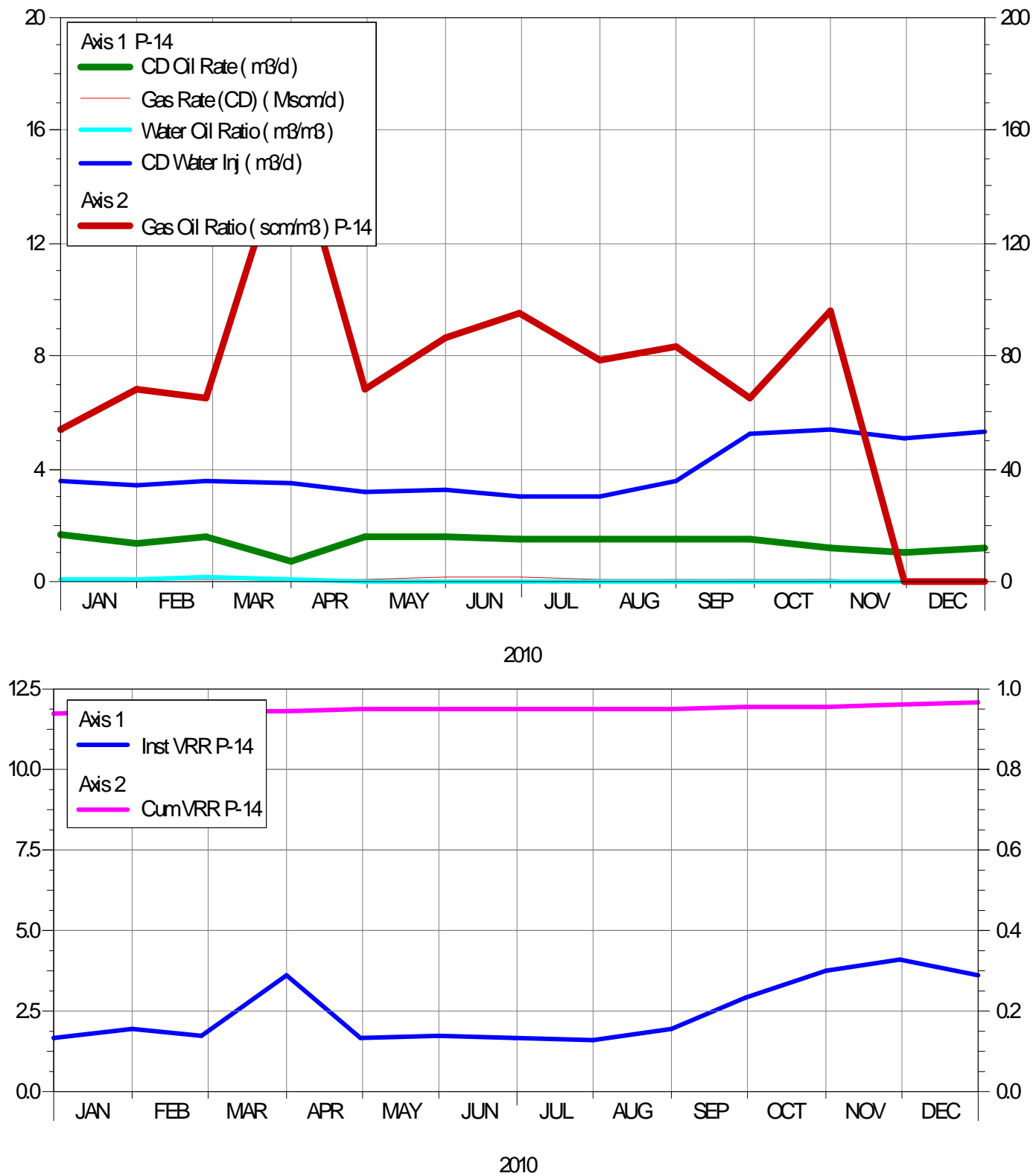


Figure B.12: 2010 Monthly Production, Injection and VRR for Pattern 14

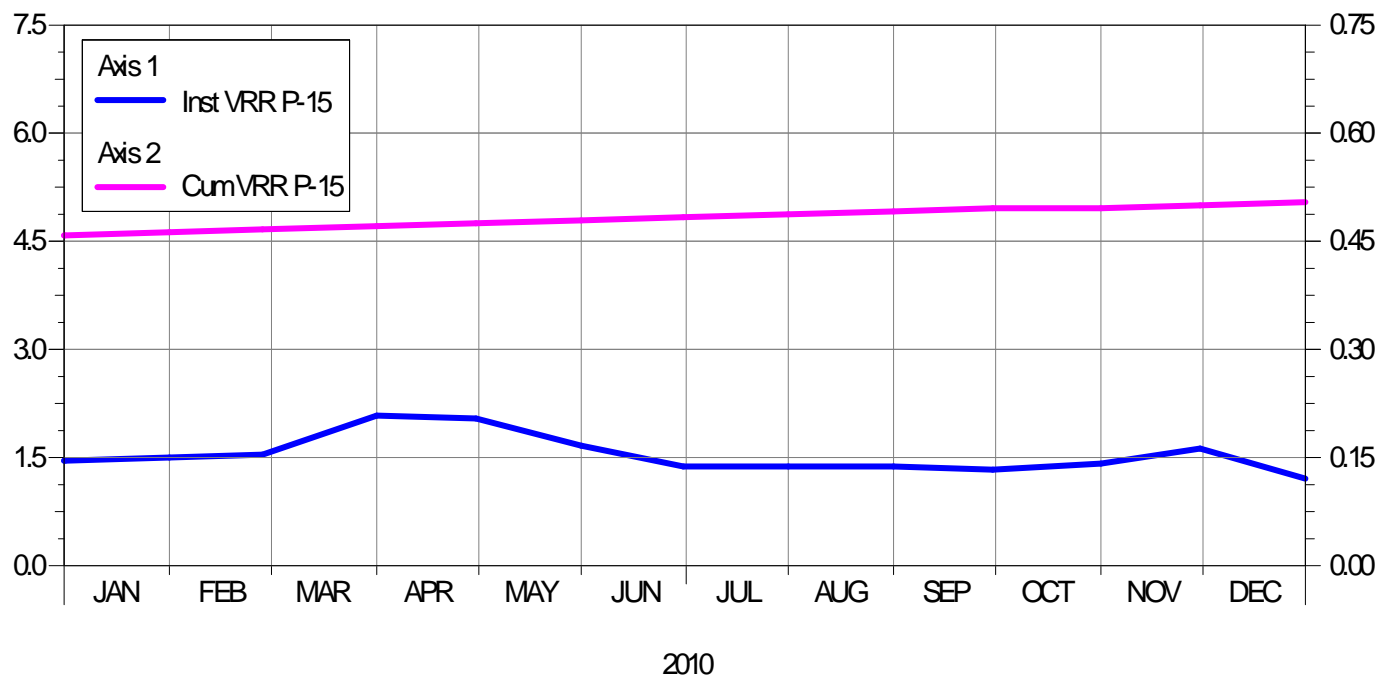
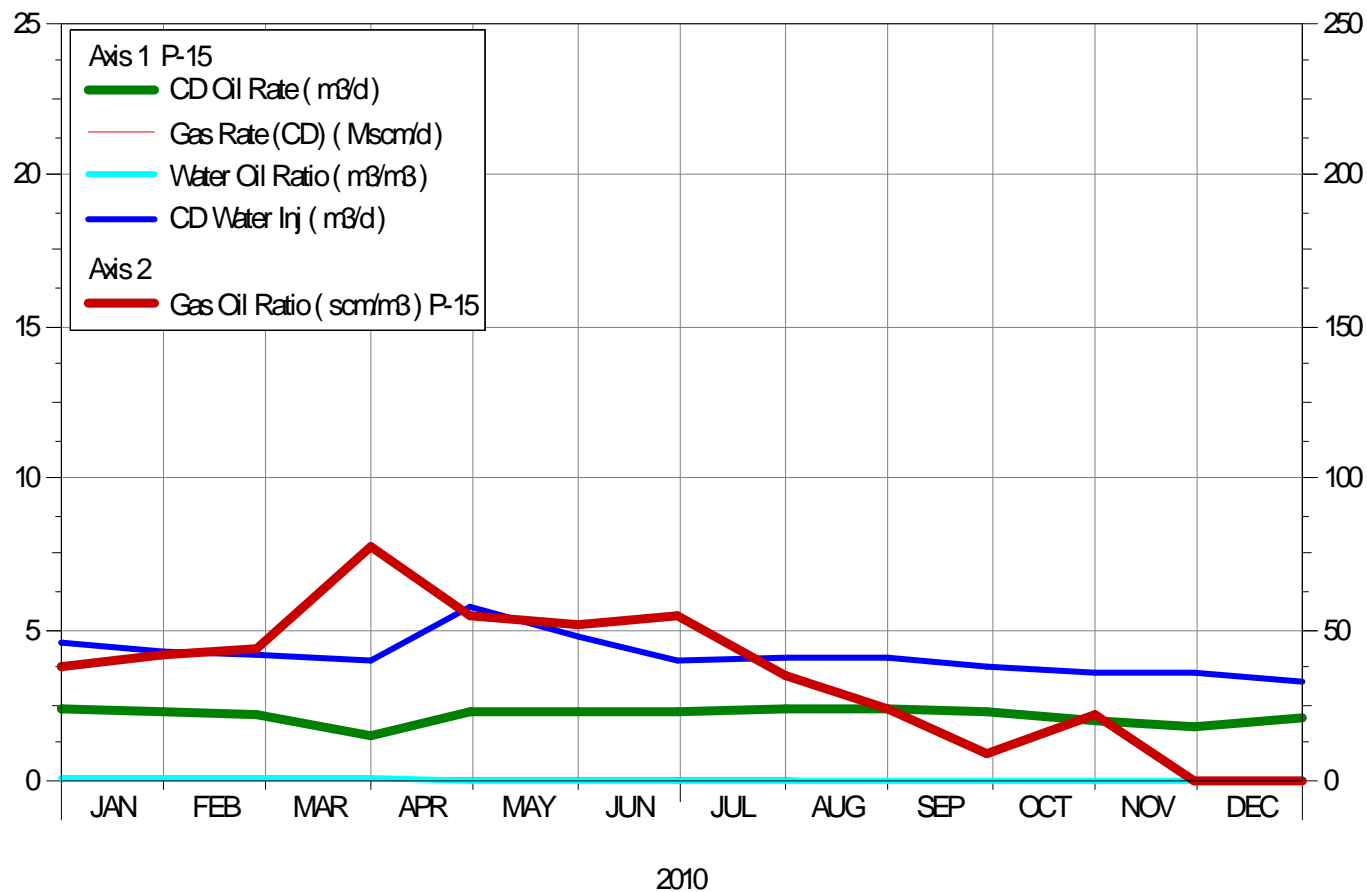


Figure B.13: 2010 Monthly Production, Injection and VRR for Pattern 15

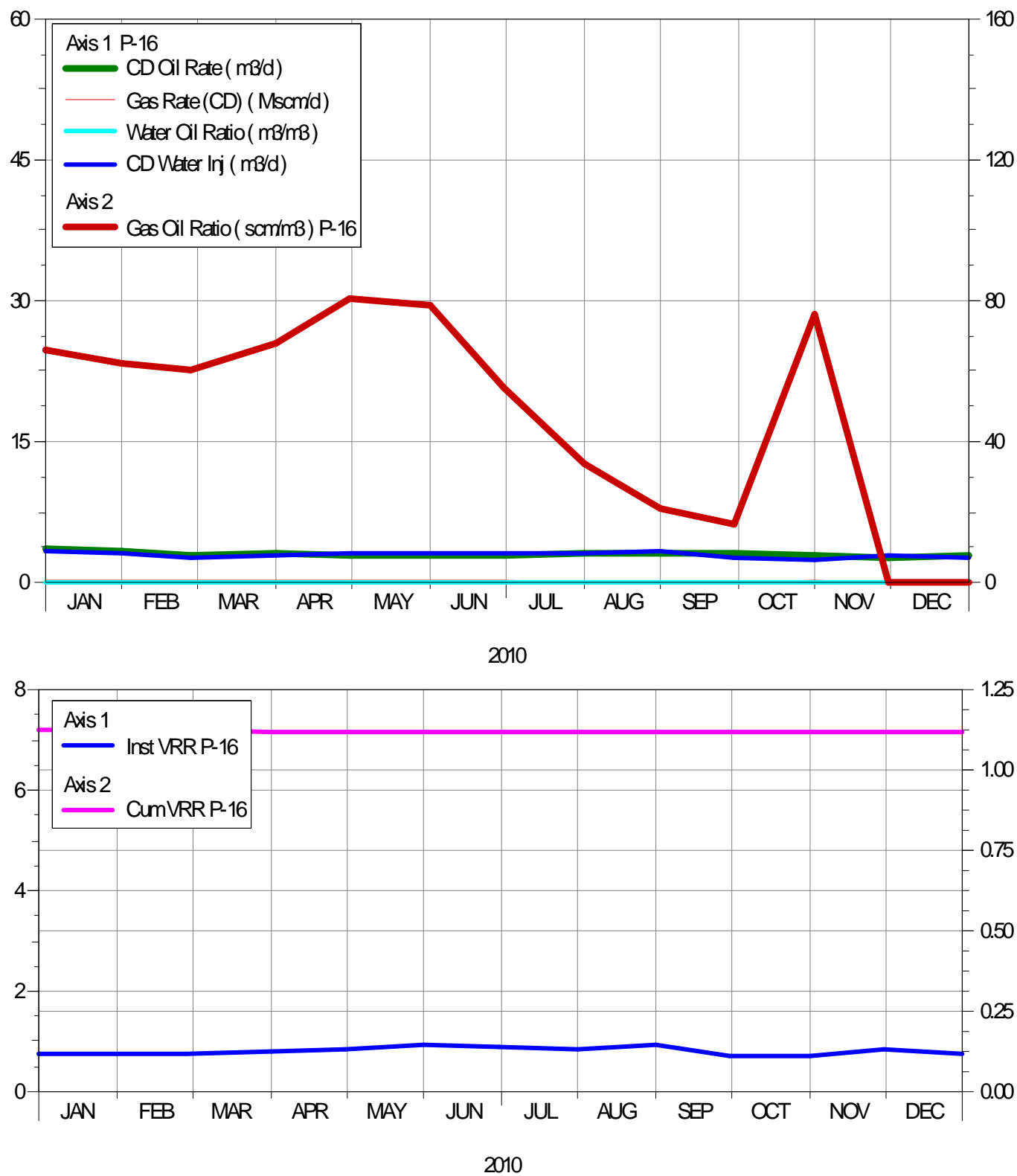


Figure B.14: 2010 Monthly Production, Injection and VRR for Pattern 16

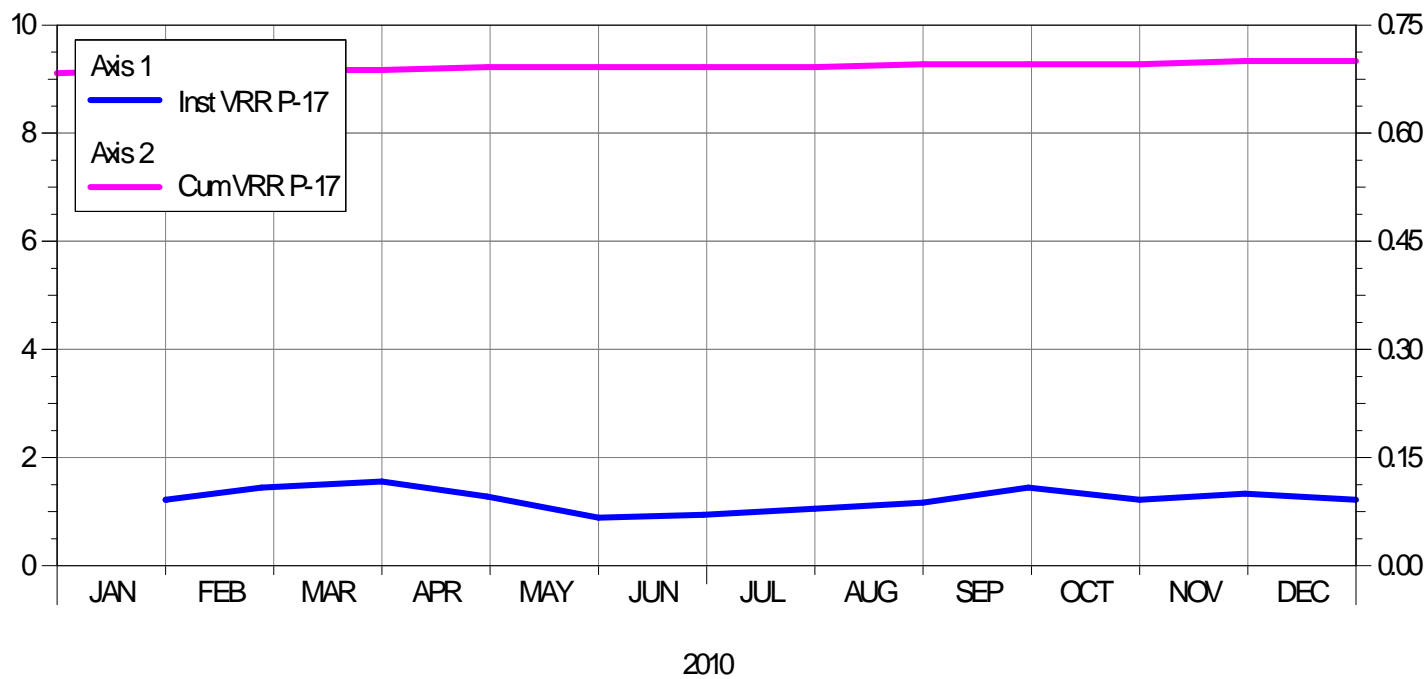
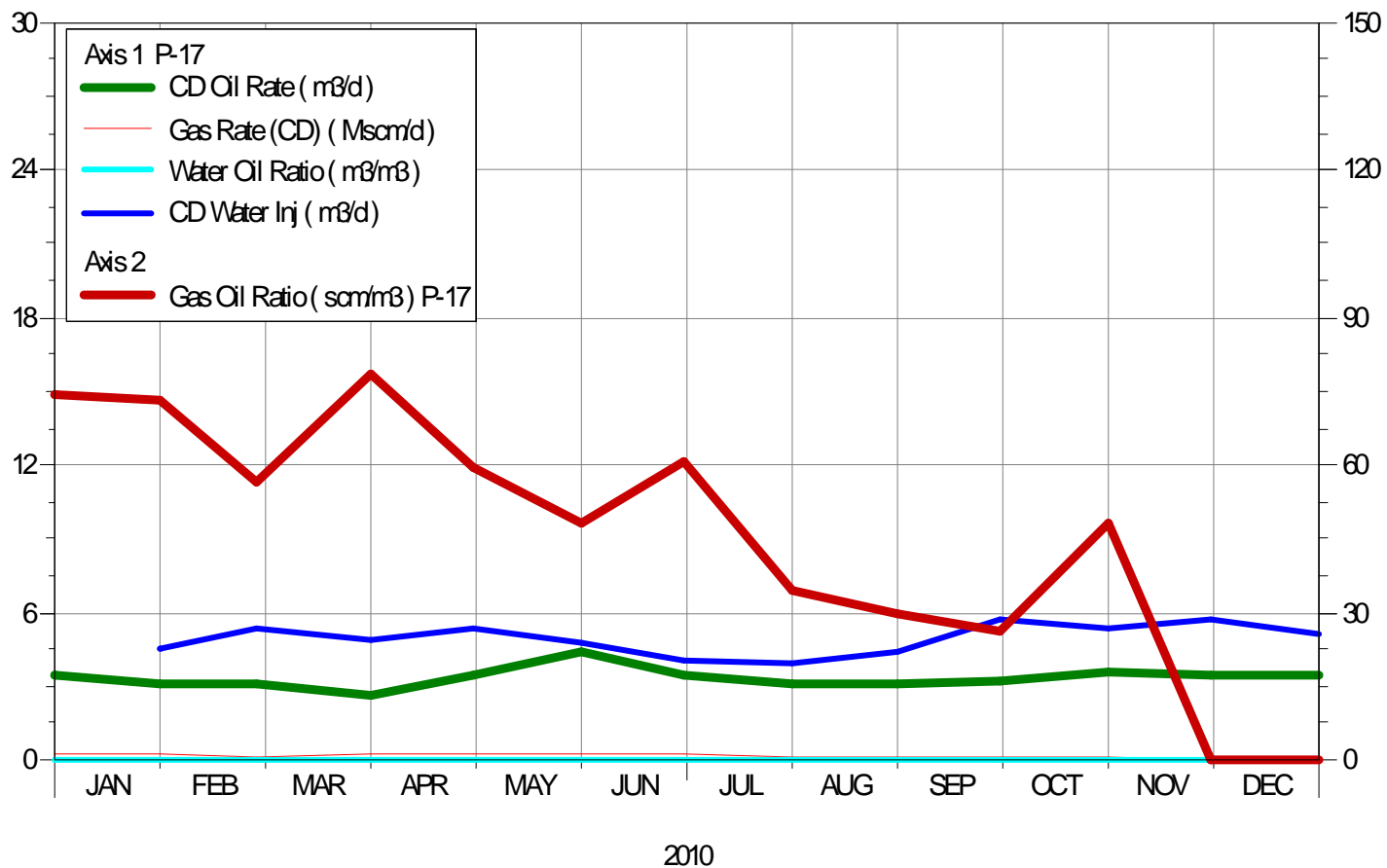


Figure B.15: 2010 Monthly Production, Injection and VRR for Pattern 17

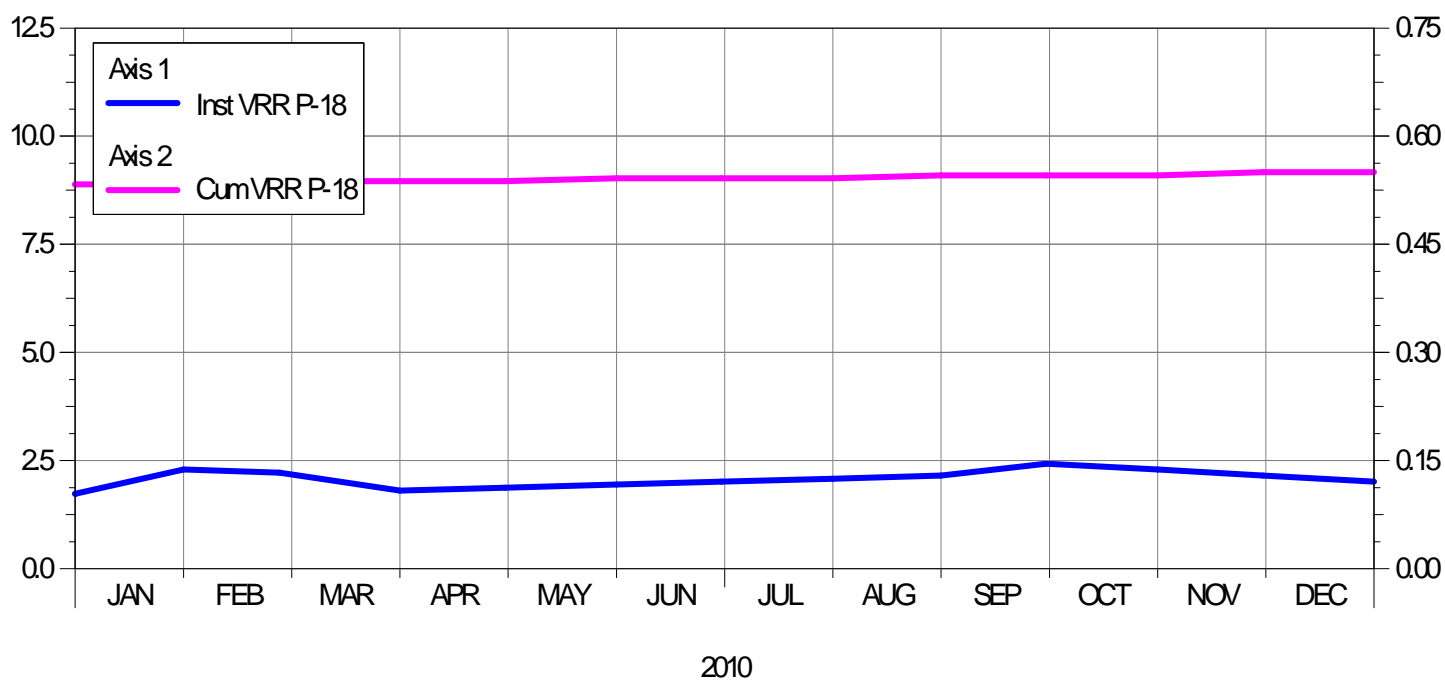
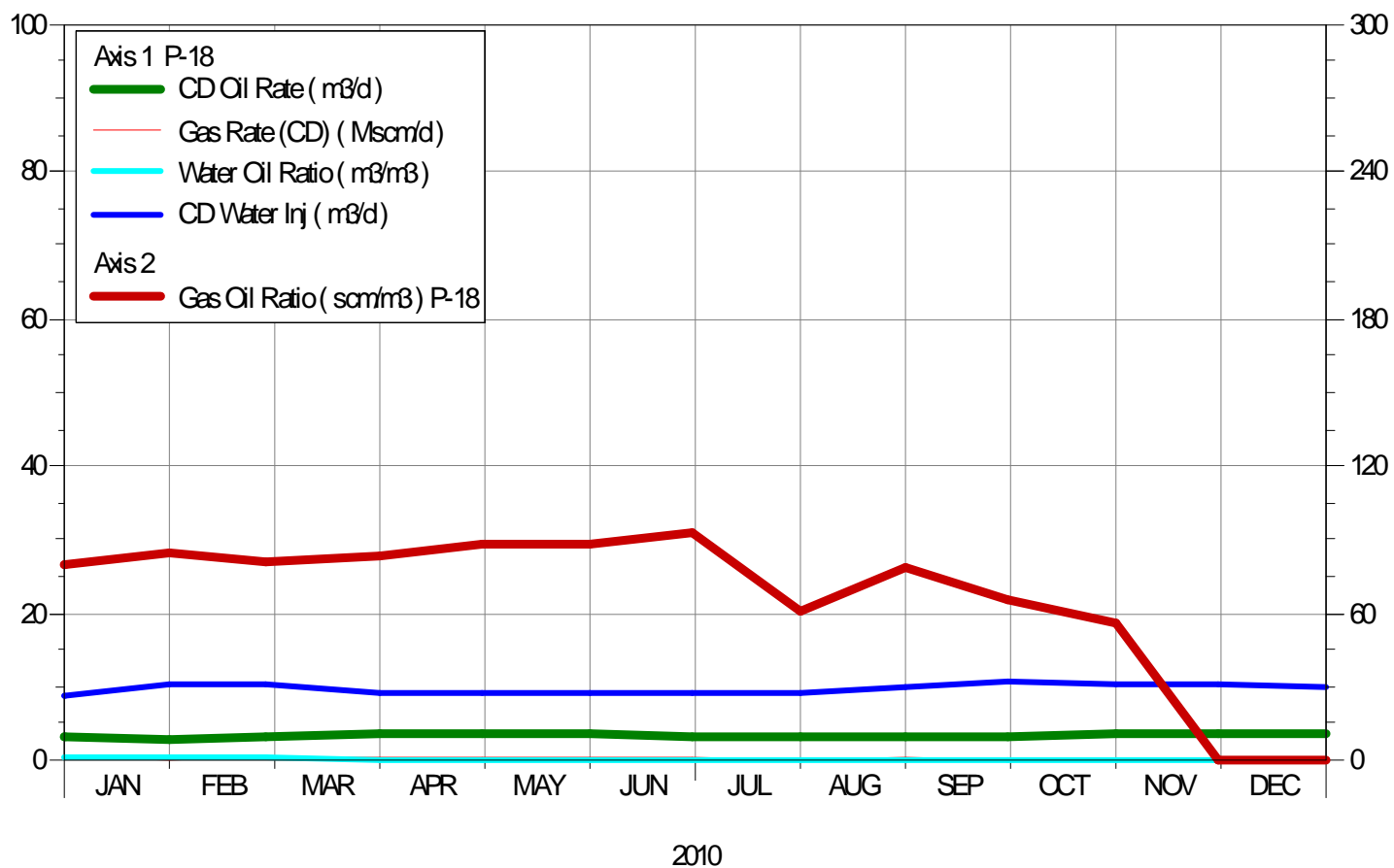


Figure B.16: 2010 Monthly Production, Injection and VRR for Pattern 18

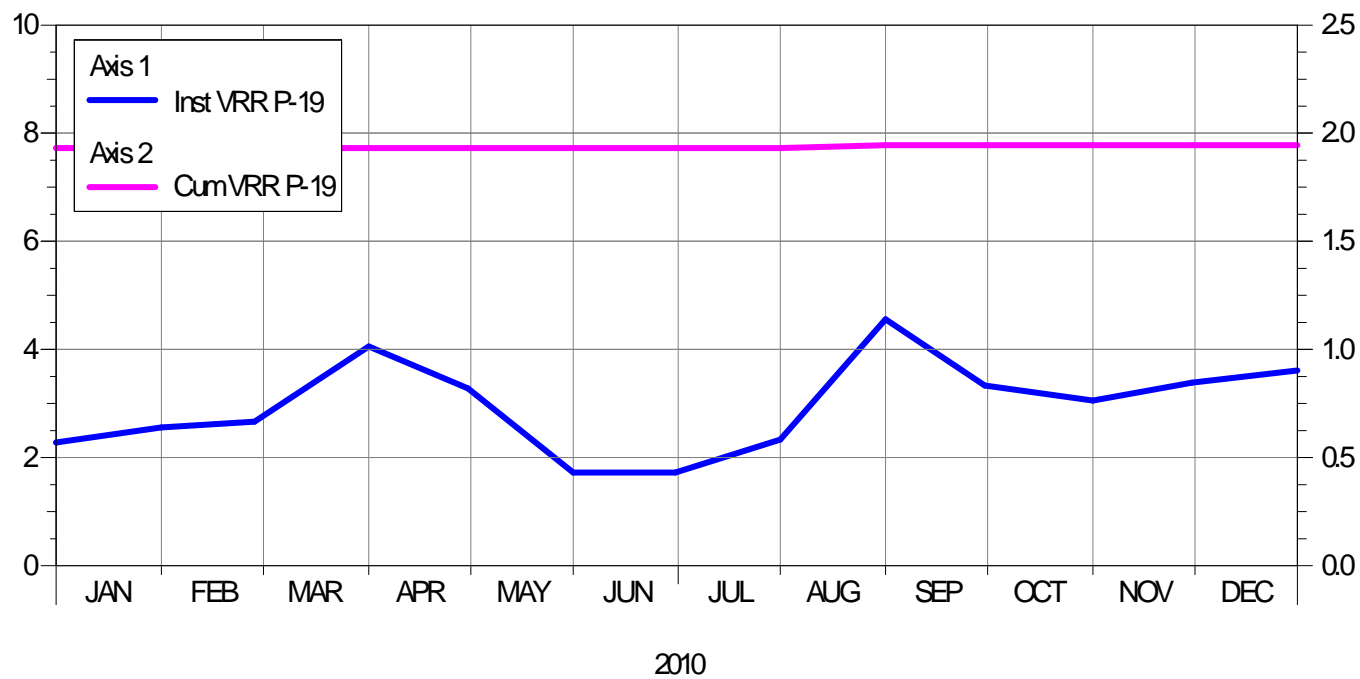
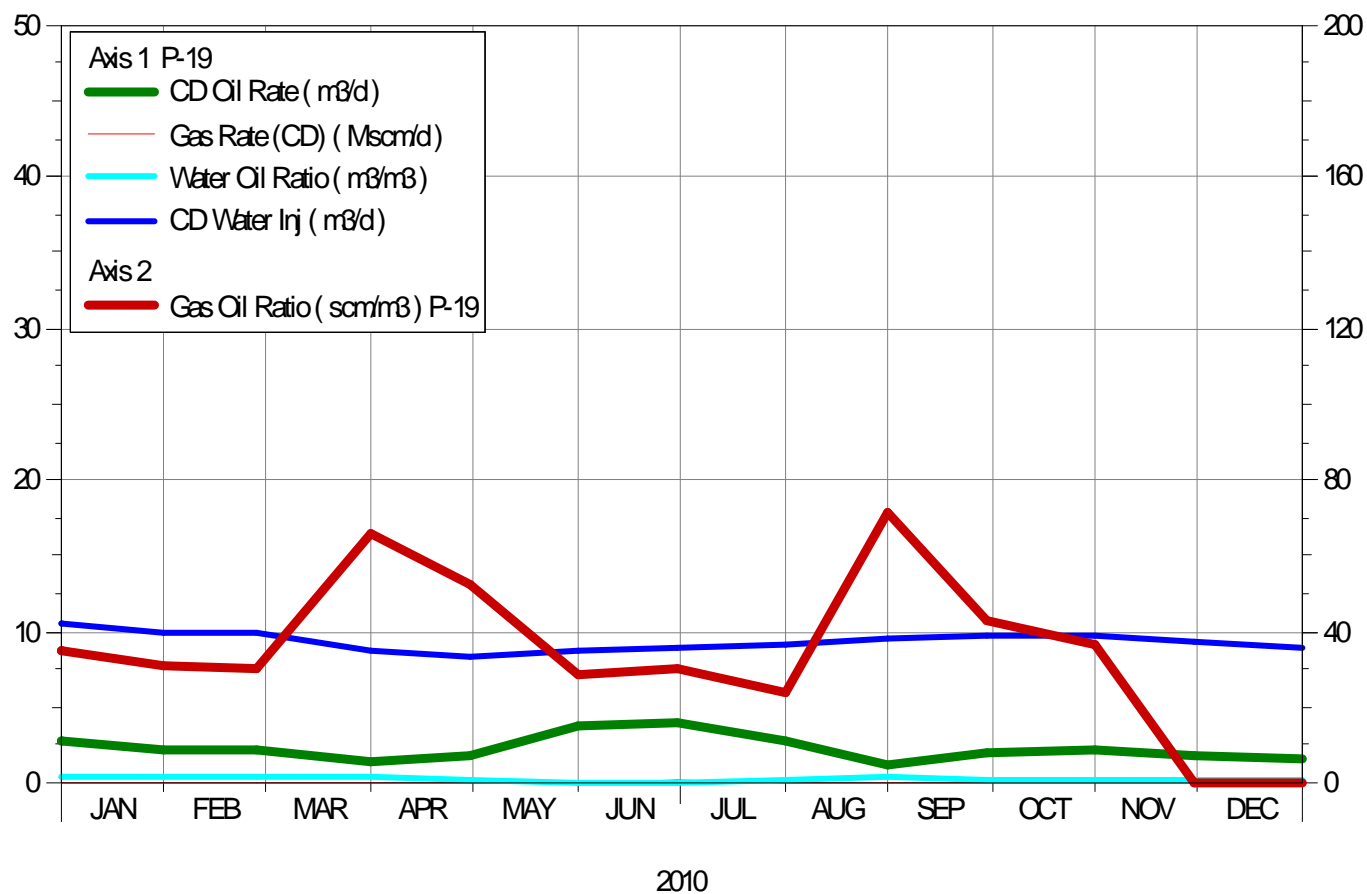
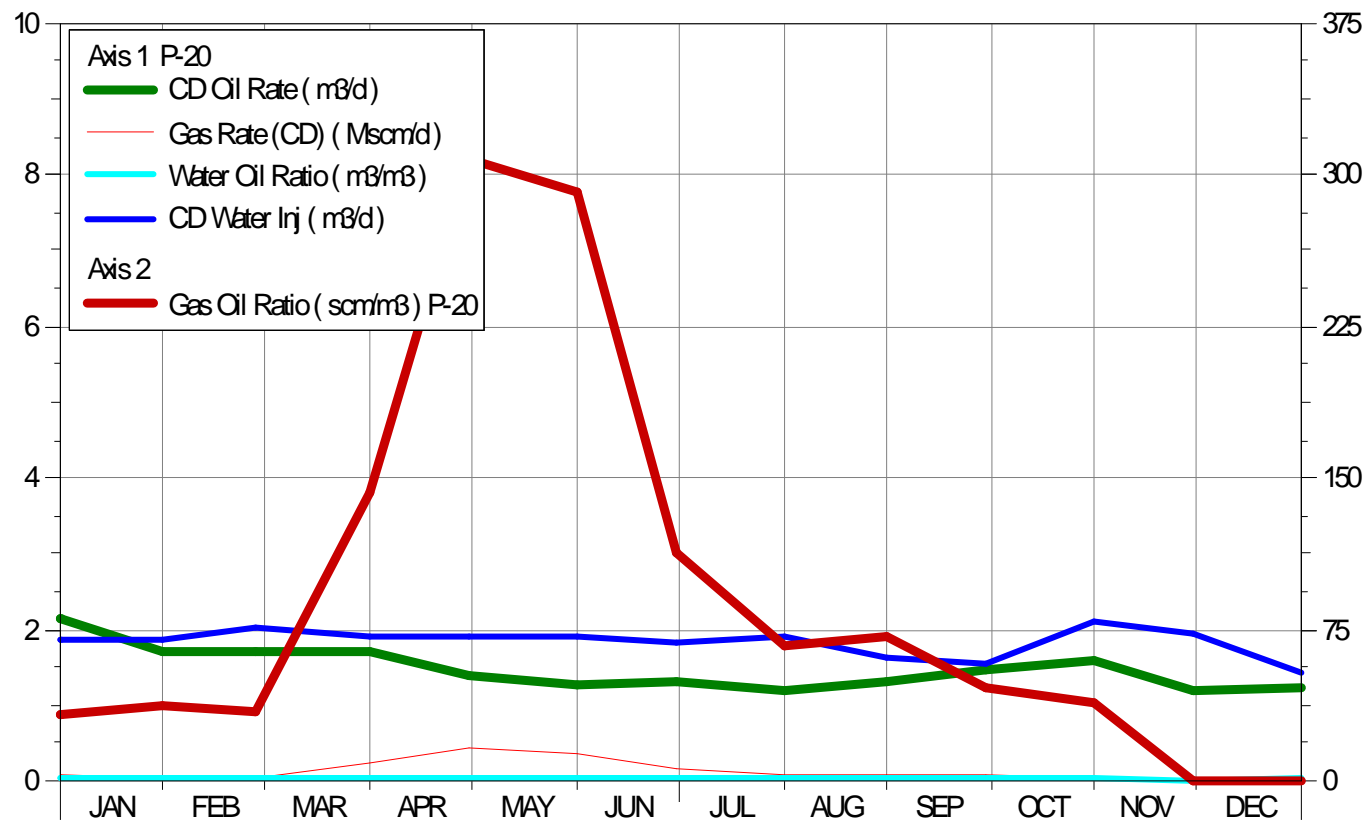
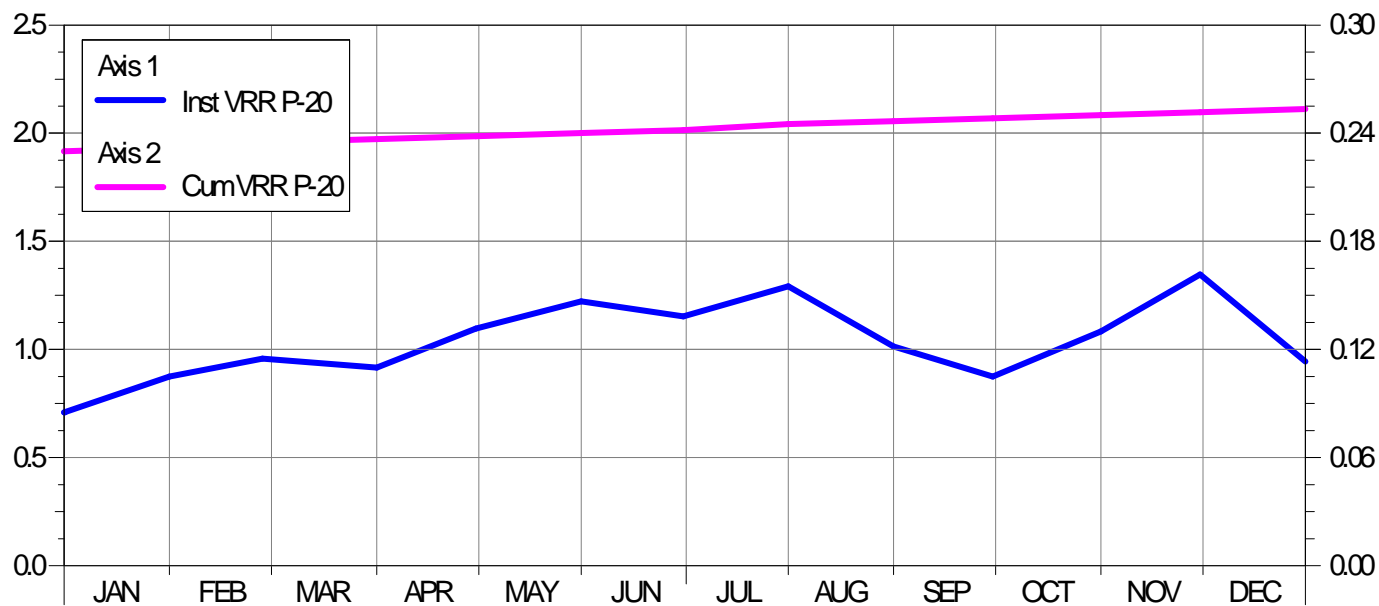


Figure B.17: 2010 Monthly Production, Injection and VRR for Pattern 19



2010



2010

Figure B.18: 2010 Monthly Production, Injection and VRR for Pattern 20

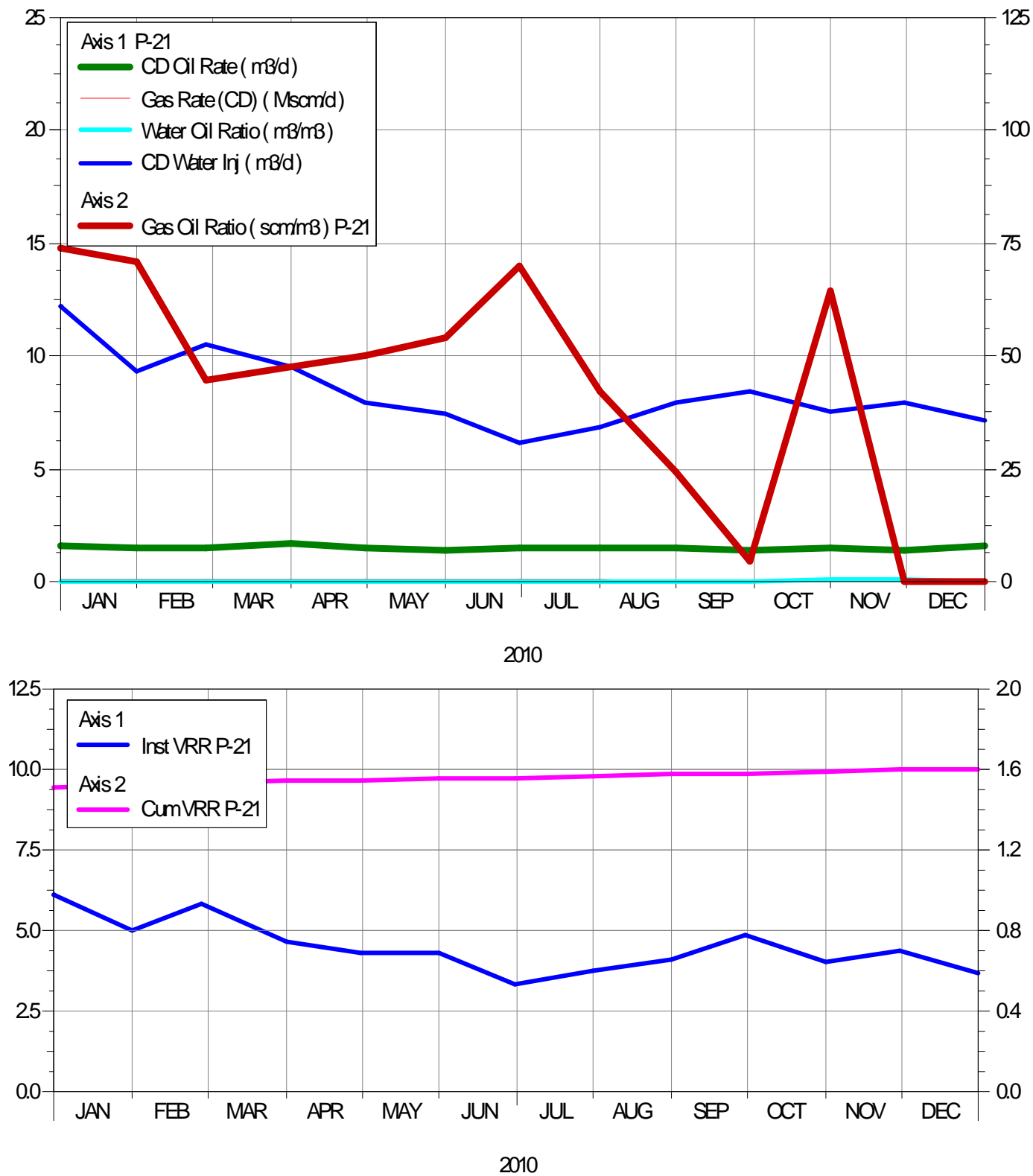


Figure B.19: 2010 Monthly Production, Injection and VRR for Pattern 21

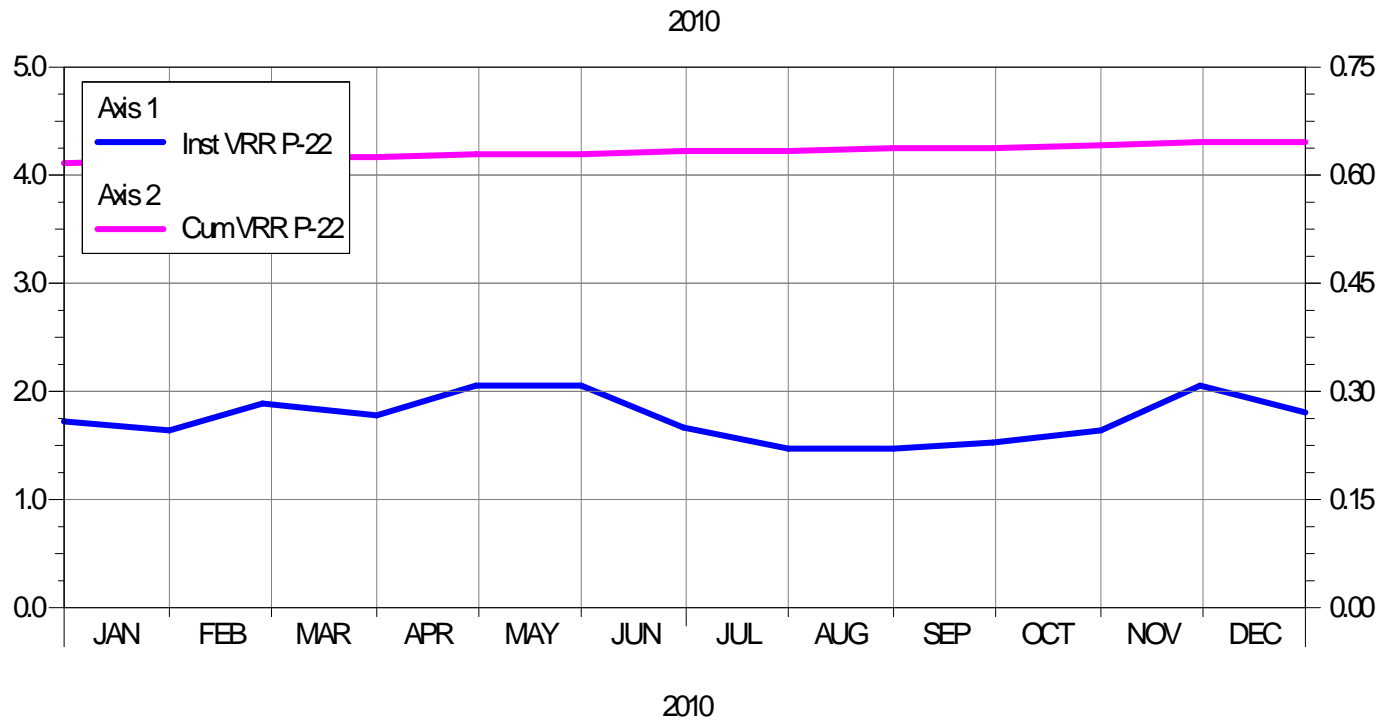
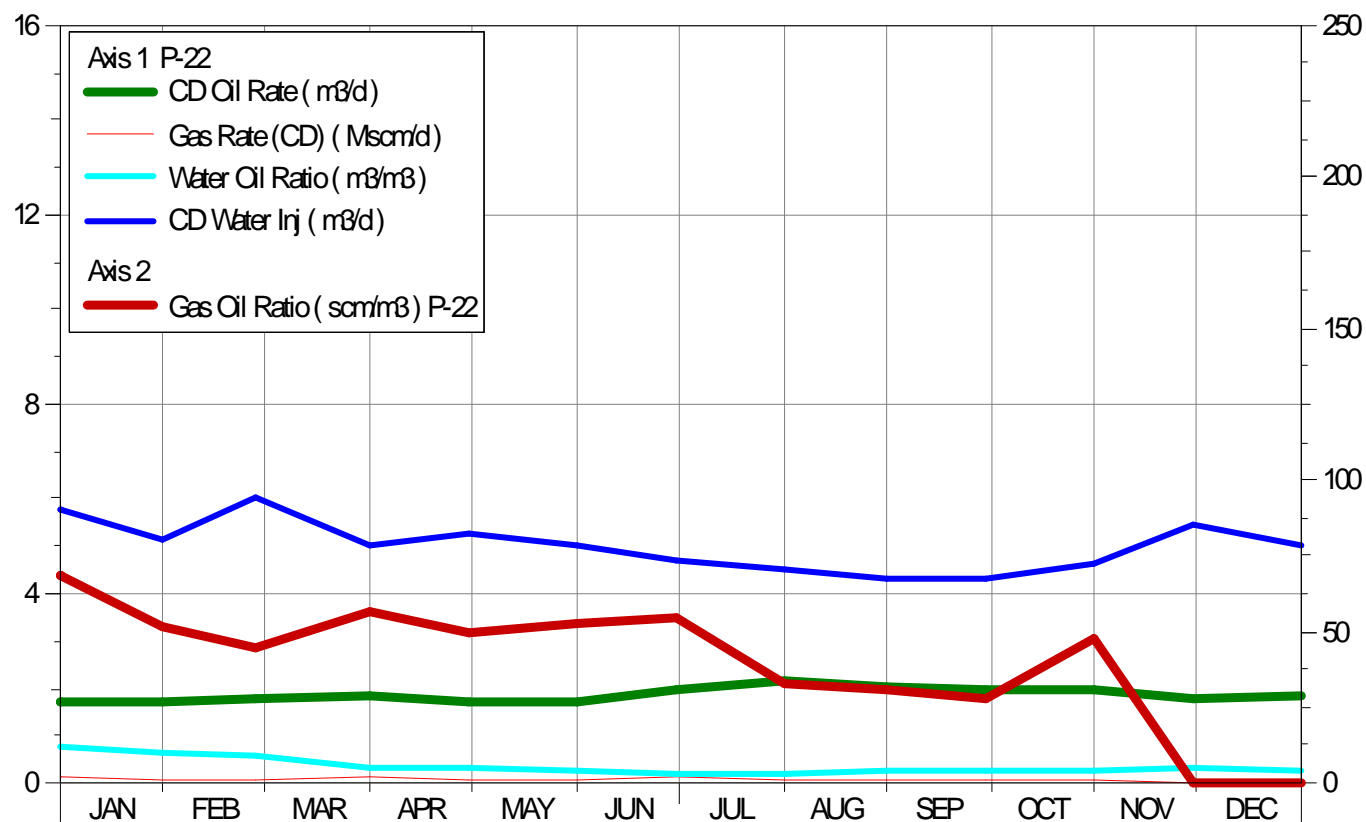


Figure B.20: 2010 Monthly Production, Injection and VRR for Pattern 22

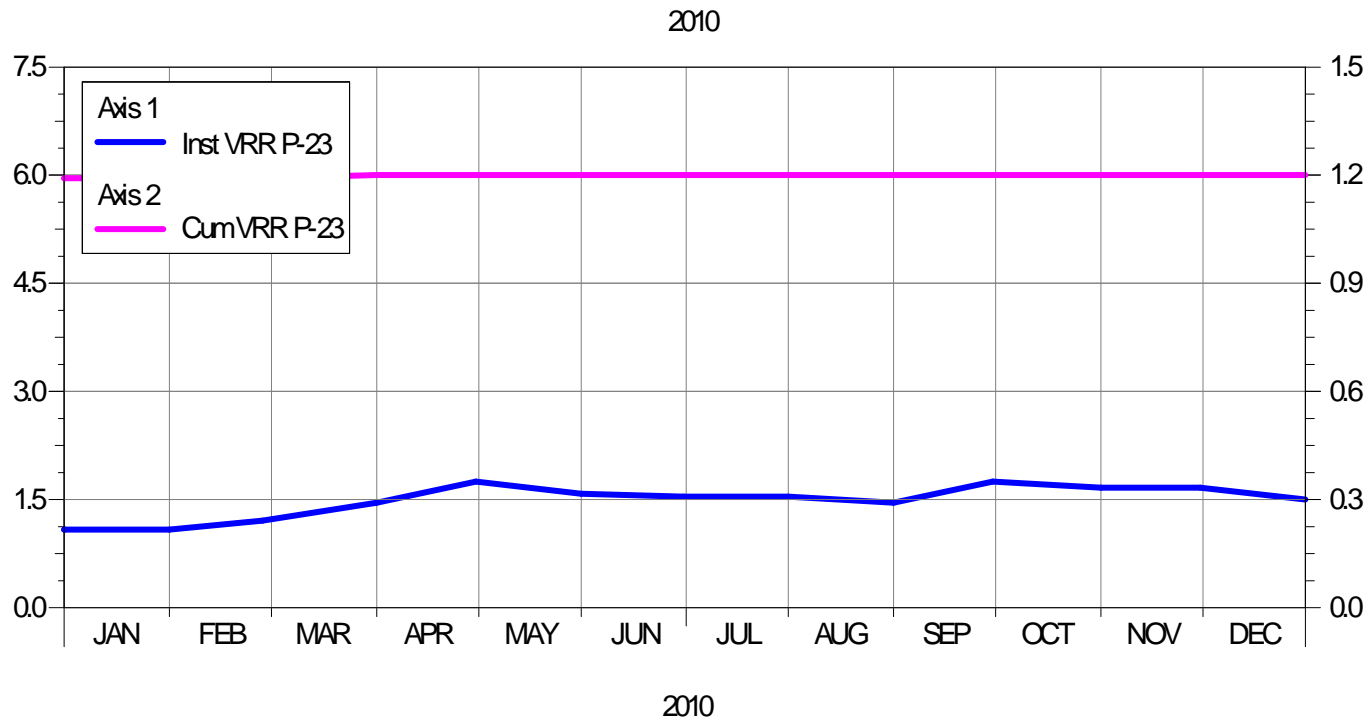
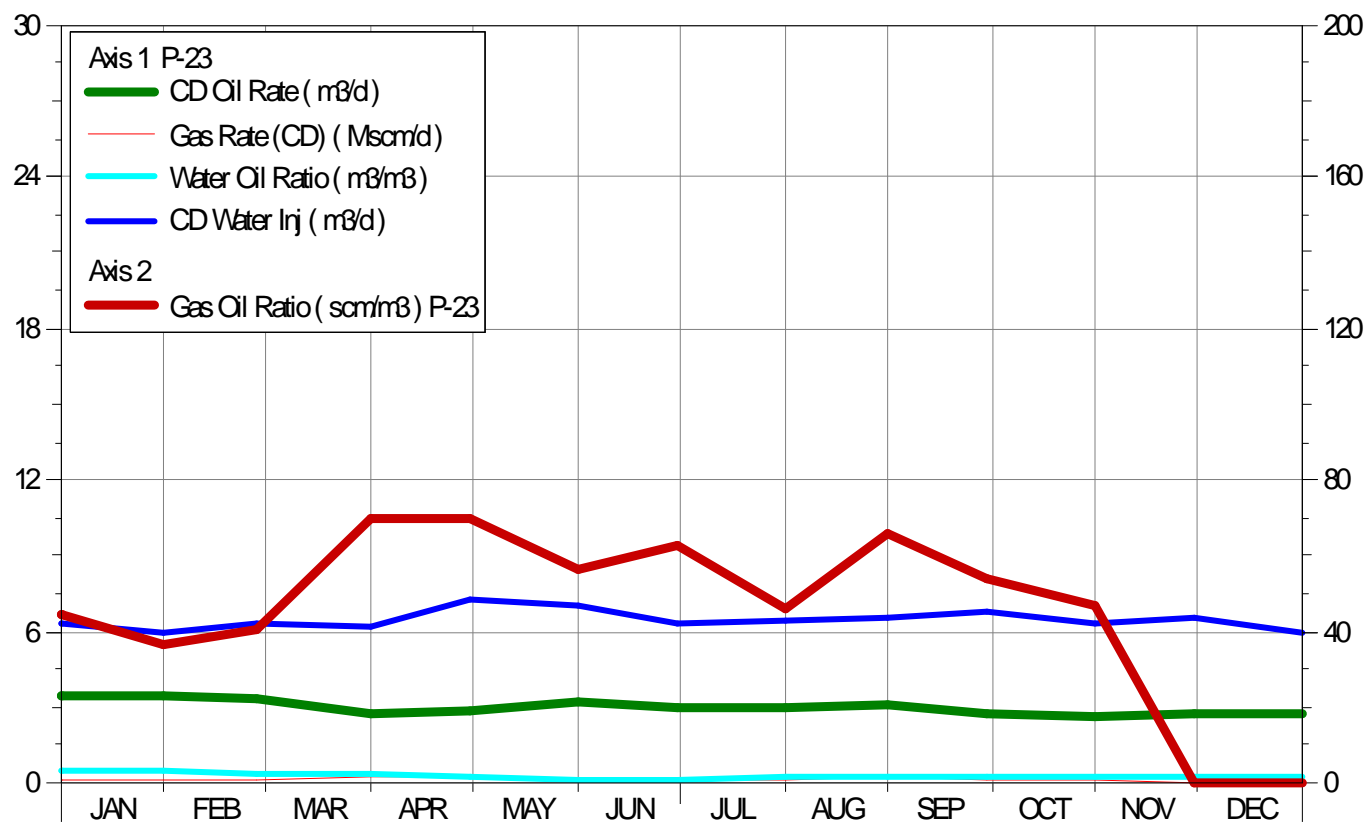


Figure B.21: 2010 Monthly Production, Injection and VRR for Pattern 23

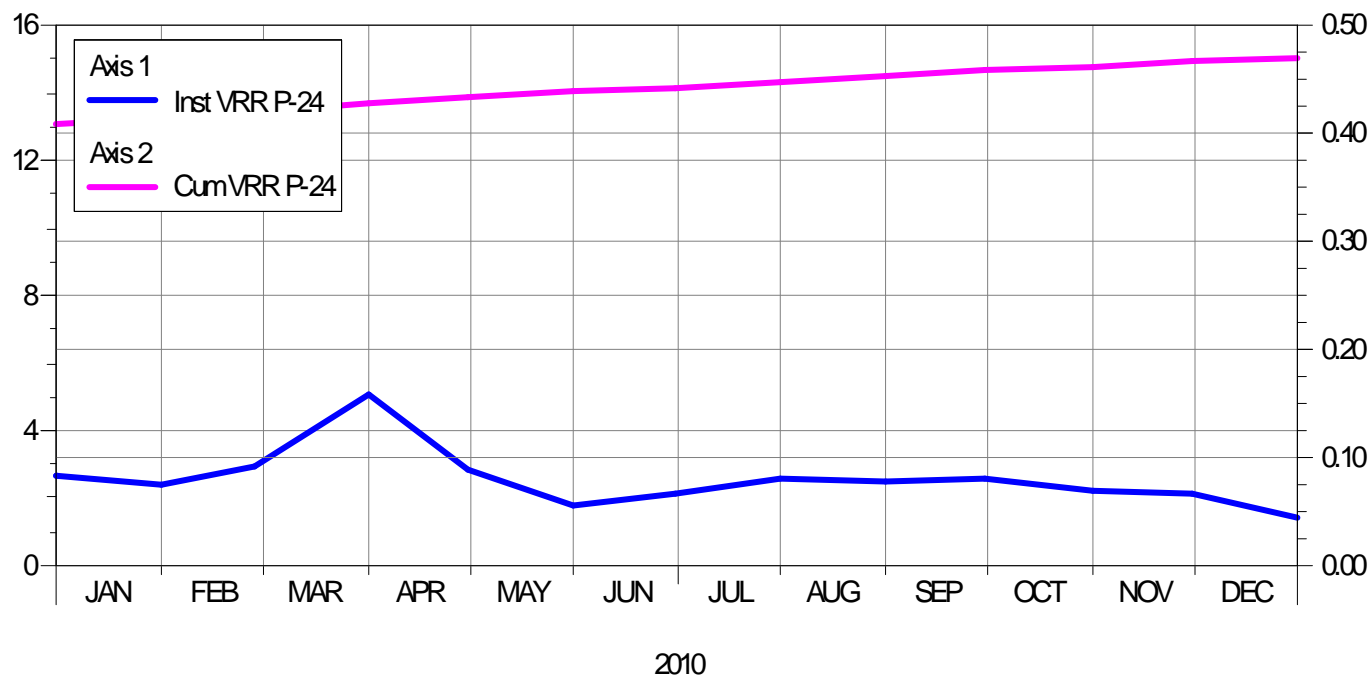
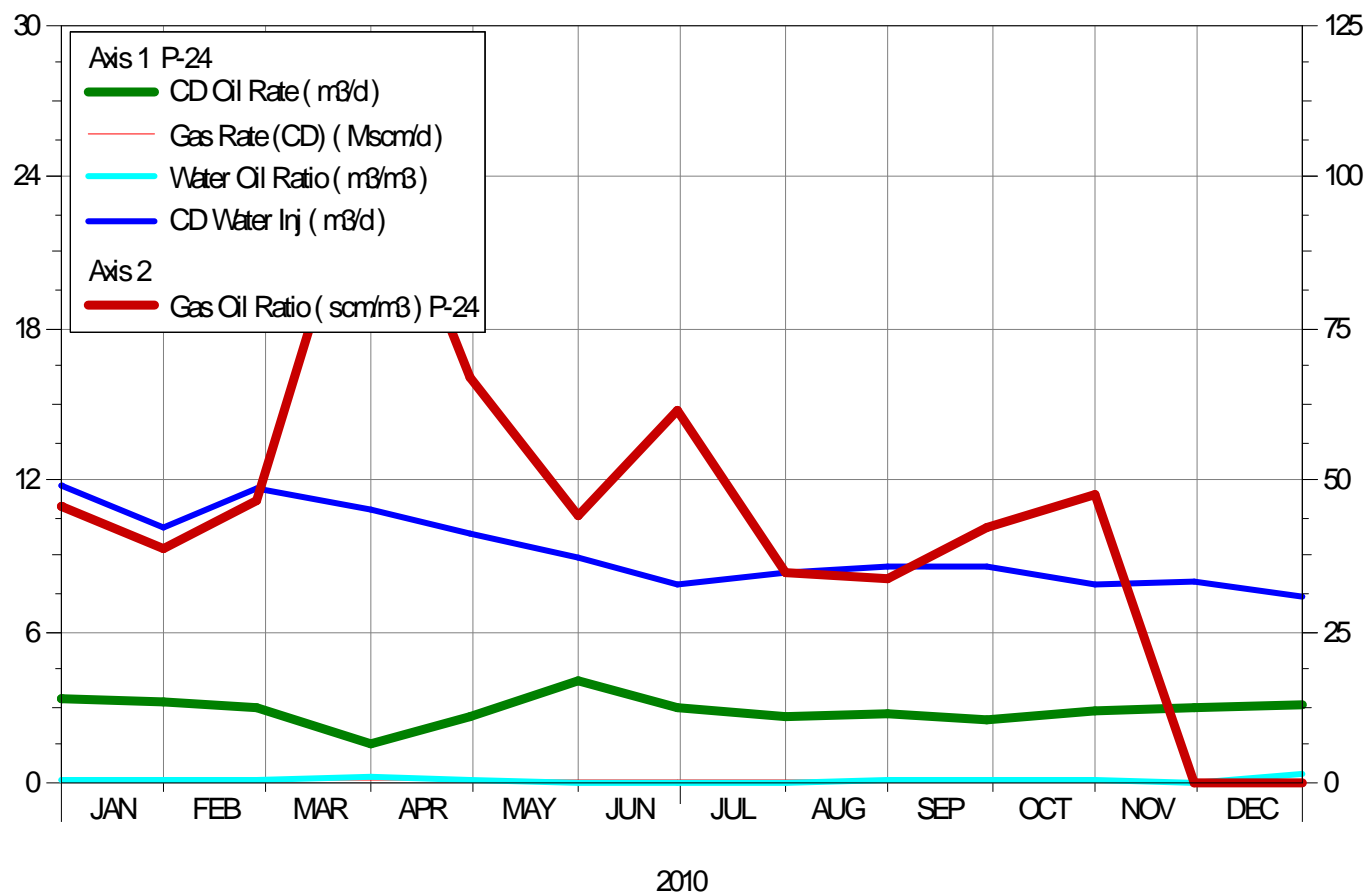


Figure B.22: 2010 Monthly Production, Injection and VRR for Pattern 24

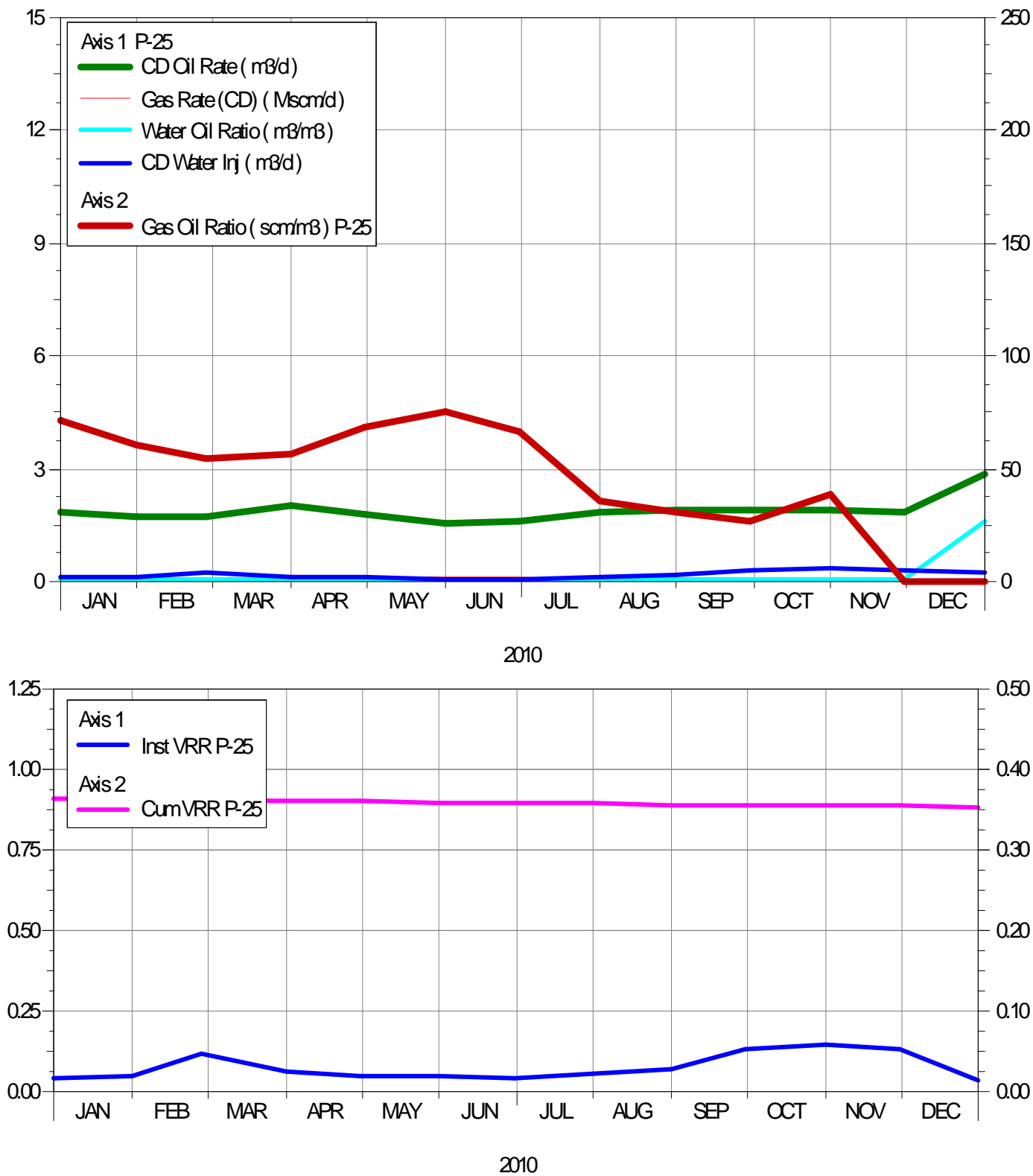


Figure B.23: 2010 Monthly Production, Injection and VRR for Pattern 25

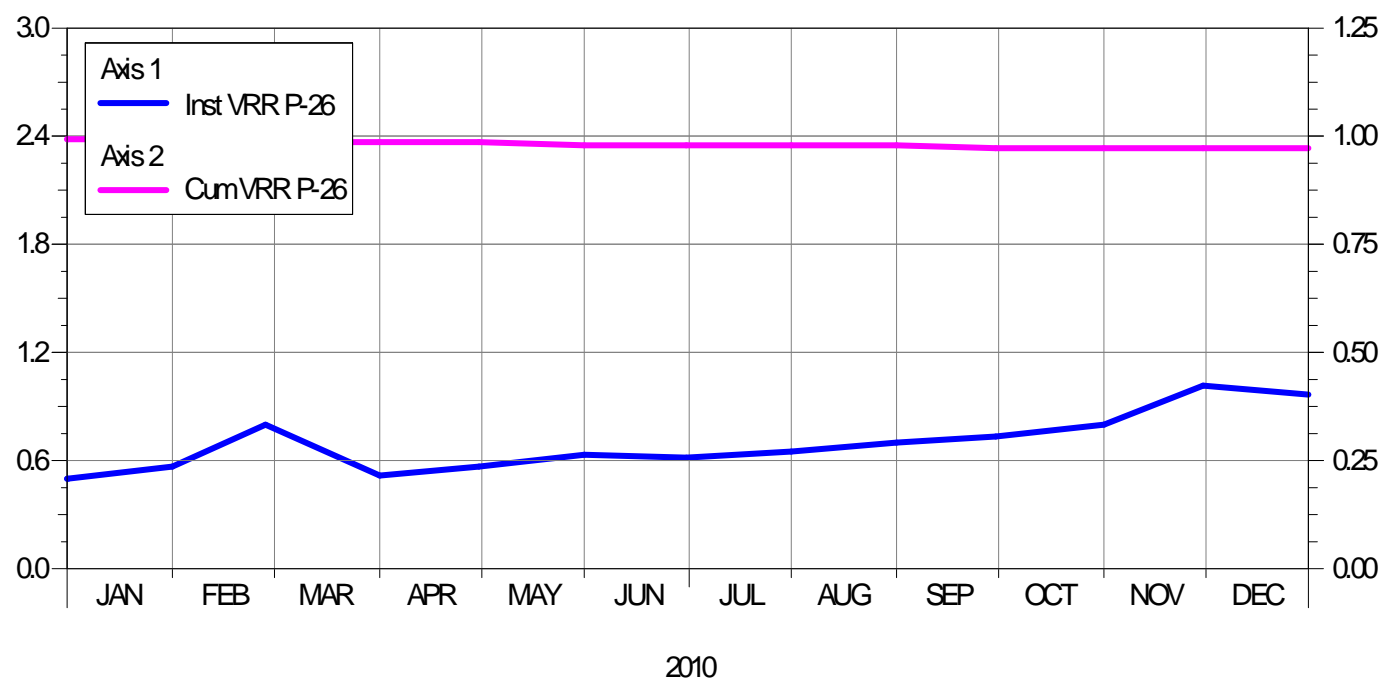
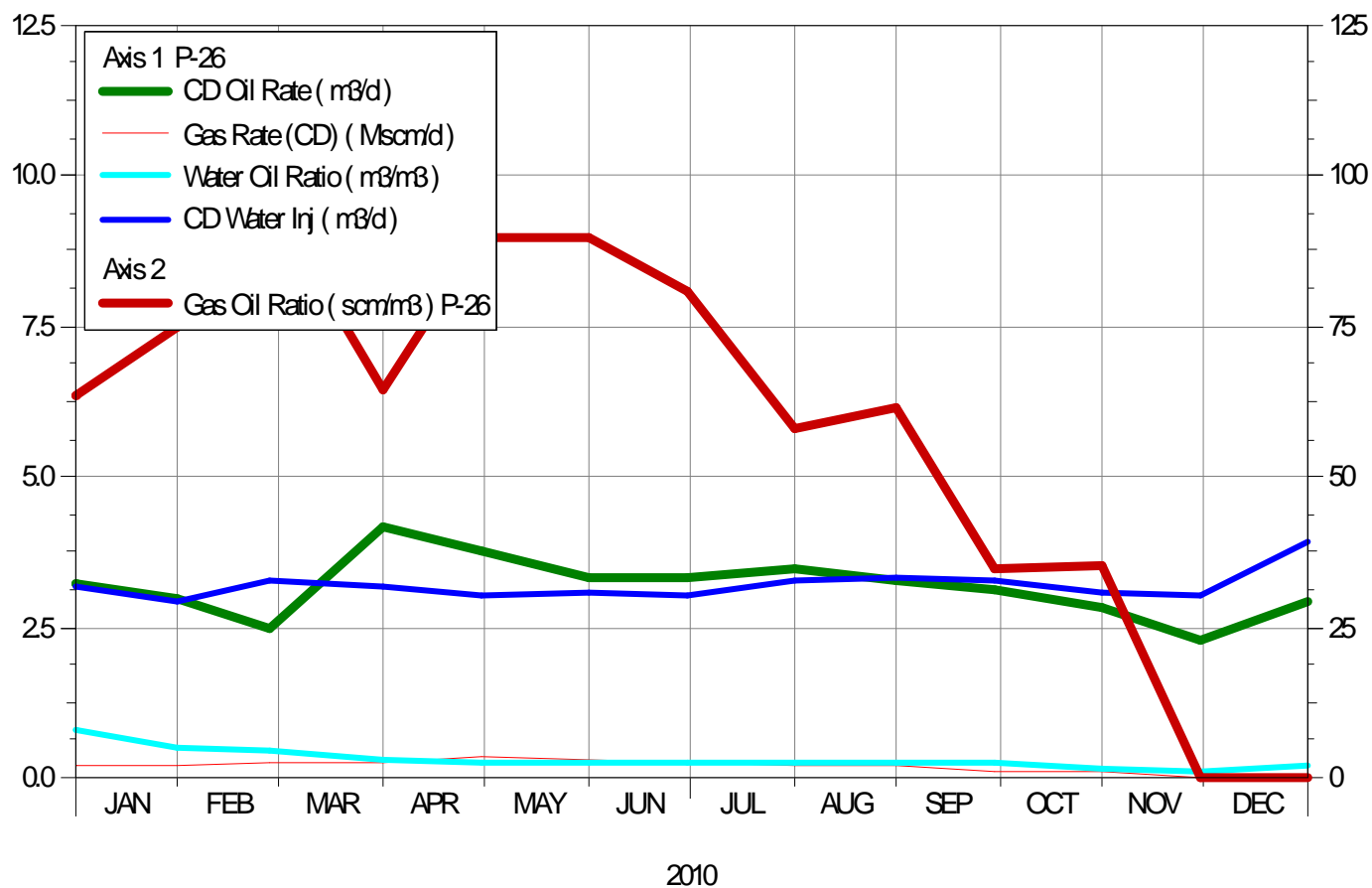


Figure B.24: 2010 Monthly Production, Injection and VRR for Pattern 26

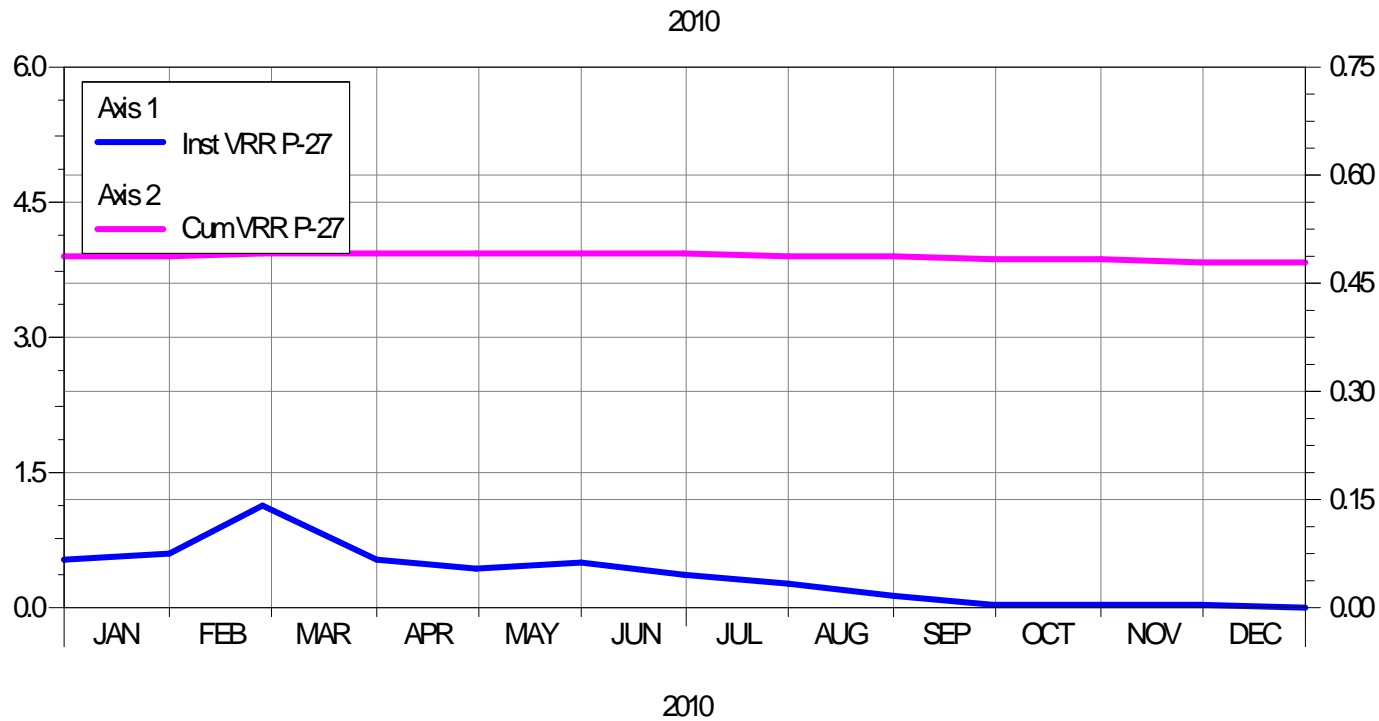
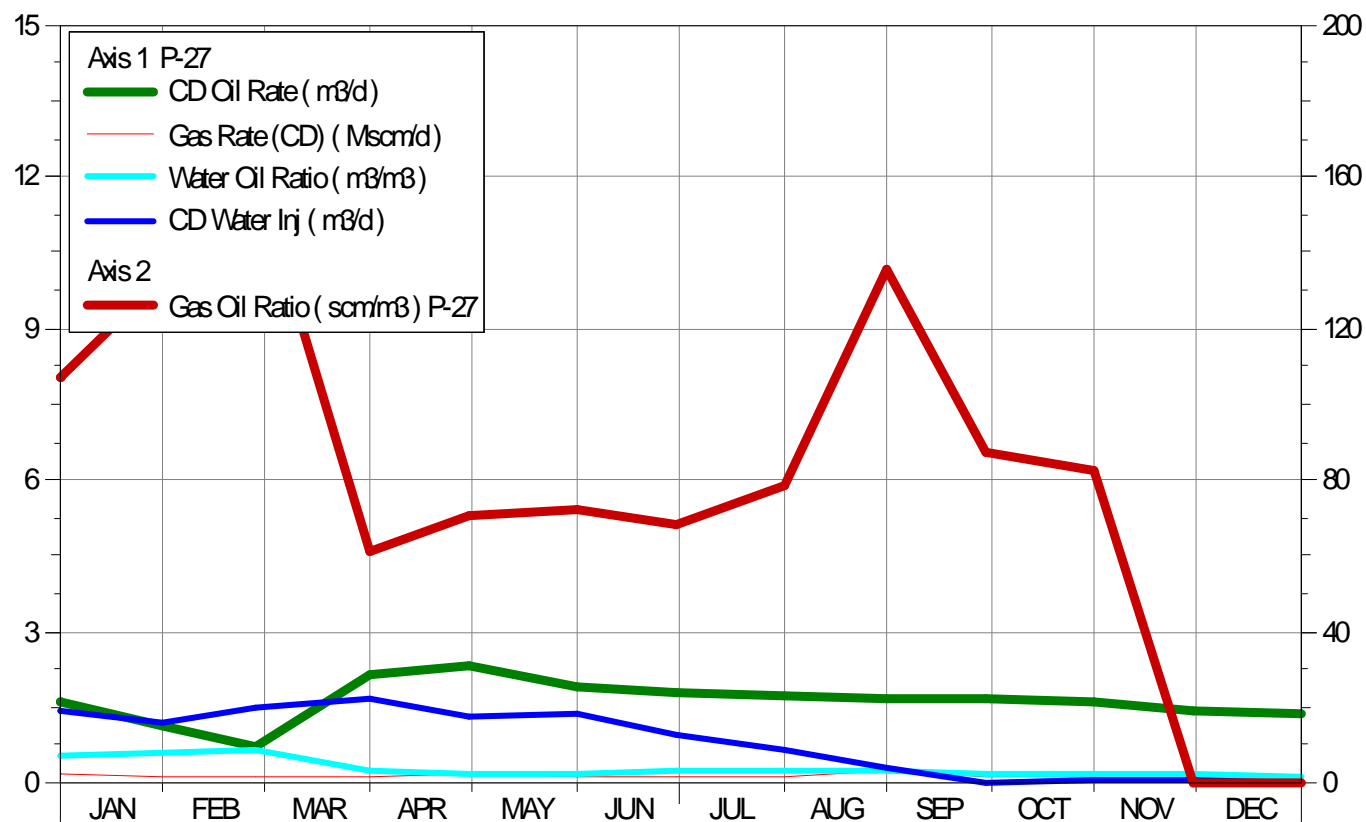


Figure B.25: 2010 Monthly Production, Injection and VRR for Pattern 27

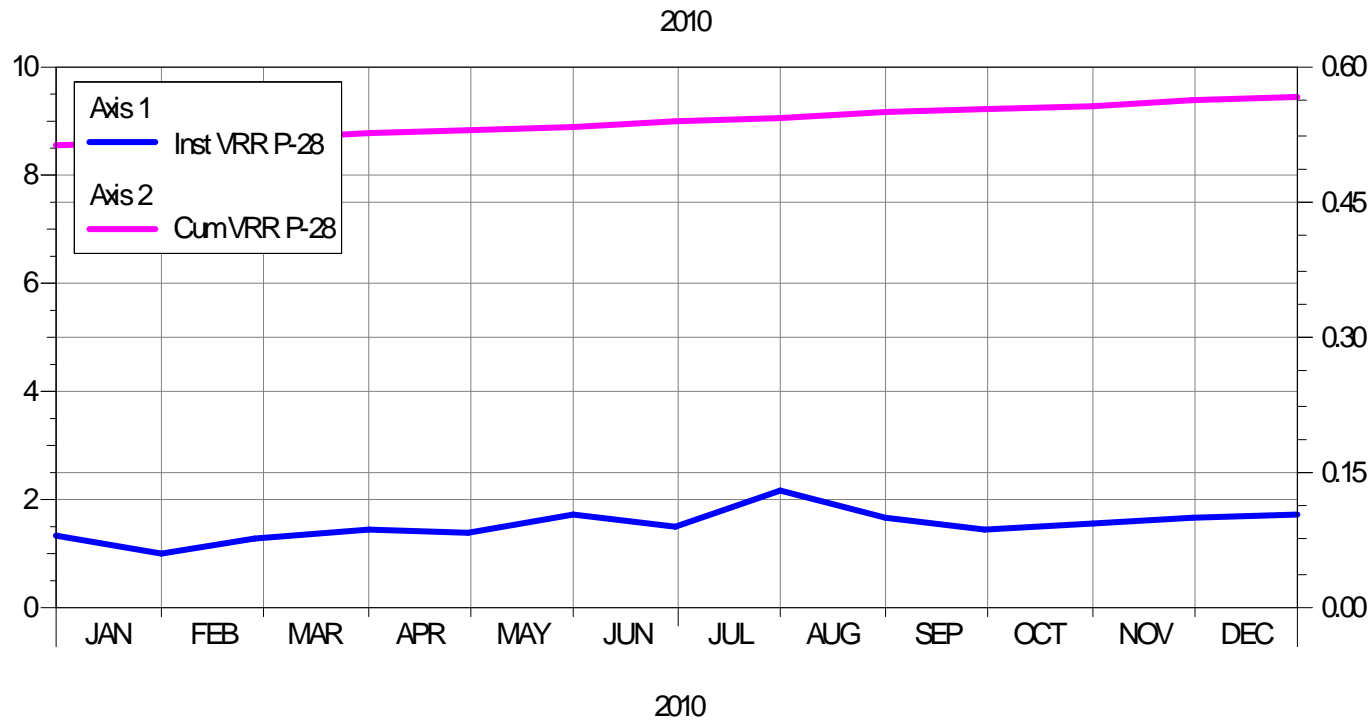
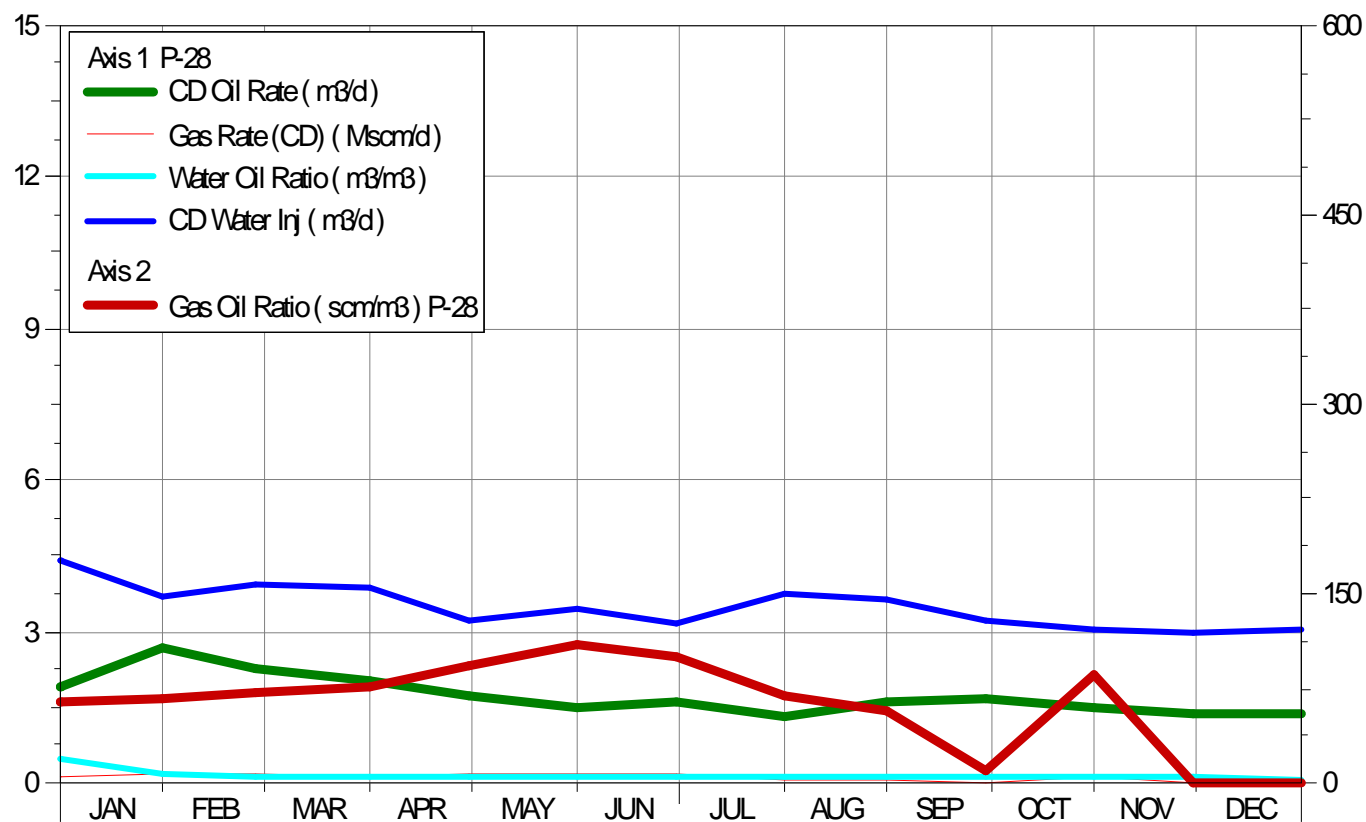
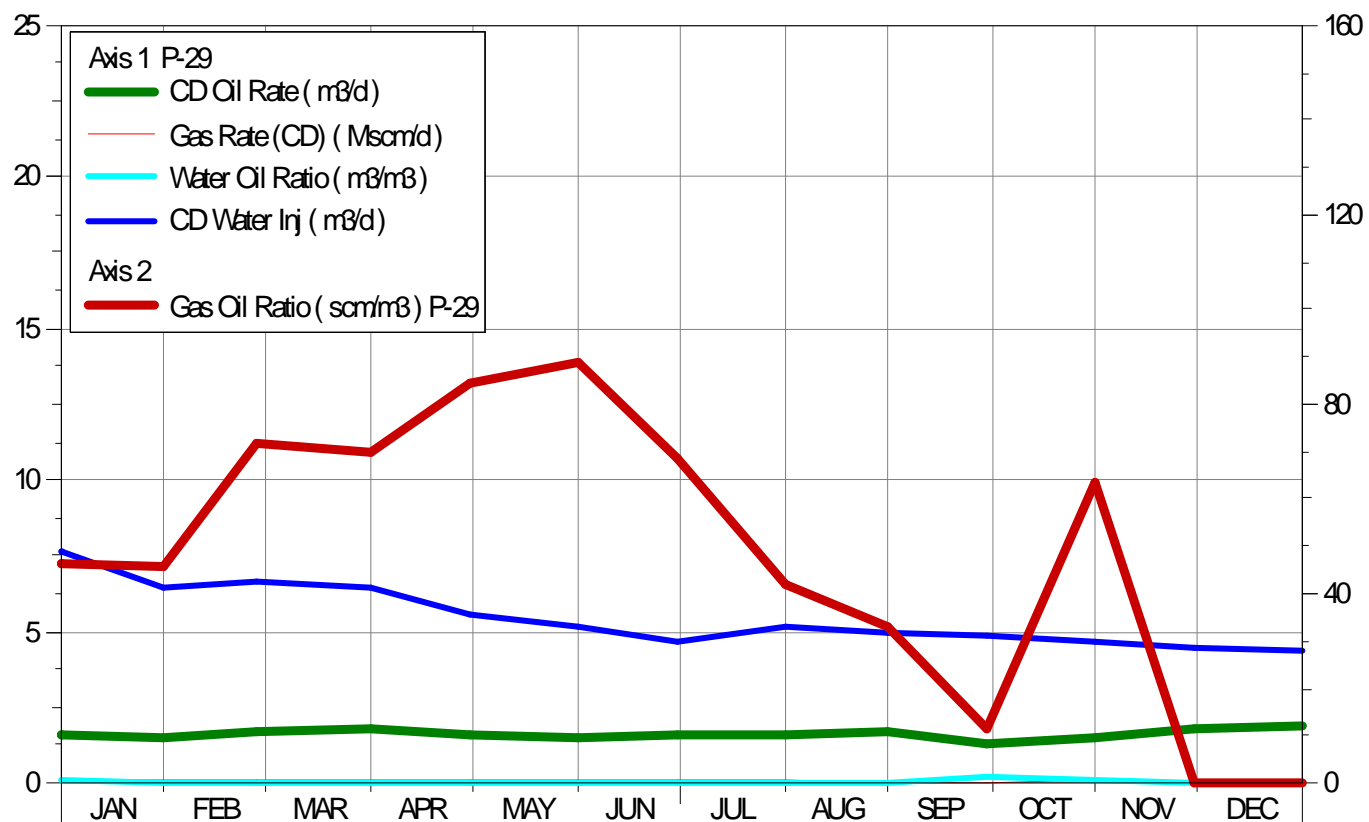
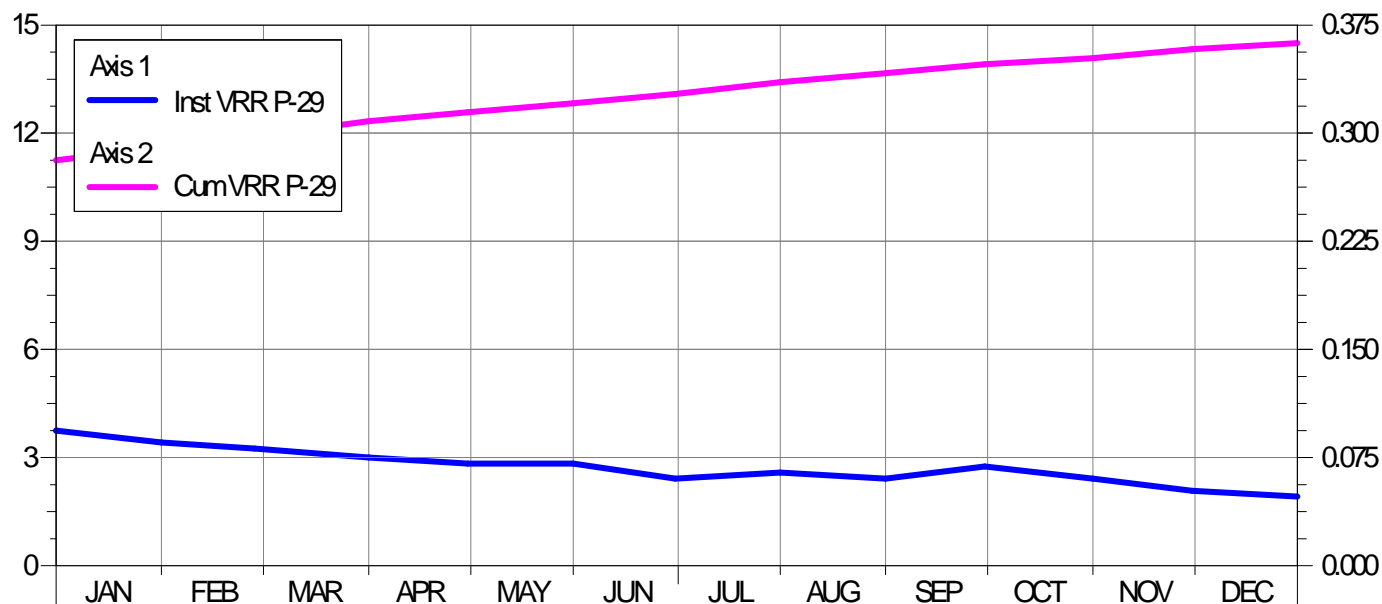


Figure B.26: 2010 Monthly Production, Injection and VRR for Pattern 28



2010



2010

Figure B.27: 2010 Monthly Production, Injection and VRR for Pattern 29

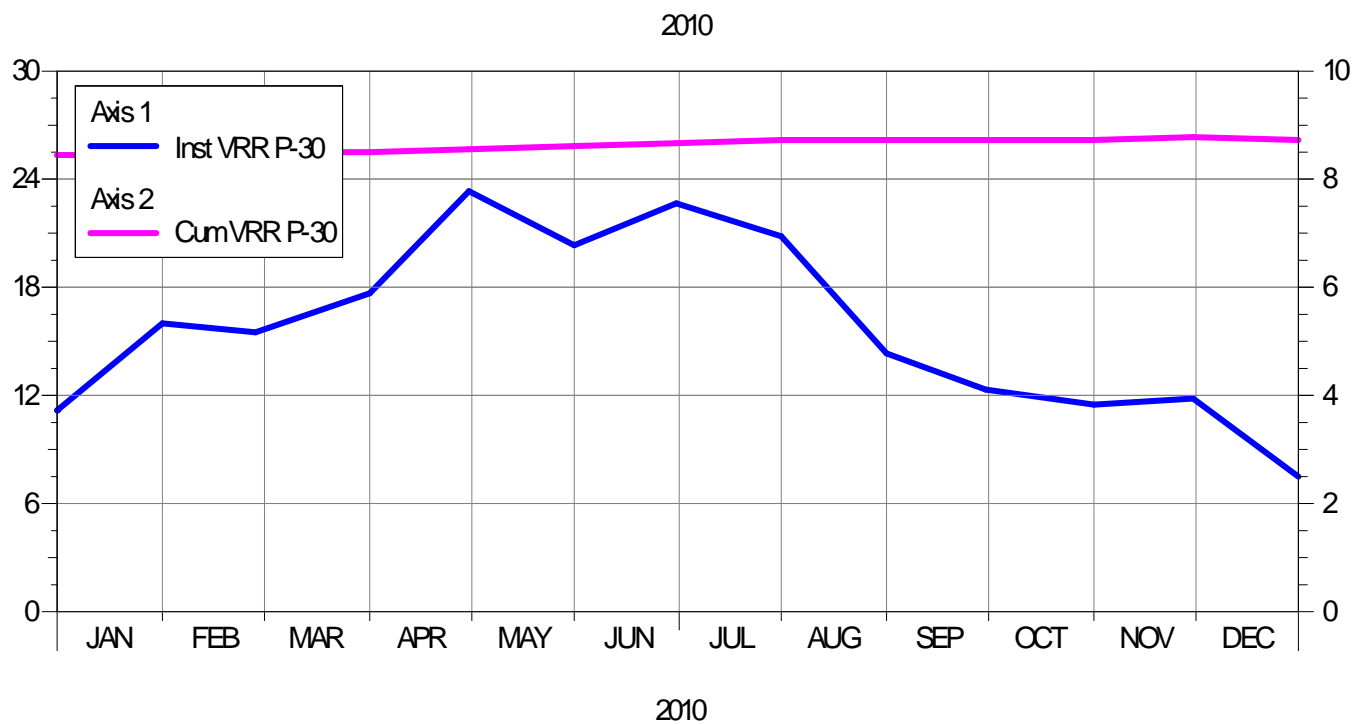
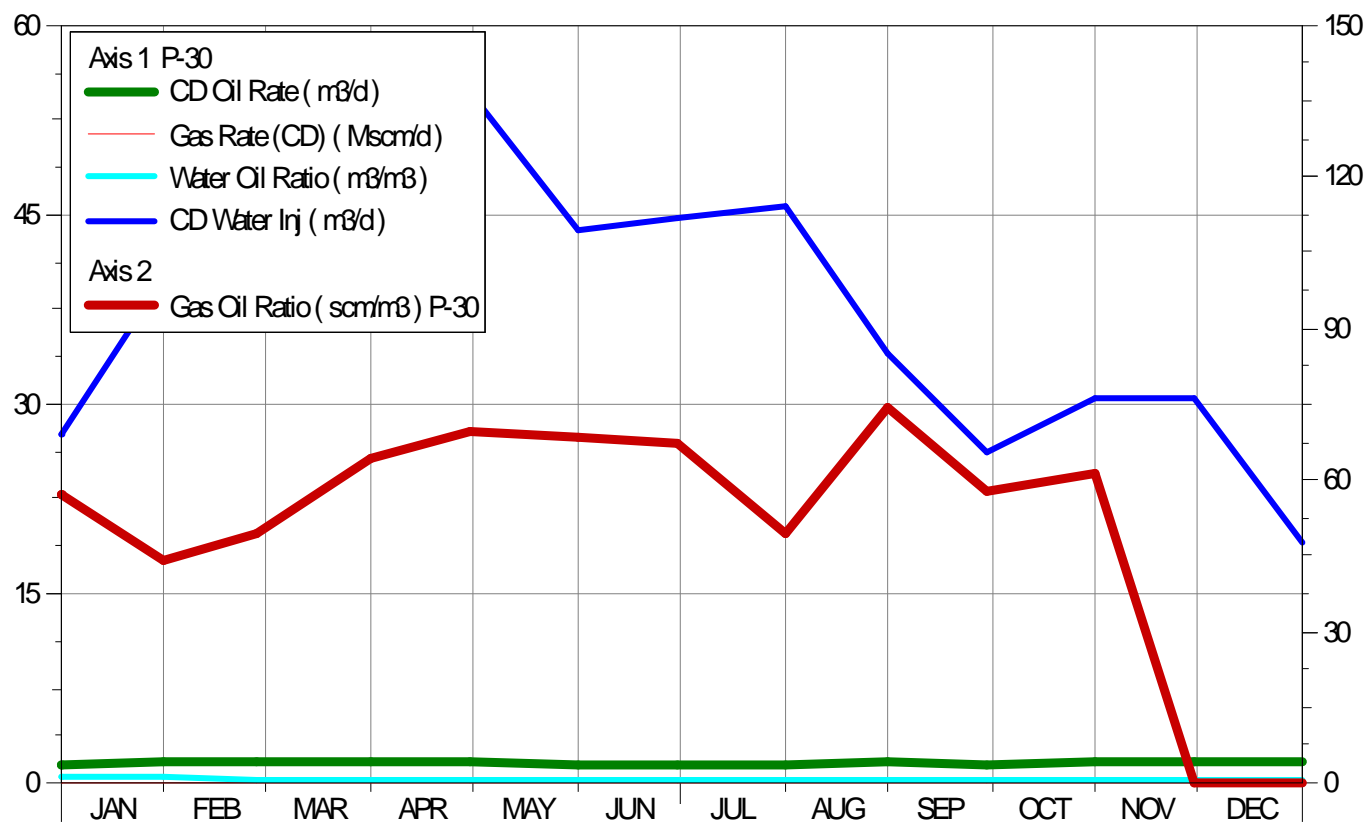


Figure B.28: 2010 Monthly Production, Injection and VRR for Pattern 30

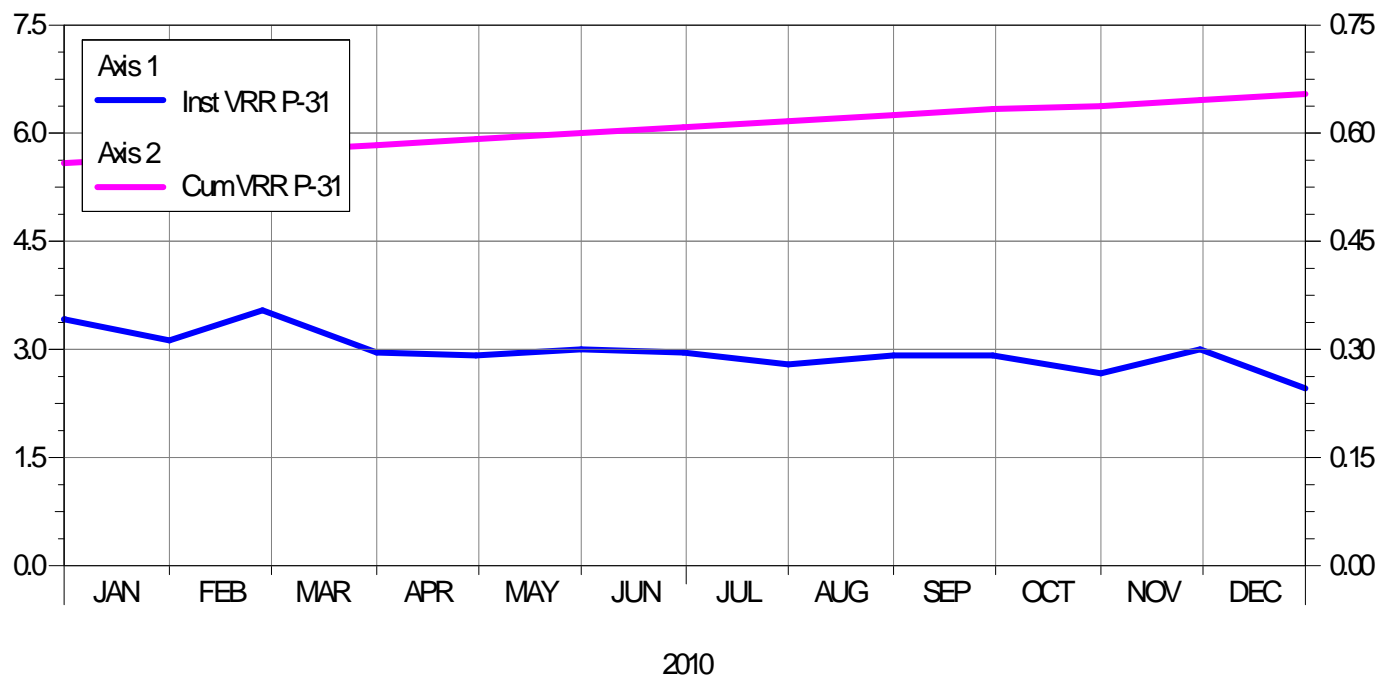
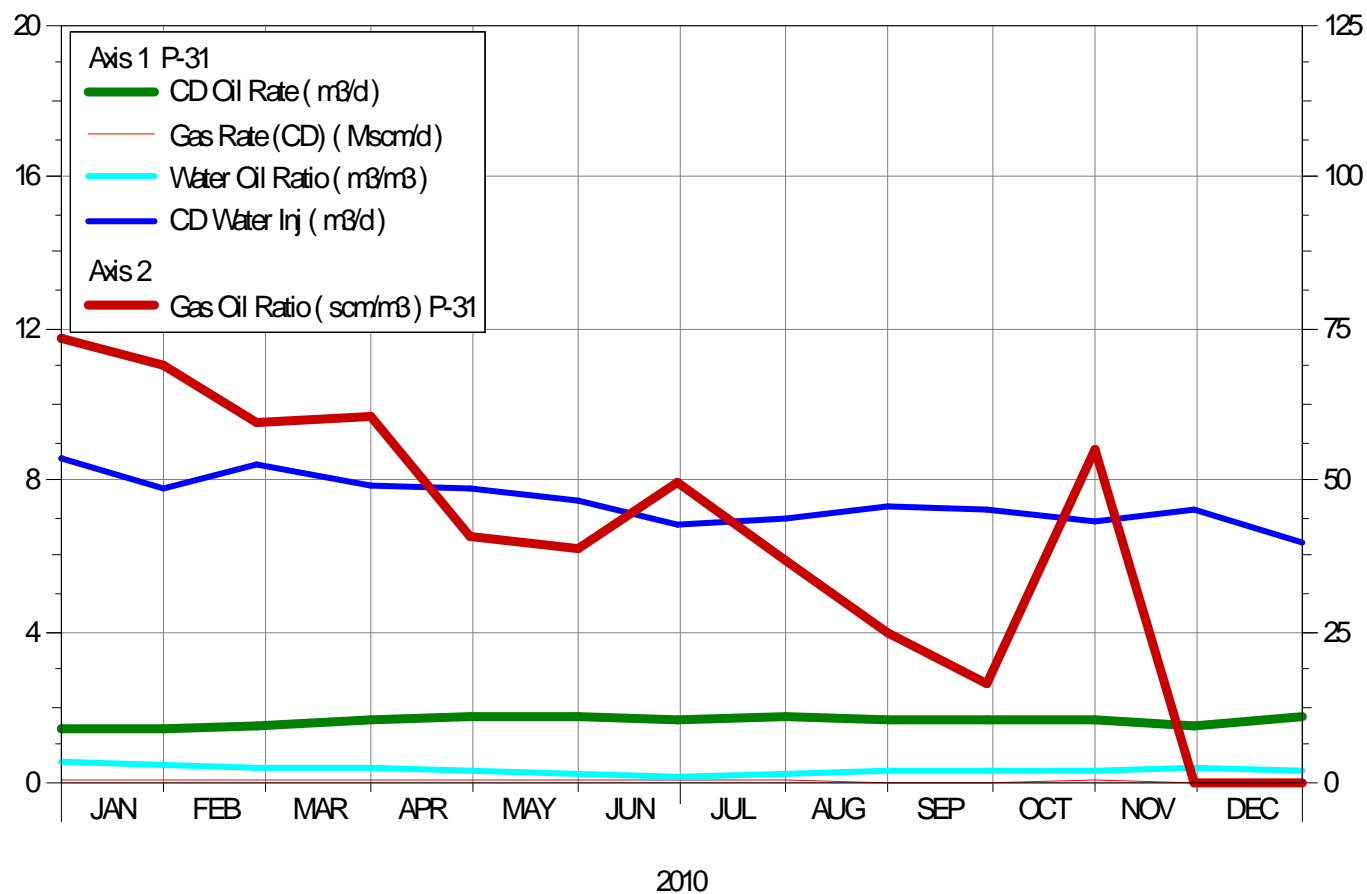


Figure B.29: 2010 Monthly Production, Injection and VRR for Pattern 31

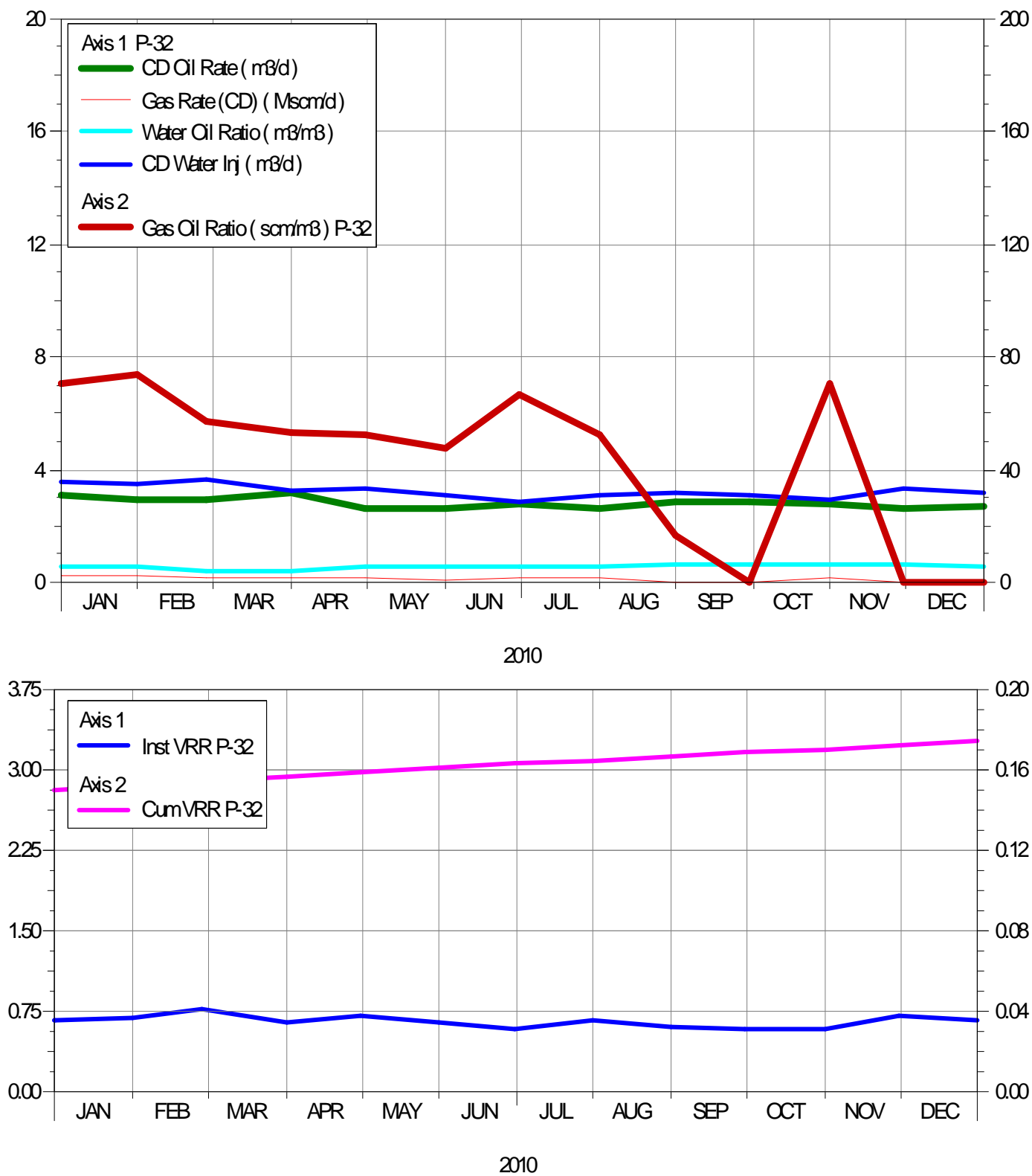


Figure B.30: 2010 Monthly Production, Injection and VRR for Pattern 32

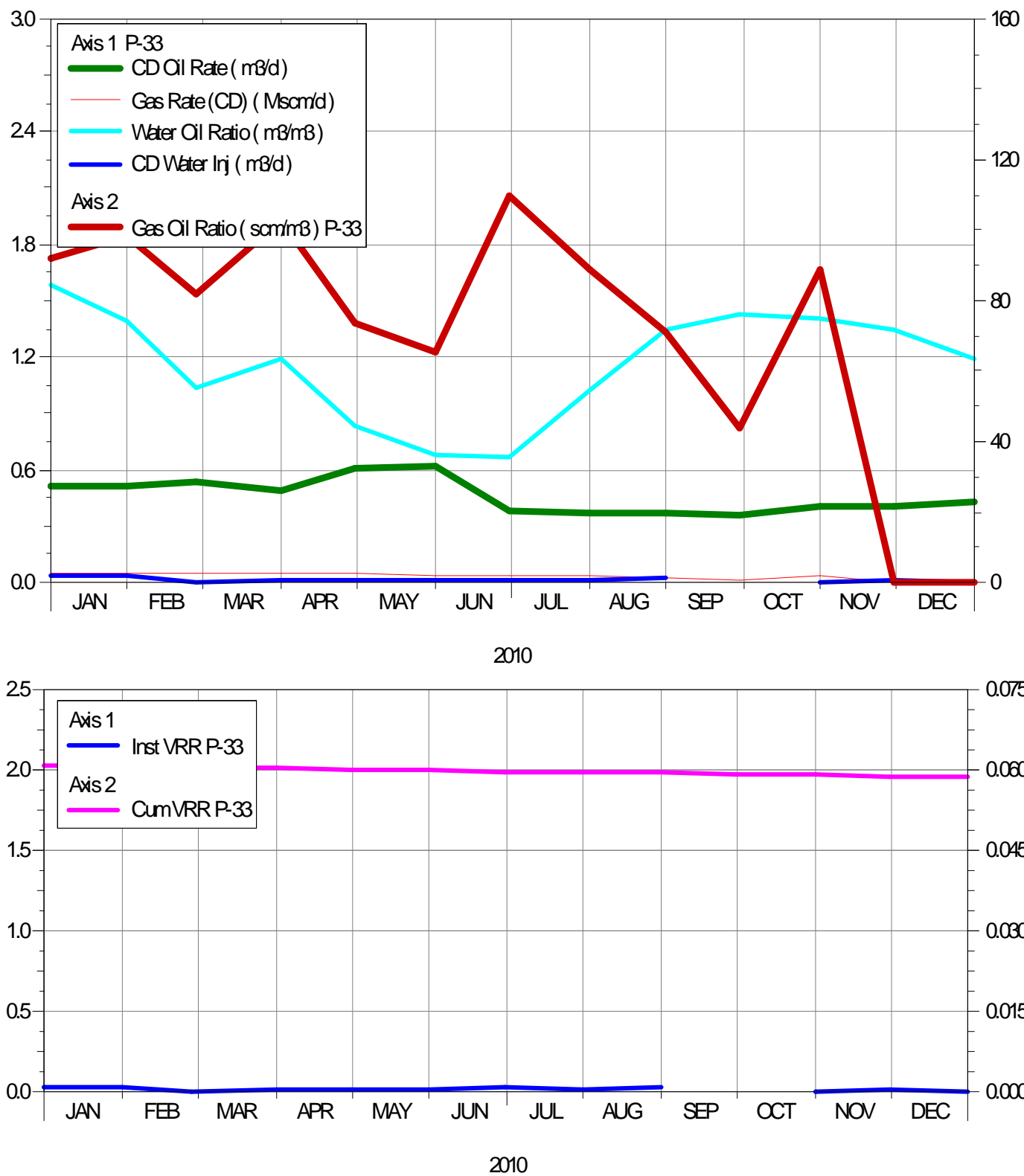


Figure B.31: 2010 Monthly Production, Injection and VRR for Pattern 33

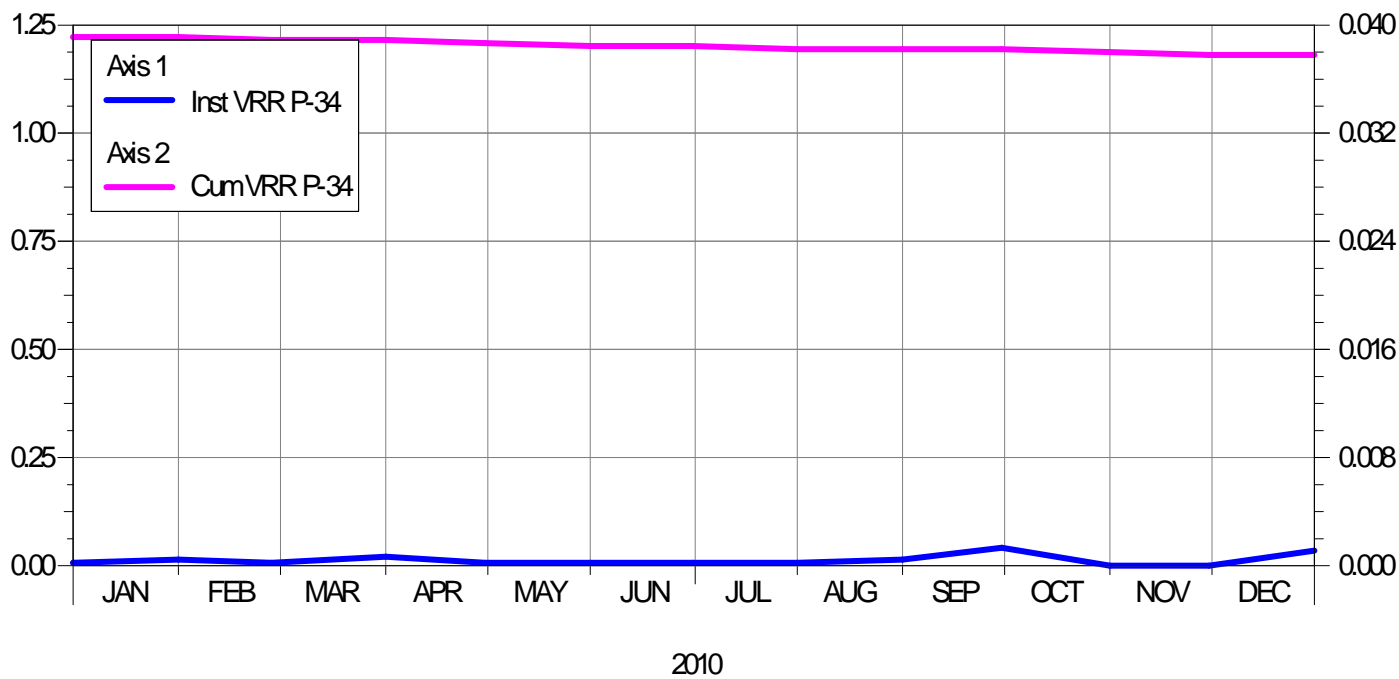
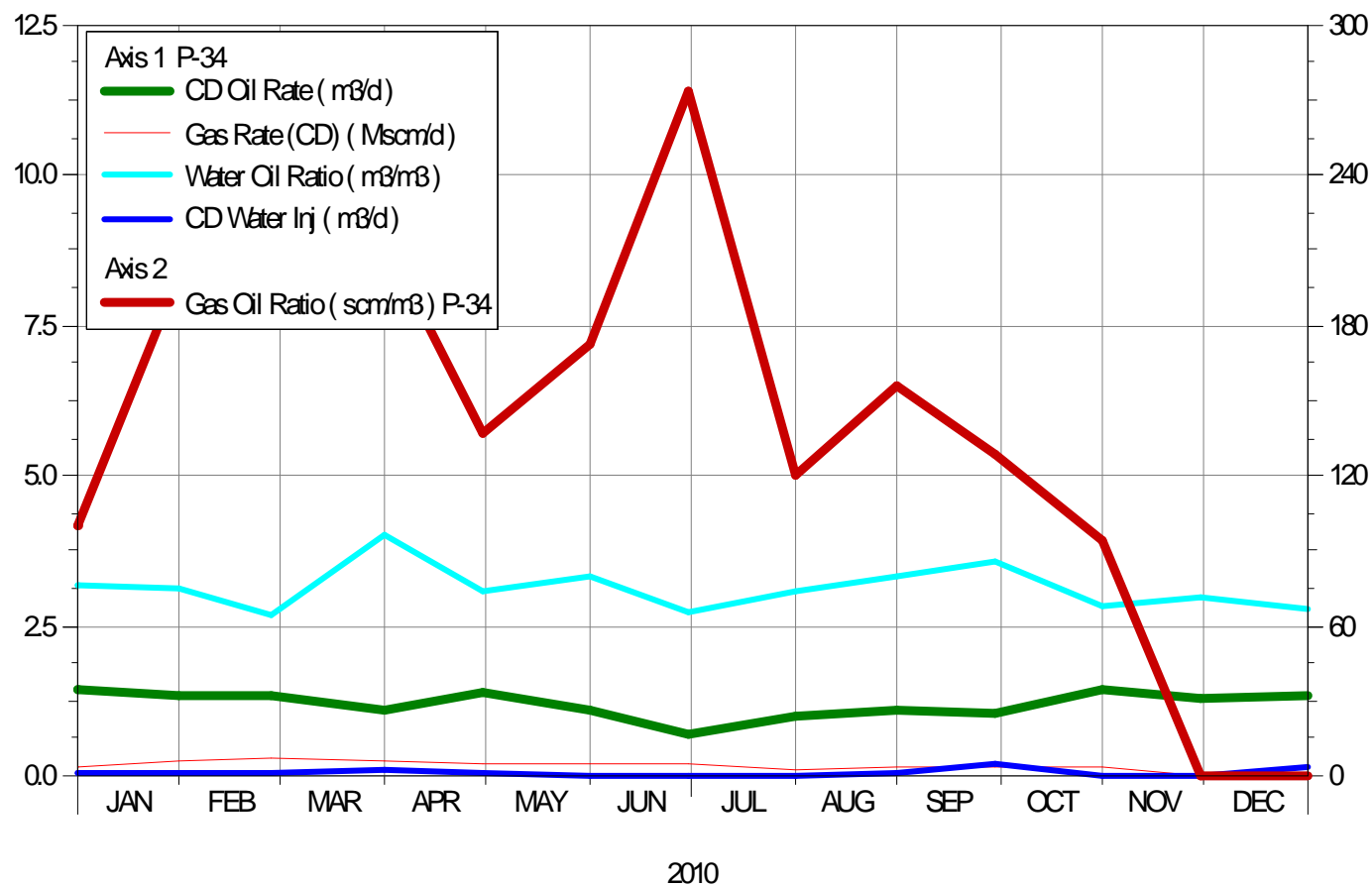


Figure B.32: 2010 Monthly Production, Injection and VRR for Pattern 34

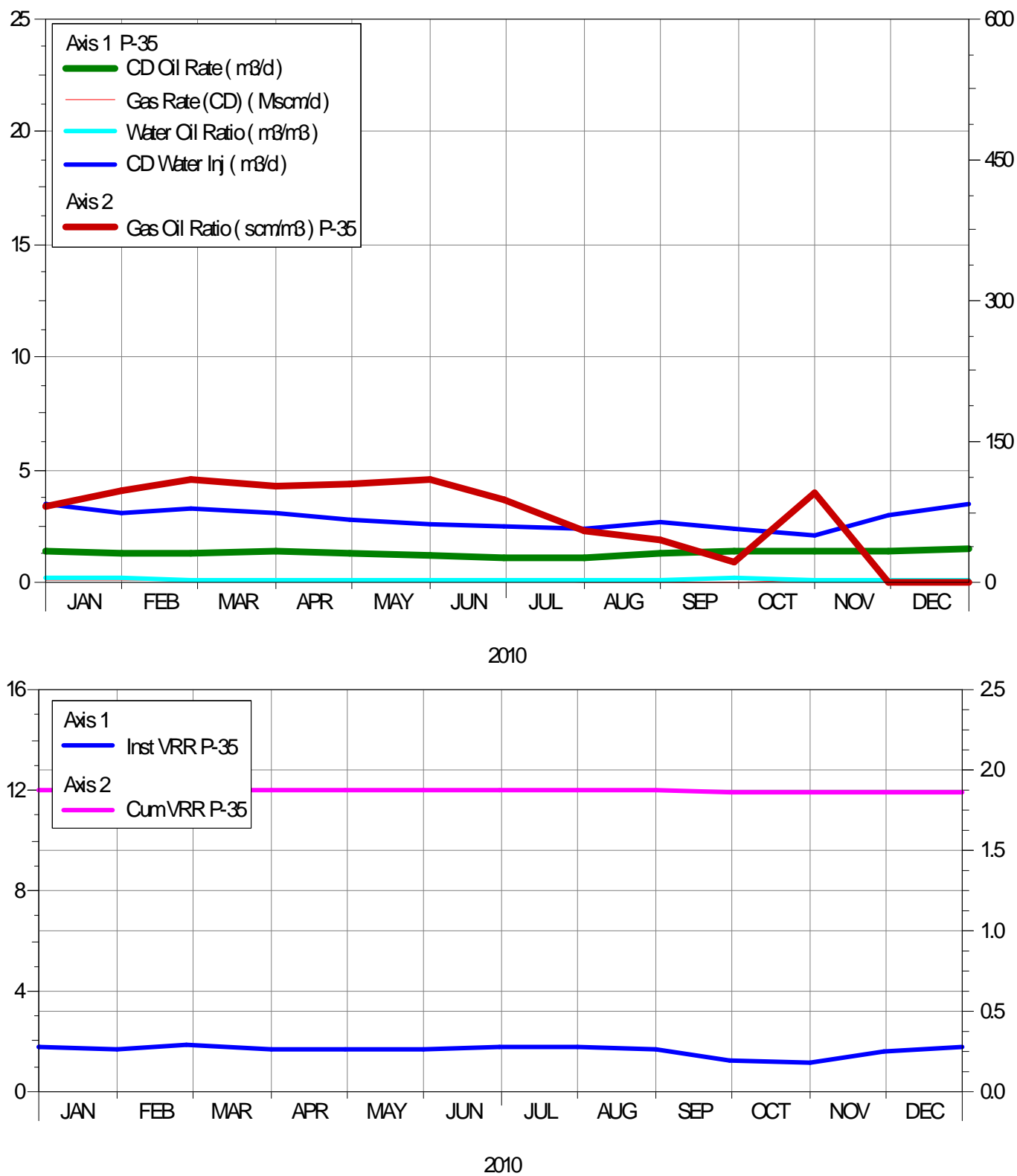


Figure B.33: 2010 Monthly Production, Injection and VRR for Pattern 35

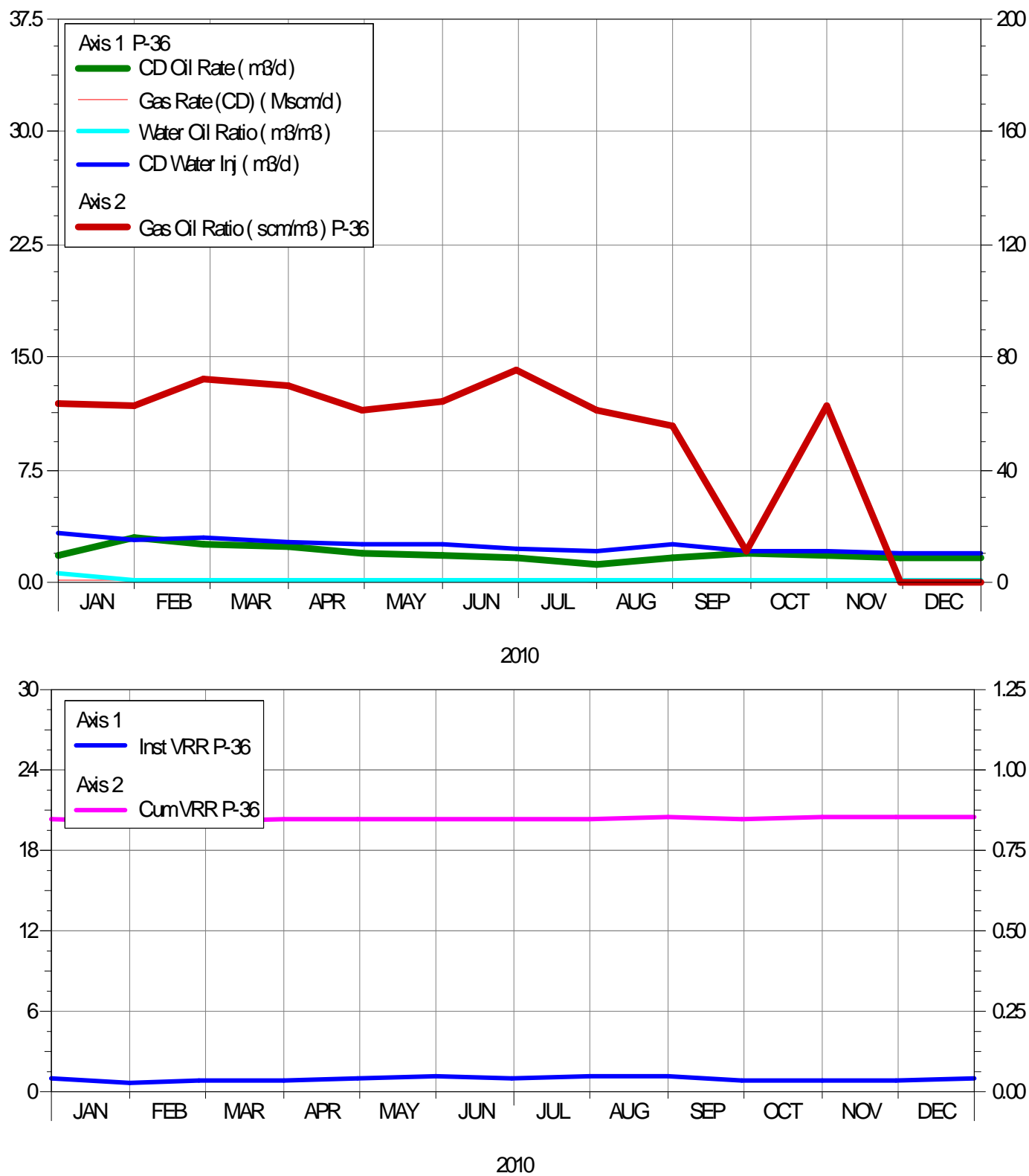


Figure B.34: 2010 Monthly Production, Injection and VRR for Pattern 36

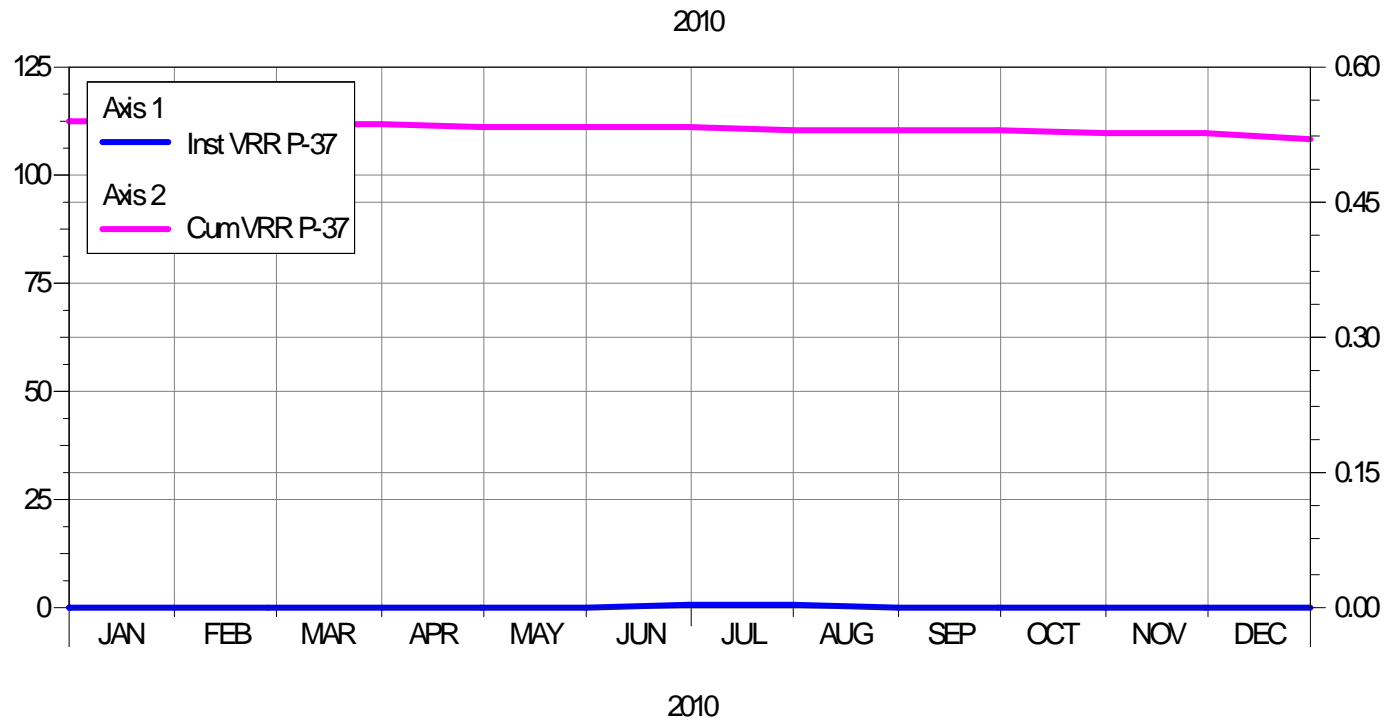
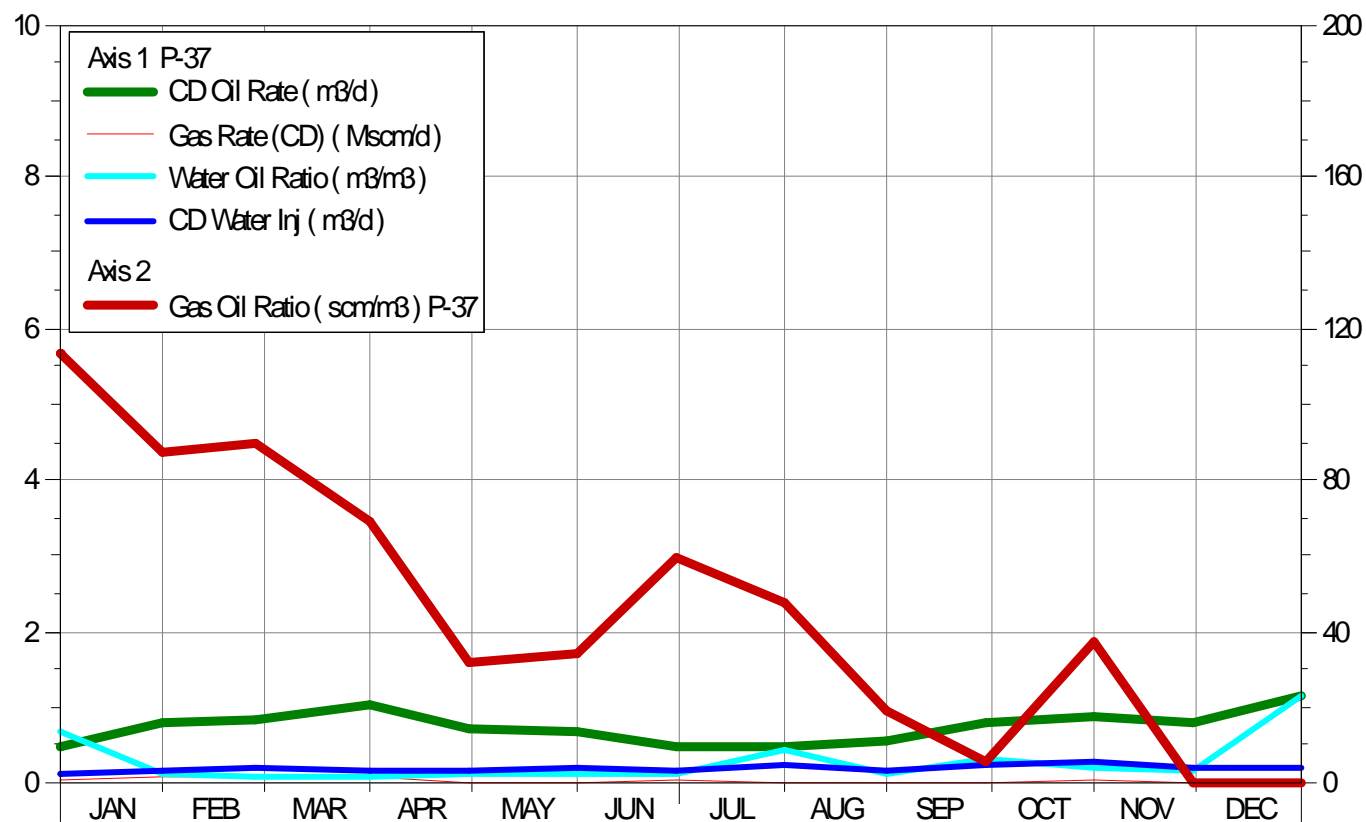


Figure B.35: 2010 Monthly Production, Injection and VRR for Pattern 37

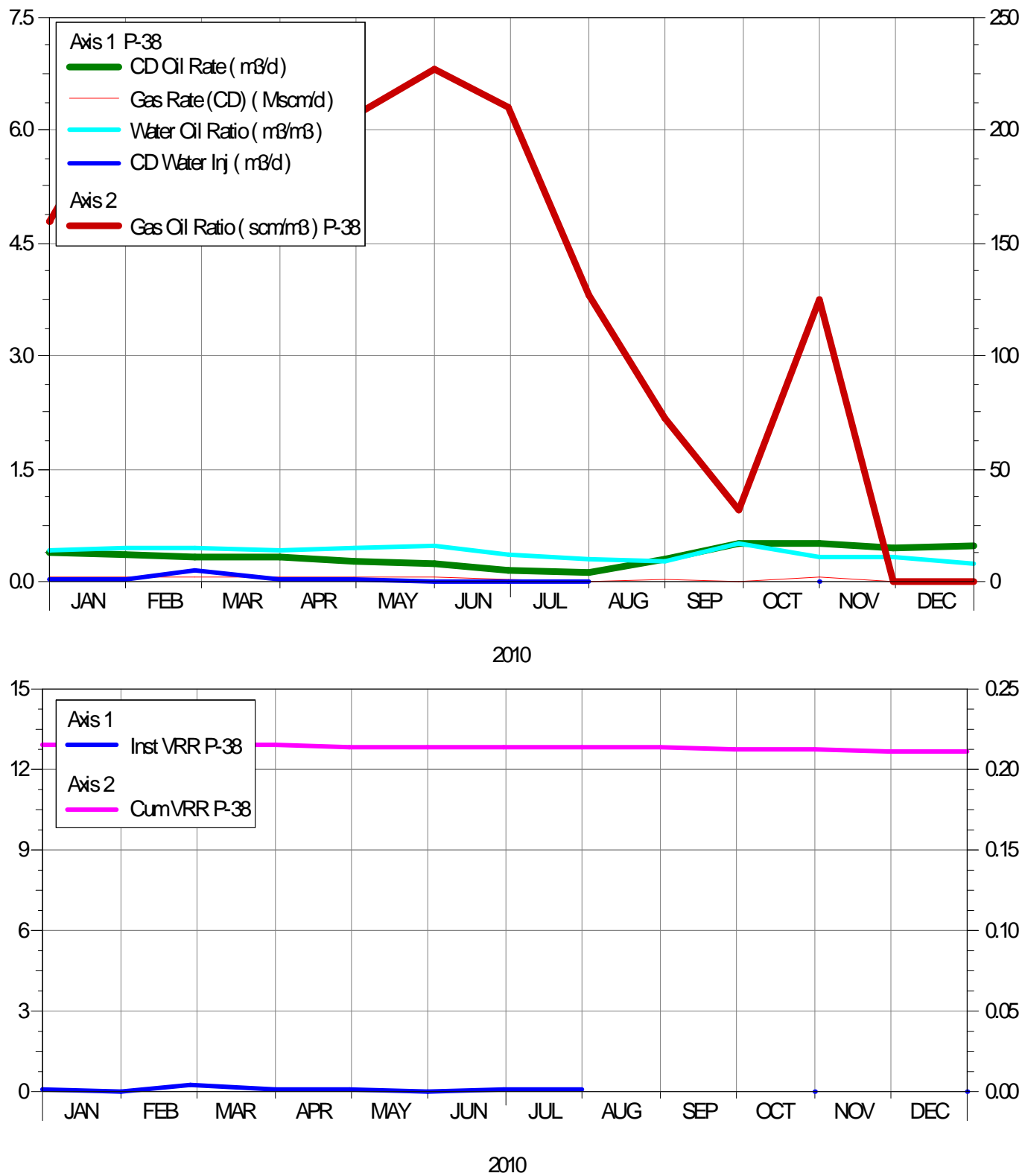


Figure B.36: 2010 Monthly Production, Injection and VRR for Pattern 38

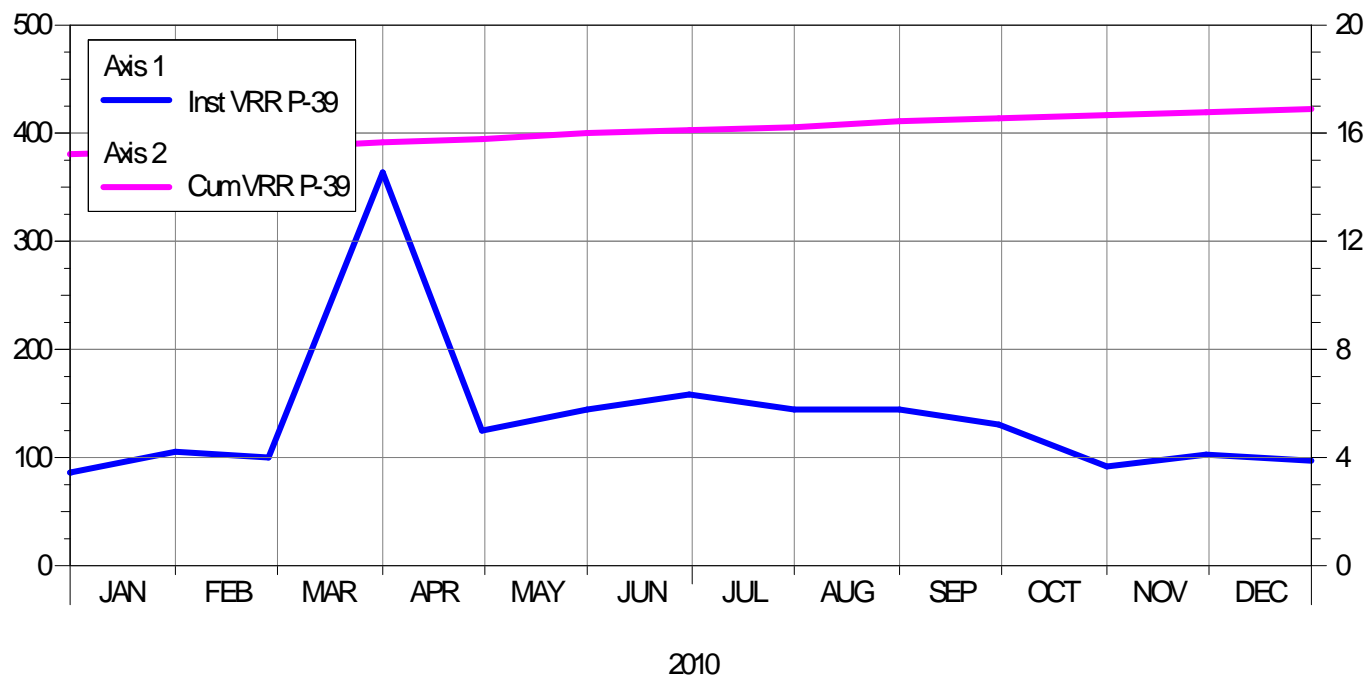
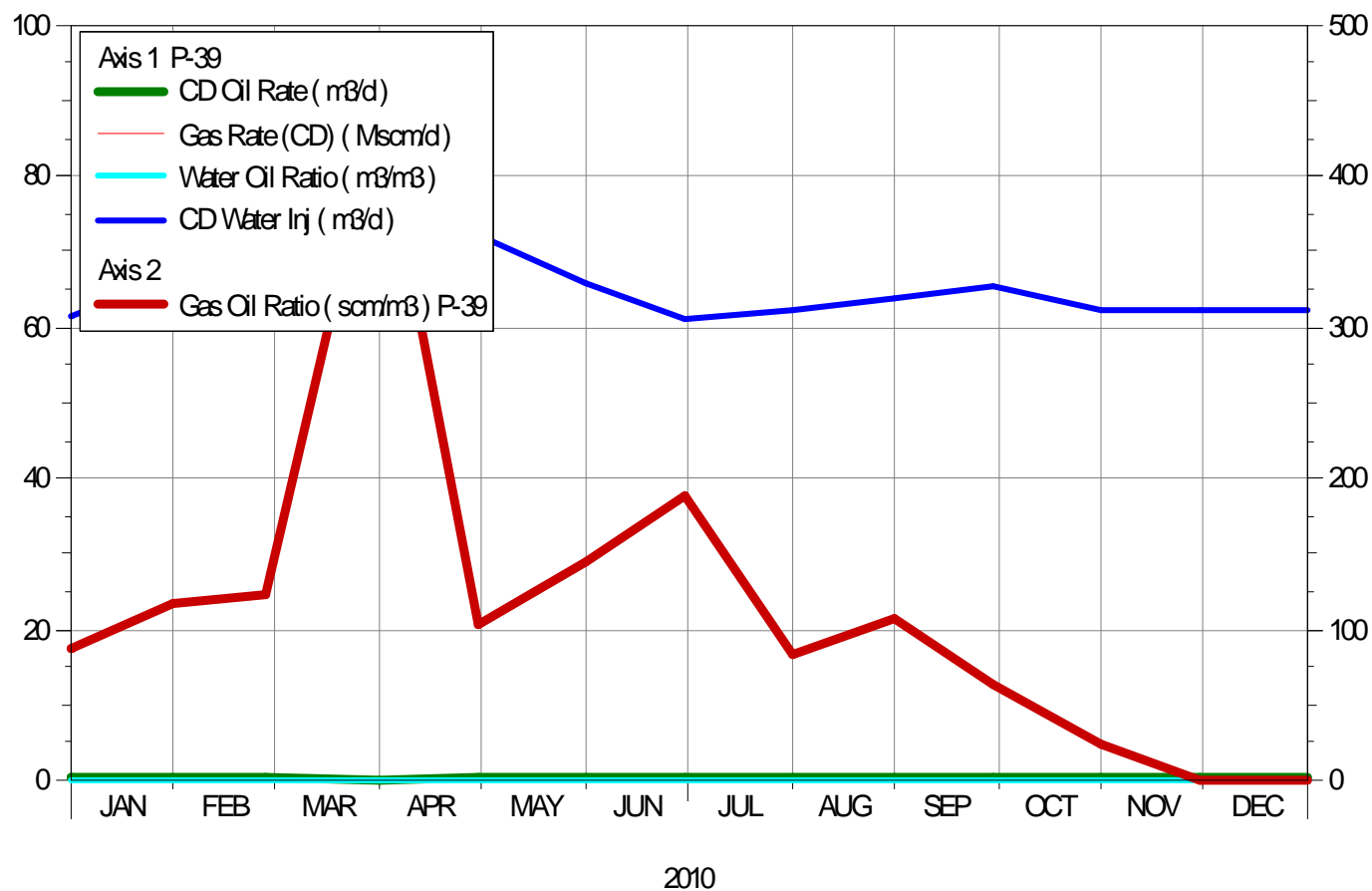


Figure B.37: 2010 Monthly Production, Injection and VRR for Pattern 39

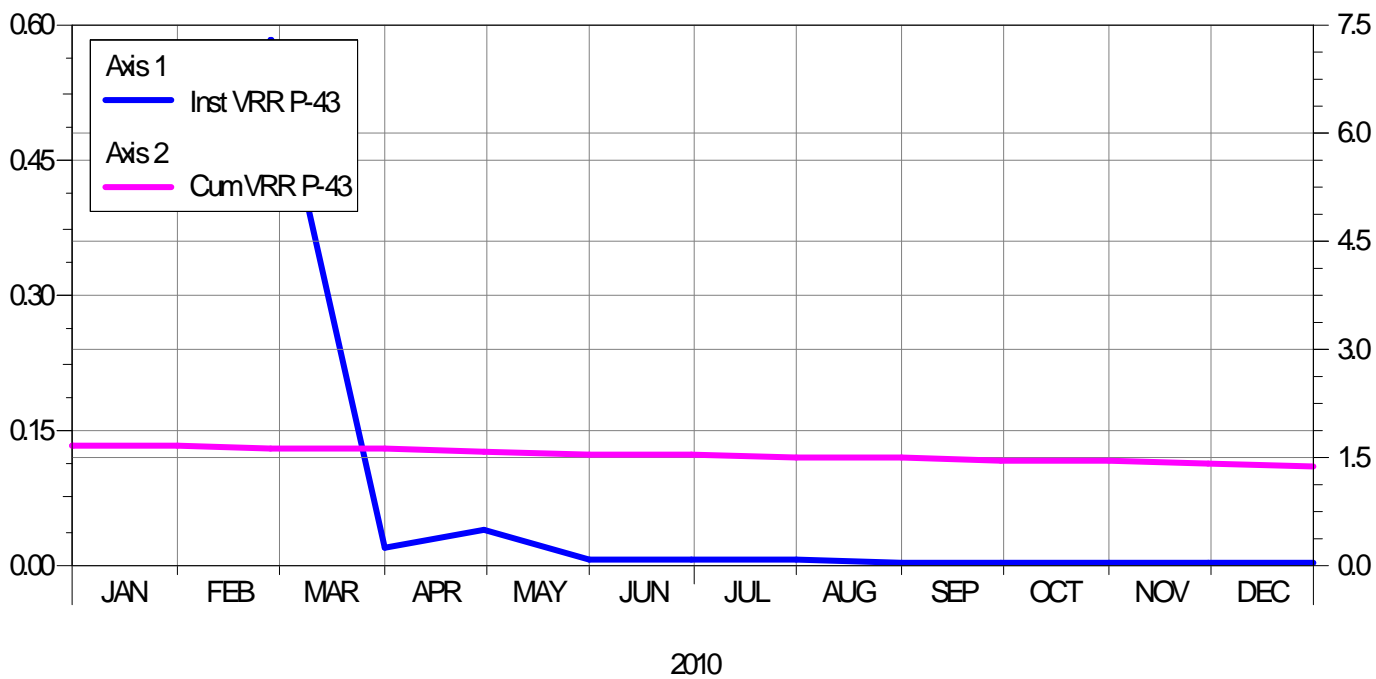
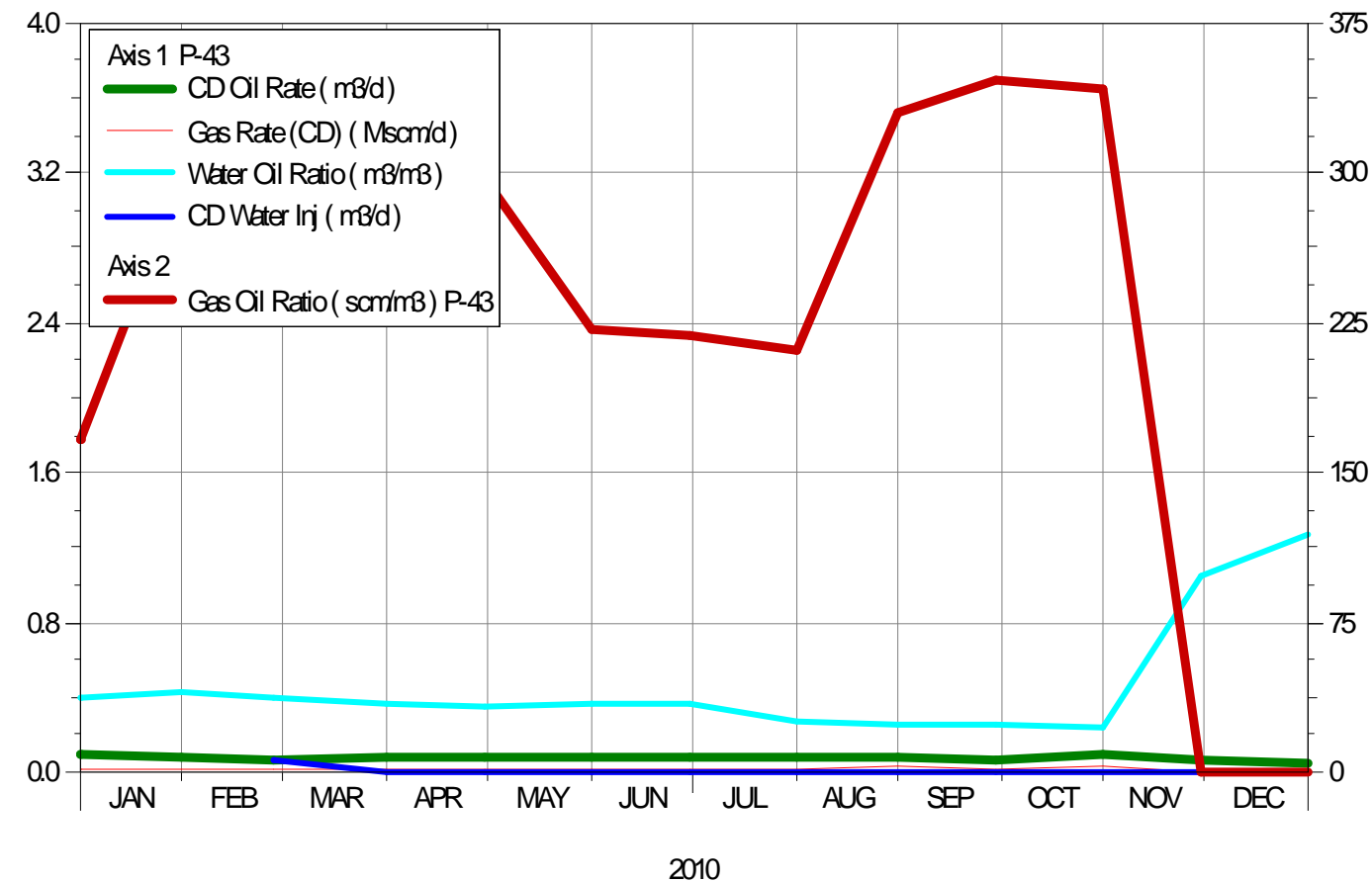


Figure B.38: 2010 Monthly Production, Injection and VRR for Pattern 43

TABLE C.1: CUMULATIVE PRODUCTION AND INJECTION AT THE END OF 2009

	Cum Oil Prod (E ³ m ³)	Cum Gas Prod (E ⁶ m ³)	Cum Water Prod (E ³ m ³)	Cum Liquid Prod (E ³ m ³)	Cum Water Inj (E ³ m ³)
Overall Unit	748.89	24.92	465.48	1214.37	1692.91
PATTERN: P-02	6.63	0.28	1.16	7.79	5.48
PATTERN: P-05	2.7	0.22	1.29	3.99	3.97
PATTERN: P-06	20.7	0.66	3.22	23.91	17.53
PATTERN: P-07	19.7	0.54	41.75	61.44	15.06
PATTERN: P-08	17.92	0.5	55.57	73.49	203.64
PATTERN: P-09	30.24	0.88	2.73	32.97	33.08
PATTERN: P-10	39.8	1.04	3.56	43.36	59.83
PATTERN: P-11	28.89	0.71	42.94	71.83	172.34
PATTERN: P-12	29.25	0.78	44.58	73.83	65.01
PATTERN: P-13	26.94	1.12	18.98	45.92	92.65
PATTERN: P-14	20.44	0.58	13.55	33.99	36.56
PATTERN: P-15	19.53	0.67	0.64	20.18	12.03
PATTERN: P-16	38.63	1.44	26.43	65.06	80.98
PATTERN: P-17	35.39	1.09	8.64	44.03	35.56
PATTERN: P-18	42.41	1.26	100.45	142.87	83.13
PATTERN: P-19	31.99	1.11	6.77	38.77	87.57
PATTERN: P-20	18.04	0.65	1.26	19.31	5.77
PATTERN: P-21	16.28	0.6	0.8	17.08	32.37
PATTERN: P-22	28.18	0.89	6.65	34.83	26.01
PATTERN: P-23	36.67	1.12	11.47	48.13	66.42
PATTERN: P-24	30.26	0.79	7.07	37.33	20.29
PATTERN: P-25	20.3	0.79	1.04	21.34	8.87
PATTERN: P-26	19.84	0.82	3.97	23.81	26.89
PATTERN: P-27	9.16	0.53	2.57	11.73	6.45
PATTERN: P-28	11.55	0.62	1.3	12.85	8.52
PATTERN: P-29	17.21	0.62	0.45	17.66	7.62
PATTERN: P-30	14.85	0.51	2.33	17.18	175.16
PATTERN: P-31	16.89	0.53	2.78	19.67	14.95
PATTERN: P-32	23.08	0.78	8.53	31.61	6.29
PATTERN: P-33	4.42	0.16	2.47	6.88	0.45
PATTERN: P-34	15.39	0.54	18.56	33.96	1.4
PATTERN: P-35	11.42	0.42	13.32	24.74	50.24
PATTERN: P-36	10.17	0.47	0.97	11.14	11.14
PATTERN: P-37	5.37	0.25	0.77	6.14	3.73
PATTERN: P-38	5.85	0.27	0.89	6.74	1.66
PATTERN: P-39	5.35	0.19	5.69	11.05	204.47
PATTERN: P-43	0.14	0.02	0.09	0.22	0.35

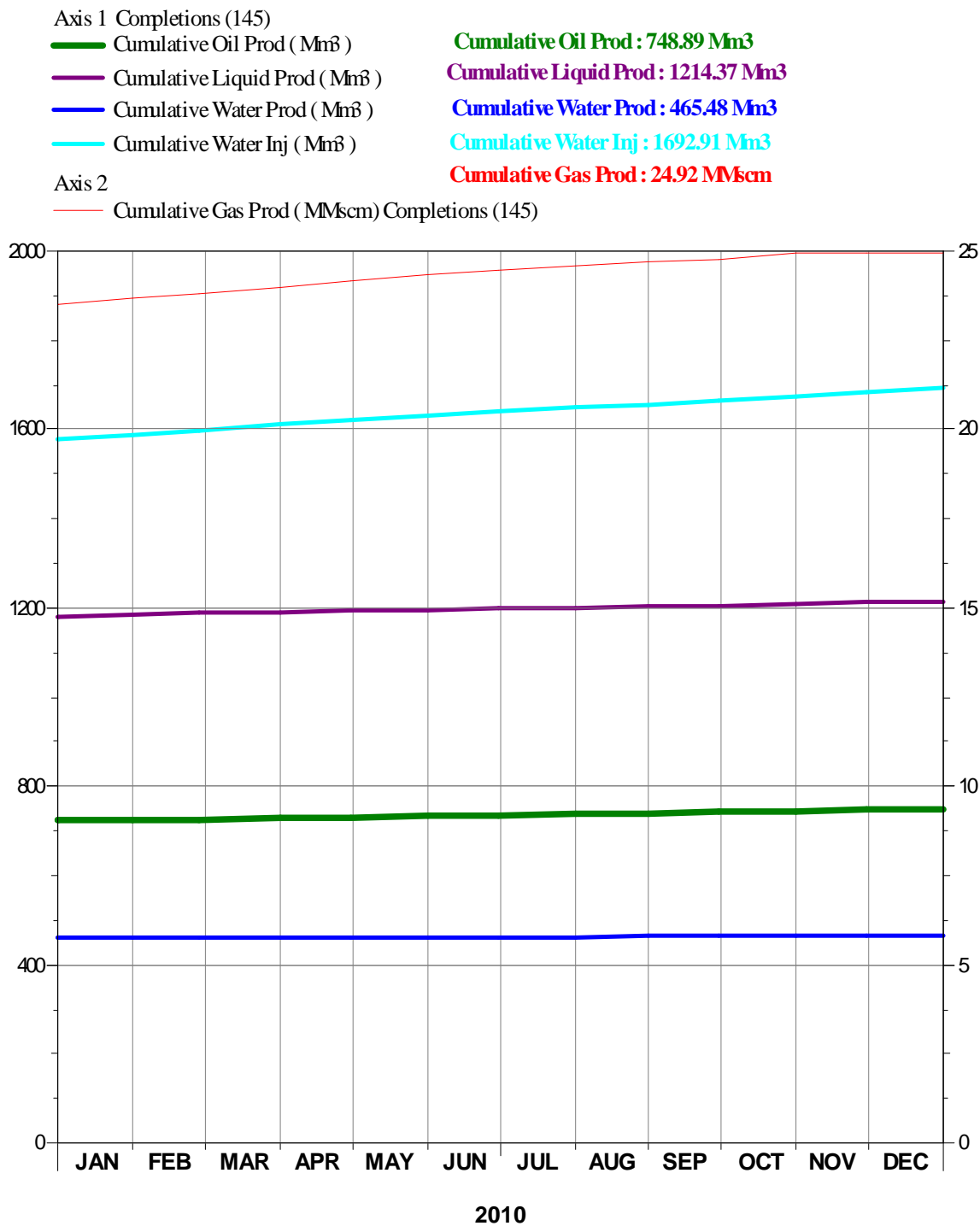


Figure C.1: 2010 Cumulative Production and Injection for the Overall Unit

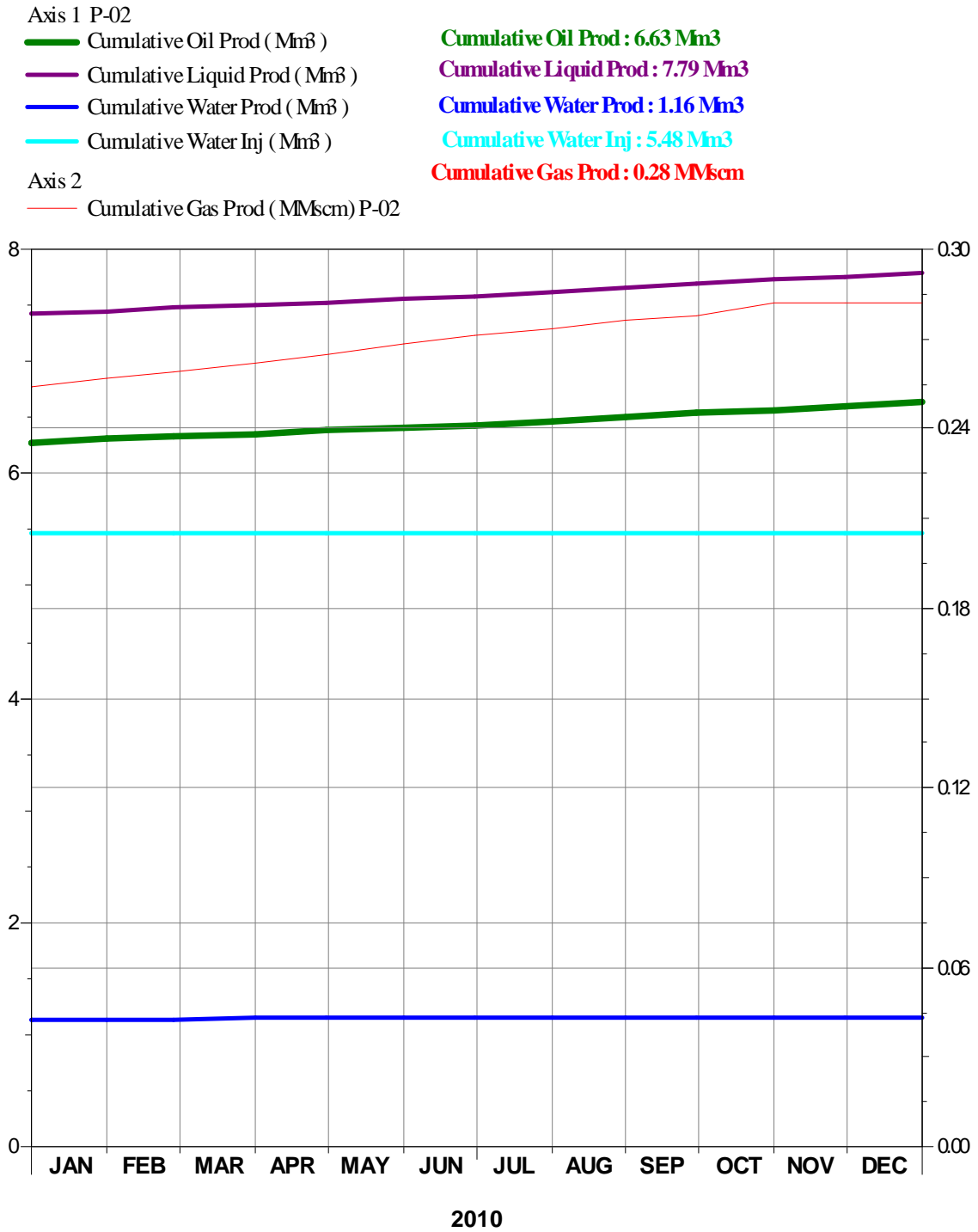


Figure C.2: 2010 Cumulative Production and Injection for Pattern 2

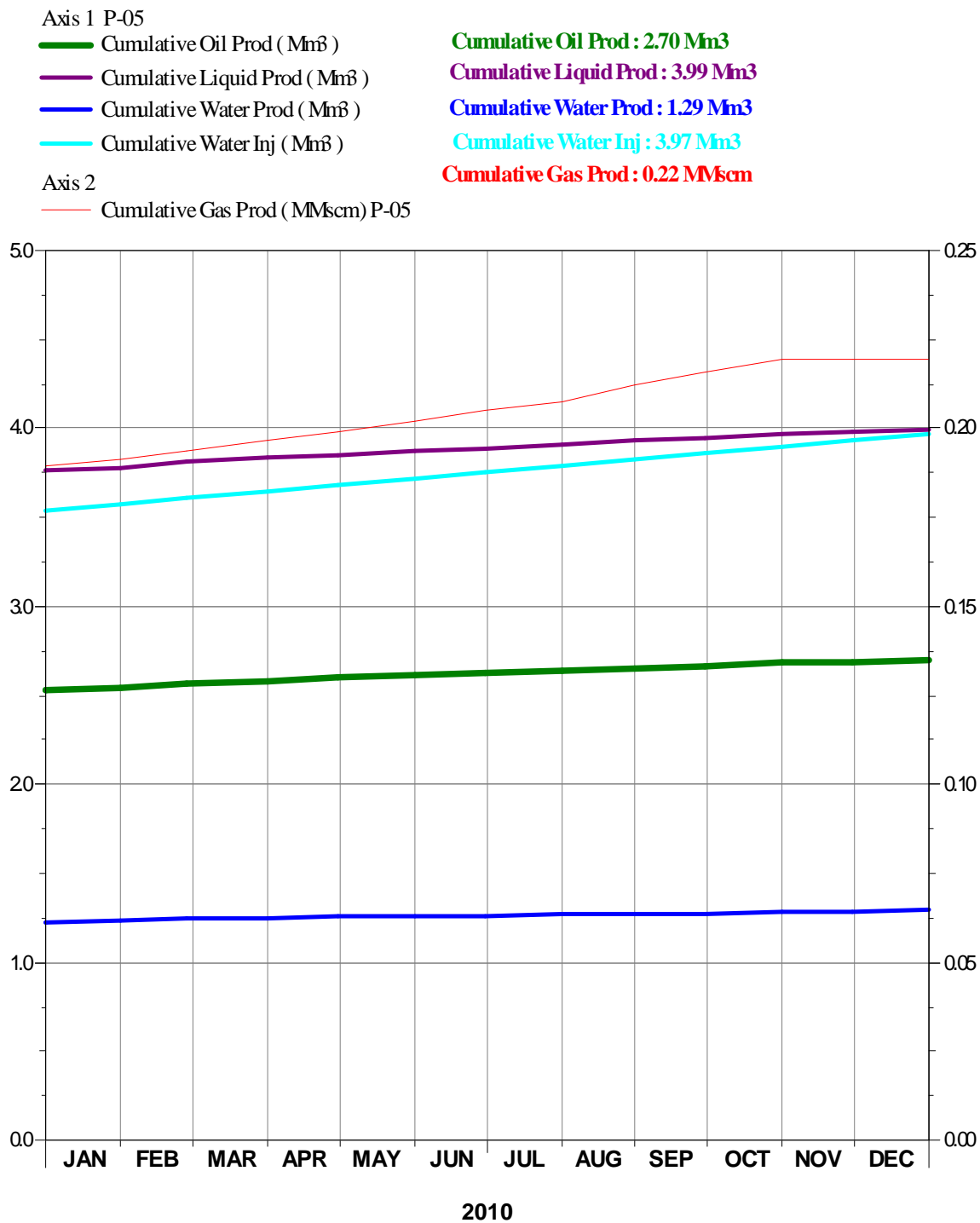


Figure C.4: 2010 Cumulative Production and Injection for Pattern 5

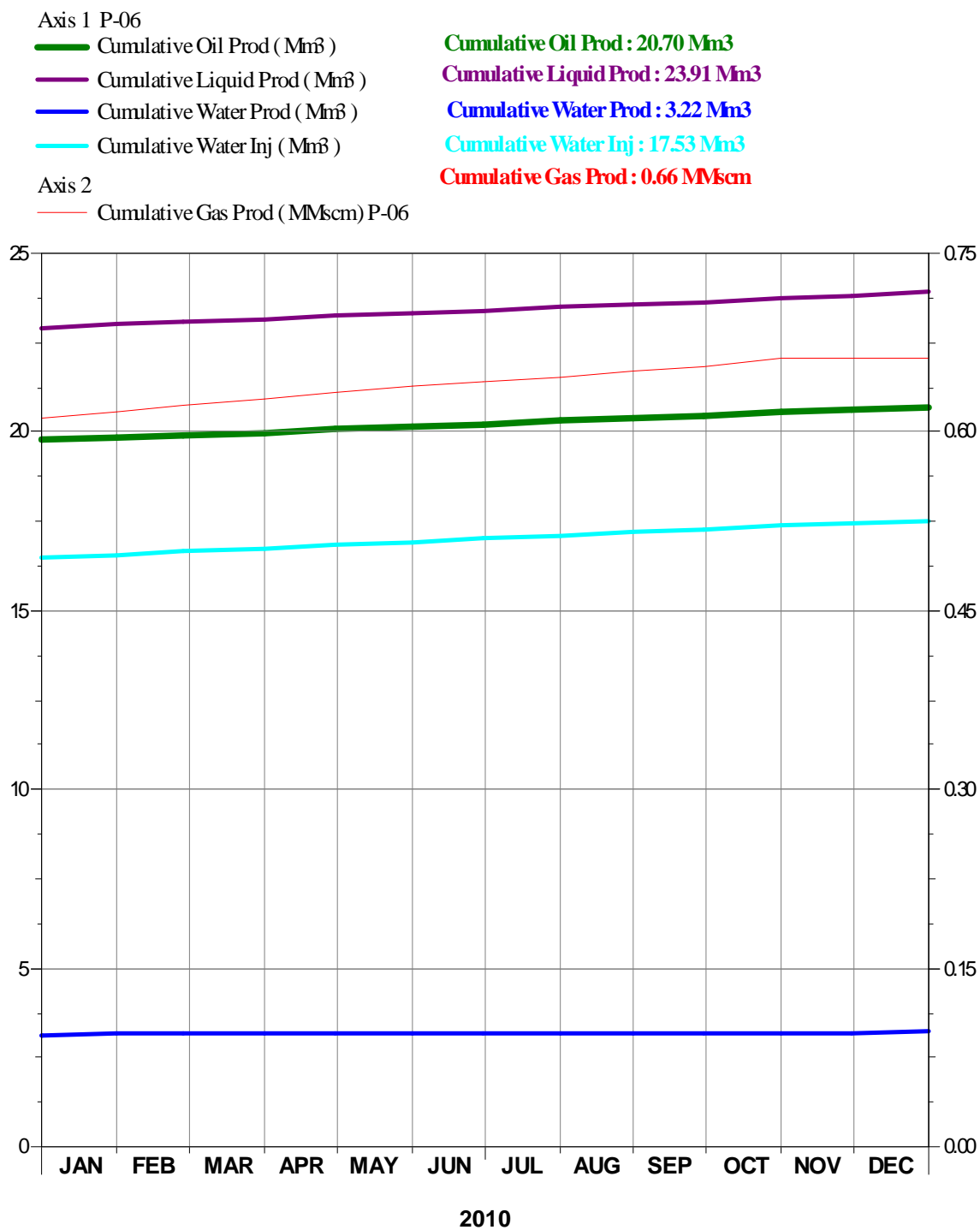


Figure C.5: 2010 Cumulative Production and Injection for Pattern 6

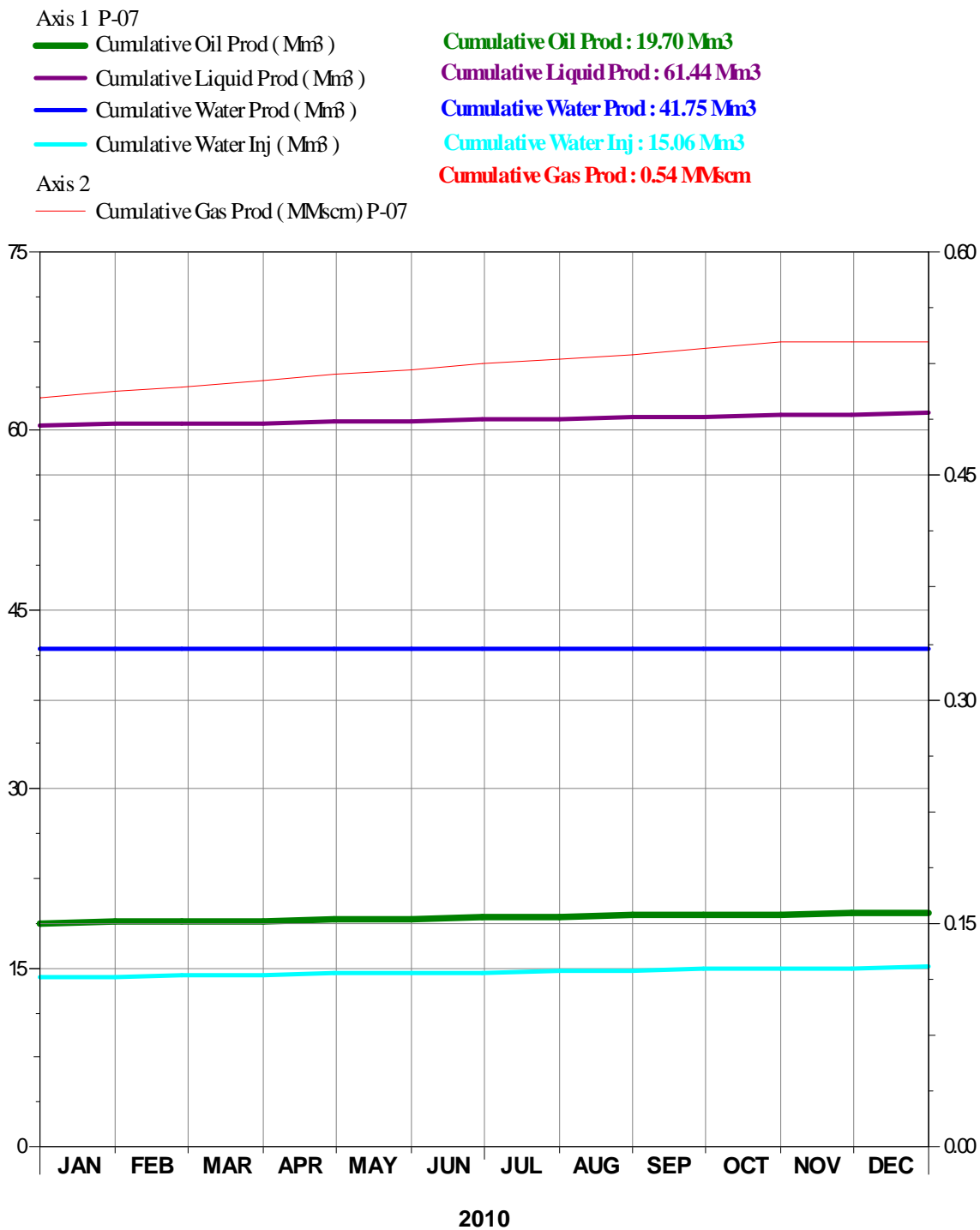


Figure C.6: 2010 Cumulative Production and Injection for Pattern 7

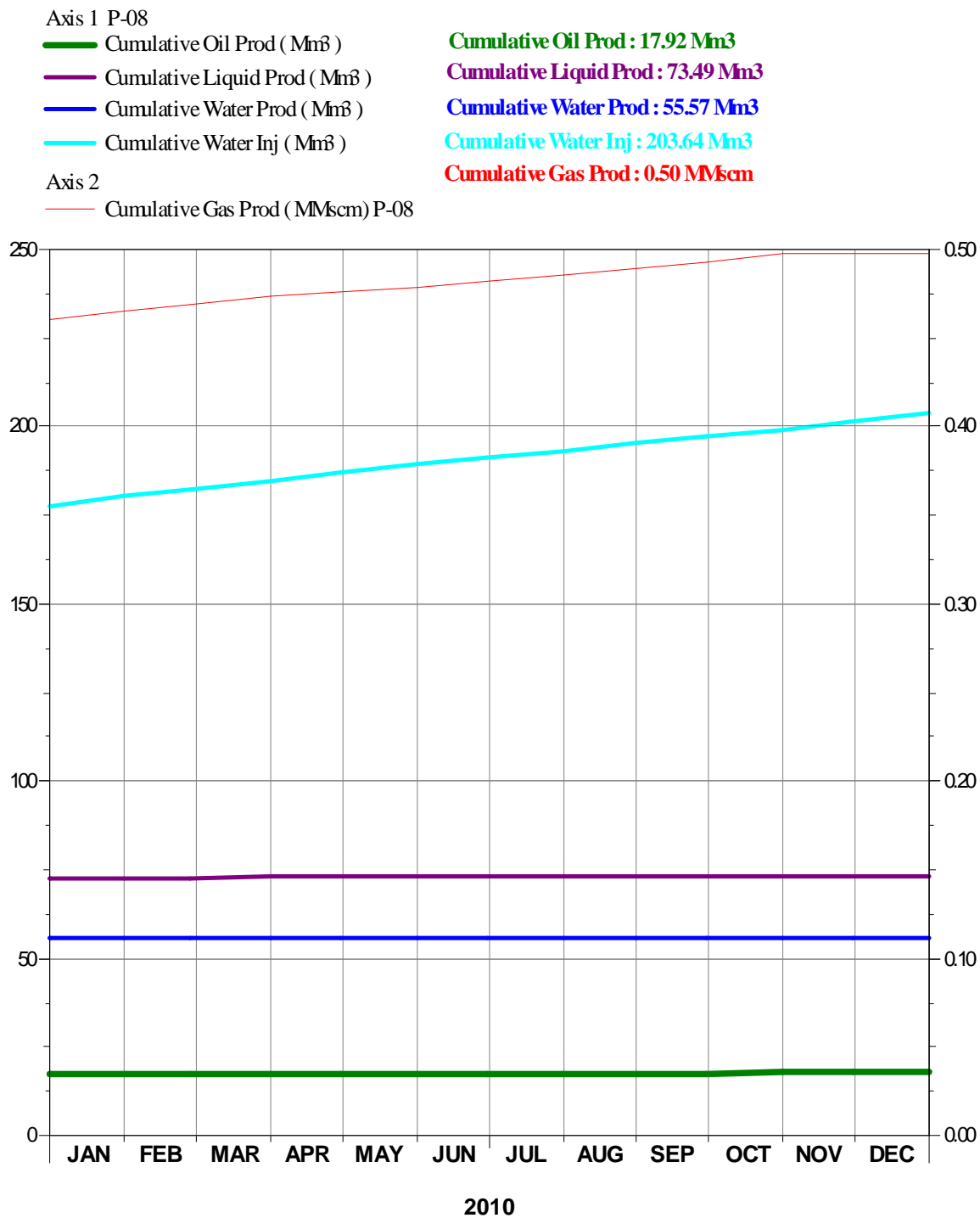


Figure C.7: 2010 Cumulative Production and Injection for Pattern 8

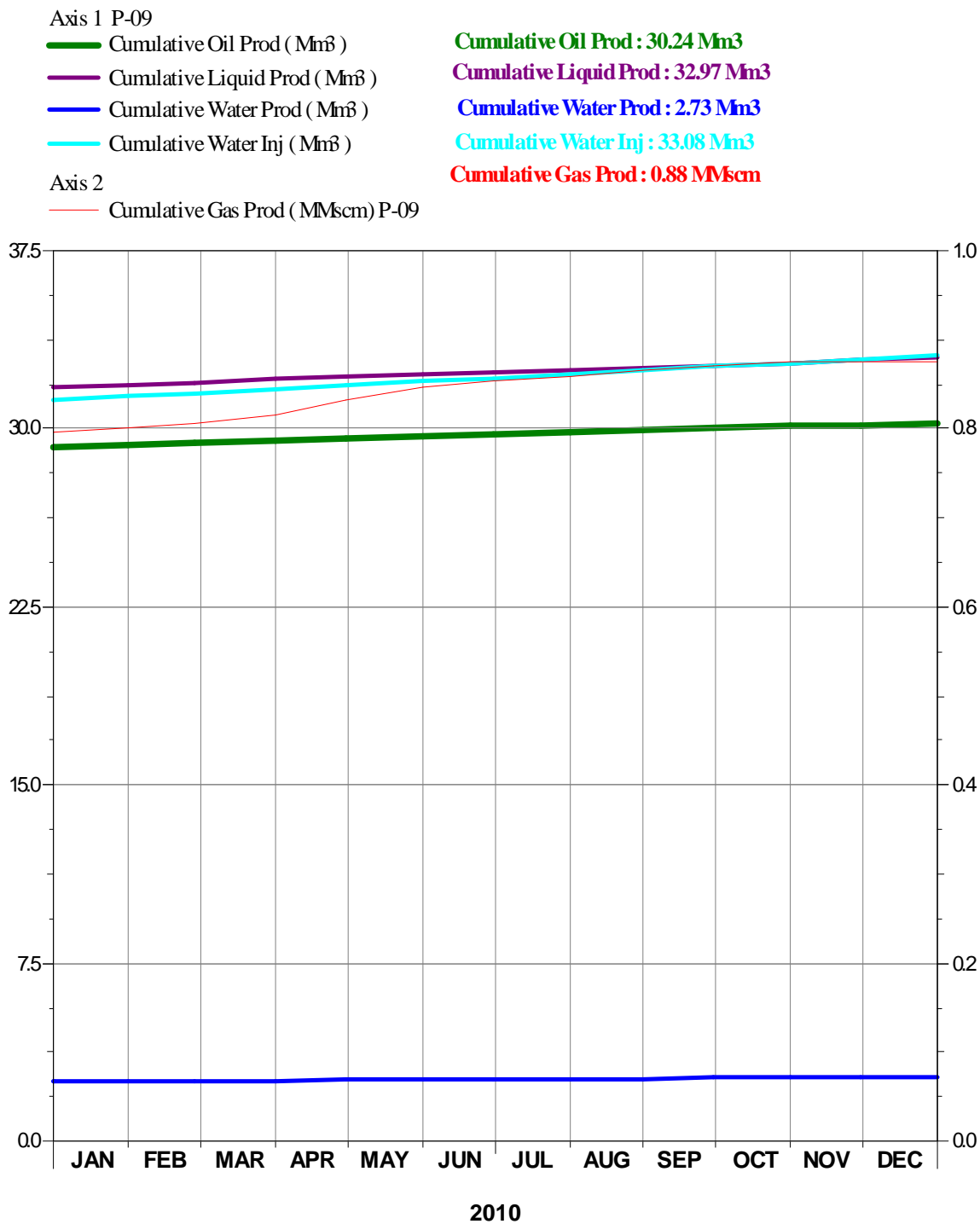


Figure C.8: 2010 Cumulative Production and Injection for Pattern 9

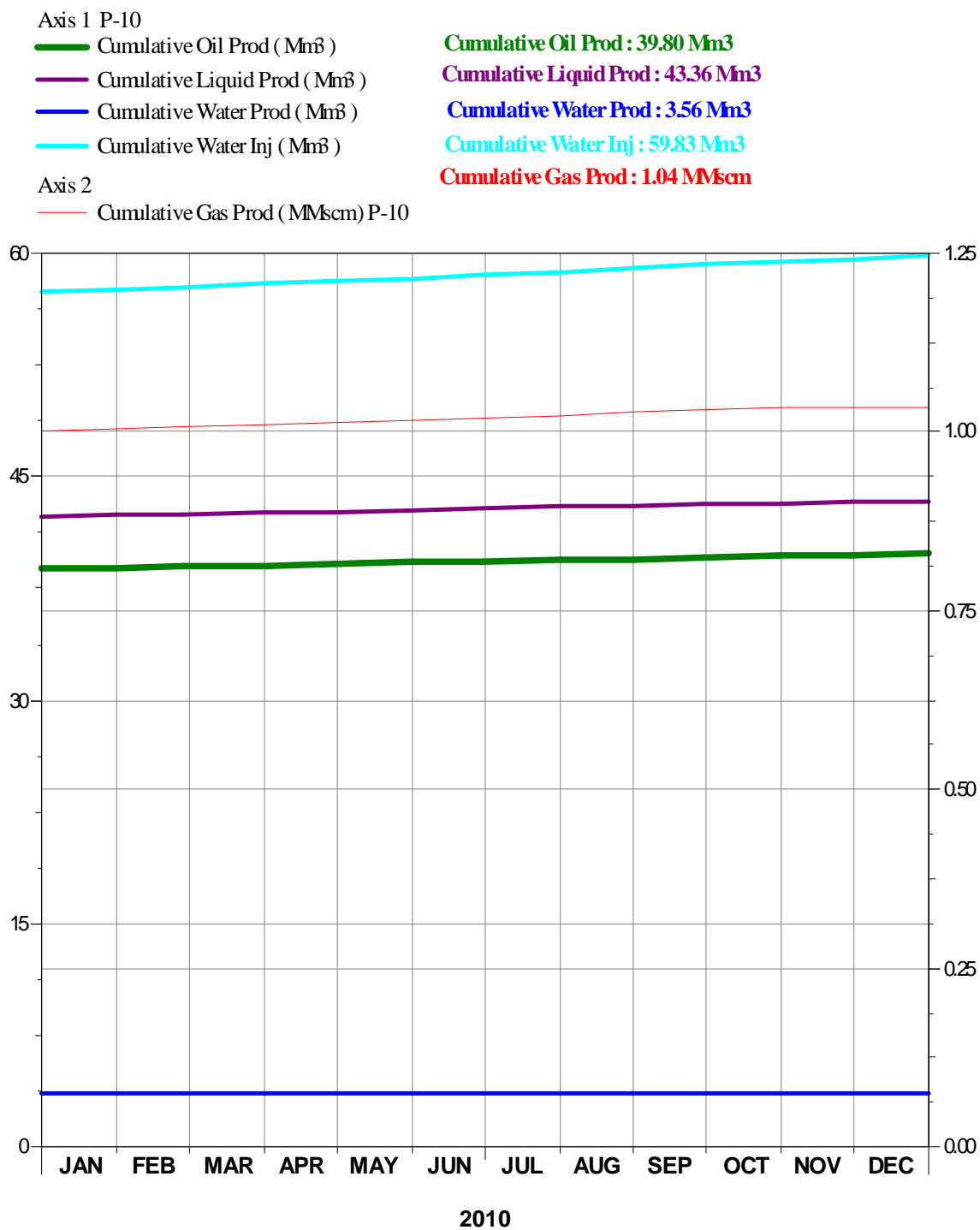


Figure C.9: 2010 Cumulative Production and Injection for Pattern 10

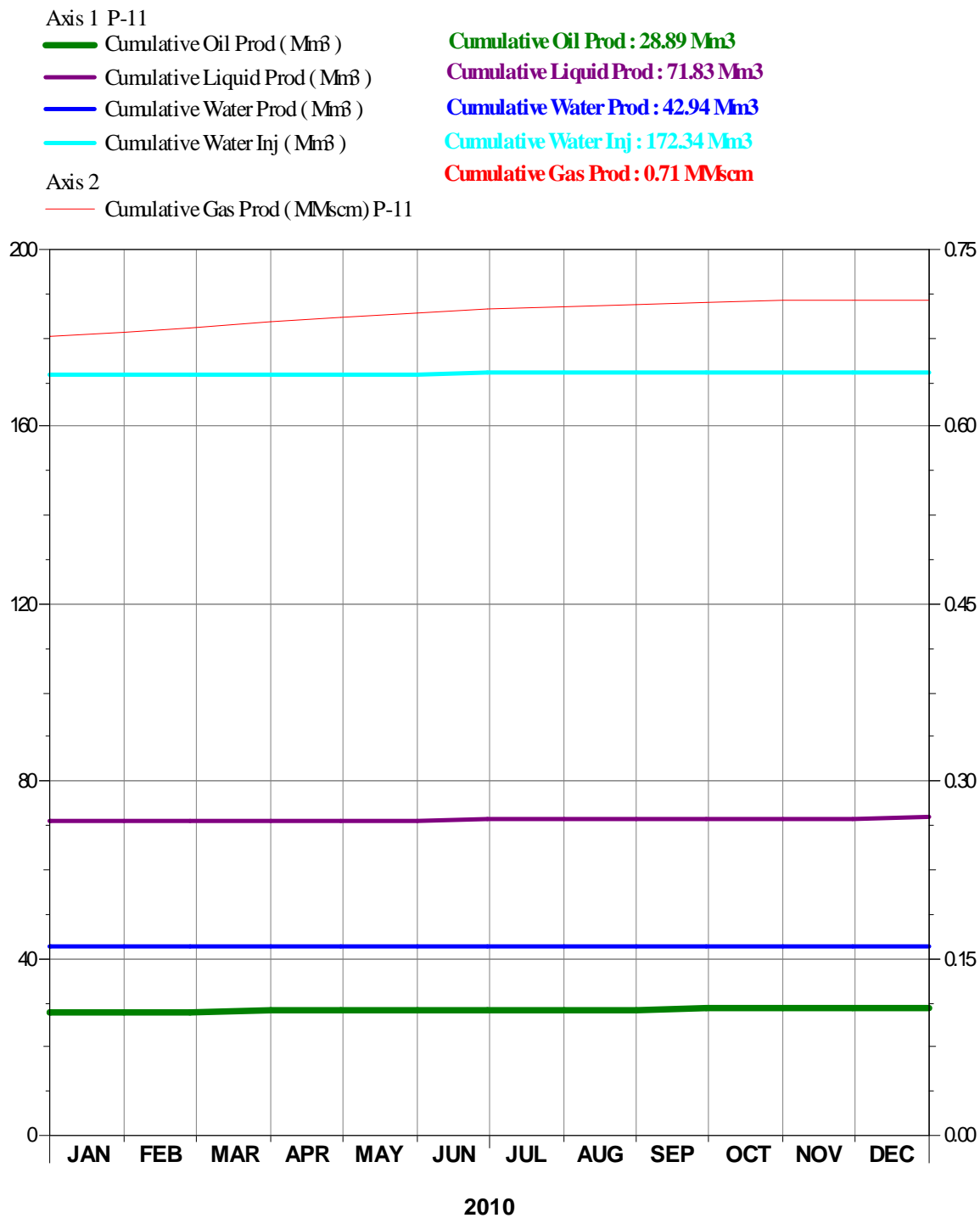


Figure C.10: 2010 Cumulative Production and Injection for Pattern 11

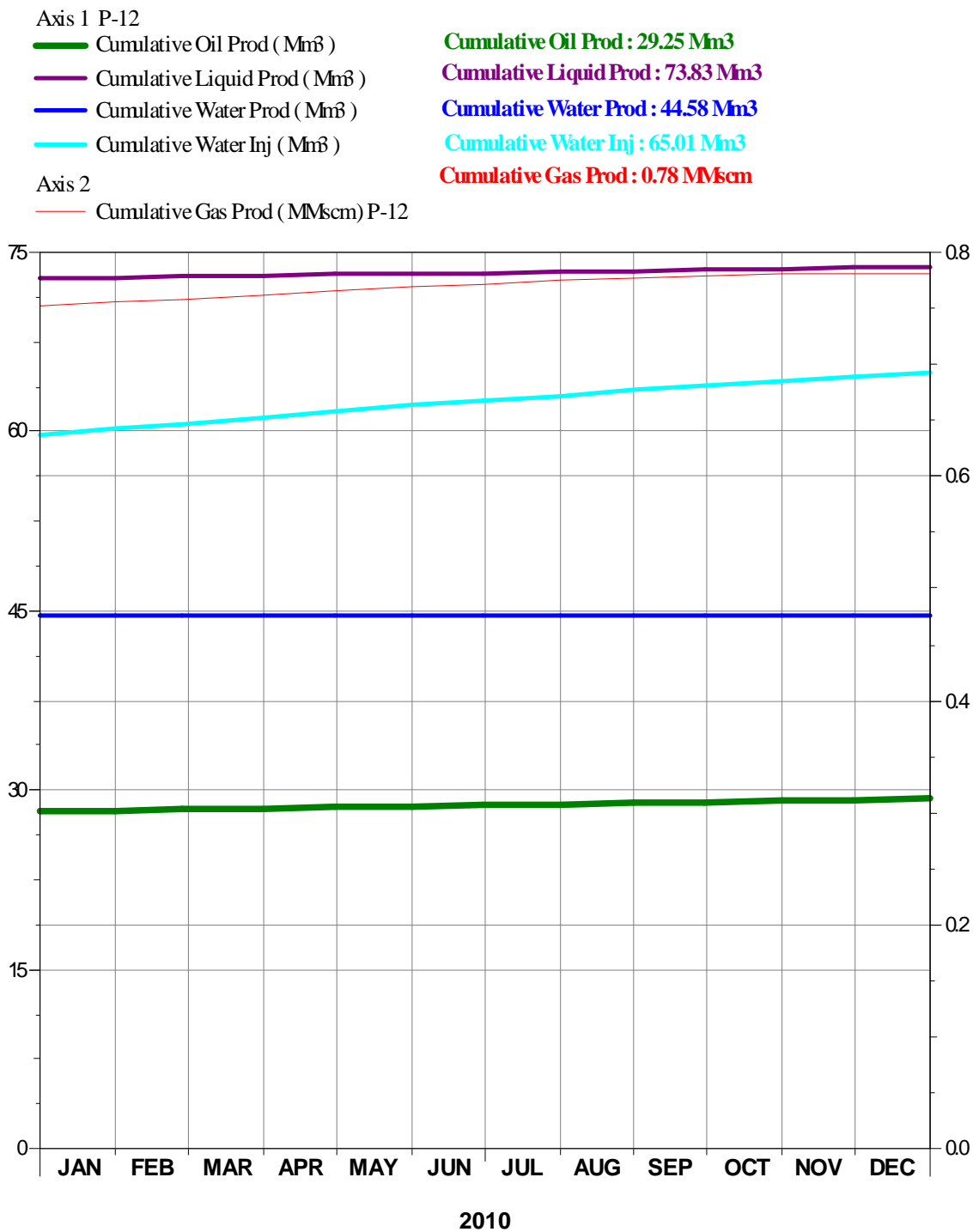


Figure C.11: 2010 Cumulative Production and Injection for Pattern 12

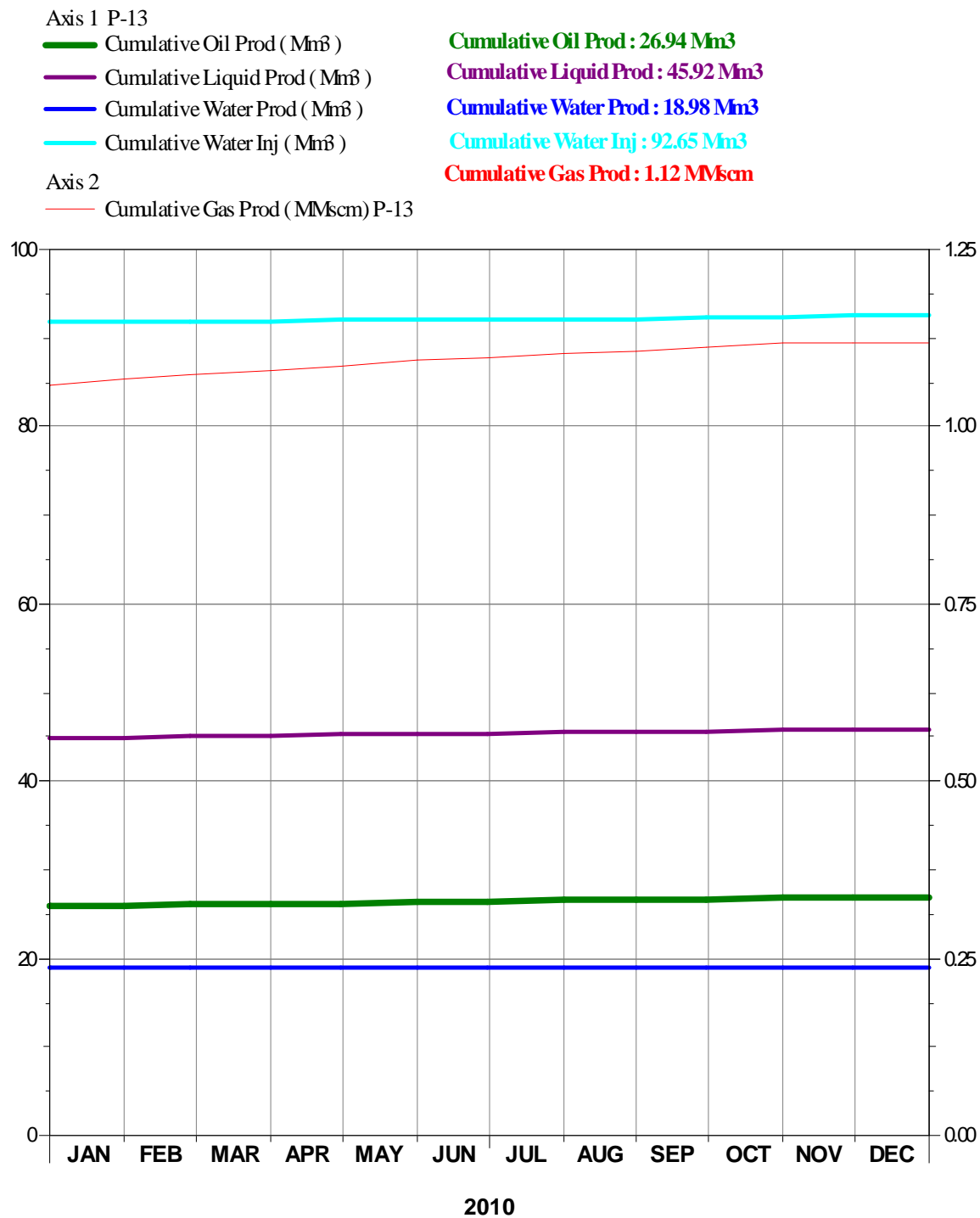


Figure C.12: 2010 Cumulative Production and Injection for Pattern 13

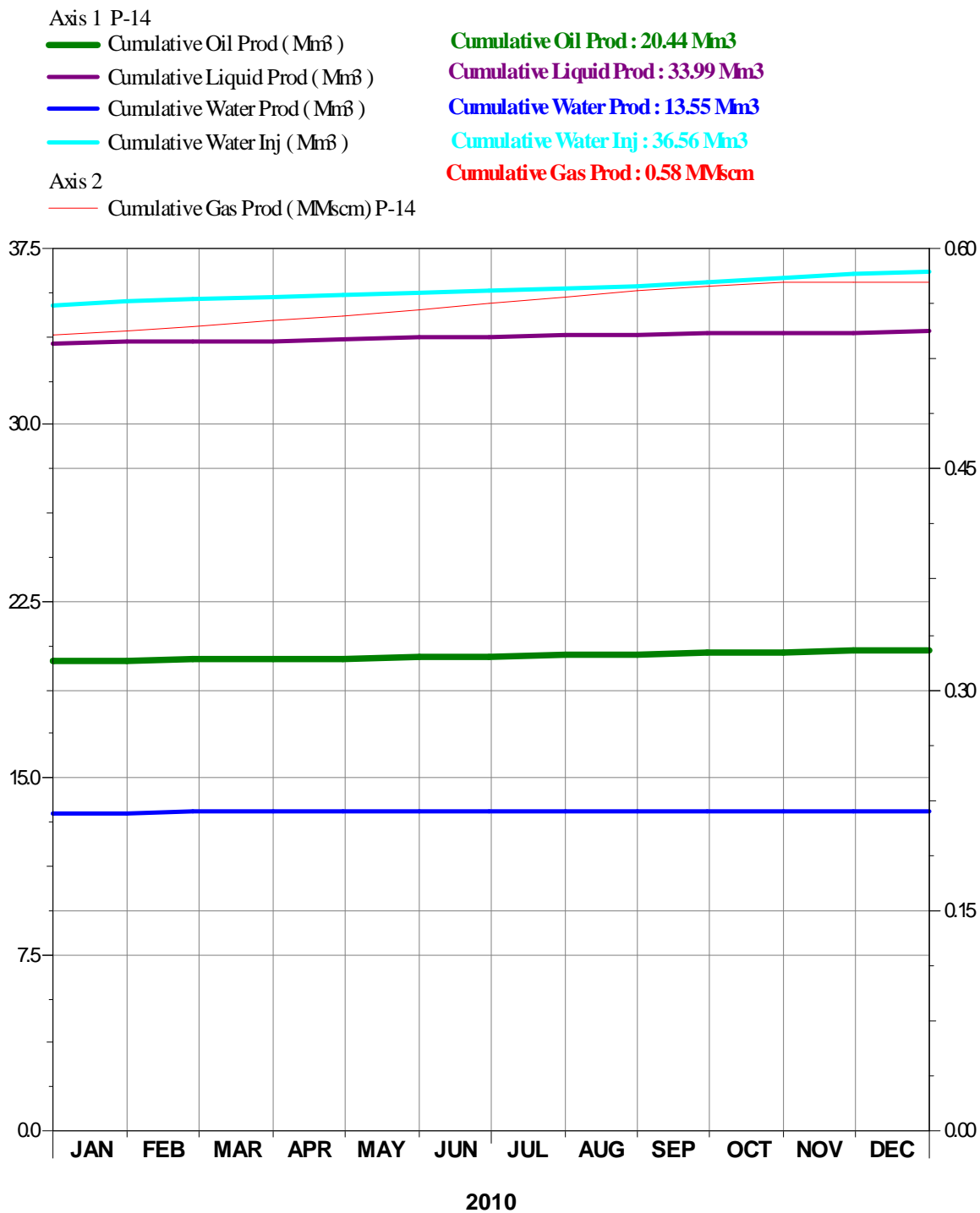


Figure C.13: 2010 Cumulative Production and Injection for Pattern 14

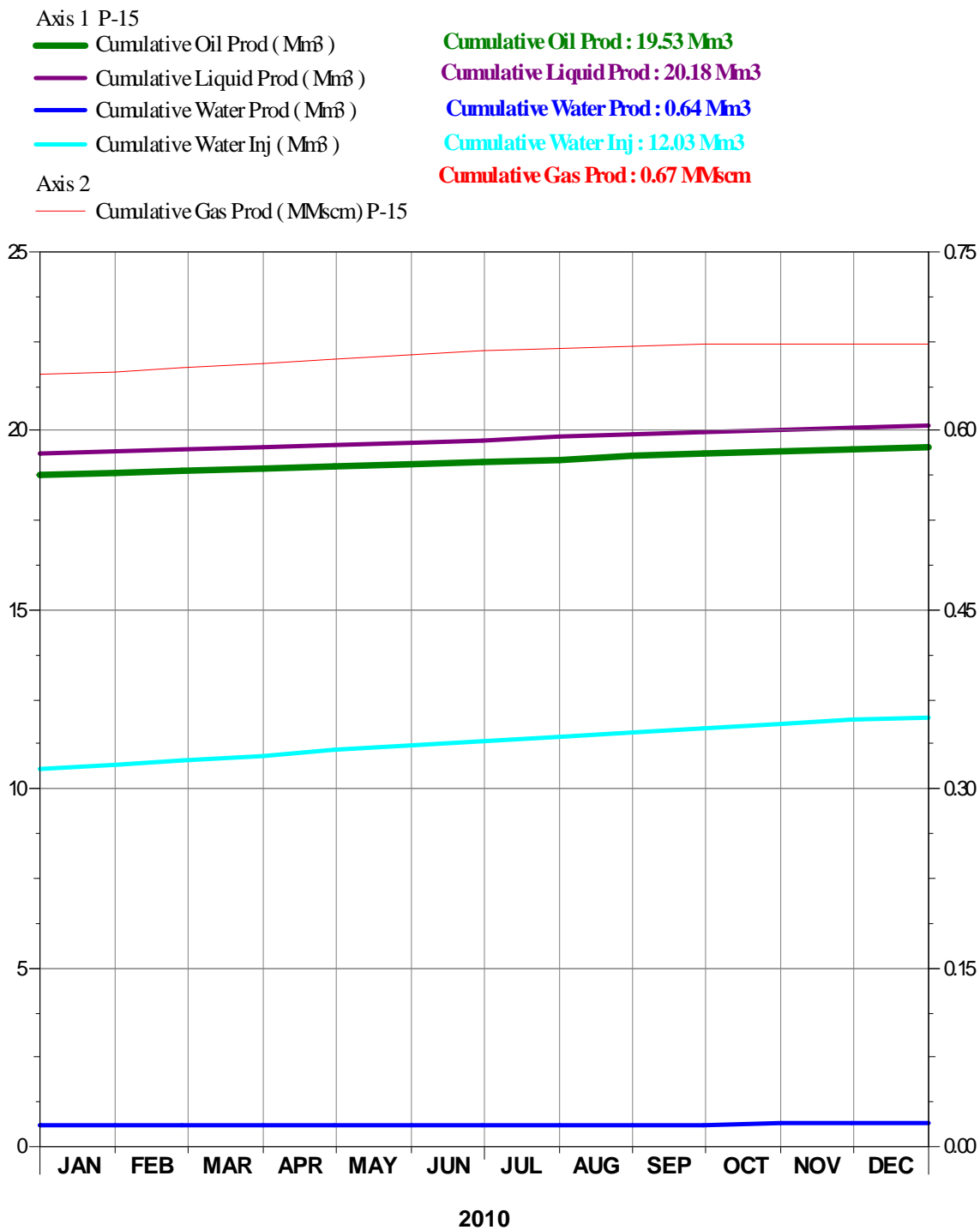


Figure C.14: 2010 Cumulative Production and Injection for Pattern 15

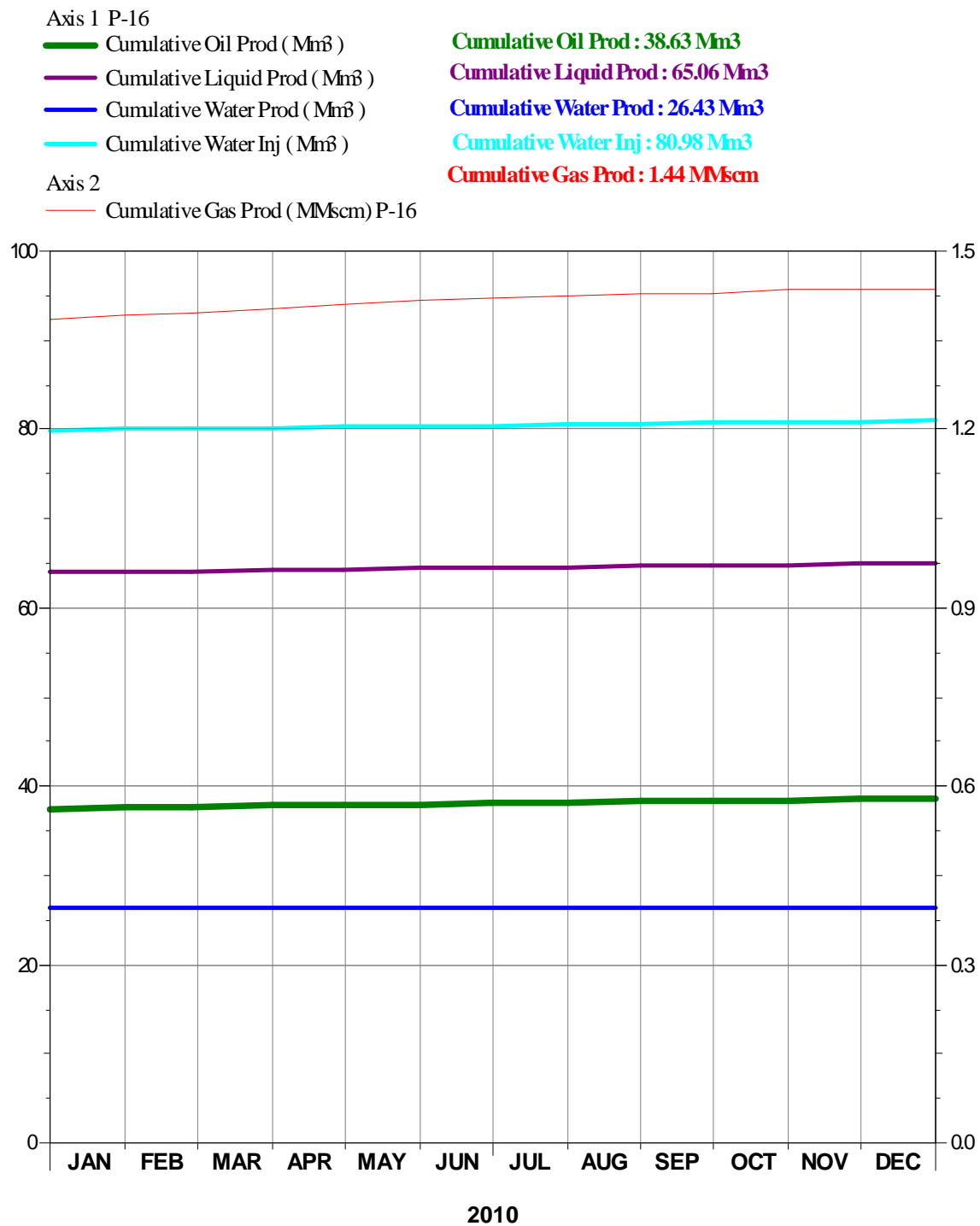


Figure C.15: 2010 Cumulative Production and Injection for Pattern 16

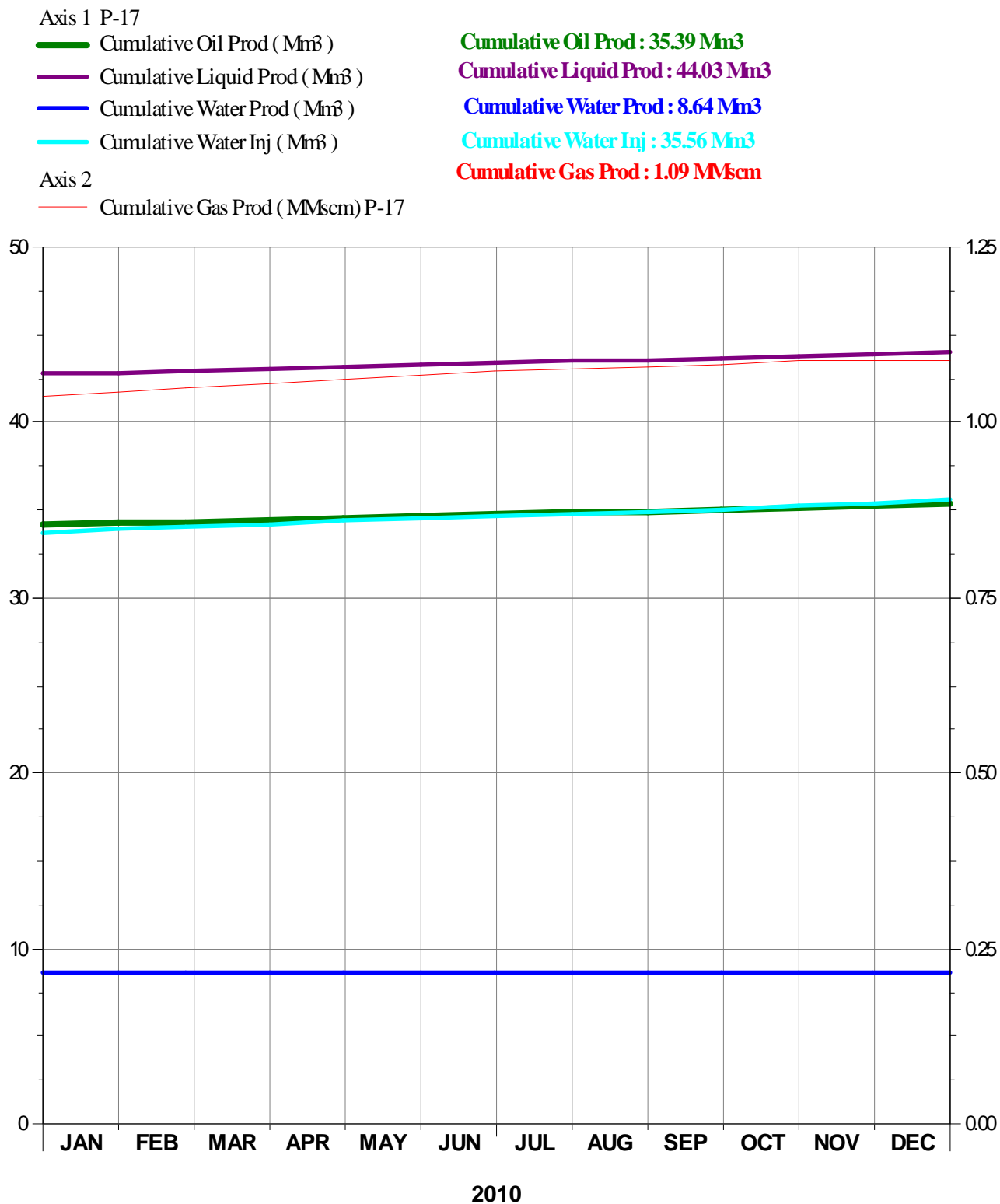


Figure C.16: 2010 Cumulative Production and Injection for Pattern 17

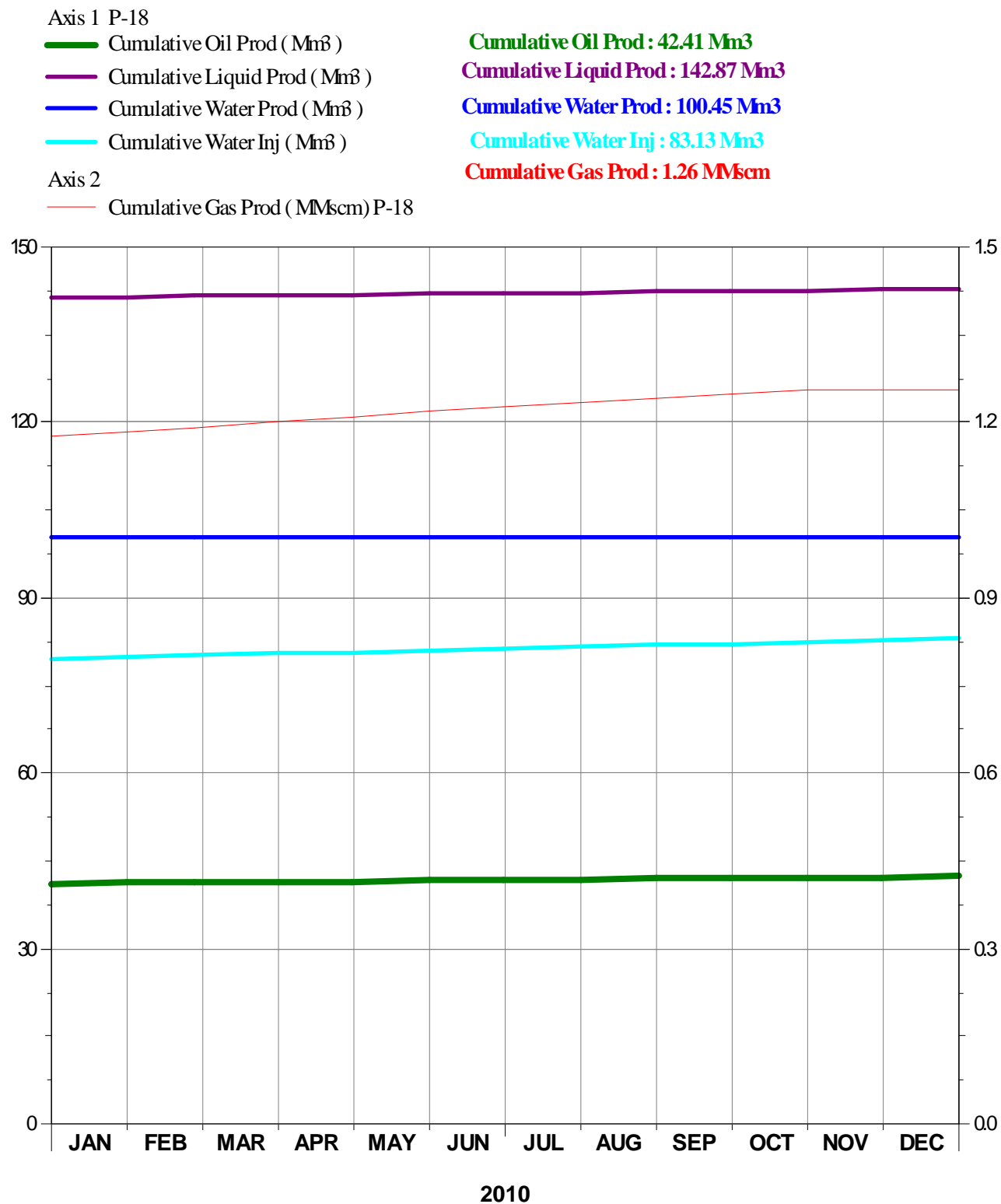


Figure C.17: 2010 Cumulative Production and Injection for Pattern 18

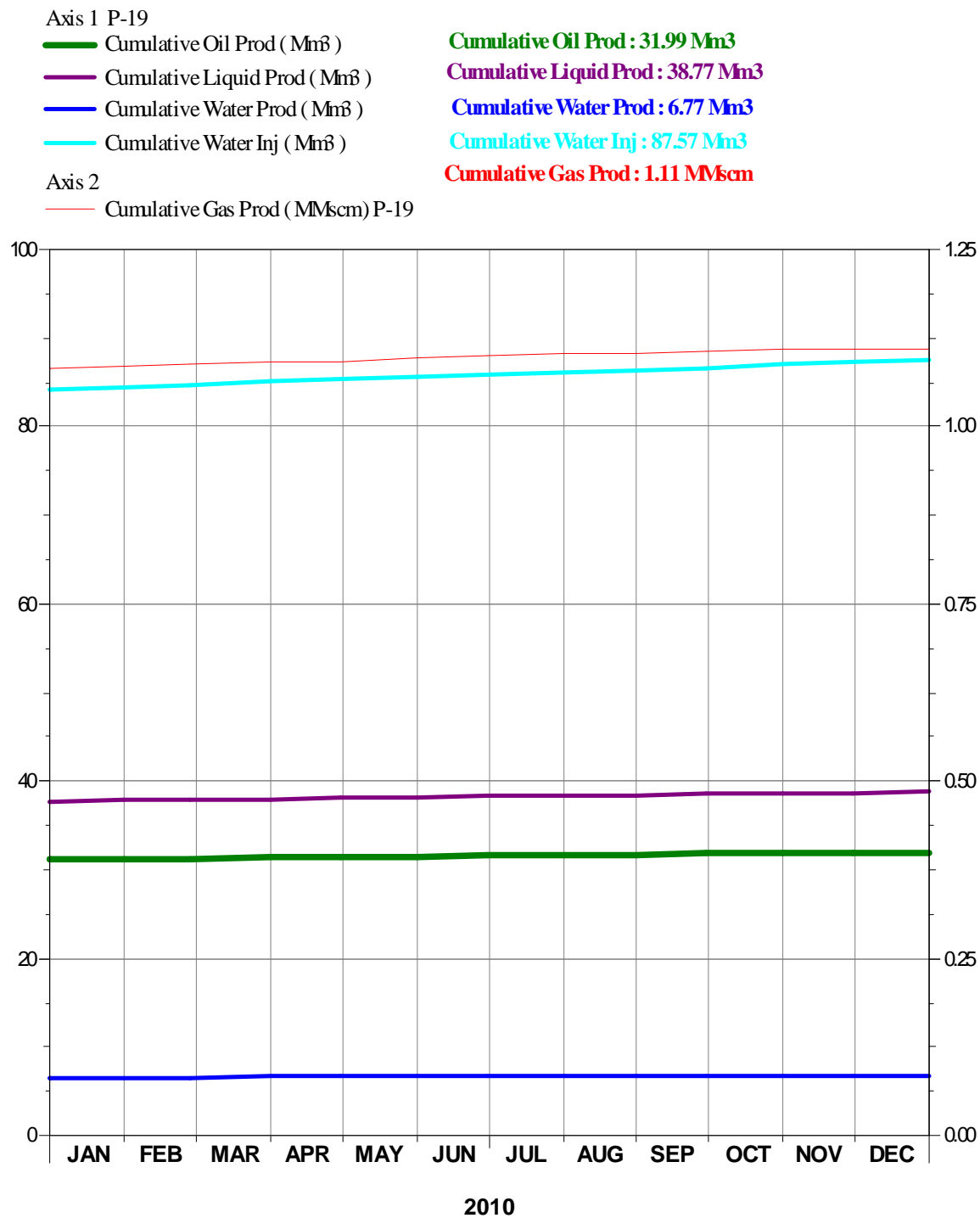


Figure C.18: 2010 Cumulative Production and Injection for Pattern 19

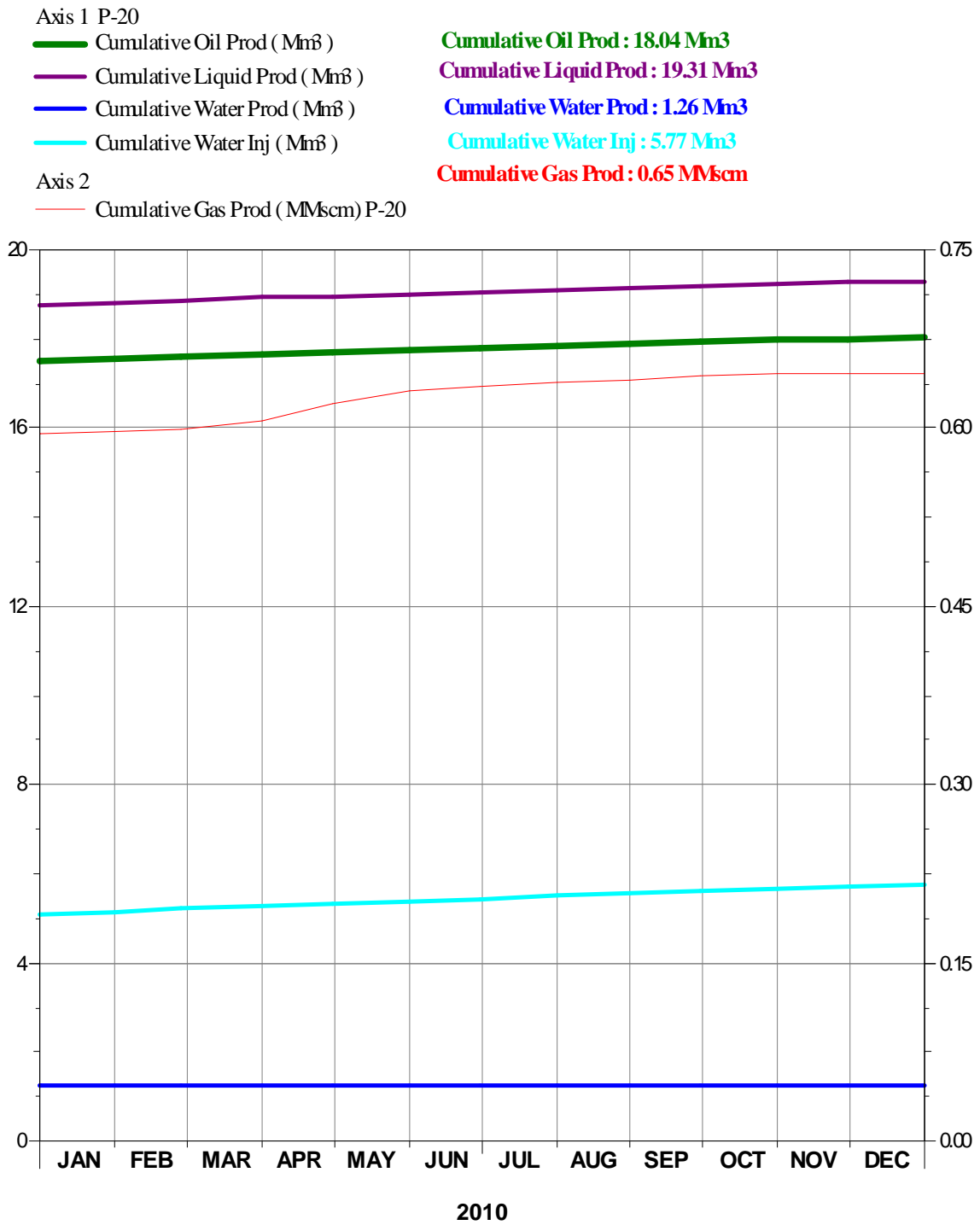


Figure C.19: 2010 Cumulative Production and Injection for Pattern 20

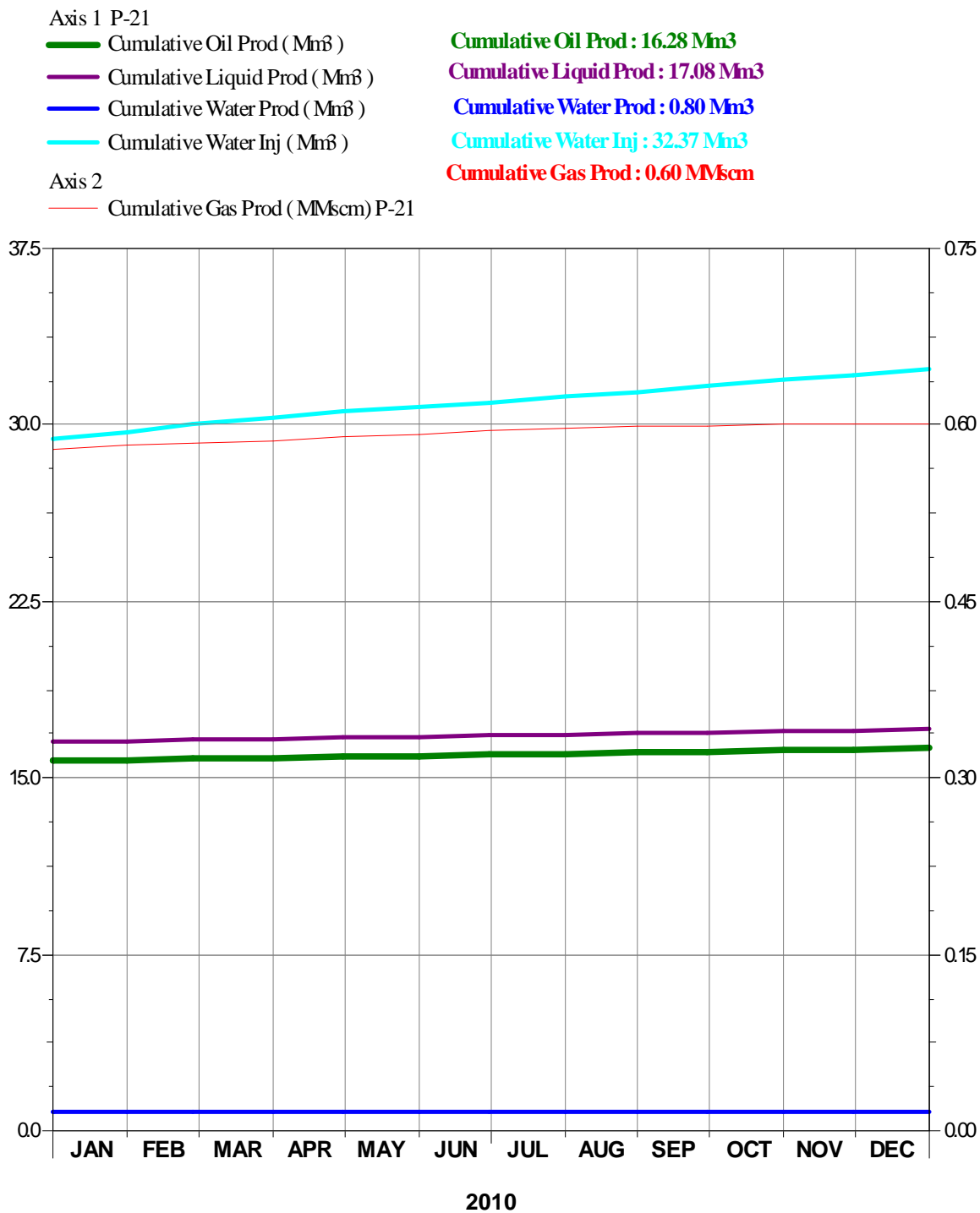


Figure C.20: 2010 Cumulative Production and Injection for Pattern 21

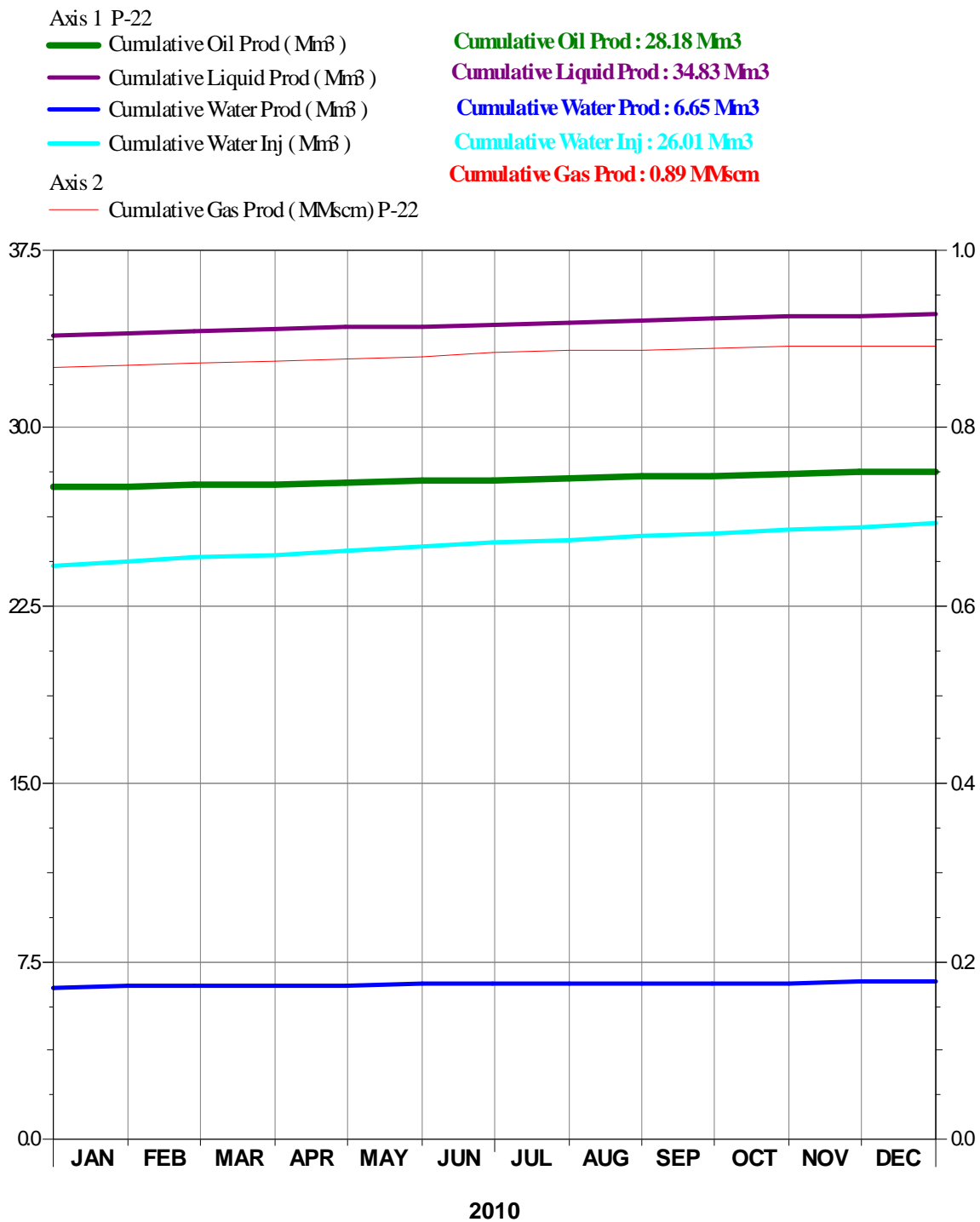


Figure C.21: 2010 Cumulative Production and Injection for Pattern 22

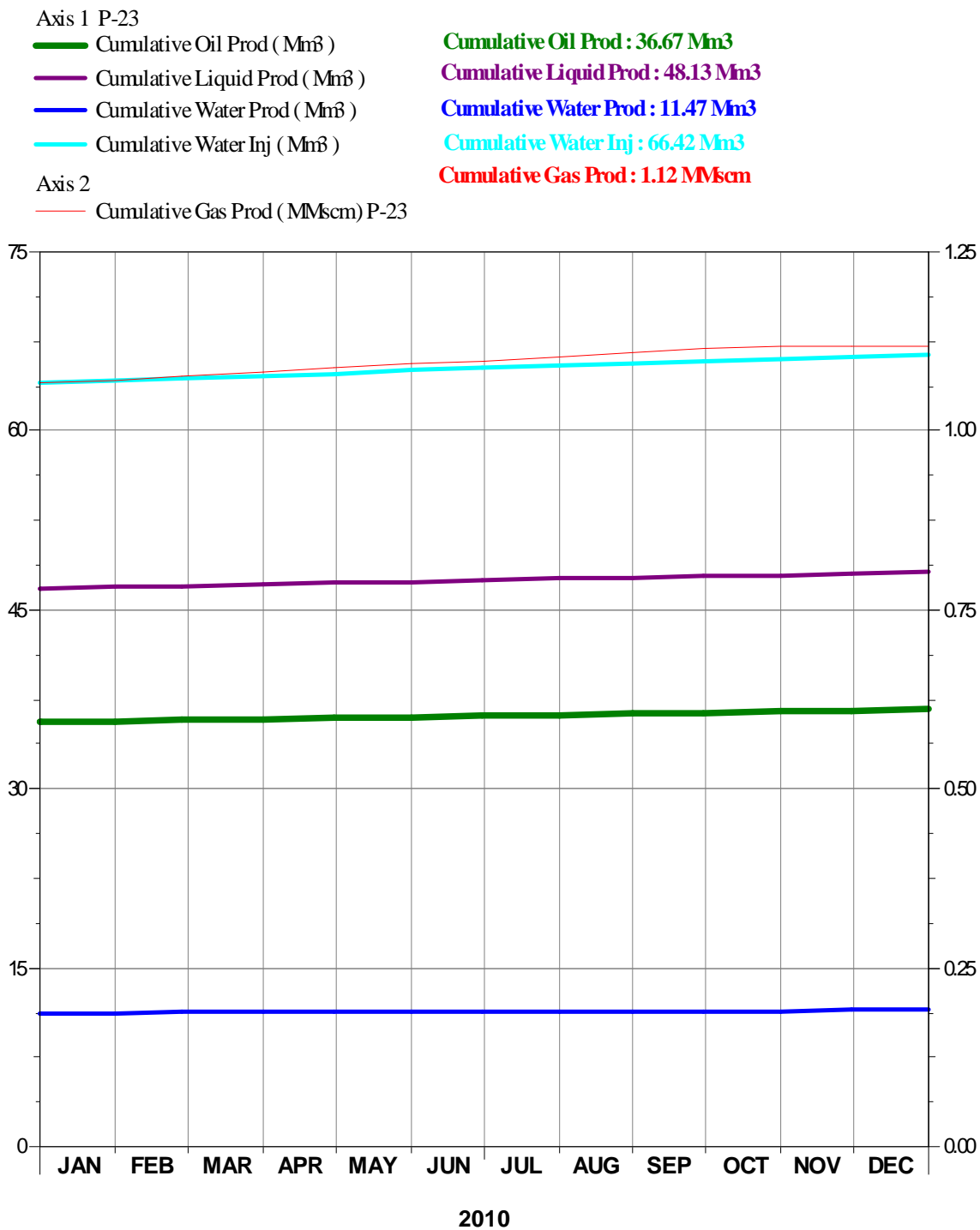


Figure C.22: 2010 Cumulative Production and Injection for Pattern 23

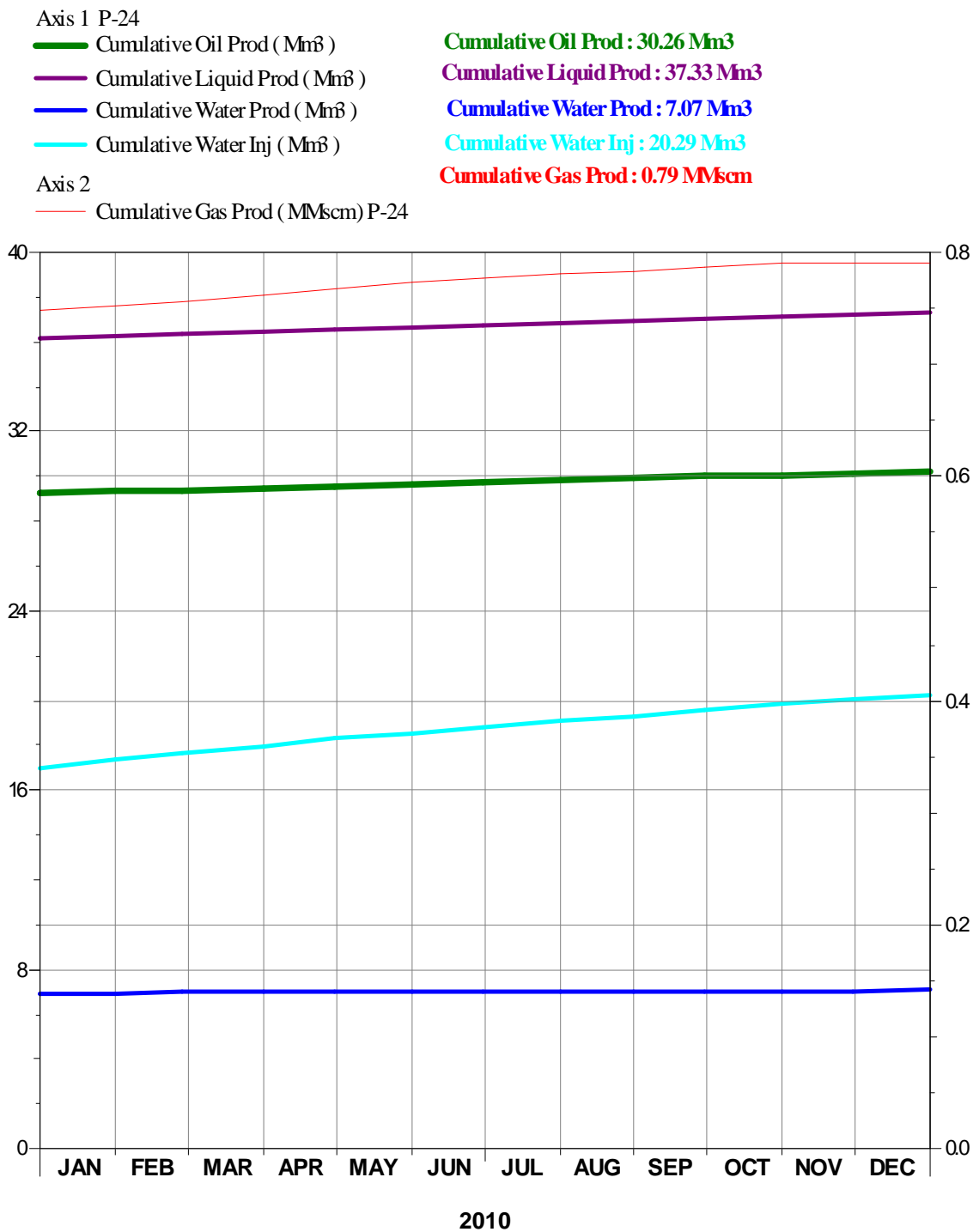


Figure C.23: 2010 Cumulative Production and Injection for Pattern 24

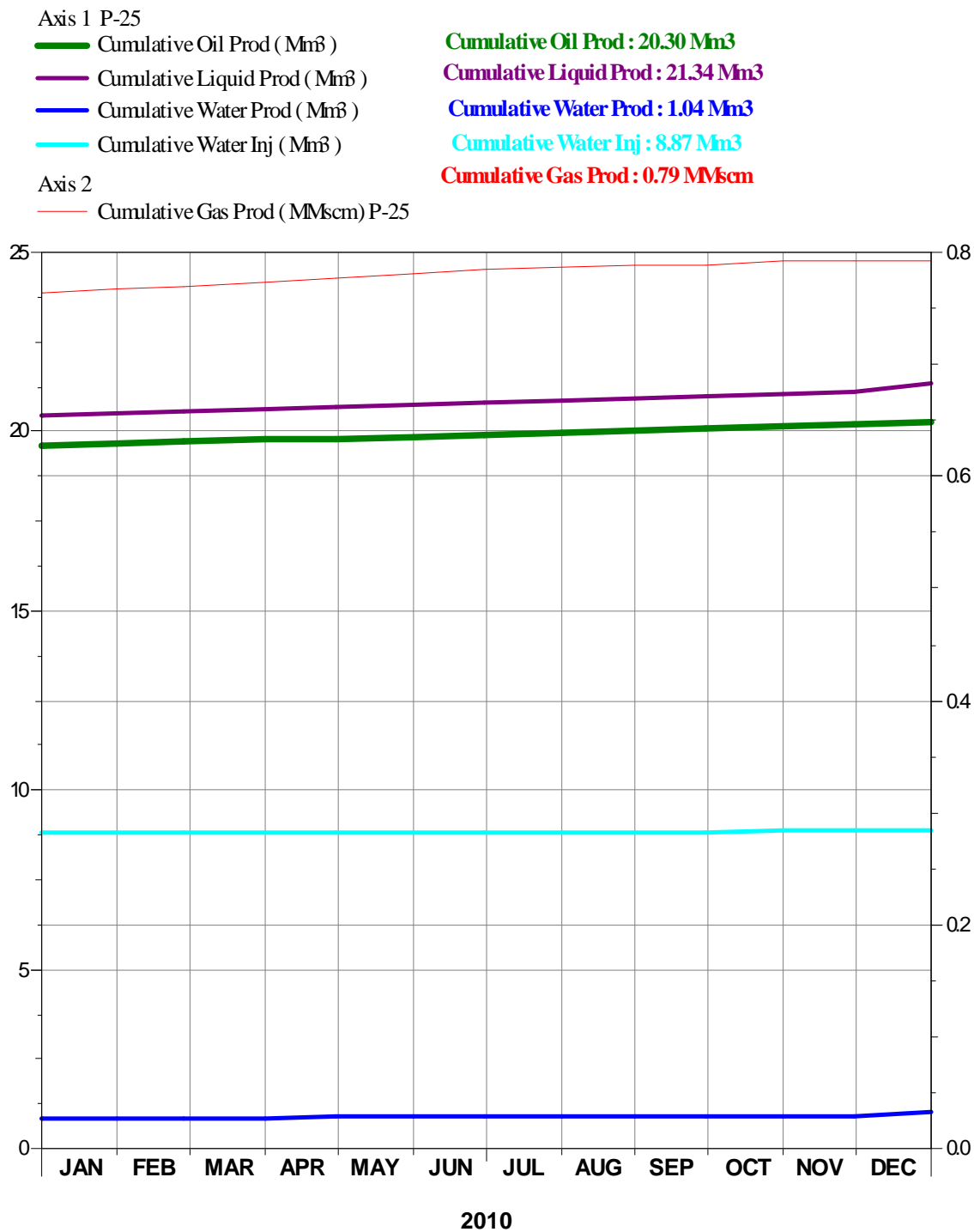


Figure C.24: 2010 Cumulative Production and Injection for Pattern 25

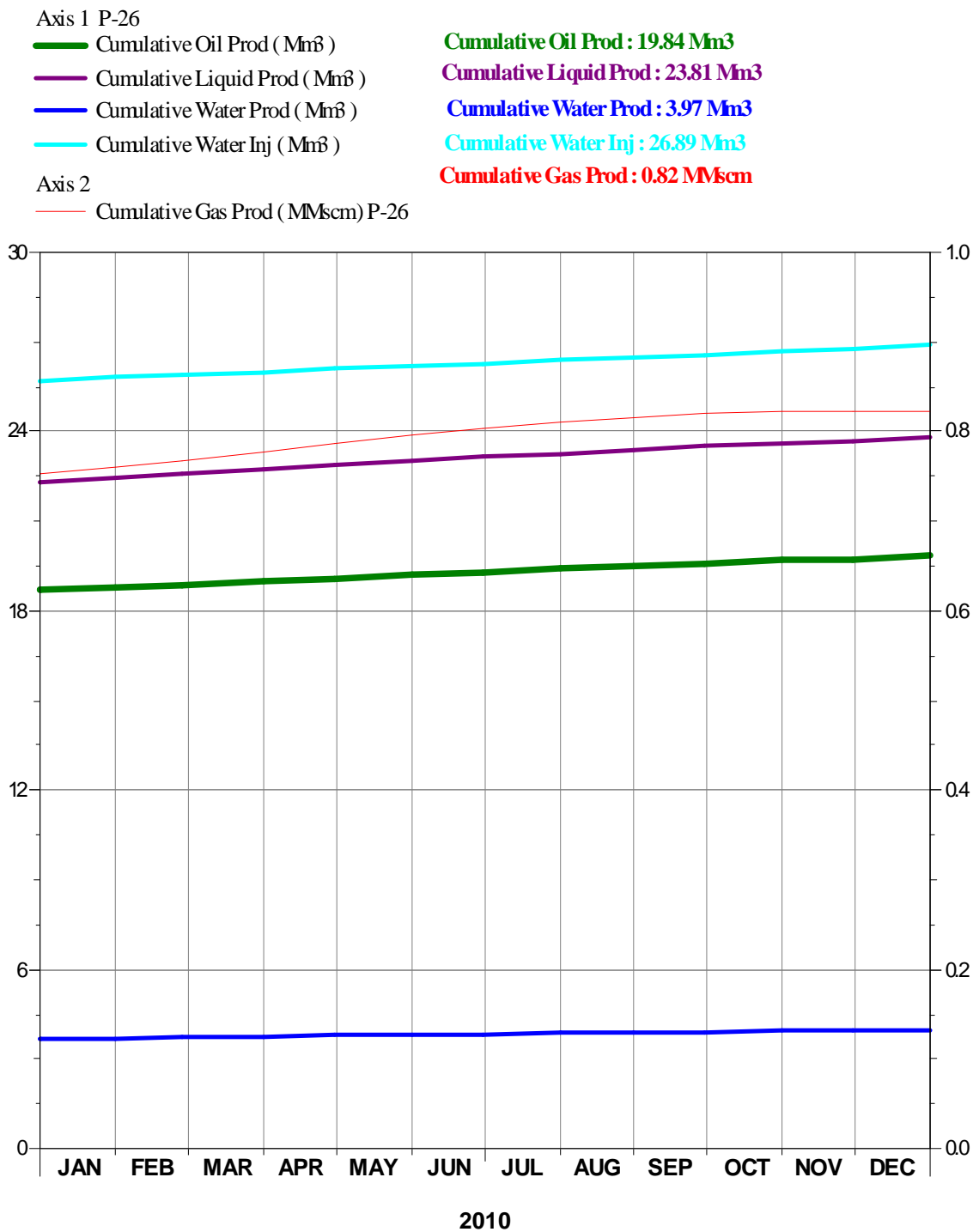


Figure C.25: 2010 Cumulative Production and Injection for Pattern 26

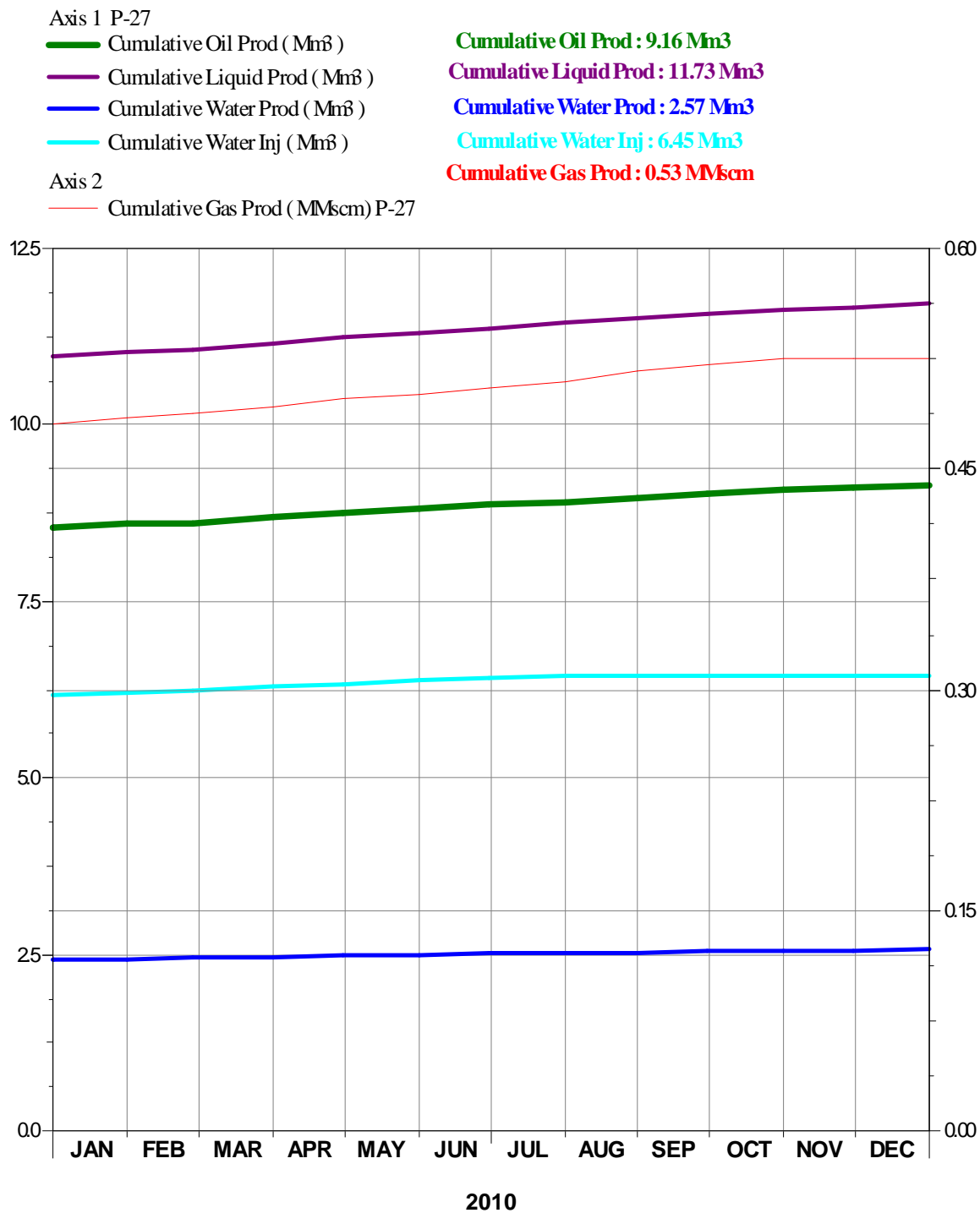


Figure C.26: 2010 Cumulative Production and Injection for Pattern 27

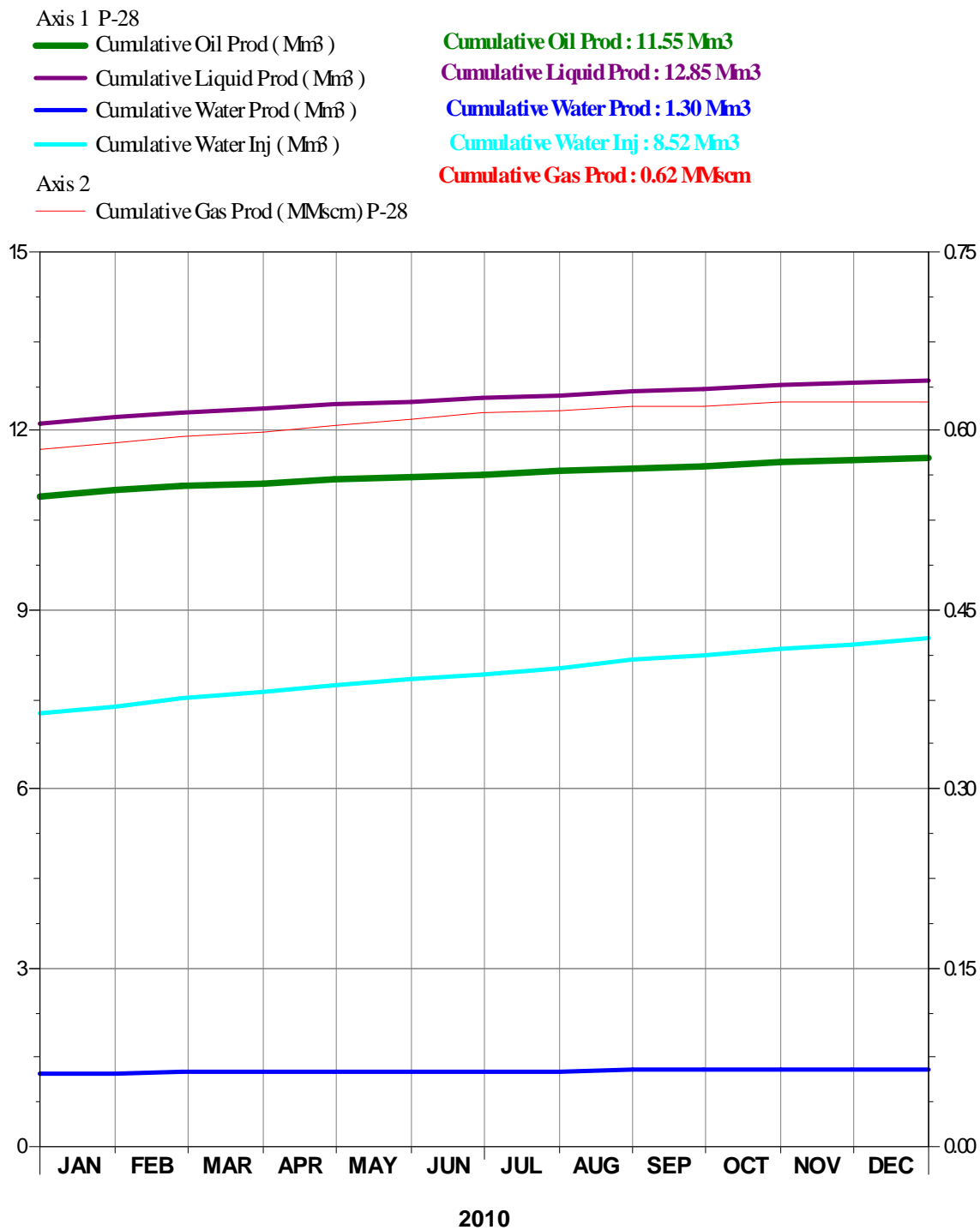


Figure C.27: 2010 Cumulative Production and Injection for Pattern 28

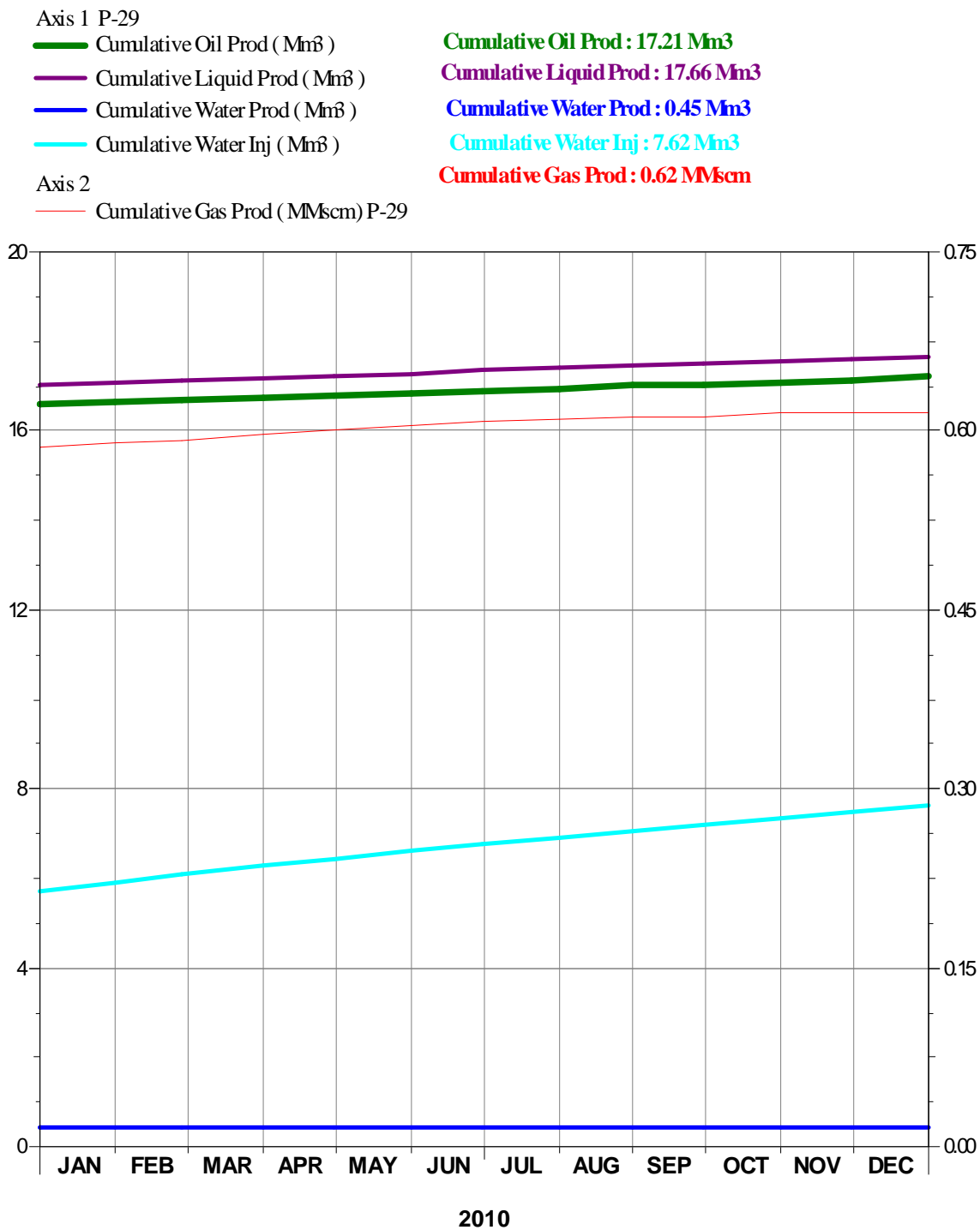


Figure C.28: 2010 Cumulative Production and Injection for Pattern 29

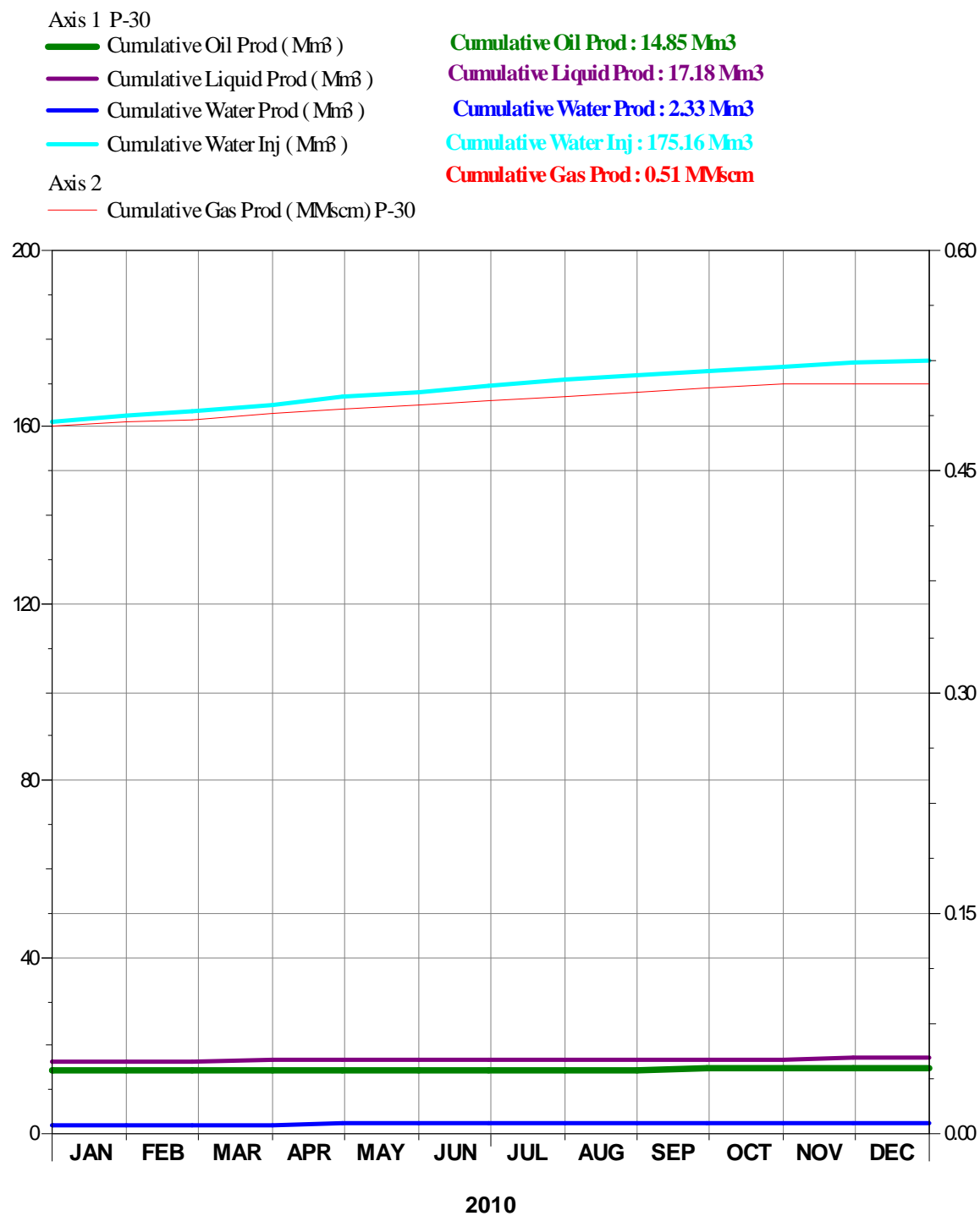


Figure C.29: 2010 Cumulative Production and Injection for Pattern 30

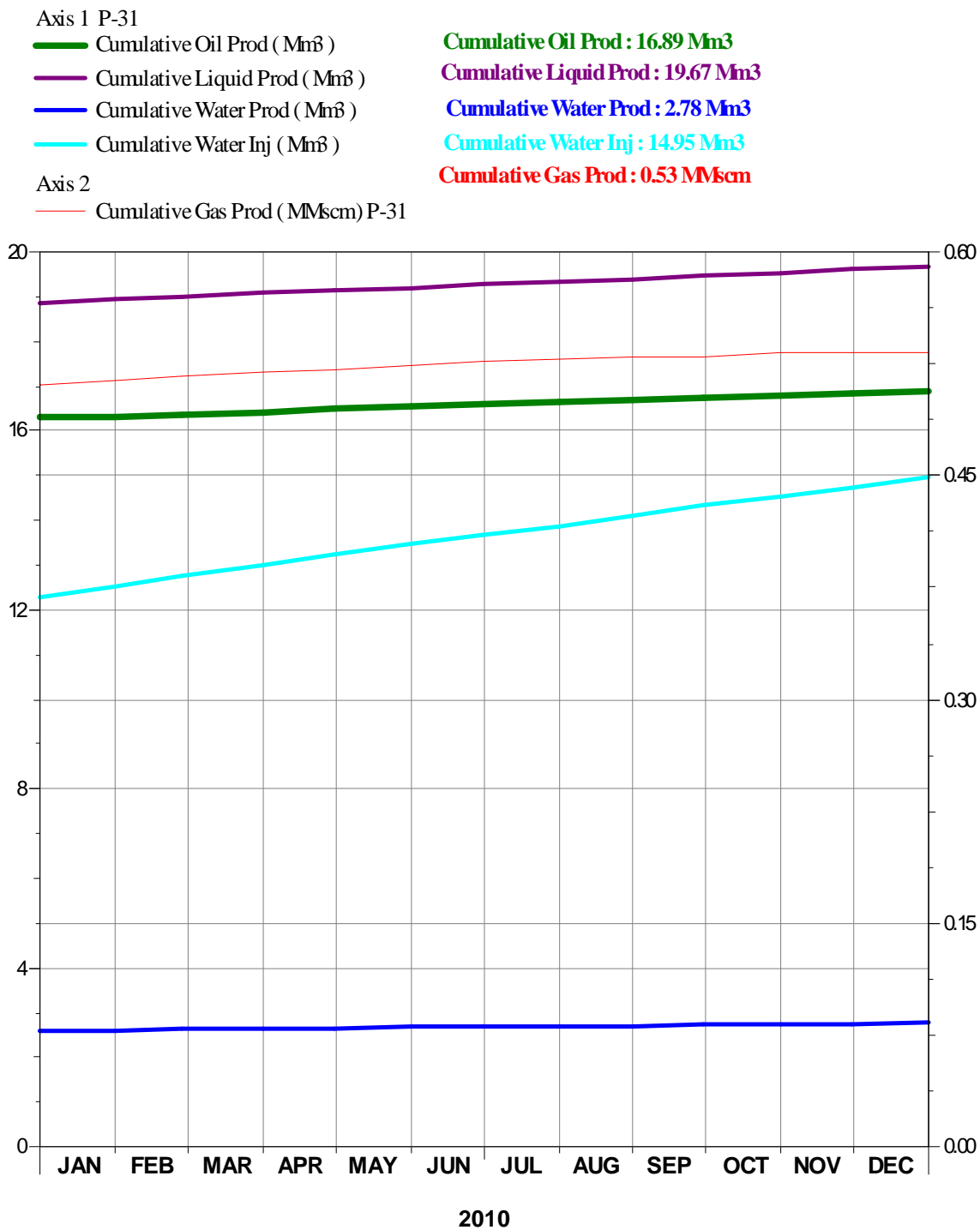


Figure C.30: 2010 Cumulative Production and Injection for Pattern 31

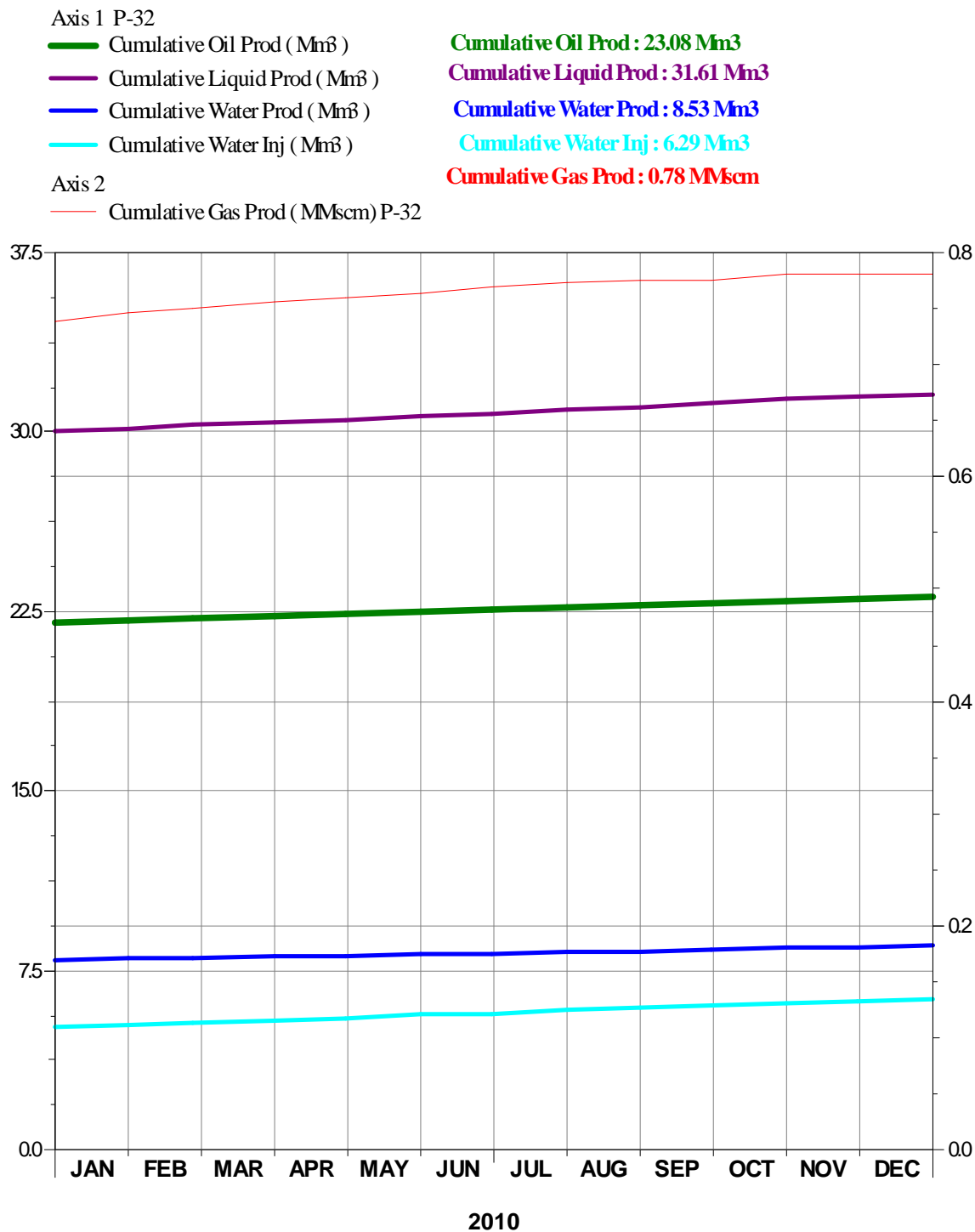


Figure C.31: 2010 Cumulative Production and Injection for Pattern 32

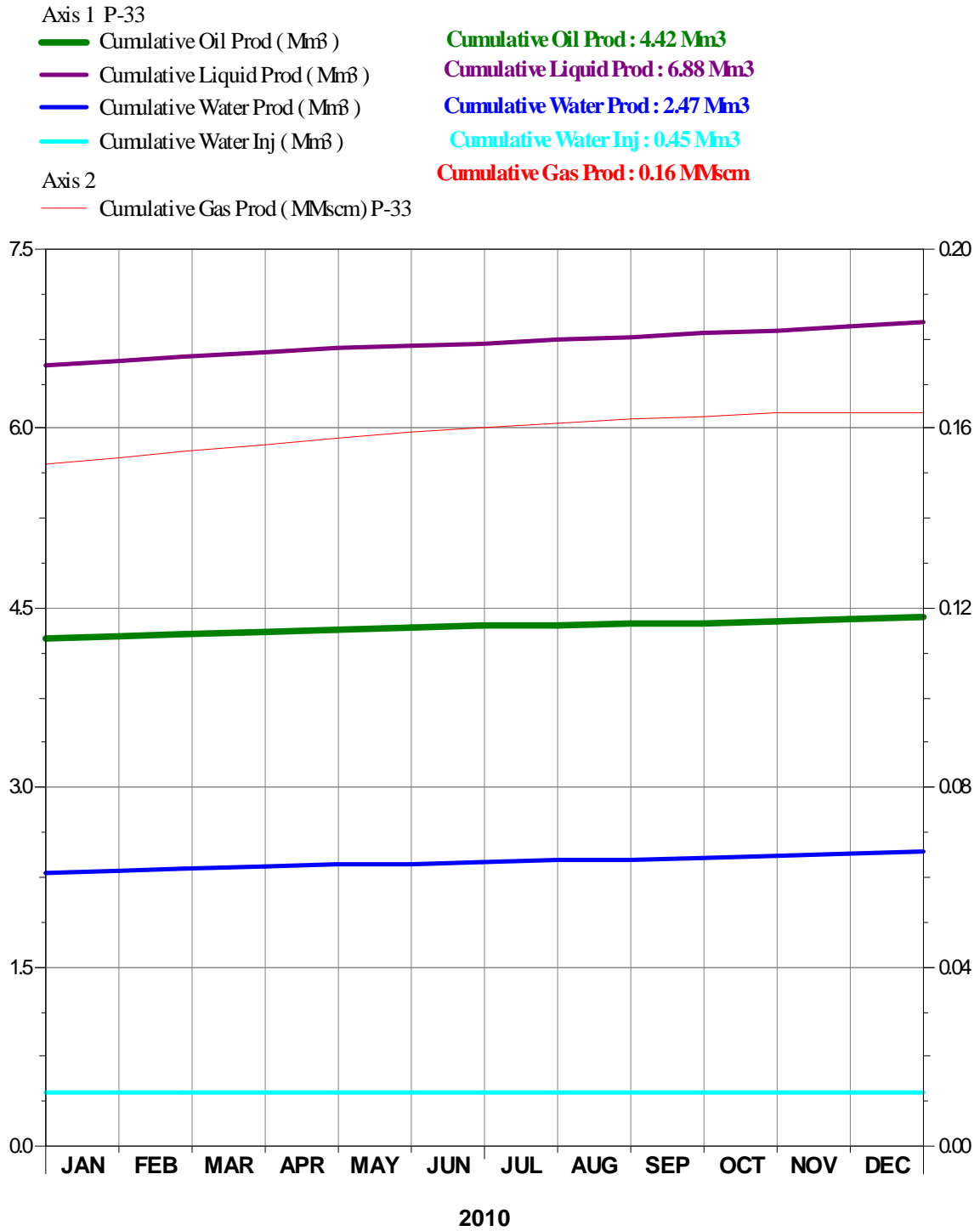


Figure C.32: 2010 Cumulative Production and Injection for Pattern 33

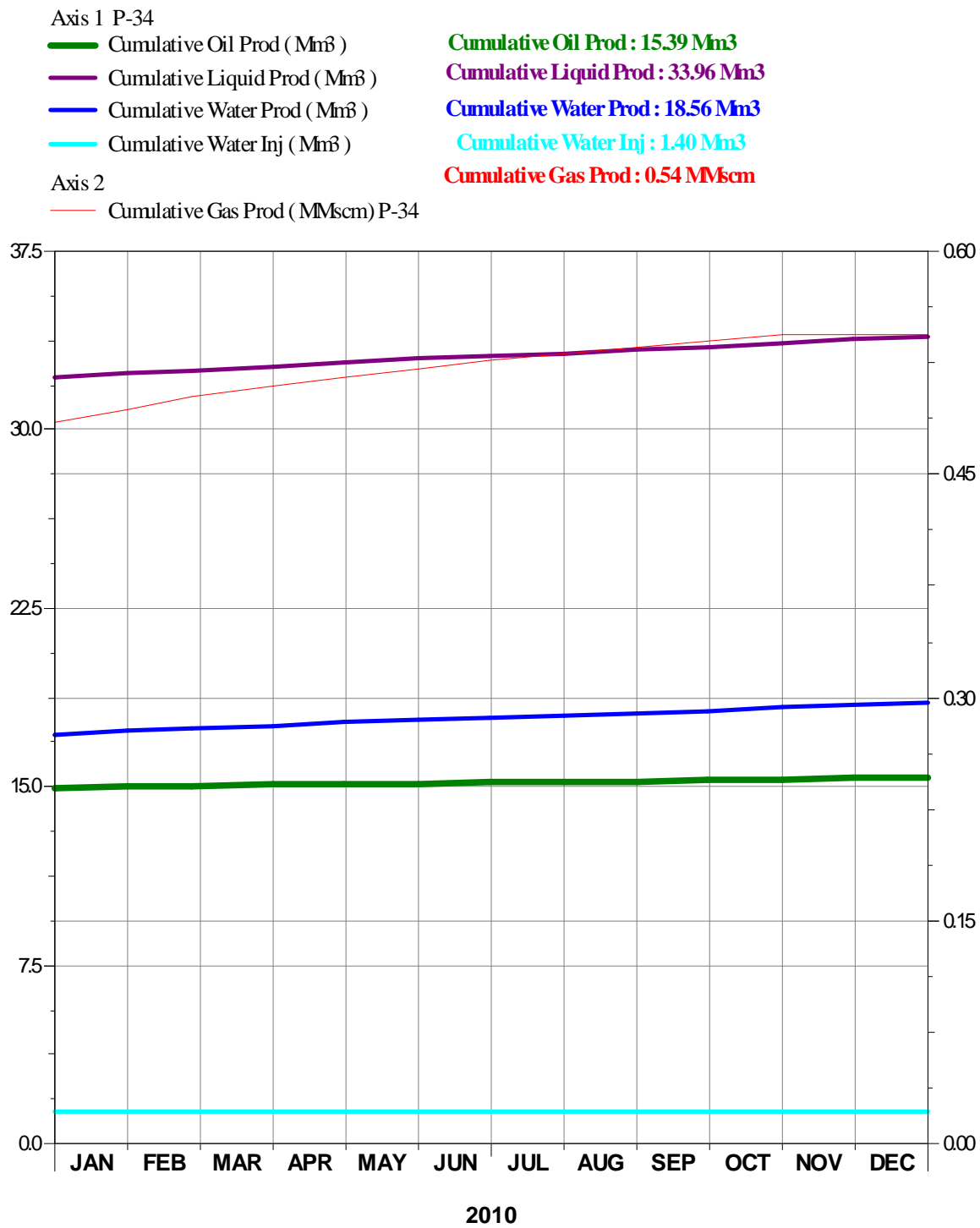


Figure C.33: 2010 Cumulative Production and Injection for Pattern 34

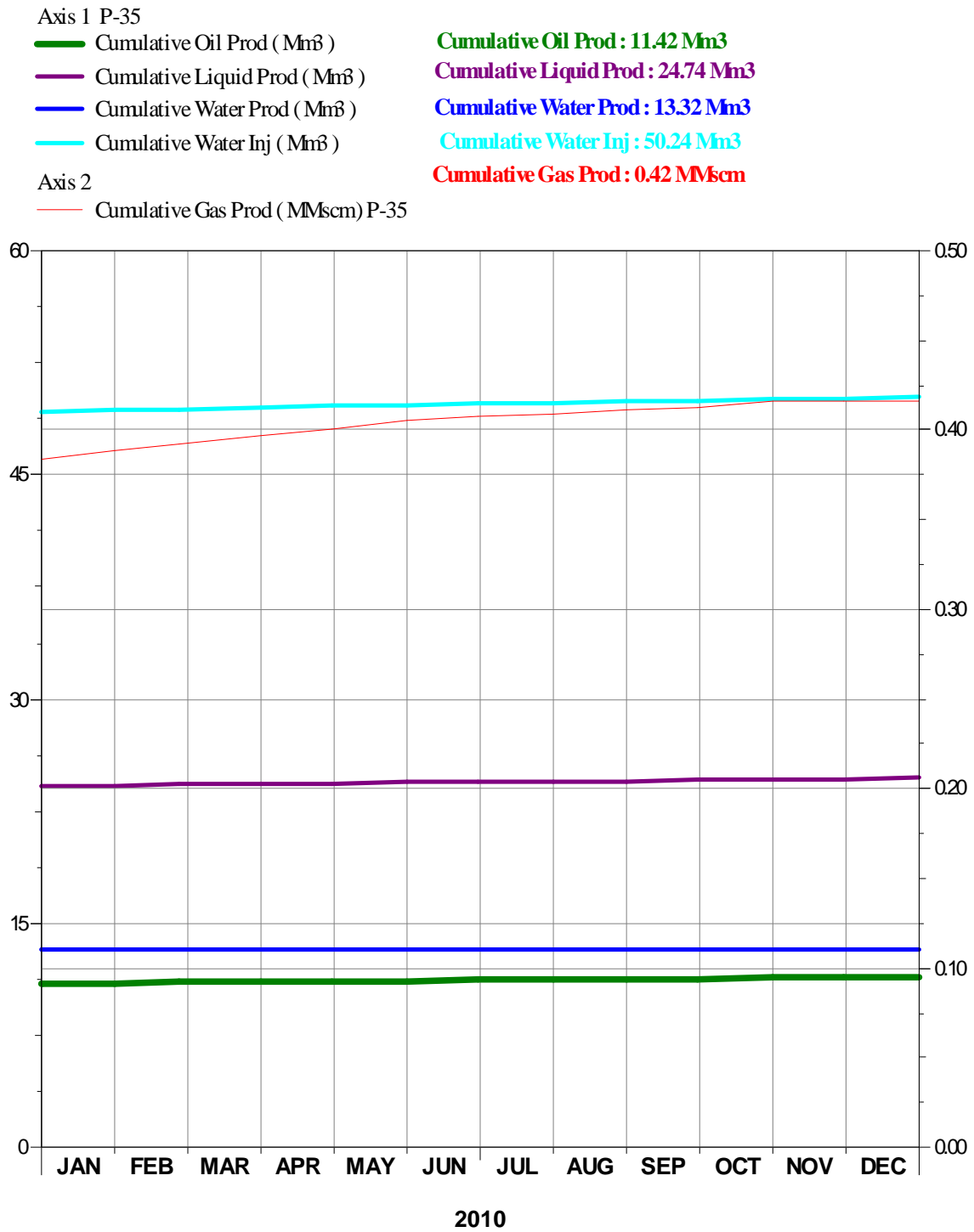


Figure C.34: 2010 Cumulative Production and Injection for Pattern 35

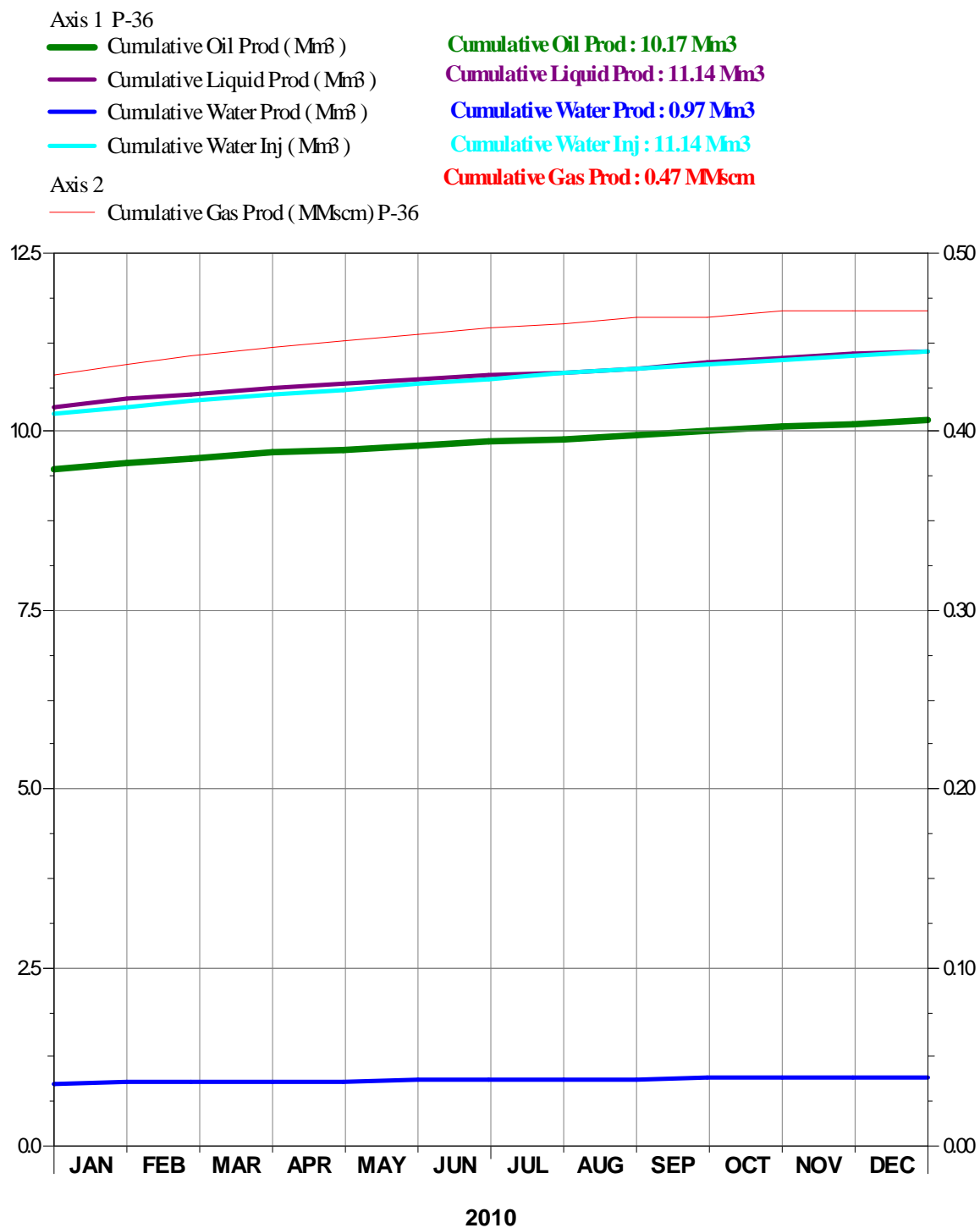


Figure C.35: 2010 Cumulative Production and Injection for Pattern 36

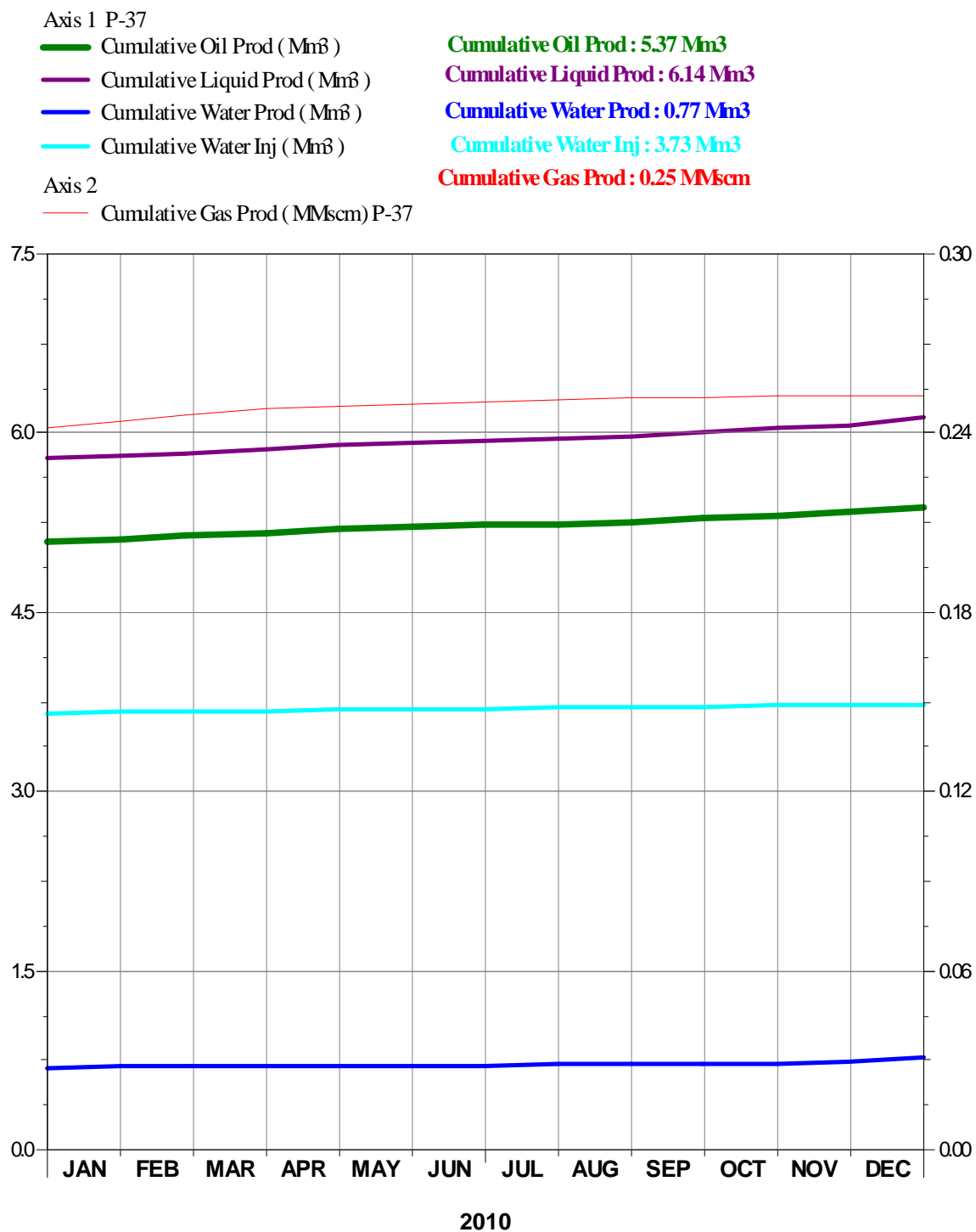


Figure C.36: 2010 Cumulative Production and Injection for Pattern 37

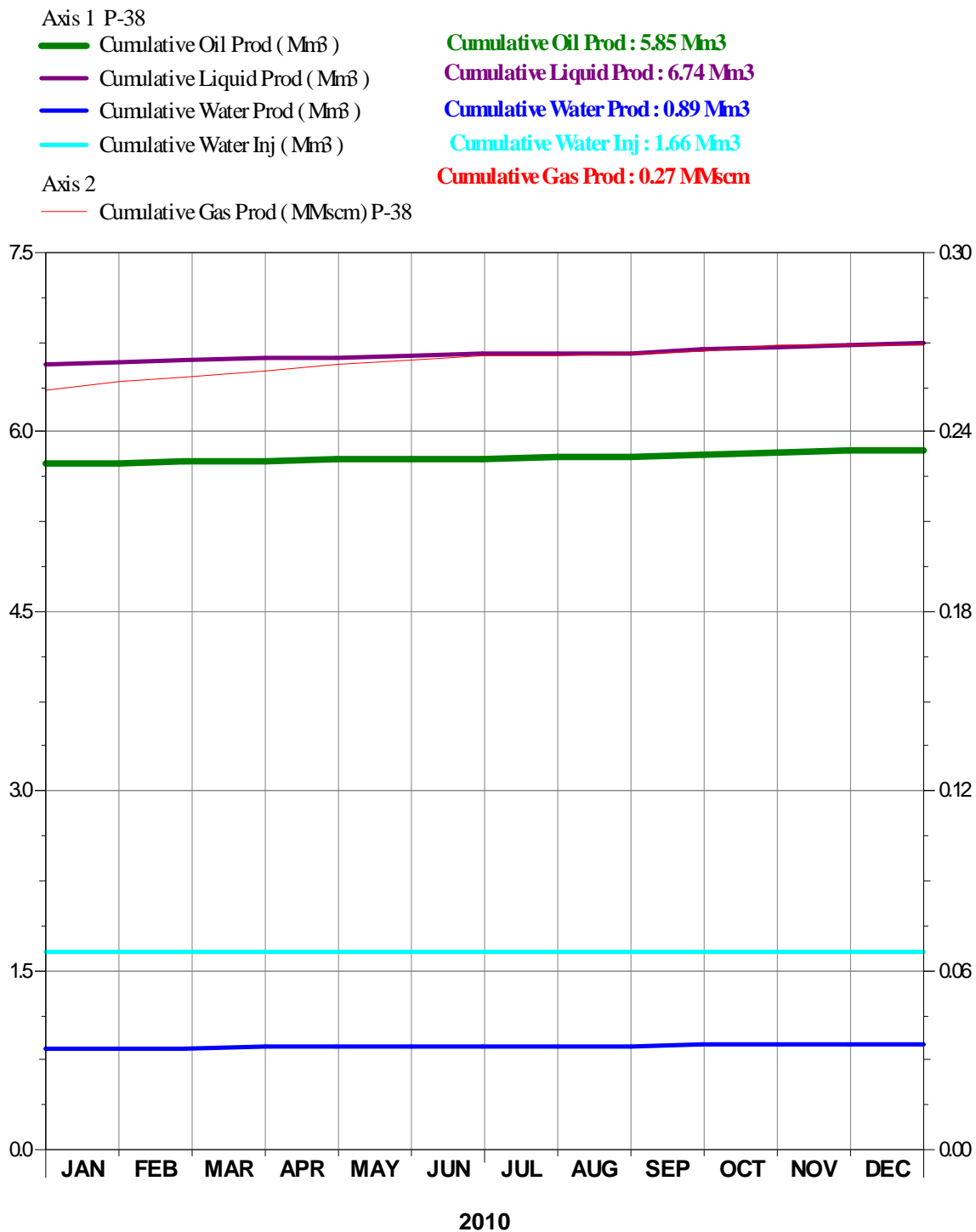


Figure C.37: 2010 Cumulative Production and Injection for Pattern 38

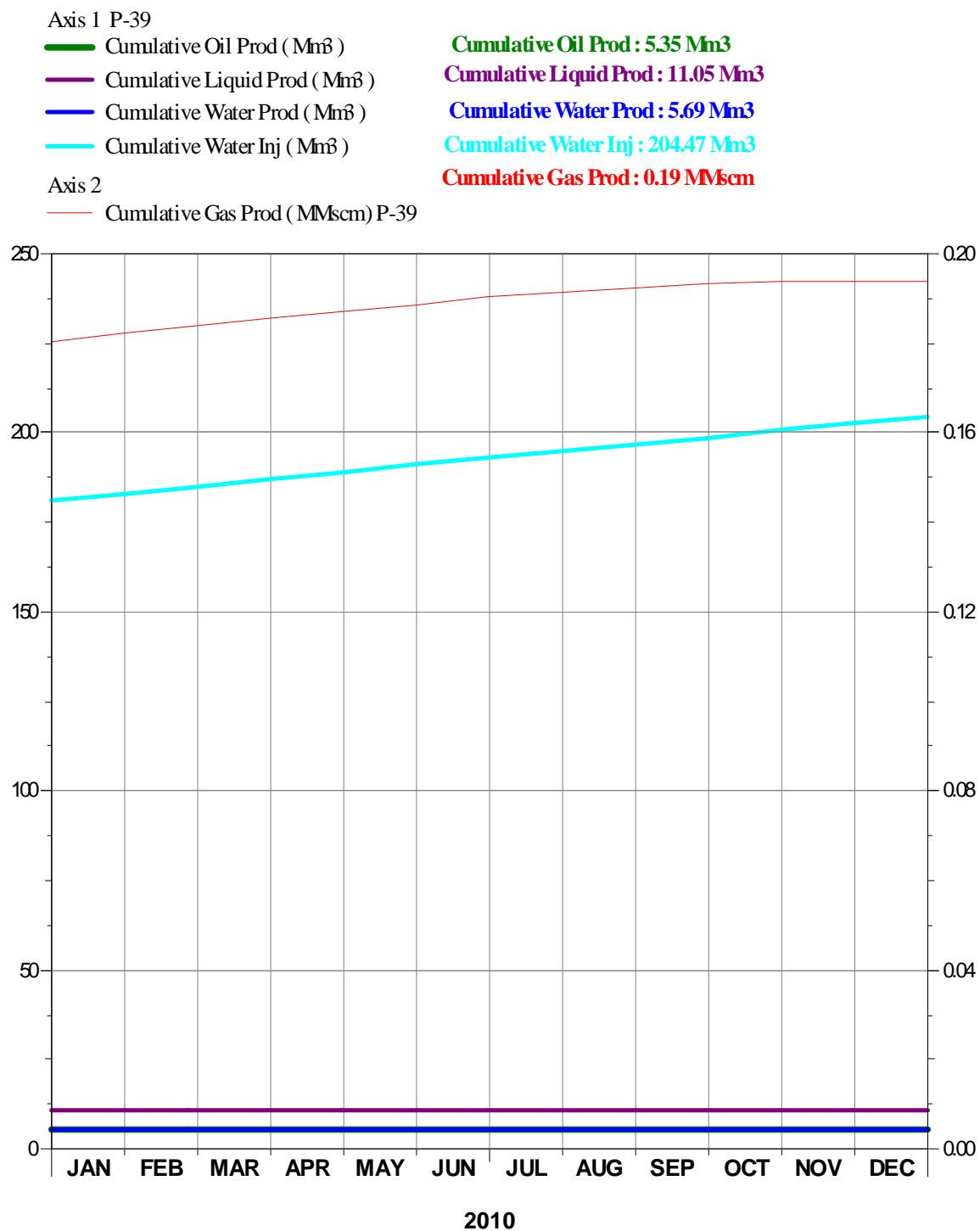


Figure C.38: 2010 Cumulative Production and Injection for Pattern 39

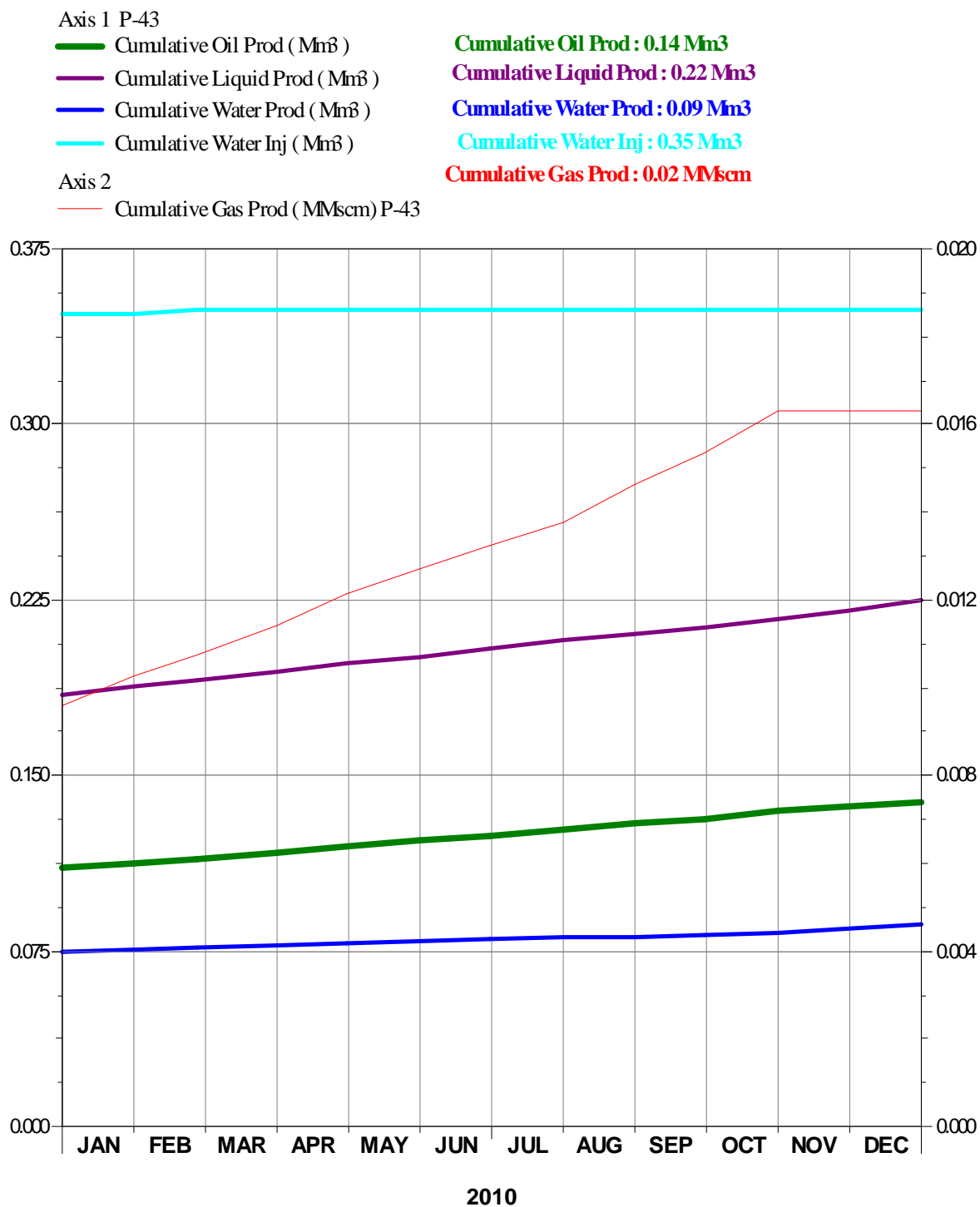


Figure 38: 2010 Cumulative Production and Injection for Pattern 43

TABLE D.1: 2009 AVERAGE DAILY INJECTION RATE AND AVERAGE INJECTION PRESSURE

Injector	January		February		March		April		May		June	
	Avg Daily Inj Rate (m ³ /d)	Avg Inj Pressure (kPa)	Avg Daily Inj Rate (m ³ /d)	Avg Inj Pressure (kPa)	Avg Daily Inj Rate (m ³ /d)	Avg Inj Pressure (kPa)	Avg Daily Inj Rate (m ³ /d)	Avg Inj Pressure (kPa)	Avg Daily Inj Rate (m ³ /d)	Avg Inj Pressure (kPa)	Avg Daily Inj Rate (m ³ /d)	Avg Inj Pressure (kPa)
00/02-08-002-29W1/0	4.30	5239	4.21	5057	3.97	5484	6.00	5169	4.80	5010	3.93	5097
00/02-09-002-29W1/0	0.04	5413	0.07	5186	0.13	5388	0.02	5314	0.03	5210	0.03	5297
00/02-16-002-29W1/0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
00/02-17-002-29W1/0	0.17	5600	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
00/04-09-002-29W1/0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
00/04-15-002-29W1/0	3.04	5550	3.48	5459	3.20	5400	3.19	5400	3.55	5400	2.88	5400
00/04-16-002-29W1/0	1.86	5550	1.73	5459	1.81	5400	2.79	5400	2.81	5400	2.56	5400
00/04-17-002-29W1/0	0.10	5550	0.00	0	0.00	0	0.00	0	3.85	5400	0.00	0
00/06-08-002-29W1/0	2.92	5550	3.28	5459	3.17	5400	3.03	5400	3.07	5400	3.01	5400
00/06-09-002-29W1/0	6.28	5313	6.74	5371	7.02	5497	6.06	5250	5.81	47471	5.34	6760
00/06-16-002-29W1/0	1.89	5550	2.25	5459	2.00	5400	2.05	5400	2.02	5400	1.89	5400
00/06-17-002-29W1/0	0.22	5550	0.35	5446	0.23	5378	0.18	5378	0.21	5378	0.26	5378
00/08-08-002-29W1/0	3.13	5152	2.74	5029	2.97	5387	3.04	5150	3.14	5190	3.08	5103
00/08-09-002-29W1/0	91.79	3887	70.12	3614	73.95	3161	69.23	3192	64.30	3200	59.24	3297
00/08-16-002-29W1/0	0.28	5550	0.19	5453	0.23	5390	0.25	5390	0.24	5390	0.30	5390
00/08-17-002-29W1/0	34.25	1329	32.30	2200	38.92	2200	49.46	2200	43.00	2036	40.54	2000
00/08-18-002-29W1/0	0.13	5550	0.19	5446	0.16	5378	0.14	5378	0.20	5378	0.17	5378
00/10-08-002-29W1/0	0.14	5550	0.26	5459	0.20	5400	0.16	5400	0.11	5400	0.08	5400
00/10-09-002-29W1/0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
00/10-16-002-29W1/0	2.36	5550	2.69	5459	2.38	5400	2.54	5400	2.53	5400	2.47	5400
00/12-04-002-29W1/0	0.04	5140	0.05	5030	0.01	5364	0.01	5231	0.01	5017	0.01	5192
00/12-08-002-29W1/0	1.16	5550	1.49	5459	1.48	5400	1.25	5400	1.32	5400	0.93	5400
00/12-09-002-29W1/0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
00/12-17-002-29W1/0	0.00	0	1.28	5410	0.00	0	0.00	0	0.00	0	0.00	0
00/14-04-002-29W1/0	0.63	5139	0.57	5029	0.38	5387	0.60	5233	0.69	5110	0.69	5003
00/14-08-002-29W1/0	0.41	5550	0.59	5456	0.37	5400	0.53	5400	0.90	5400	0.78	5400
00/14-09-002-29W1/0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
00/14-17-002-29W1/0	66.42	2000	60.33	2000	72.42	2000	72.09	2000	65.84	2000	60.91	2000
00/16-04-002-29W1/0	0.03	5256	0.01	5075	0.01	5400	0.02	5310	0.01	5123	0.08	5200
00/16-05-002-29W1/0	3.32	5226	3.48	5200	3.45	5490	3.13	5250	3.21	5110	2.96	5197
00/16-08-002-29W1/0	8.29	5500	9.50	5427	8.78	5380	7.70	5380	6.91	5380	6.16	5380
00/16-09-002-29W1/0	2.10	5313	2.17	5229	2.10	5394	2.12	5233	3.67	5019	3.92	5000
00/16-18-002-29W1/0	0.00	0	1.83	5378	0.02	5500	0.04	5500	0.01	5500	0.01	5500
02/08-09-002-29W1/0	0.07	5400	0.08	5030	0.05	5471	0.13	5159	0.03	5100	0.01	5000
02/10-16-002-29W1/0	11.91	5480	13.03	5431	12.79	5400	9.05	5400	8.07	5400	6.32	5400
02/12-09-002-29W1/0	6.98	4042	7.71	4000	6.96	4000	9.22	4000	6.79	4000	5.81	4000
02/12-16-002-29W1/0	3.05	5550	3.34	5459	3.05	5400	3.21	5400	3.09	5400	2.83	5400
02/16-09-002-29W1/0	3.47	5313	3.67	5229	3.58	5394	3.39	5150	3.34	5010	3.20	5000
03/15-16-002-29W1/0	2.49	5550	2.43	5459	2.09	5400	2.28	5400	2.05	5400	1.73	5400
03/16-09-002-29W1/0	3.73	5313	4.20	5226	4.22	5394	4.07	5067	3.74	5000	3.41	5000
B0/02-17-002-29W1/0	6.49	5550	6.68	5447	6.71	5380	5.35	5380	5.08	5380	4.76	5380
B0/04-16-002-29W1/0	3.75	5550	4.31	5459	4.08	5400	4.28	5400	4.05	5400	3.88	5400
B0/06-09-002-29W1/0	7.38	5326	7.99	5371	8.10	5400	7.80	5317	7.58	5119	6.61	5197
B0/06-16-002-29W1/0	4.50	5550	4.94	5459	4.63	5400	4.75	5400	4.31	5400	4.02	5400
B0/08-09-002-29W1/0	5.28	5413	5.54	5114	5.04	5387	3.83	5317	3.31	5121	3.80	5293
B0/08-16-002-29W1/0	3.22	5550	3.66	5453	3.34	5390	3.30	5390	3.34	5390	3.10	5390
B0/12-17-002-29W1/0	0.10	5550	0.07	5482	0.17	5400	0.13	5400	0.08	5400	0.19	5400
B0/14-04-002-29W1/0	2.20	5139	2.60	5029	2.44	5387	2.35	5233	2.18	5019	2.21	5000
B0/14-08-002-29W1/0	0.15	5550	0.13	5550	0.66	5400	0.25	5400	0.10	5400	0.02	5400
B0/16-17-002-29W1/0	0.23	5550	0.30	5378	0.27	5378	0.51	5378	0.17	5378	0.49	5378
C0/05-16-002-29W1/0	4.81	5550	5.25	5456	5.16	5395	4.78	5395	4.60	5395	4.03	5395
C0/11-16-002-29W1/0	4.57	5550	4.95	5453	4.47	5390	4.36	5390	4.08	5390	3.93	5390
C0/15-04-002-29W1/0	2.09	5239	2.33	5057	2.18	5435	2.56	5242	2.34	5200	2.49	5200
C2/07-16-002-29W1/0	2.02	5550	2.56	5459	1.50	5400	1.71	5400	1.72	5400	1.56	5400
D0/02-09-002-29W1/0	2.65	5413	3.02	5186	2.80	5390	2.87	5233	2.70	5200	2.41	5297
D0/02-17-002-29W1/0	6.46	5550	6.57	5459	6.29	5400	5.80	5400	5.26	5400	4.54	5400
D0/04-09-002-29W1/0	3.74	5313	4.18	5229	3.53	5490	3.49	5250	3.31	5200	3.00	5200
D0/04-17-002-29W1/0	5.69	5550	5.85	5447	5.49	5380	5.14	5380	4.72	5380	4.42	5380
D0/06-09-002-29W1/0	0.36	5326	0.32	5371	0.25	5497	0.60	5250	0.12	5200	0.09	5200
D0/06-17-002-29W1/0	0.28	5550	1.10	5378	0.63	5378	0.38	5378	0.01	5378	0.20	5378
D0/14-09-002-29W1/0	16.45	4800	16.26	4800	14.28	4800	13.41	4800	14.02	4800	14.80	4800
D0/16-05-002-29W1/0	0.13	5230	0.23	5200	0.08	5489	0.07	5212	0.15	5110	0.17	5197

TABLE D.1: 2009 AVERAGE DAILY INJECTION RATE AND AVERAGE INJECTION PRESSURE

Injector	July		August		September		November		December	
	Avg Daily Inj Rate (m ³ /d)	Avg Inj Pressure (kPa)	Avg Daily Inj Rate (m ³ /d)	Avg Inj Pressure (kPa)	Avg Daily Inj Rate (m ³ /d)	Avg Inj Pressure (kPa)	Avg Daily Inj Rate (m ³ /d)	Avg Inj Pressure (kPa)	Avg Daily Inj Rate (m ³ /d)	Avg Inj Pressure (kPa)
00/02-08-002-29W1/0	4.05	5100	4.05	5190	3.81	5200	3.58	5300	3.25	5300
00/02-09-002-29W1/0	0.03	5300	0.02	5300	0.03	5300	0.02	5300	0.02	5457
00/02-16-002-29W1/0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
00/02-17-002-29W1/0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
00/04-09-002-29W1/0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
00/04-15-002-29W1/0	3.31	5400	3.72	5400	3.60	5400	3.29	5400	3.26	5400
00/04-16-002-29W1/0	2.44	5400	2.49	5400	2.65	5400	2.62	5400	2.57	5400
00/04-17-002-29W1/0	0.01	5400	0.01	5400	0.00	0	0.00	0	0.01	5400
00/06-08-002-29W1/0	3.27	5400	3.33	5400	3.27	5412	3.03	5400	3.92	5400
00/06-09-002-29W1/0	5.80	5200	6.32	5471	6.43	5500	5.80	5400	5.51	5481
00/06-16-002-29W1/0	1.70	5400	1.27	5400	1.37	5400	2.36	5400	2.27	5400
00/06-17-002-29W1/0	0.23	5378	0.21	5378	0.05	5378	1.02	5480	1.34	5480
00/08-08-002-29W1/0	3.13	5100	3.40	5100	2.62	5100	2.76	5200	2.72	5361
00/08-09-002-29W1/0	58.93	3300	61.97	3390	60.88	3400	63.11	3500	68.52	3581
00/08-16-002-29W1/0	0.26	5390	0.10	5390	0.08	5390	0.41	5390	0.26	5390
00/08-17-002-29W1/0	41.06	2000	29.30	2000	21.72	2050	26.11	2500	14.91	2500
00/08-18-002-29W1/0	0.21	5378	0.17	5378	0.24	5389	0.21	5490	0.20	5490
00/10-08-002-29W1/0	0.12	5400	0.16	5400	0.30	5410	0.31	5450	0.29	5450
00/10-09-002-29W1/0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
00/10-16-002-29W1/0	2.59	5400	2.89	5400	3.08	5400	2.64	5400	2.81	5400
00/12-04-002-29W1/0	0.01	5200	0.01	5200	0.01	5200	0.01	5300	0.03	5219
00/12-08-002-29W1/0	0.68	5400	0.21	5400	0.03	5425	0.04	5500	0.02	5500
00/12-09-002-29W1/0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
00/12-17-002-29W1/0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
00/14-04-002-29W1/0	0.74	5000	0.83	5181	0.66	5200	0.83	5300	0.73	5219
00/14-08-002-29W1/0	1.10	5400	1.06	5400	0.85	5410	0.75	5450	0.94	5450
00/14-09-002-29W1/0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
00/14-17-002-29W1/0	62.29	2000	63.76	2000	65.55	2100	62.15	3000	62.19	3000
00/16-04-002-29W1/0	0.01	5200	0.01	5200	0.02	5200	0.02	5300	0.01	5300
00/16-05-002-29W1/0	2.89	5200	3.18	5200	2.42	5200	2.97	5300	2.85	5381
00/16-08-002-29W1/0	6.38	5380	6.65	5380	6.51	5397	6.05	5465	5.58	5465
00/16-09-002-29W1/0	3.90	5000	3.88	5271	3.79	5300	3.18	5400	2.93	5400
00/16-18-002-29W1/0	0.01	5500	0.01	5500	0.01	5500	0.01	5500	0.01	5500
02/08-09-002-29W1/0	0.02	5000	0.08	5100	0.07	5100	0.01	5200	0.03	5500
02/10-16-002-29W1/0	7.00	5400	8.03	5400	8.93	5400	8.44	5400	7.13	5400
02/12-09-002-29W1/0	5.55	4000	6.33	4000	8.20	4000	8.16	4000	7.36	4000
02/12-16-002-29W1/0	2.89	5400	2.98	5400	3.09	5400	2.89	5400	2.74	5400
02/16-09-002-29W1/0	3.33	5000	3.33	5271	3.37	5300	3.33	5400	3.34	5400
03/15-16-002-29W1/0	2.11	5400	2.06	5400	1.95	5400	2.12	5400	2.88	5400
03/16-09-002-29W1/0	3.60	5000	3.53	5271	3.52	5300	3.49	5400	3.37	5400
B0/02-17-002-29W1/0	5.23	5380	4.74	5380	4.72	5390	4.40	5480	4.21	5480
B0/04-16-002-29W1/0	3.88	5400	3.87	5400	4.19	5400	3.79	5400	3.62	5400
B0/06-09-002-29W1/0	6.38	5200	6.30	5471	5.96	5500	5.69	5400	5.86	5481
B0/06-16-002-29W1/0	4.02	5400	4.14	5400	4.07	5400	4.13	5400	3.47	5400
B0/08-09-002-29W1/0	3.89	5300	4.00	5300	3.75	5300	3.71	5200	3.60	5361
B0/08-16-002-29W1/0	3.27	5390	3.12	5390	3.07	5390	3.12	5390	2.80	5390
B0/12-17-002-29W1/0	0.13	5400	0.00	0	0.00	0	0.00	0	0.03	5400
B0/14-04-002-29W1/0	2.30	5000	2.40	5181	2.36	5200	2.32	5300	2.29	5219
B0/14-08-002-29W1/0	0.08	5400	0.85	5400	0.04	5363	0.06	5425	0.01	5425
B0/16-17-002-29W1/0	0.08	5378	0.15	5378	0.00	0	0.11	5480	0.03	5480
C0/05-16-002-29W1/0	4.14	5395	4.36	5395	4.04	5395	4.09	5395	3.93	5395
C0/11-16-002-29W1/0	4.09	5390	4.22	5390	4.18	5390	4.51	5390	3.54	5390
C0/15-04-002-29W1/0	2.44	5200	2.14	5200	1.46	5200	1.31	5300	1.34	5381
C2/07-16-002-29W1/0	1.56	5400	2.04	5400	2.06	5400	2.11	5400	1.97	5400
D0/02-09-002-29W1/0	2.52	5300	2.46	5300	2.85	5213	2.68	5300	2.60	5461
D0/02-17-002-29W1/0	5.06	5400	5.14	5400	5.01	5400	4.63	5400	4.46	5400
D0/04-09-002-29W1/0	2.78	5200	2.66	5471	2.74	5500	2.43	5400	2.19	5400
D0/04-17-002-29W1/0	4.30	5380	4.97	5380	4.33	5390	3.85	5480	3.90	5480
D0/06-09-002-29W1/0	0.06	5200	0.03	5471	0.03	5500	0.37	5400	0.33	5481
D0/06-17-002-29W1/0	0.05	5378	0.68	5384	2.42	4680	0.00	0	2.00	5300
D0/14-09-002-29W1/0	15.14	4800	15.81	4800	16.38	4800	15.58	4800	15.60	4800
D0/16-05-002-29W1/0	0.20	5200	0.80	5206	5.59	5213	4.25	5300	4.94	5381

00/02-08-002-29W1/0

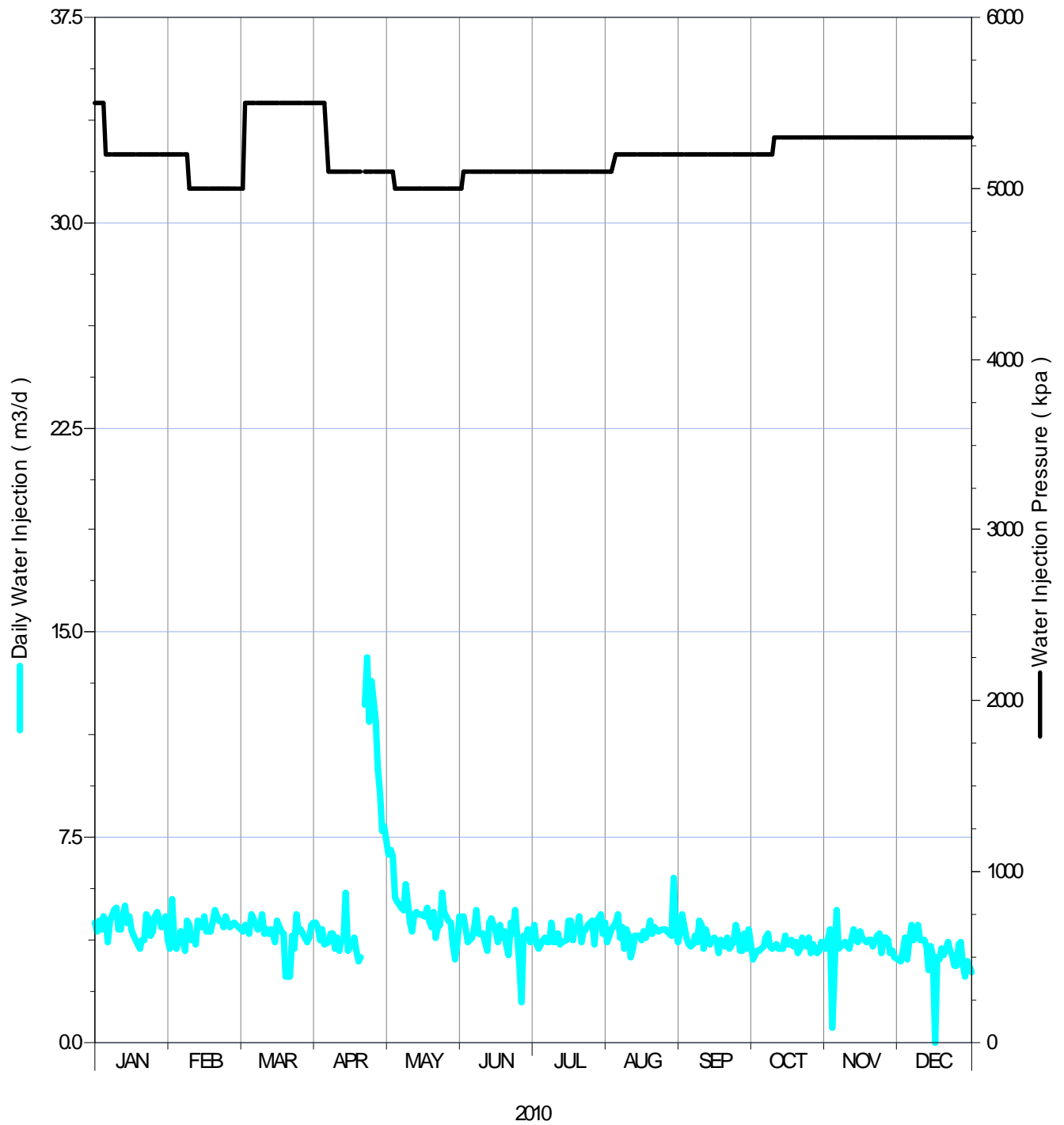


Figure D.1 – 2010 Daily Water Injection and Wellhead Injection Pressure

00/02-09-002-29W1/0

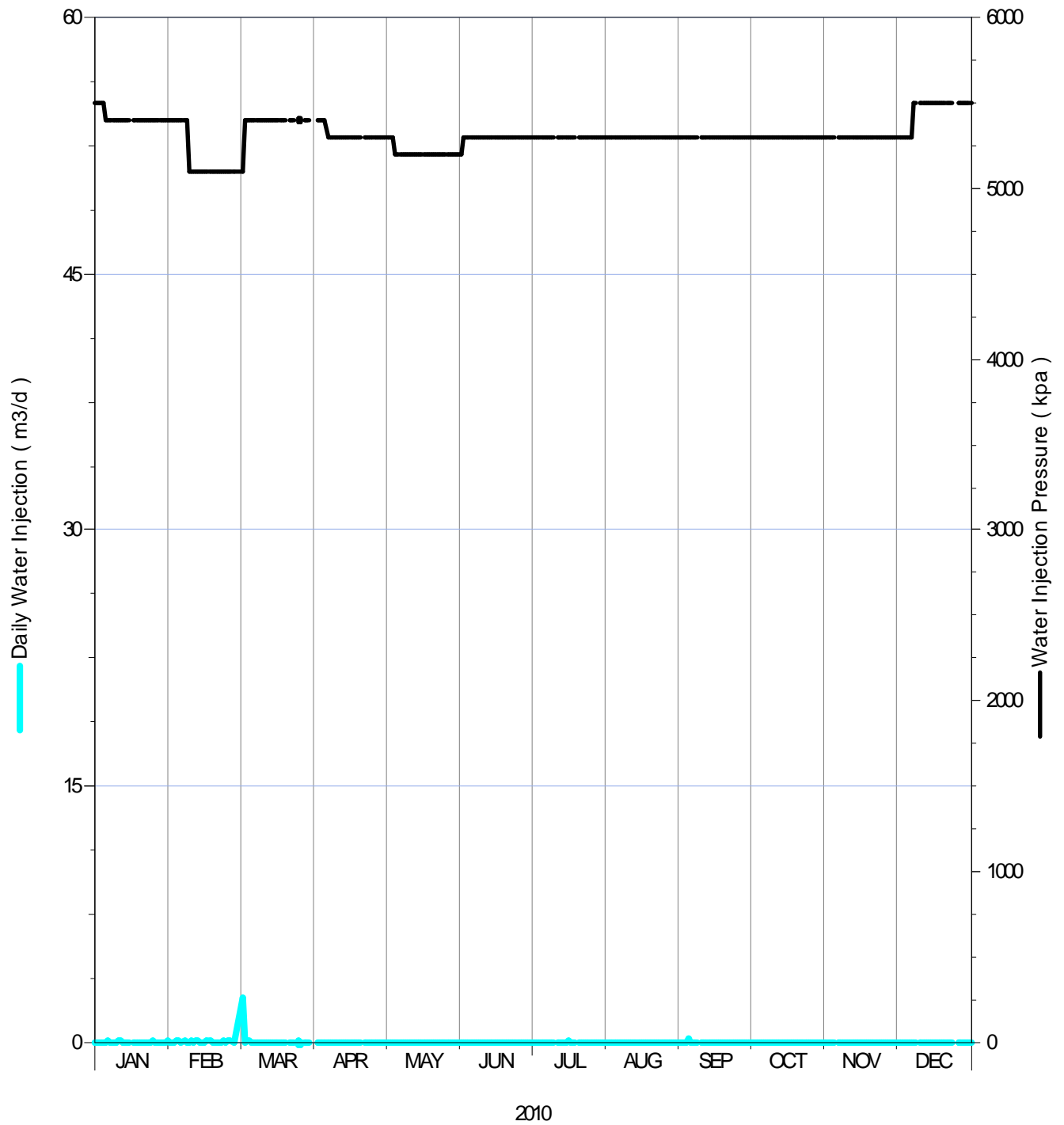


Figure D.2 – 2010 Daily Water Injection and Wellhead Injection Pressure

00/02-16-002-29W1/0

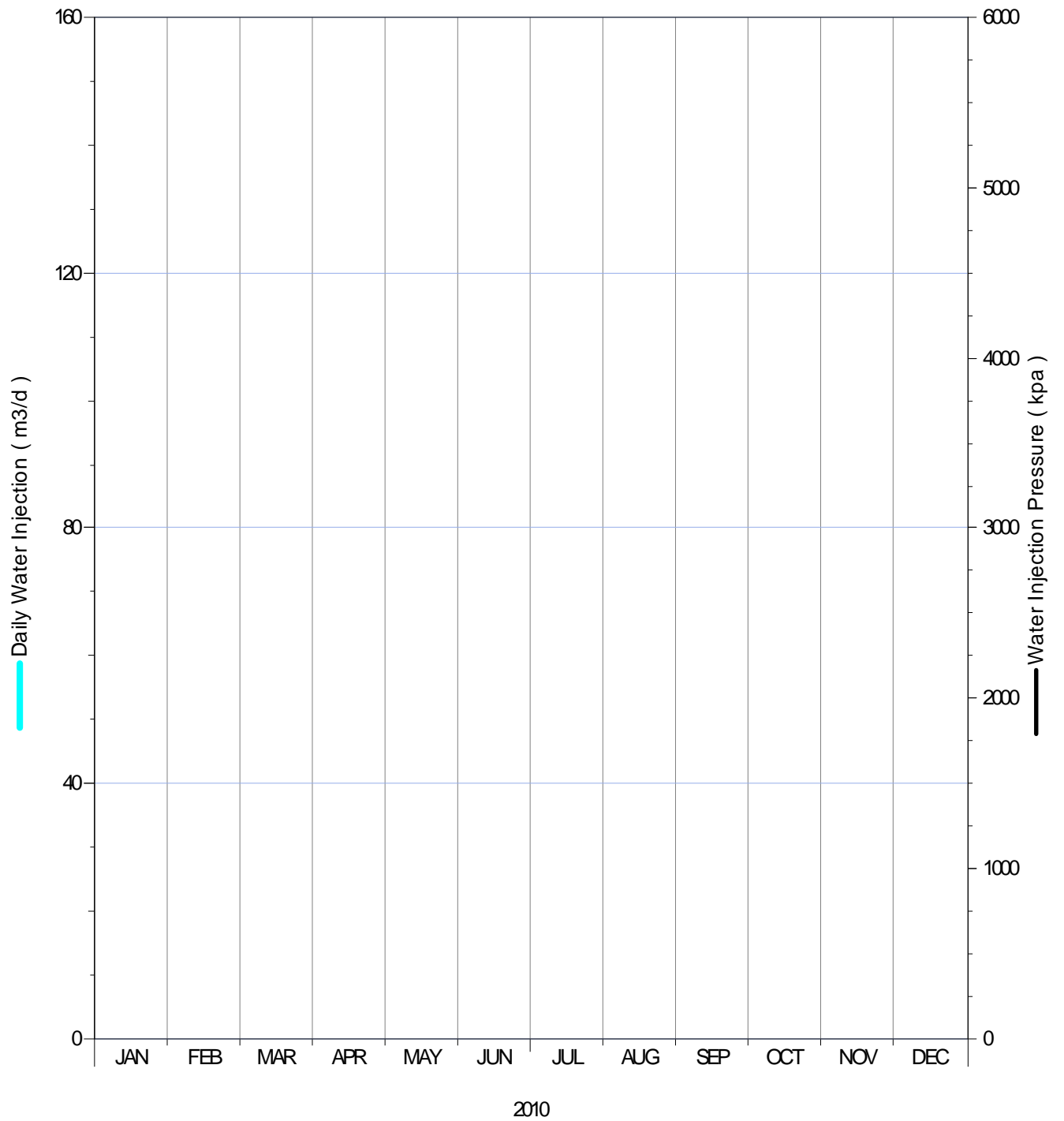


Figure D.3 – 2010 Daily Water Injection and Wellhead Injection Pressure

00/02-17-002-29W1/0

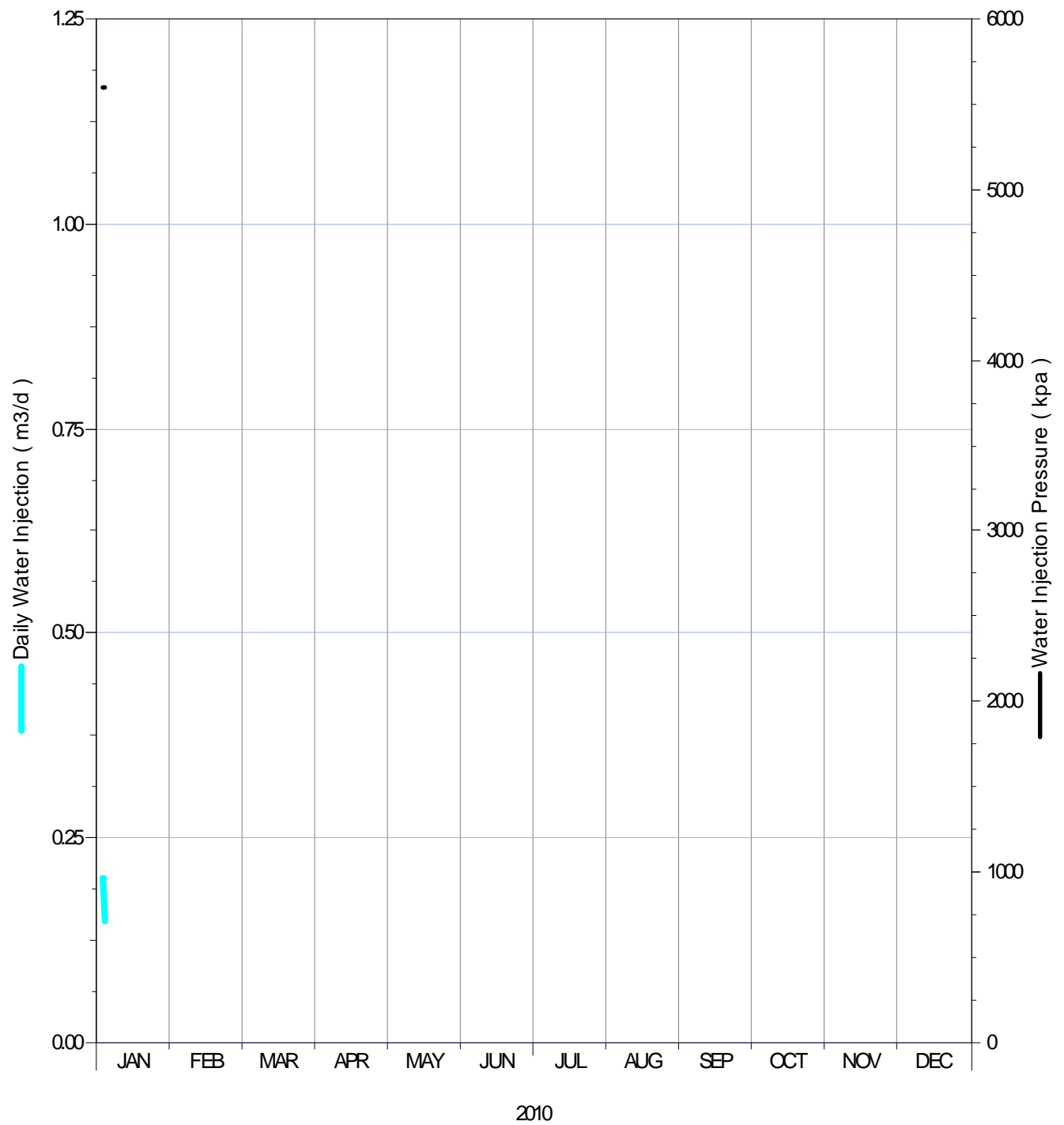


Figure D.4 – 2010 Daily Water Injection and Wellhead Injection Pressure

00/04-09-002-29W1/0

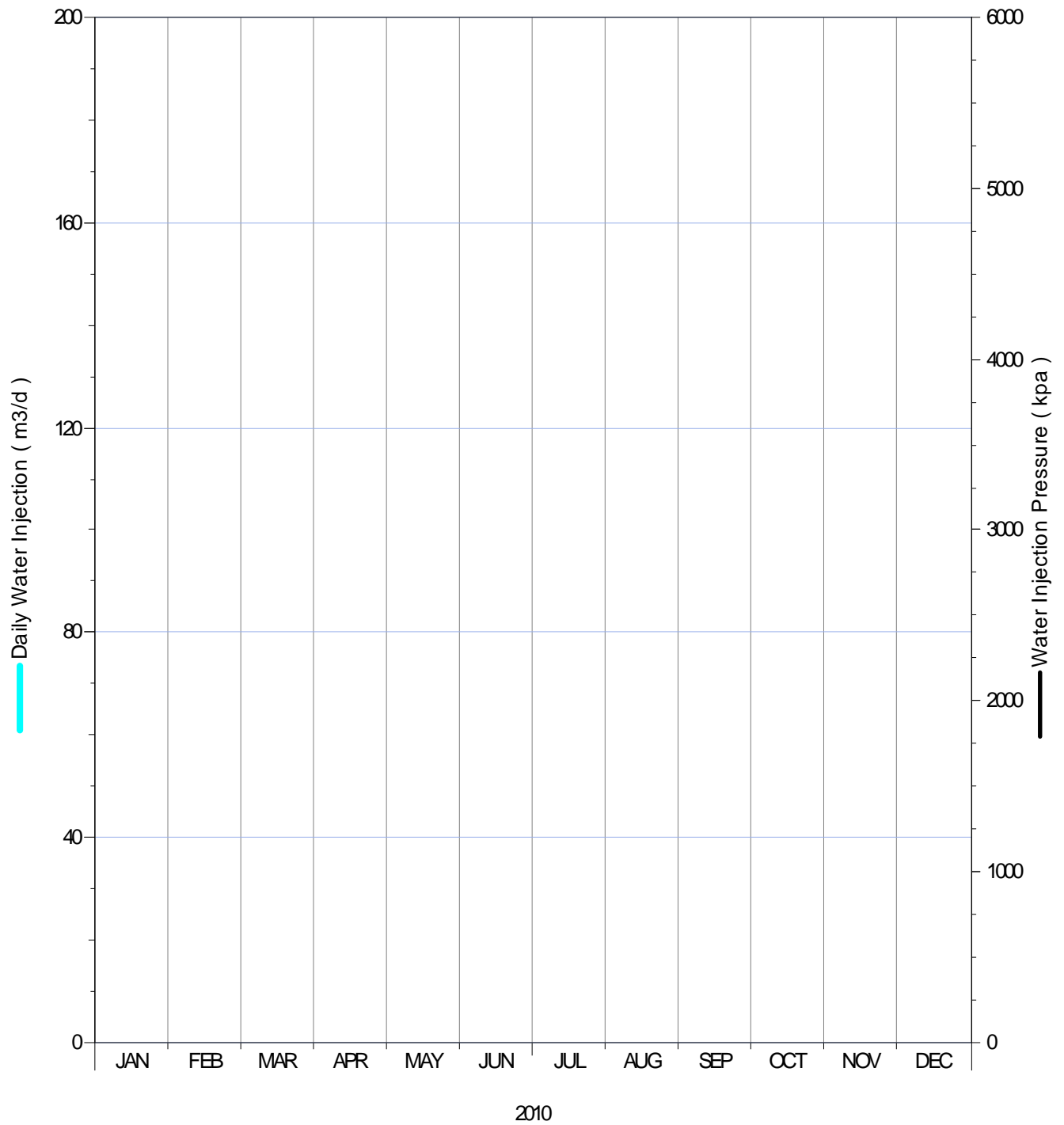


Figure D.5 – 2010 Daily Water Injection and Wellhead Injection Pressure

00/04-15-002-29W1/0

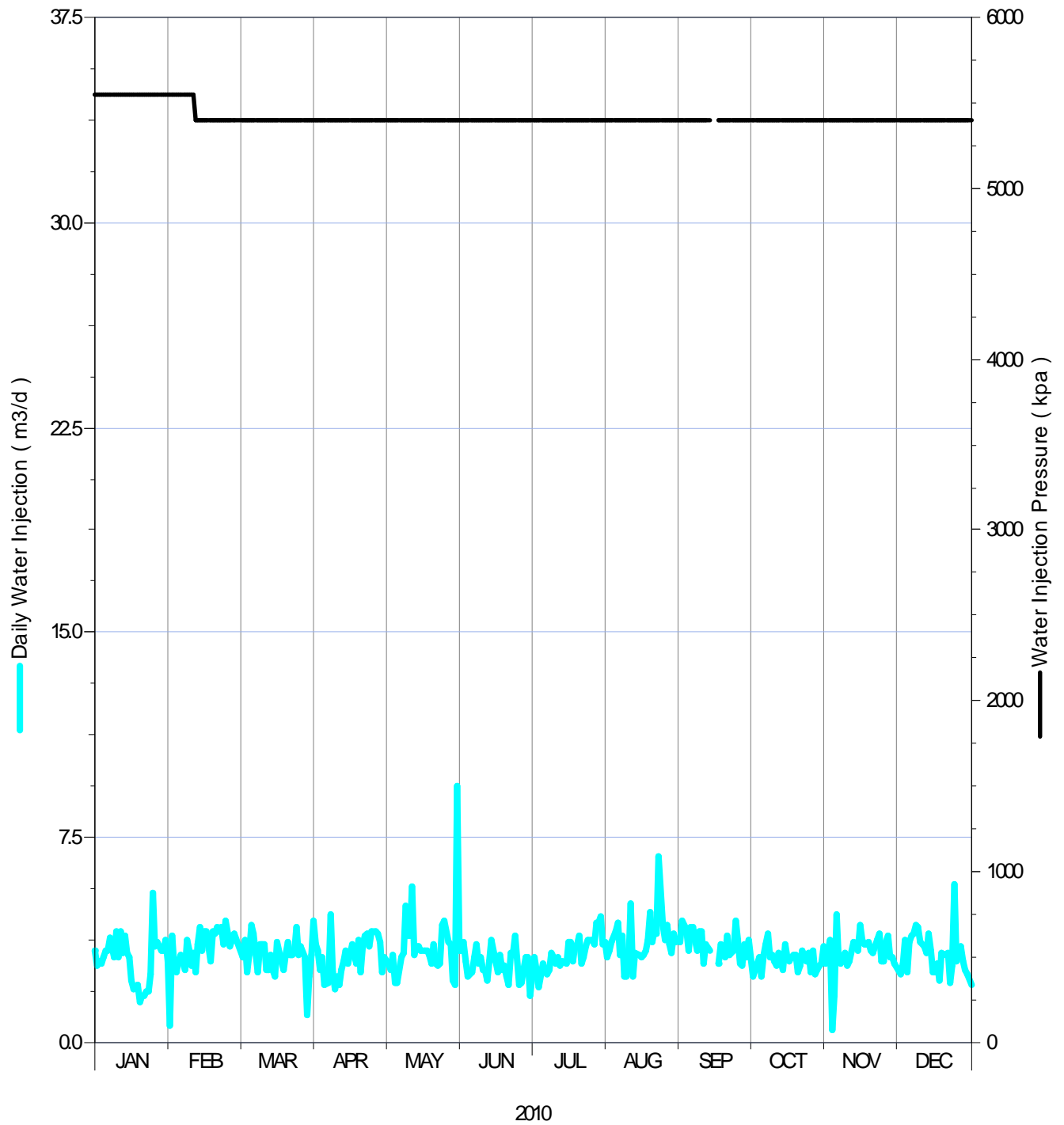


Figure D.6 – 2010 Daily Water Injection and Wellhead Injection Pressure

00/04-16-002-29W1/0

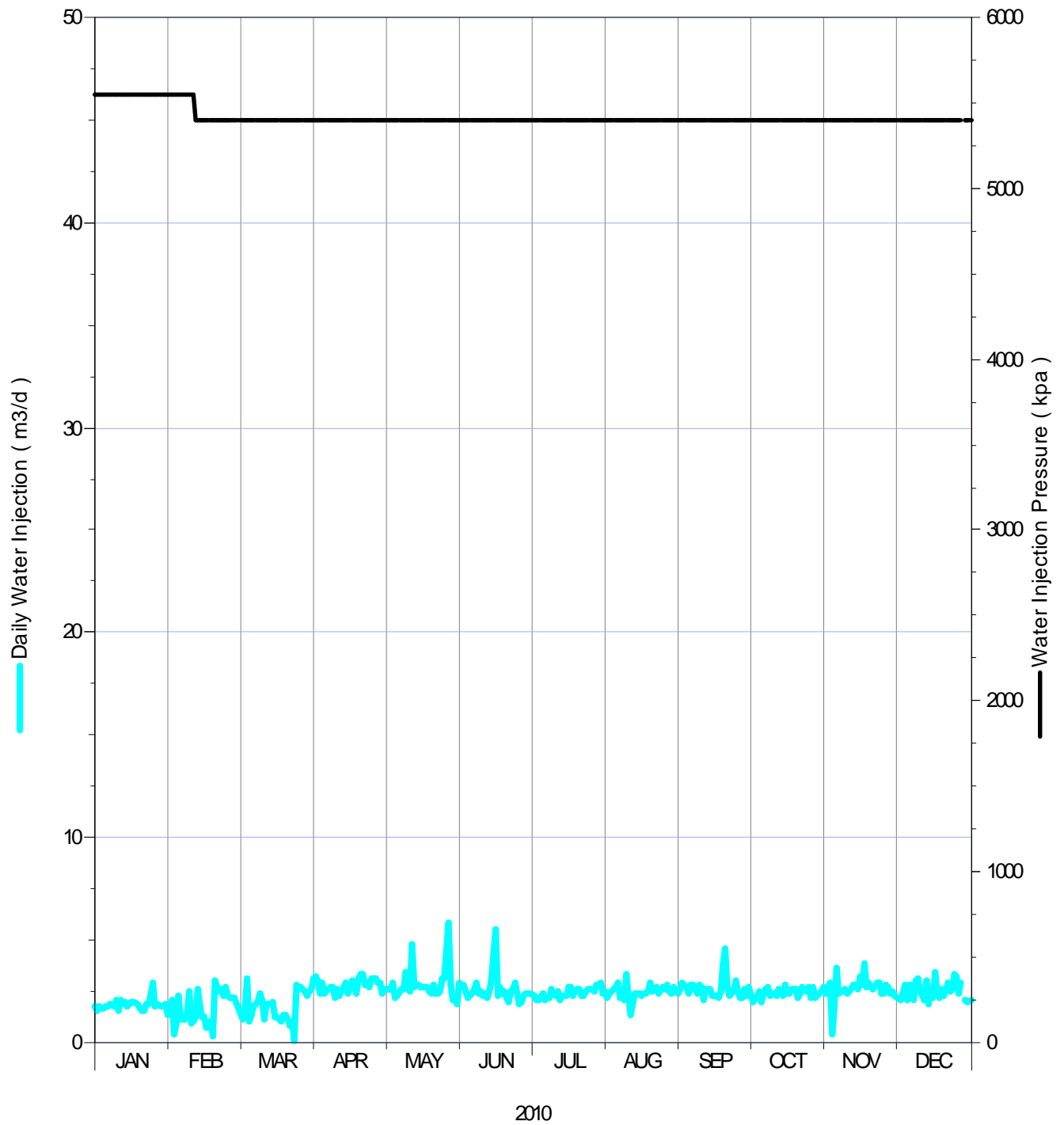


Figure D.7 – 2010 Daily Water Injection and Wellhead Injection Pressure

00/04-17-002-29W1/0

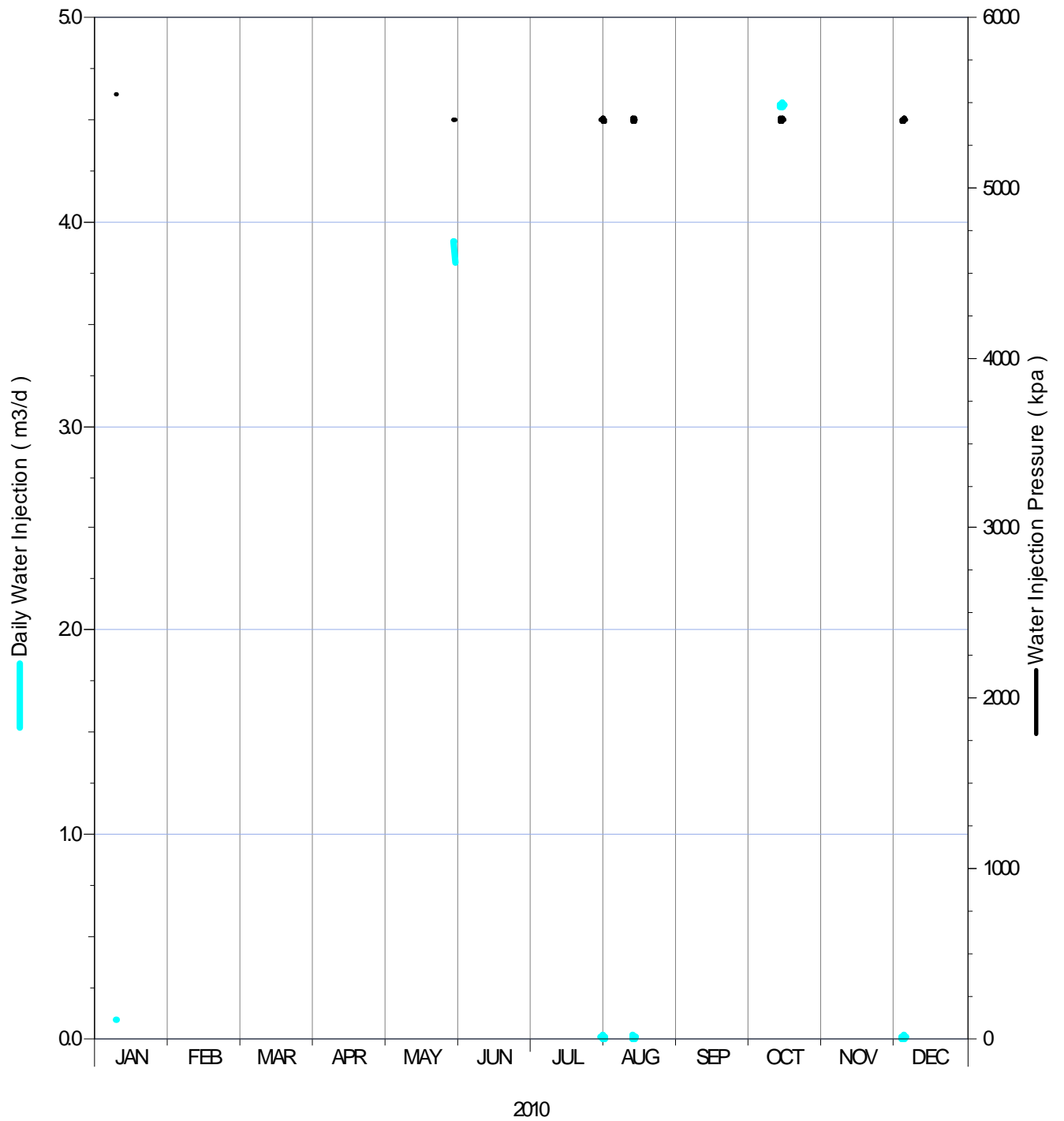


Figure D.8 – 2010 Daily Water Injection and Wellhead Injection Pressure

00/06-08-002-29W1/0

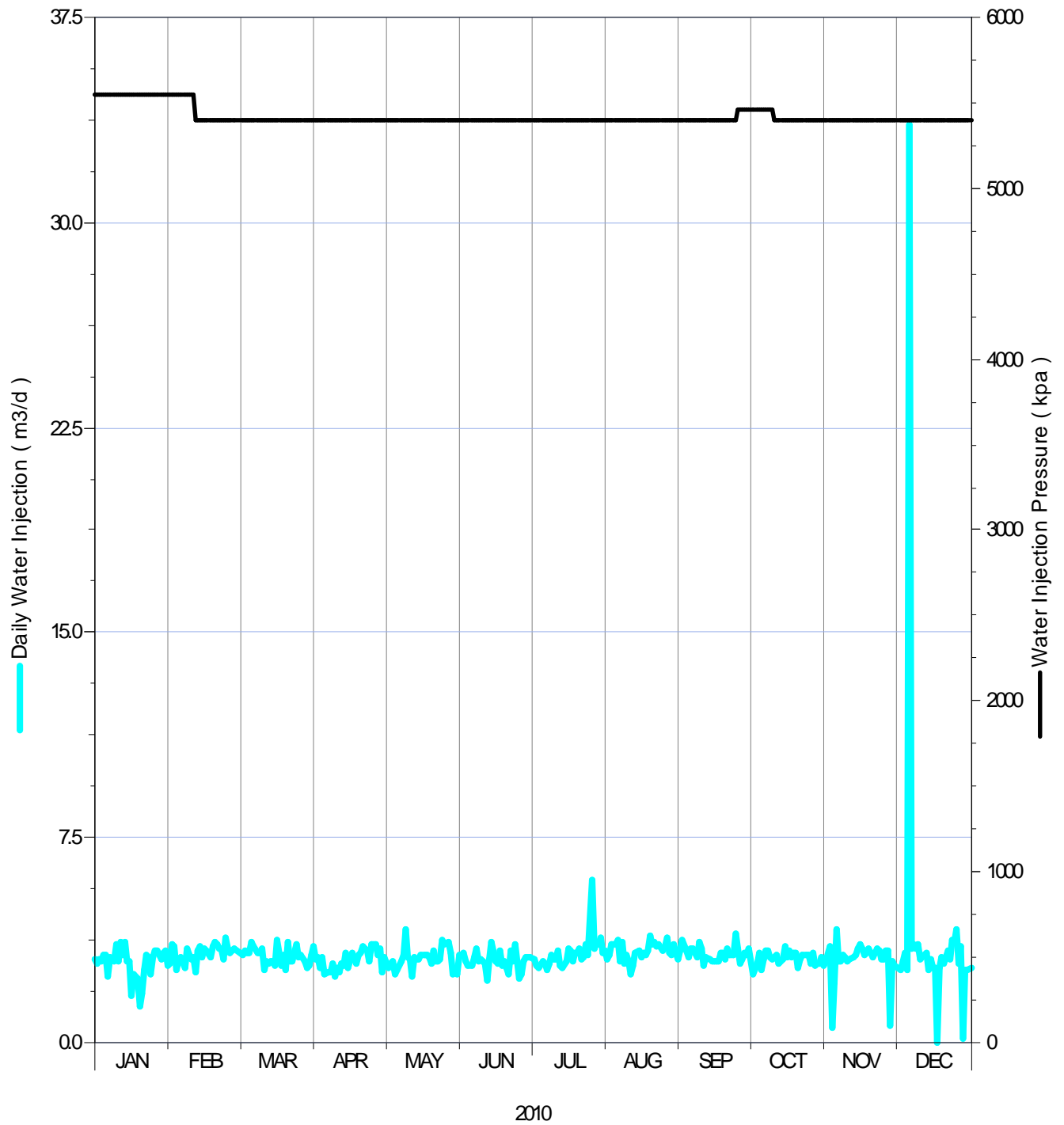


Figure D.9 – 2010 Daily Water Injection and Wellhead Injection Pressure

00/06-09-002-29W1/0

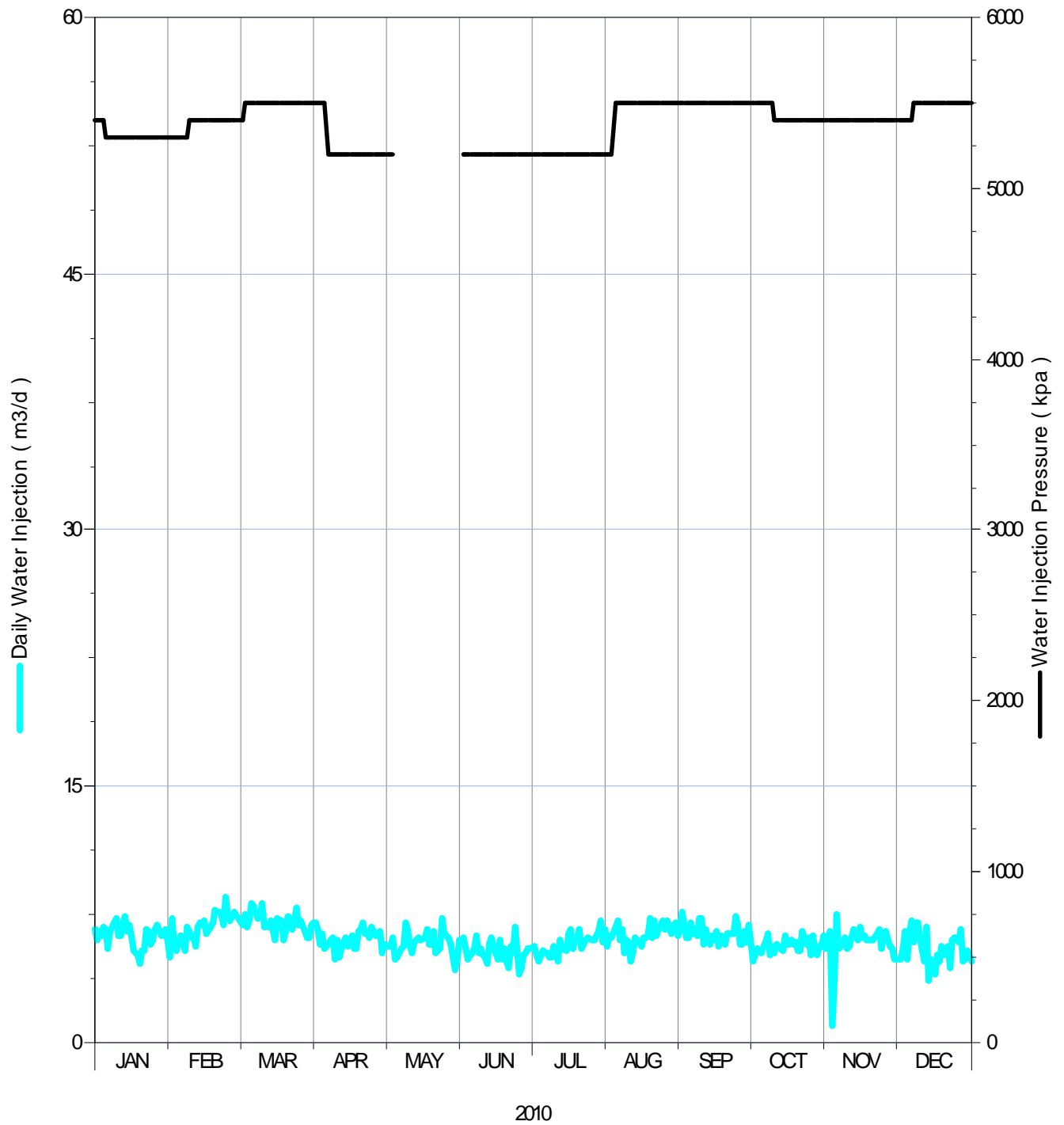


Figure D.10 – 2010 Daily Water Injection and Wellhead Injection Pressure

00/06-16-002-29W1/0

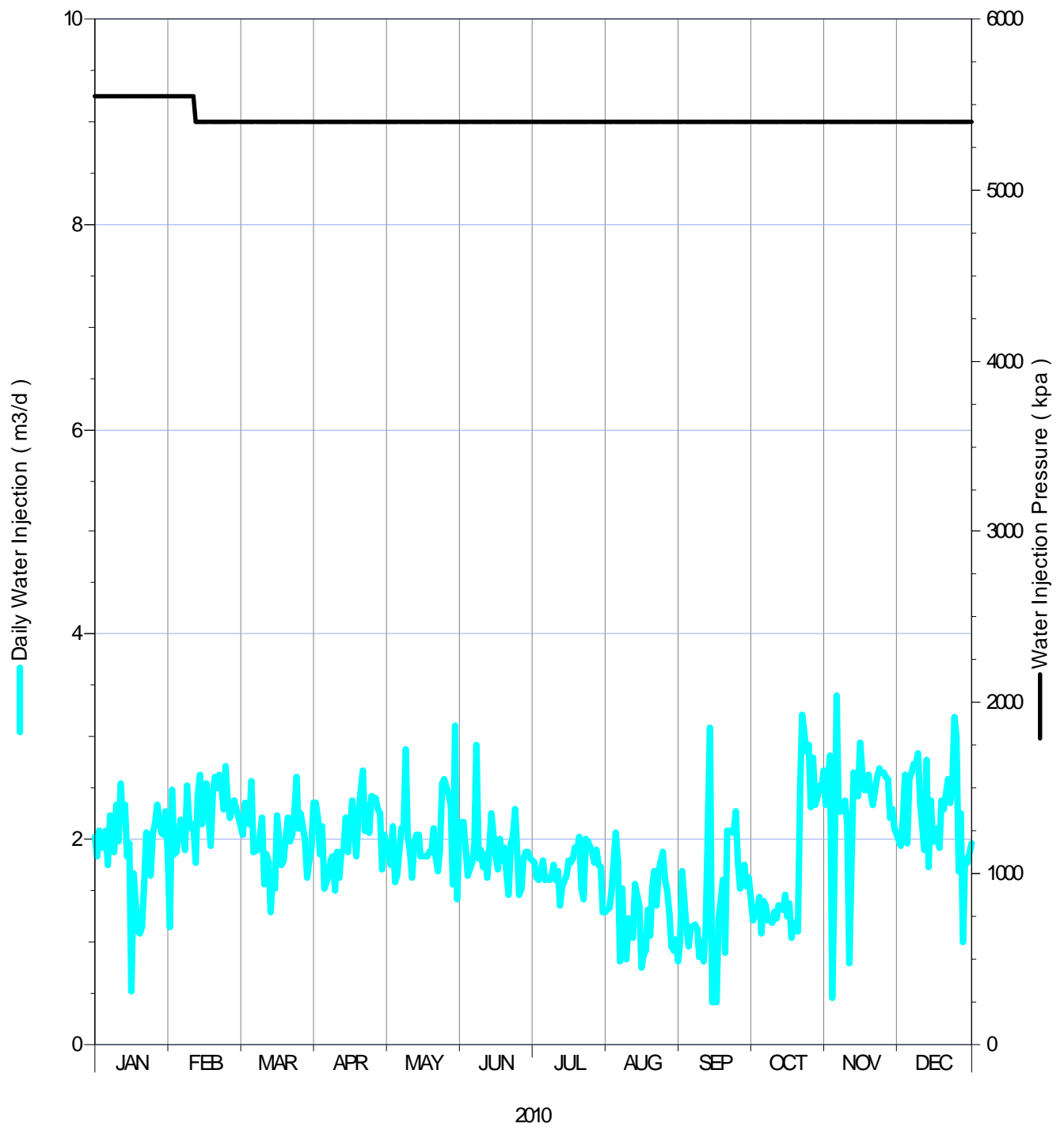


Figure D.11 – 2010 Daily Water Injection and Wellhead Injection Pressure

00/06-17-002-29W1/0

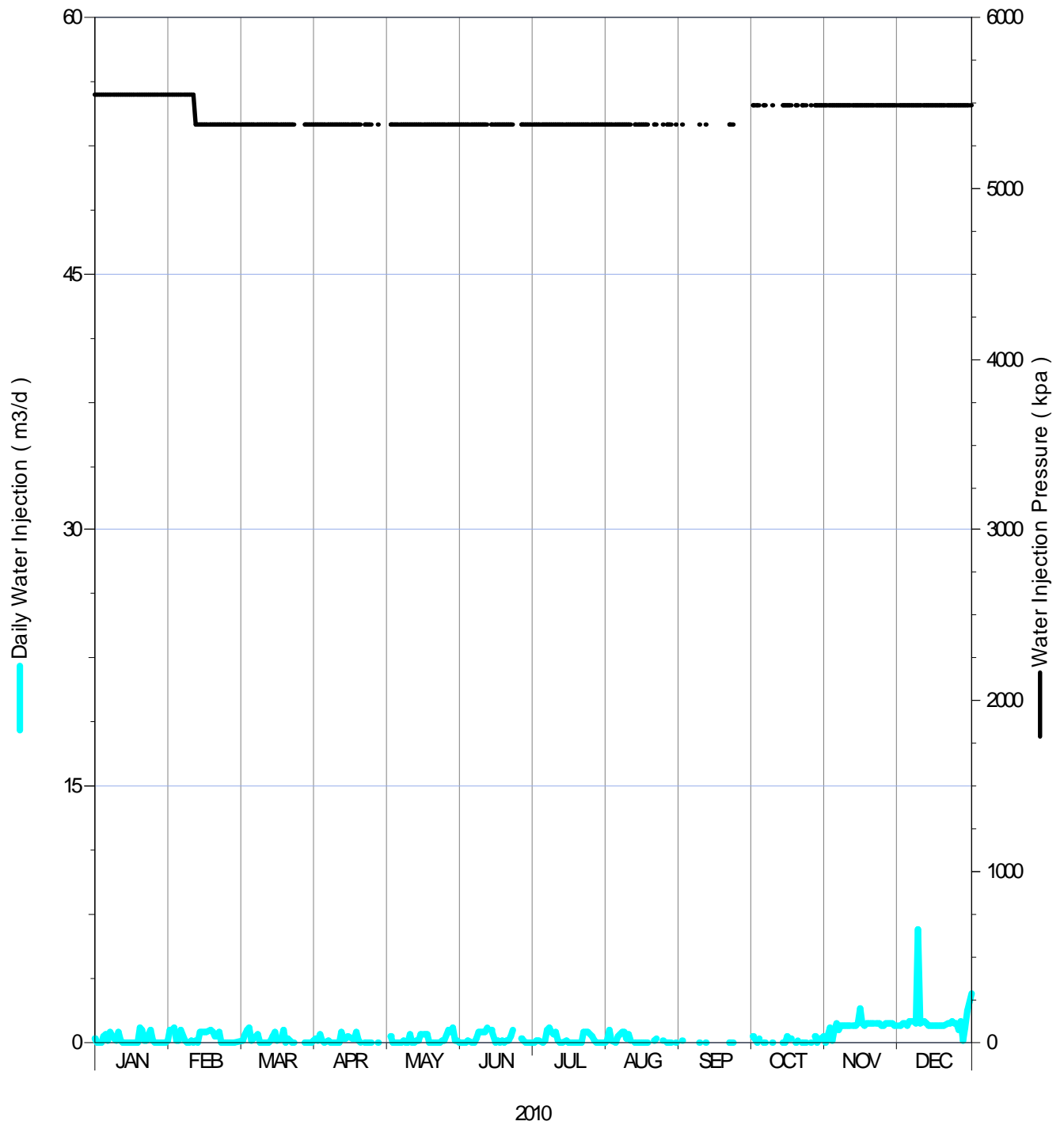


Figure D.12 – 2010 Daily Water Injection and Wellhead Injection Pressure

00/08-08-002-29W1/0

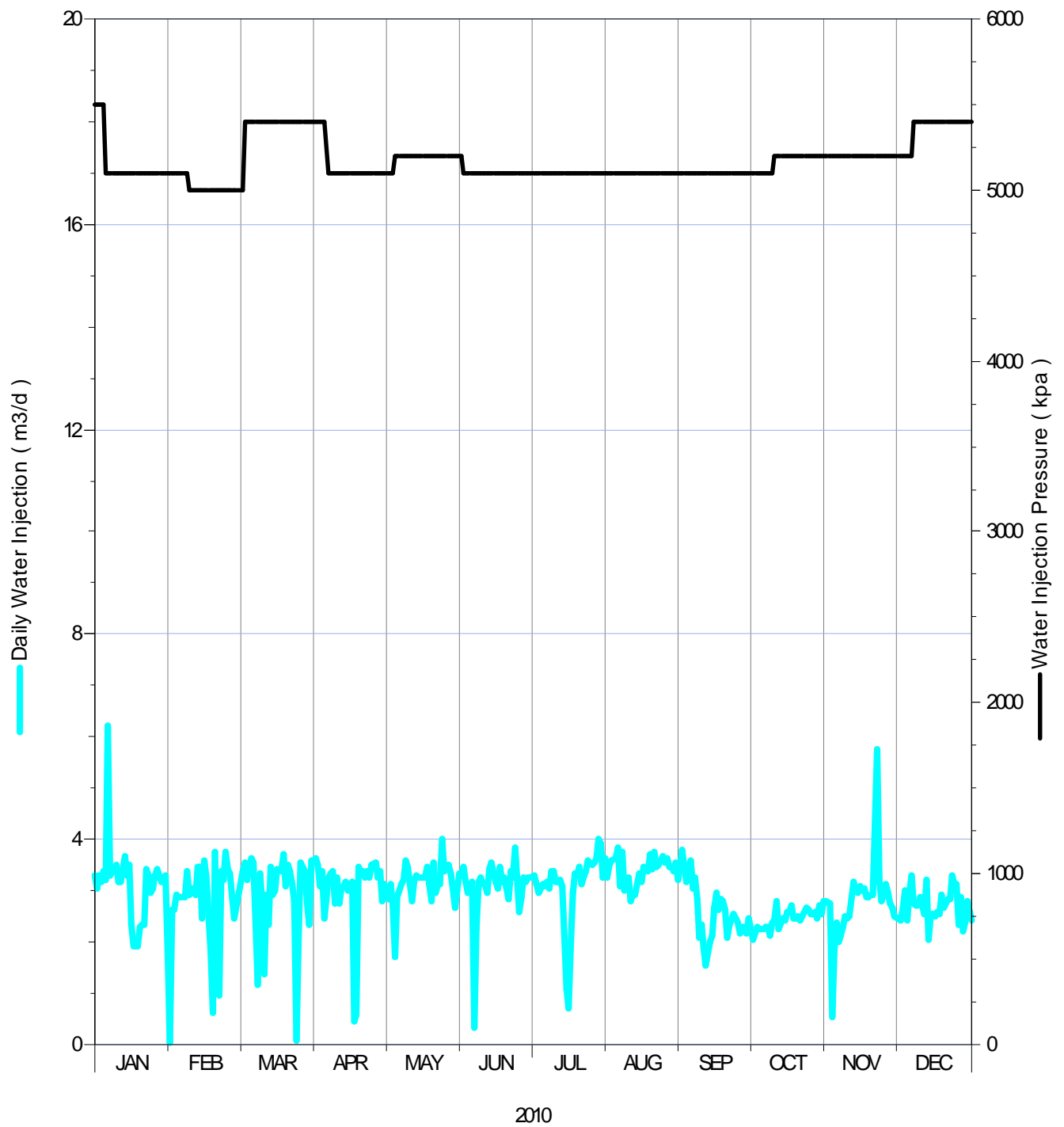


Figure D.13 – 2010 Daily Water Injection and Wellhead Injection Pressure

00/08-09-002-29W1/0

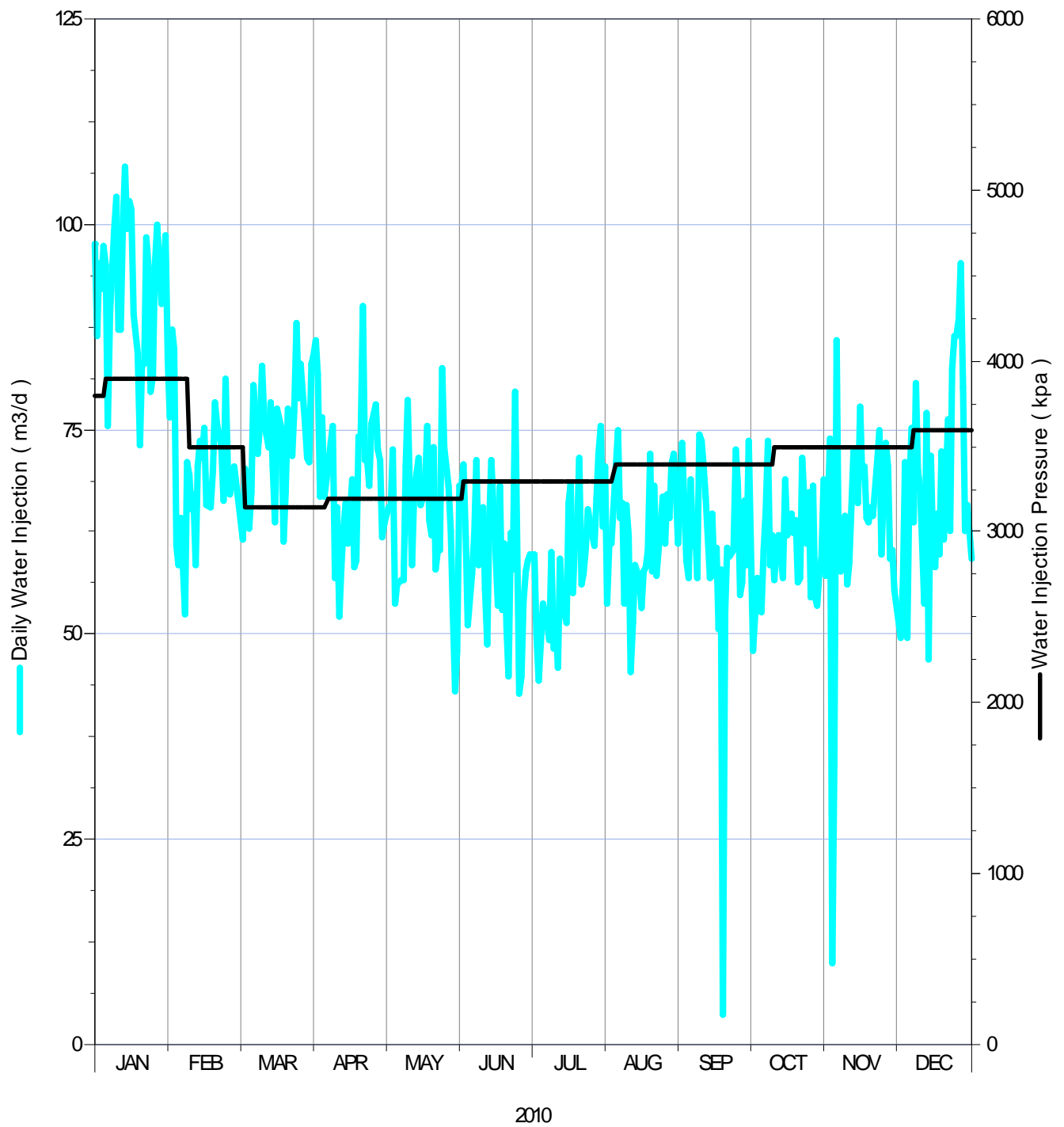


Figure D.14 – 2010 Daily Water Injection and Wellhead Injection Pressure

00/08-16-002-29W1/0

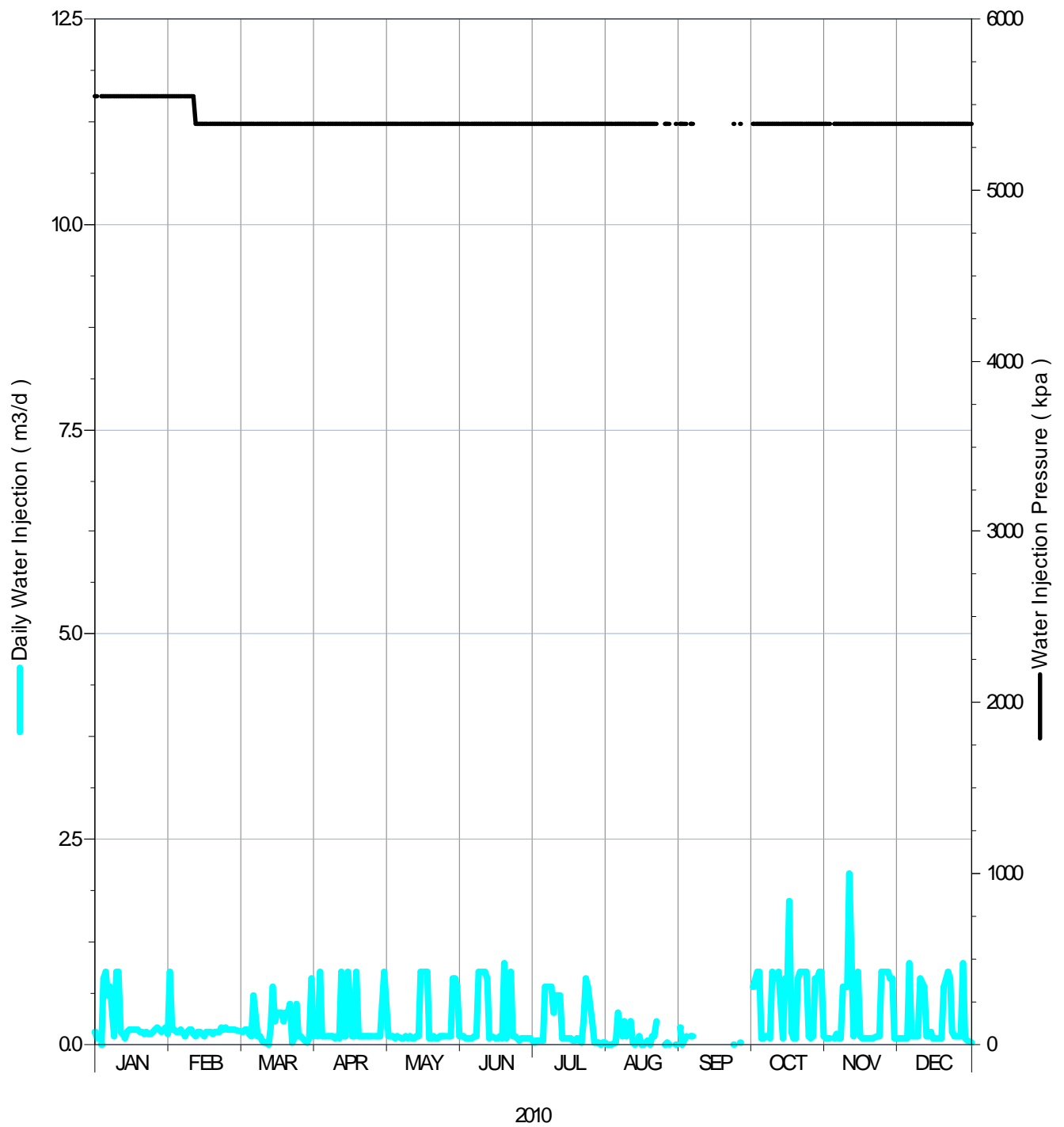


Figure D.15 – 2010 Daily Water Injection and Wellhead Injection Pressure

00/08-17-002-29W1/0

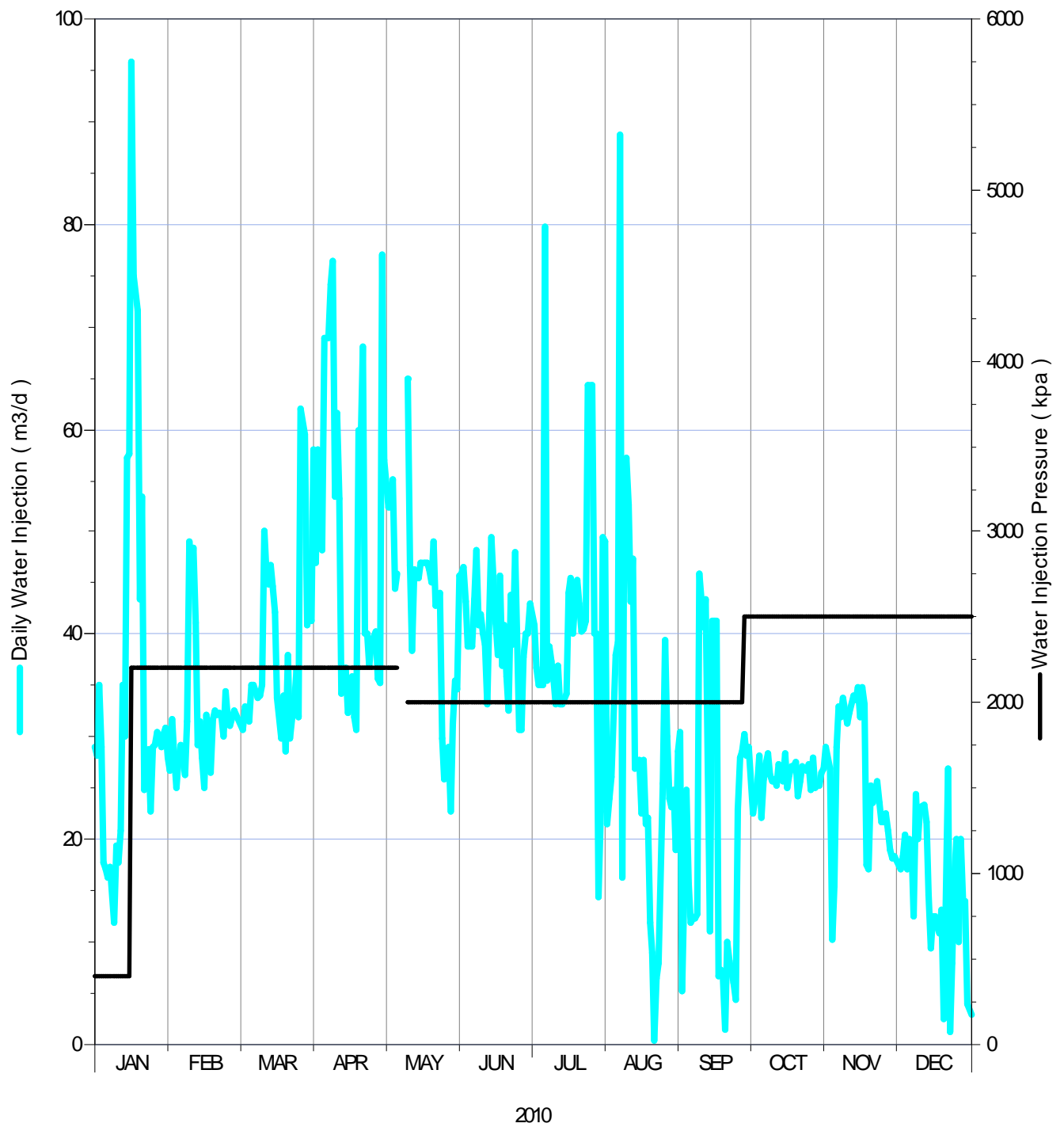


Figure D.16 – 2010 Daily Water Injection and Wellhead Injection Pressure

00/08-18-002-29W1/0

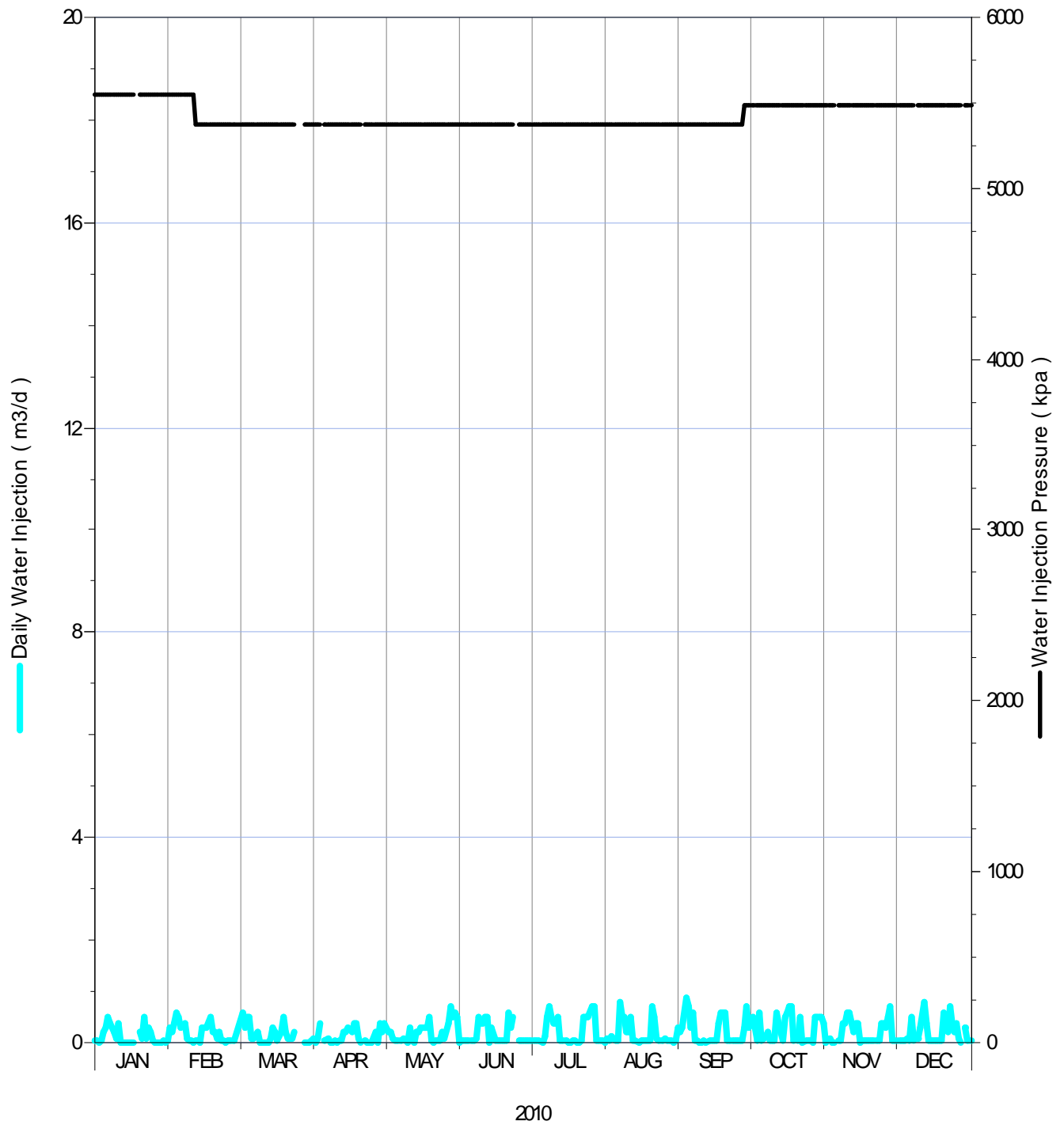


Figure D.17 – 2010 Daily Water Injection and Wellhead Injection Pressure

00/10-08-002-29W1/0

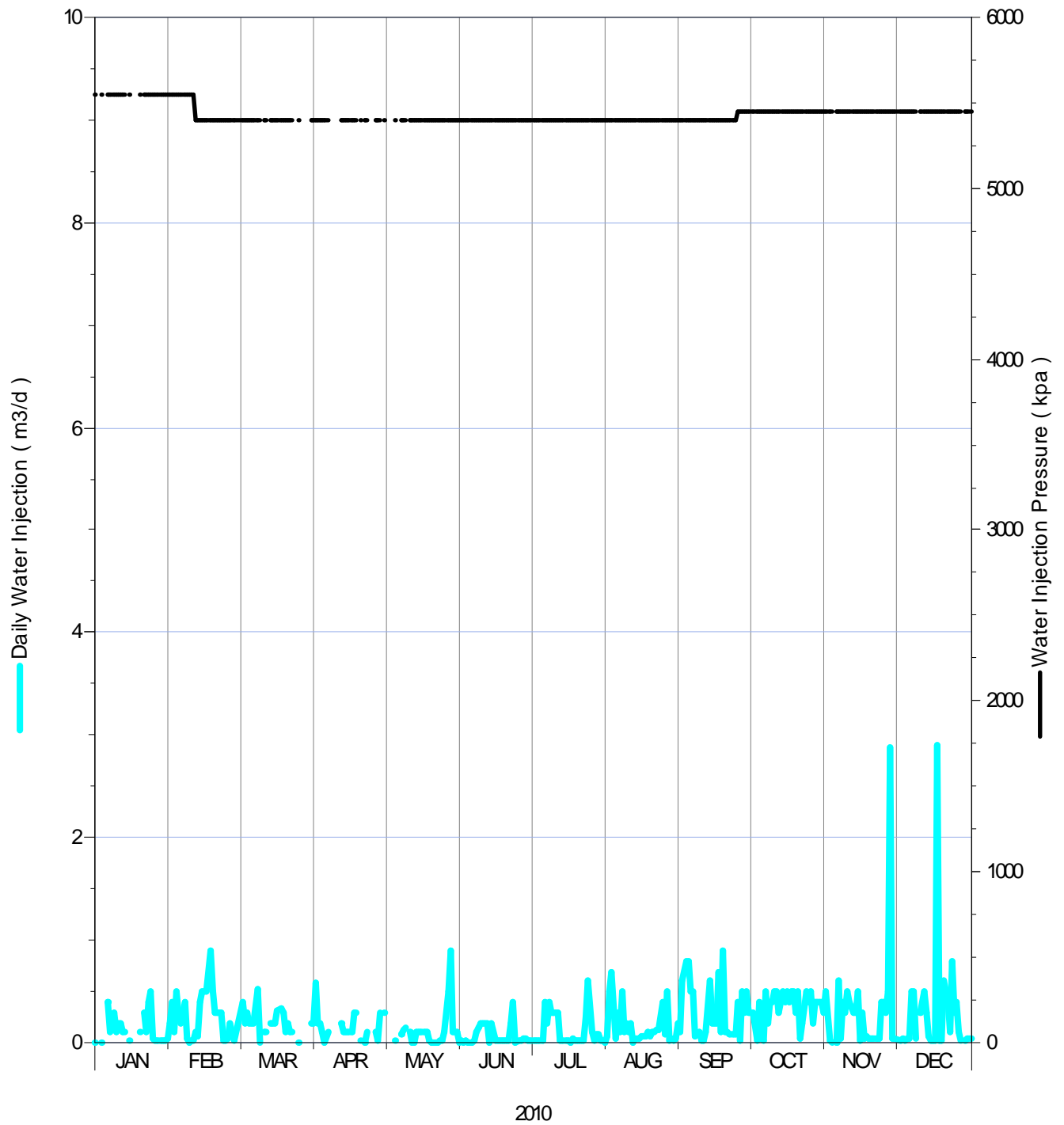


Figure D.18 – 2010 Daily Water Injection and Wellhead Injection Pressure

00/10-09-002-29W1/0

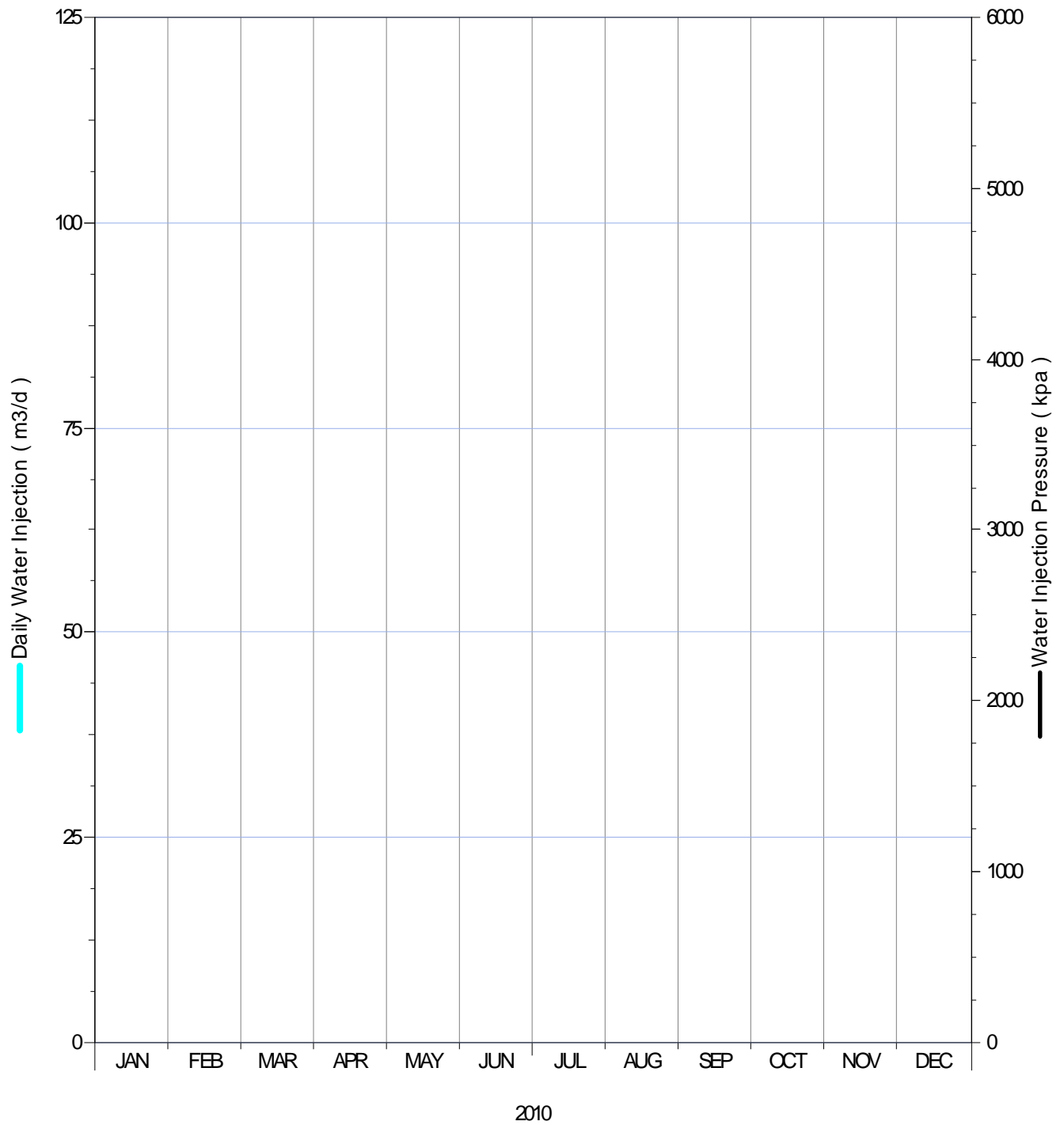


Figure D.19 – 2010 Daily Water Injection and Wellhead Injection Pressure

00/10-16-002-29W1/0

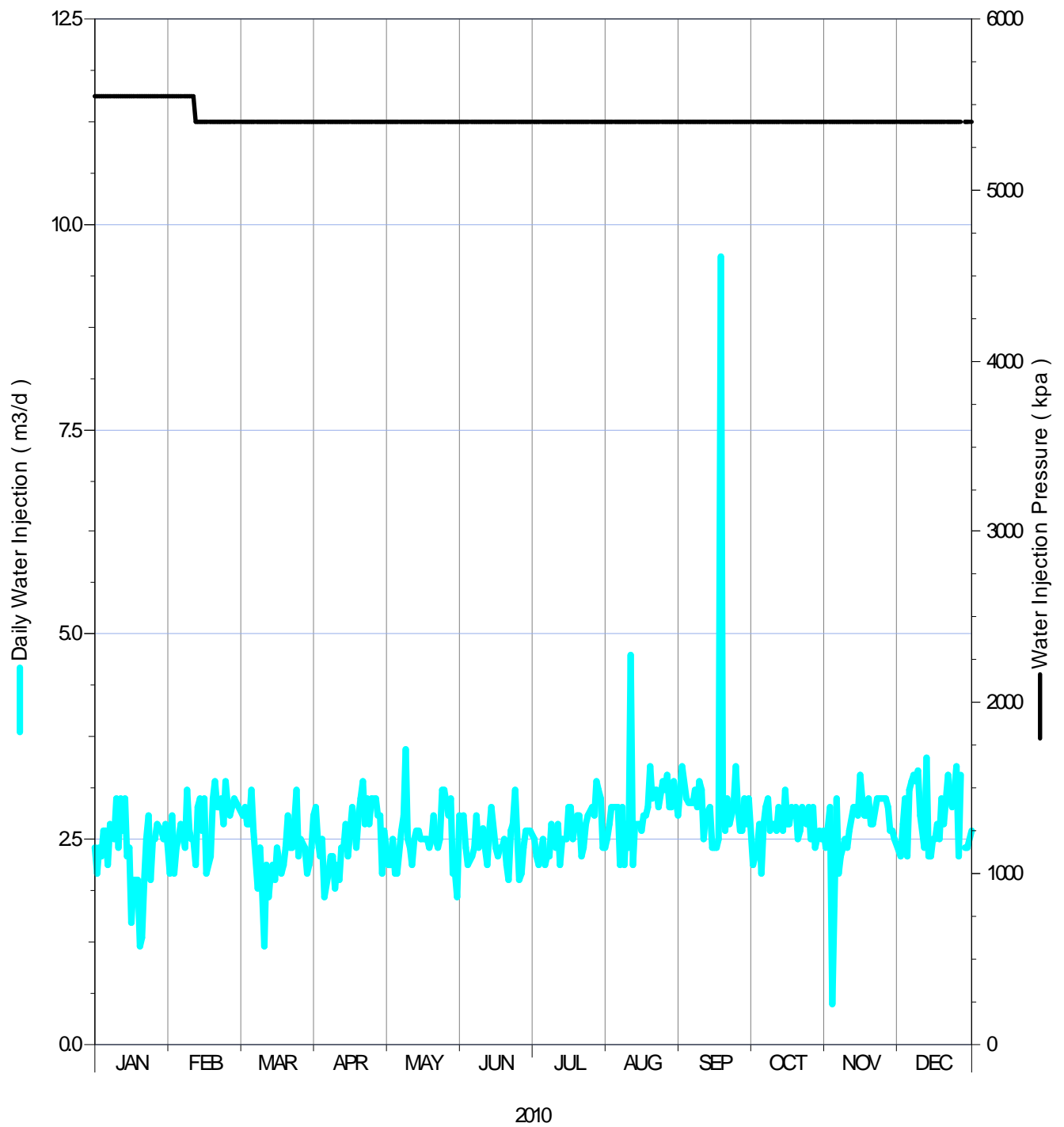


Figure D.20 – 2010 Daily Water Injection and Wellhead Injection Pressure

00/12-04-002-29W1/0

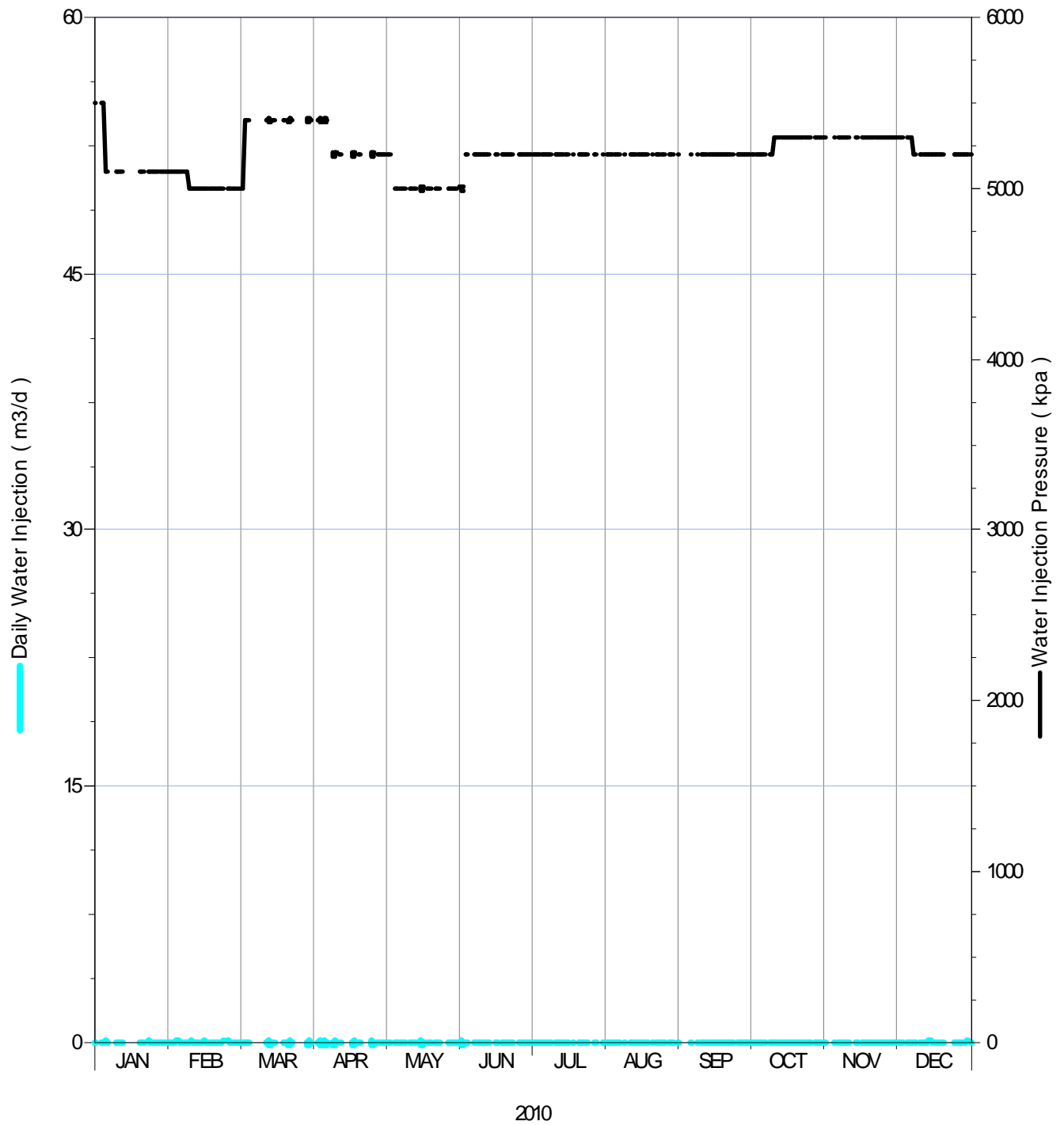


Figure D.21 – 2010 Daily Water Injection and Wellhead Injection Pressure

00/12-08-002-29W1/0

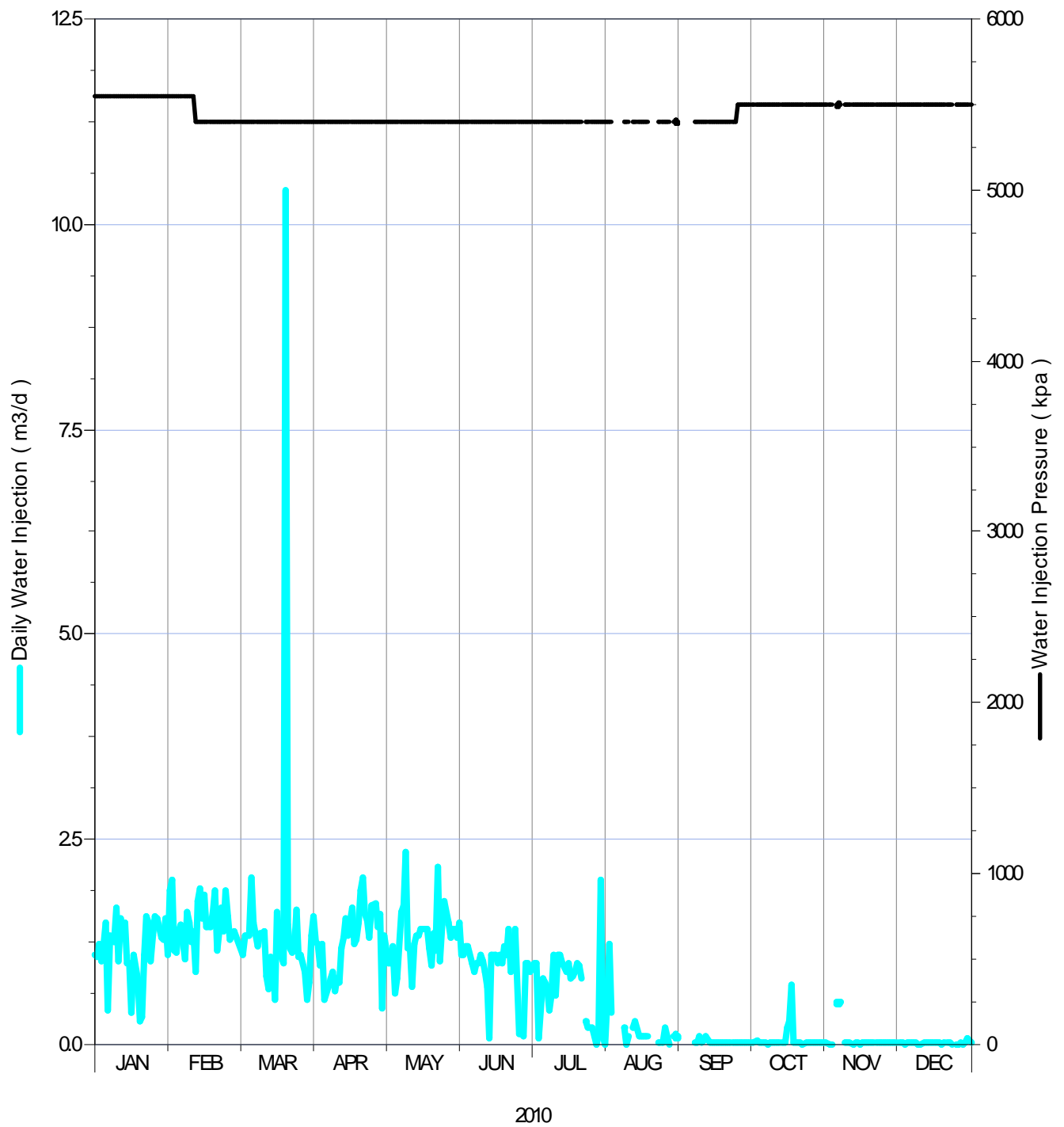


Figure D.22 – 2010 Daily Water Injection and Wellhead Injection Pressure

00/12-09-002-29W1/0

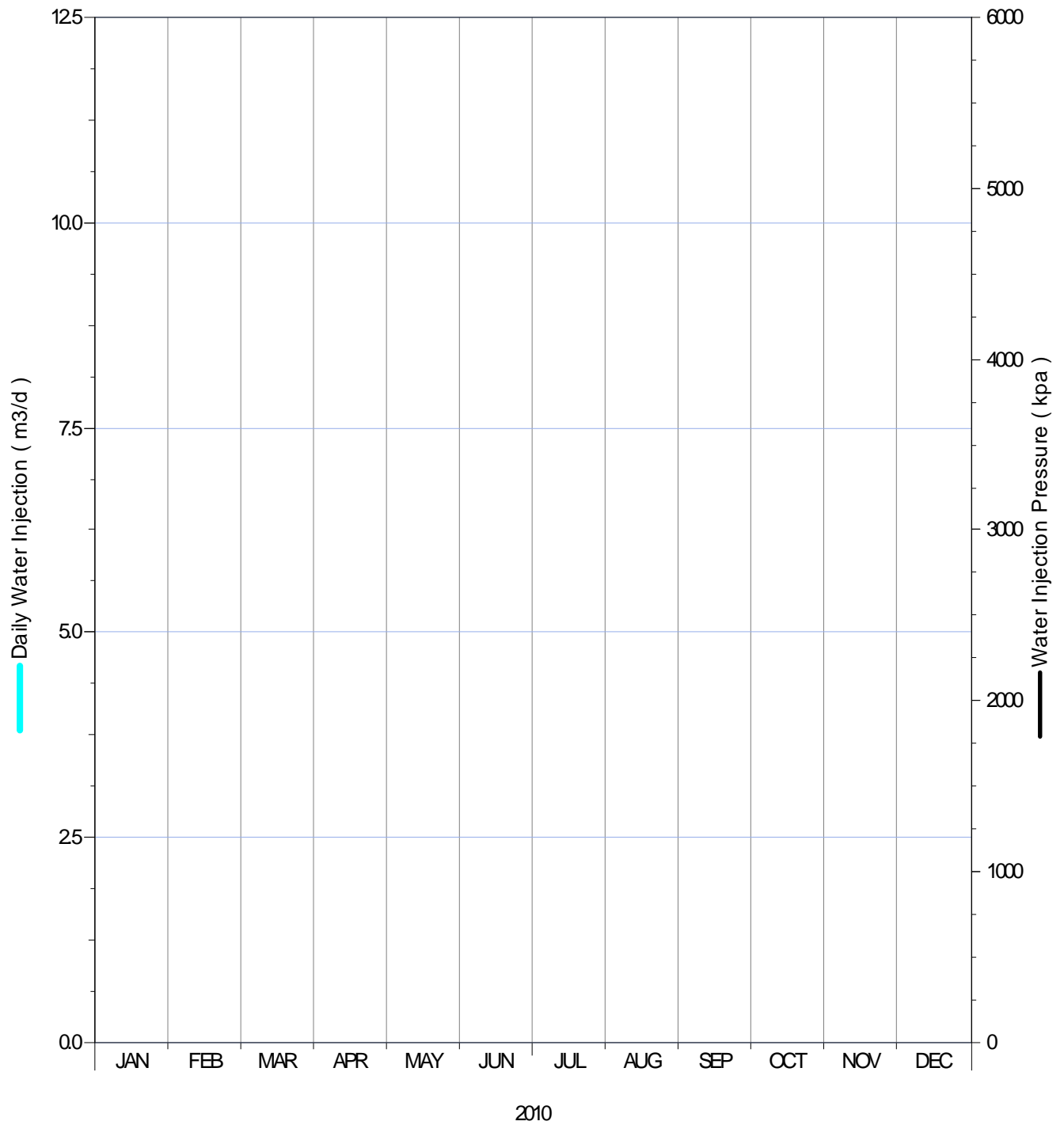


Figure D.23 – 2010 Daily Water Injection and Wellhead Injection Pressure

00/12-17-002-29W1/0

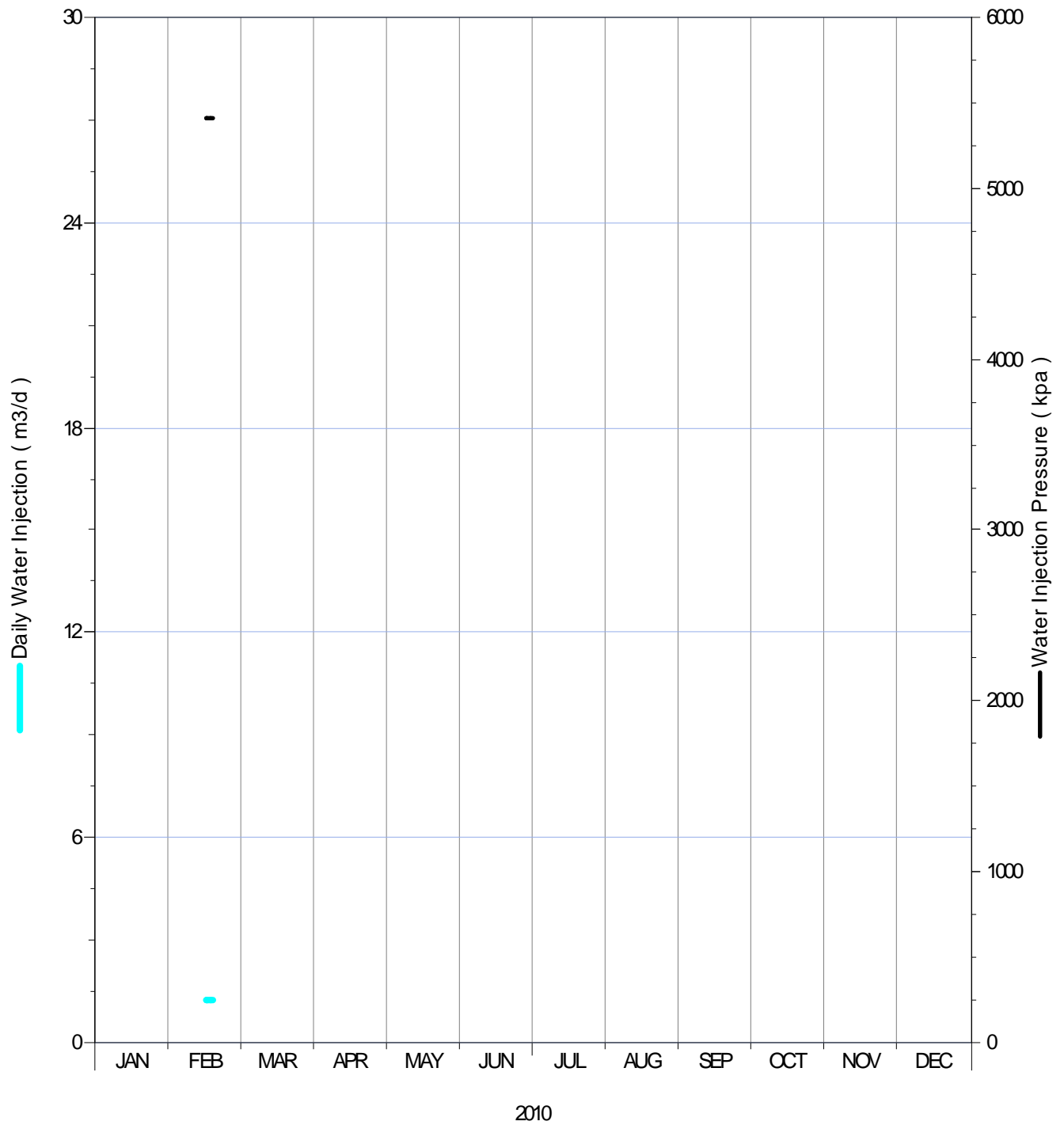


Figure D.24 – 2010 Daily Water Injection and Wellhead Injection Pressure

00/14-04-002-29W1/0

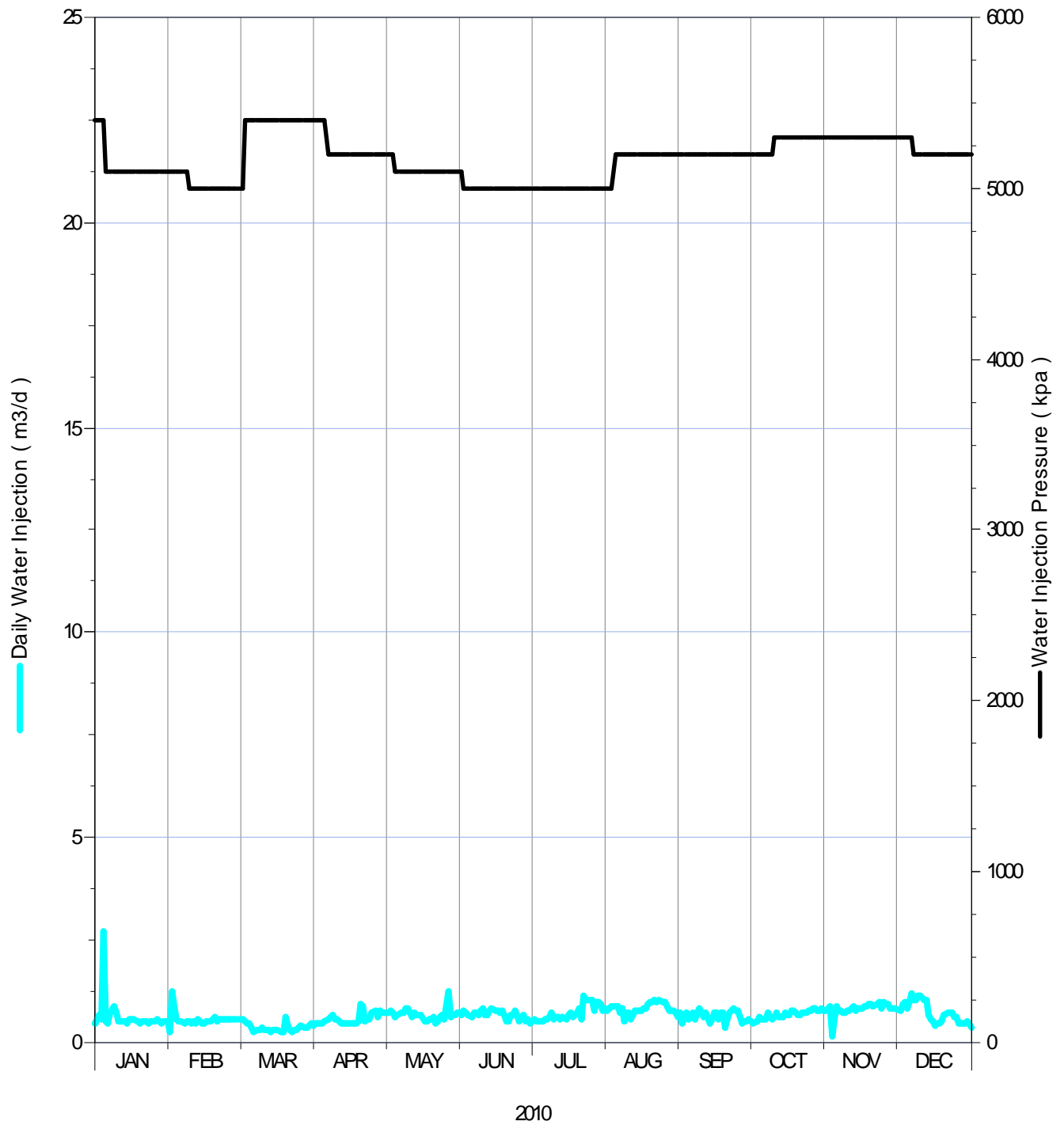


Figure D.25 – 2010 Daily Water Injection and Wellhead Injection Pressure

00/14-08-002-29W1/0

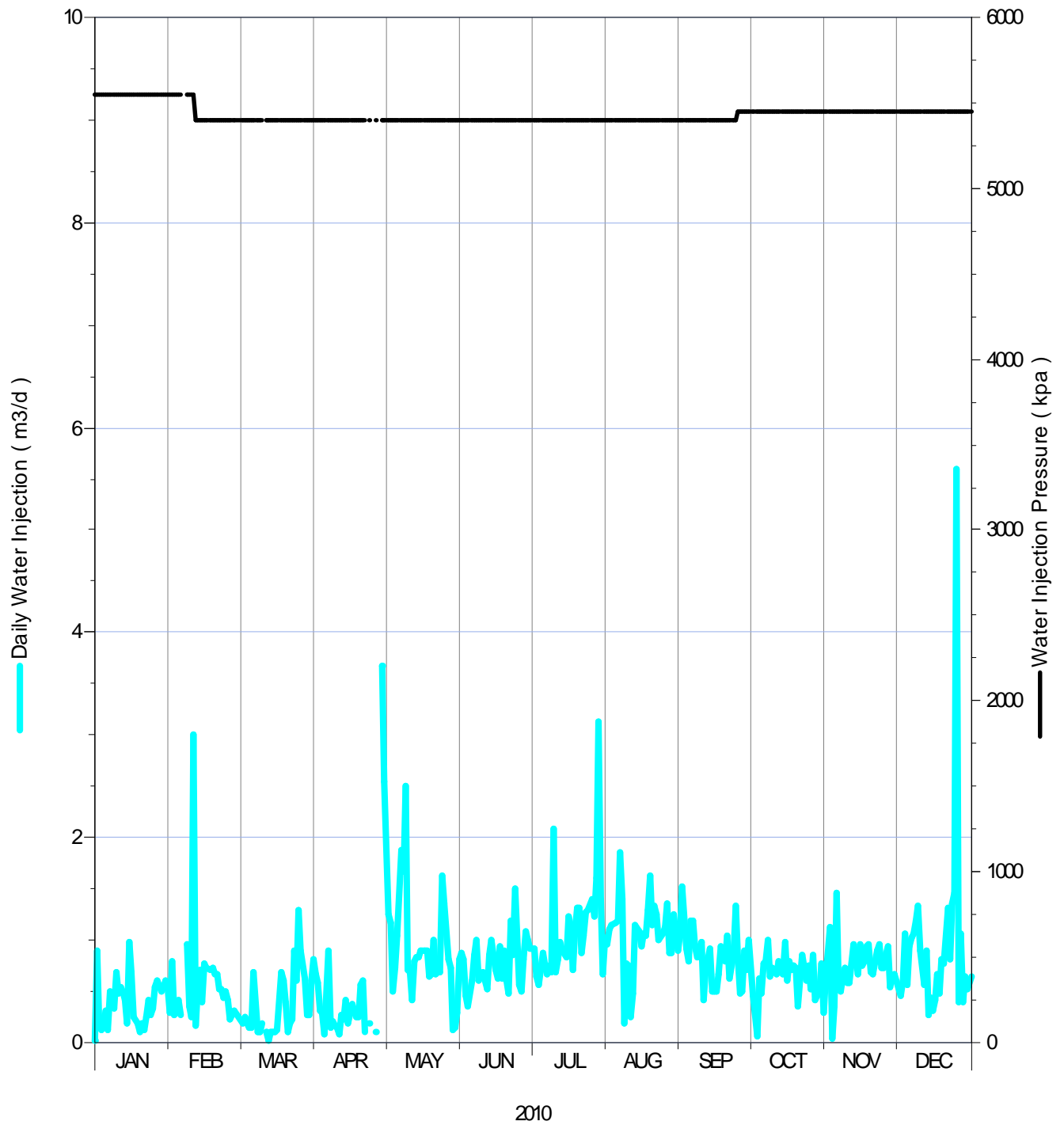


Figure D.26 – 2010 Daily Water Injection and Wellhead Injection Pressure

00/14-09-002-29W1/0

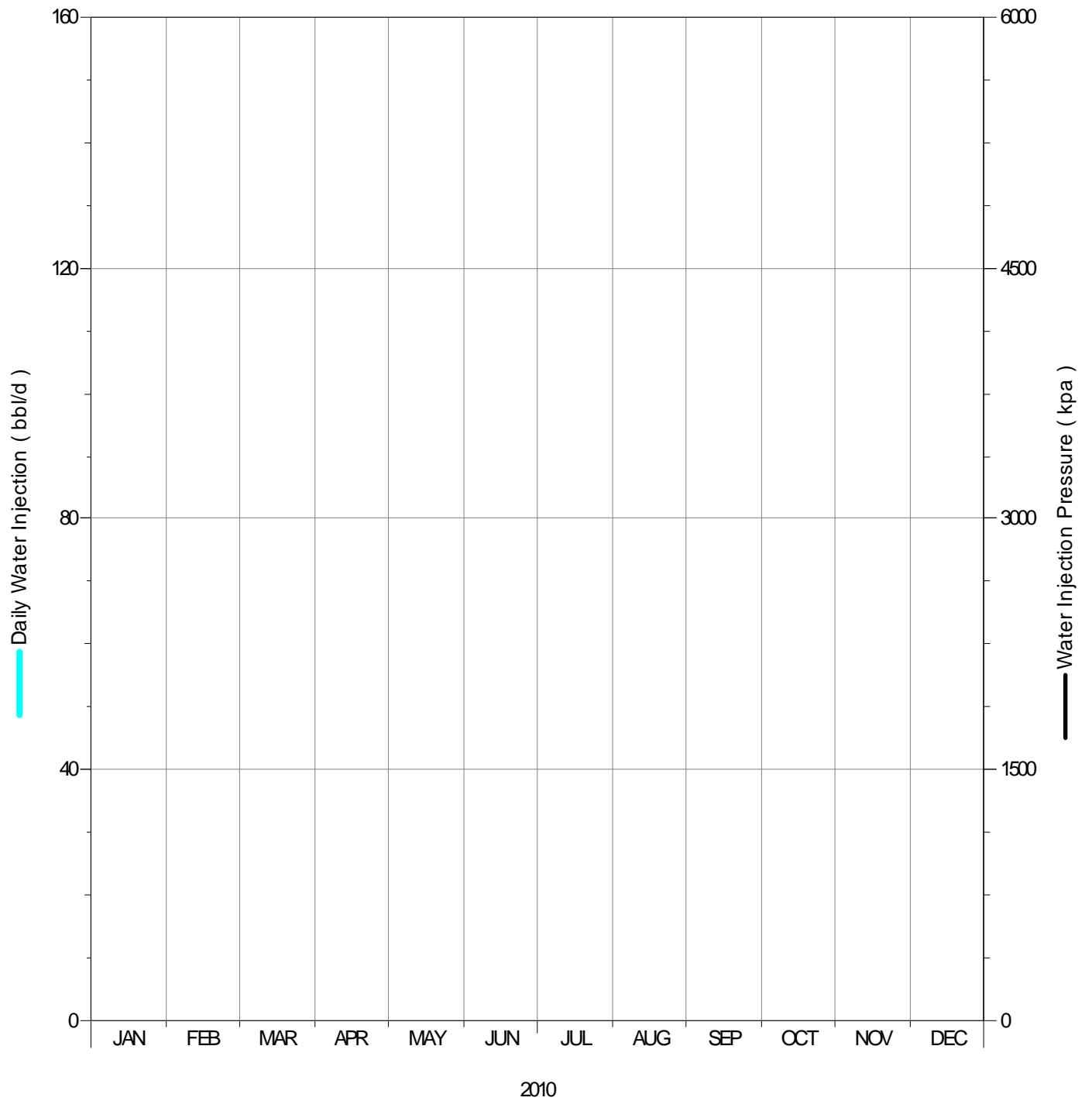


Figure D.27 – 2010 Daily Water Injection and Wellhead Injection Pressure

00/14-17-002-29W1/0

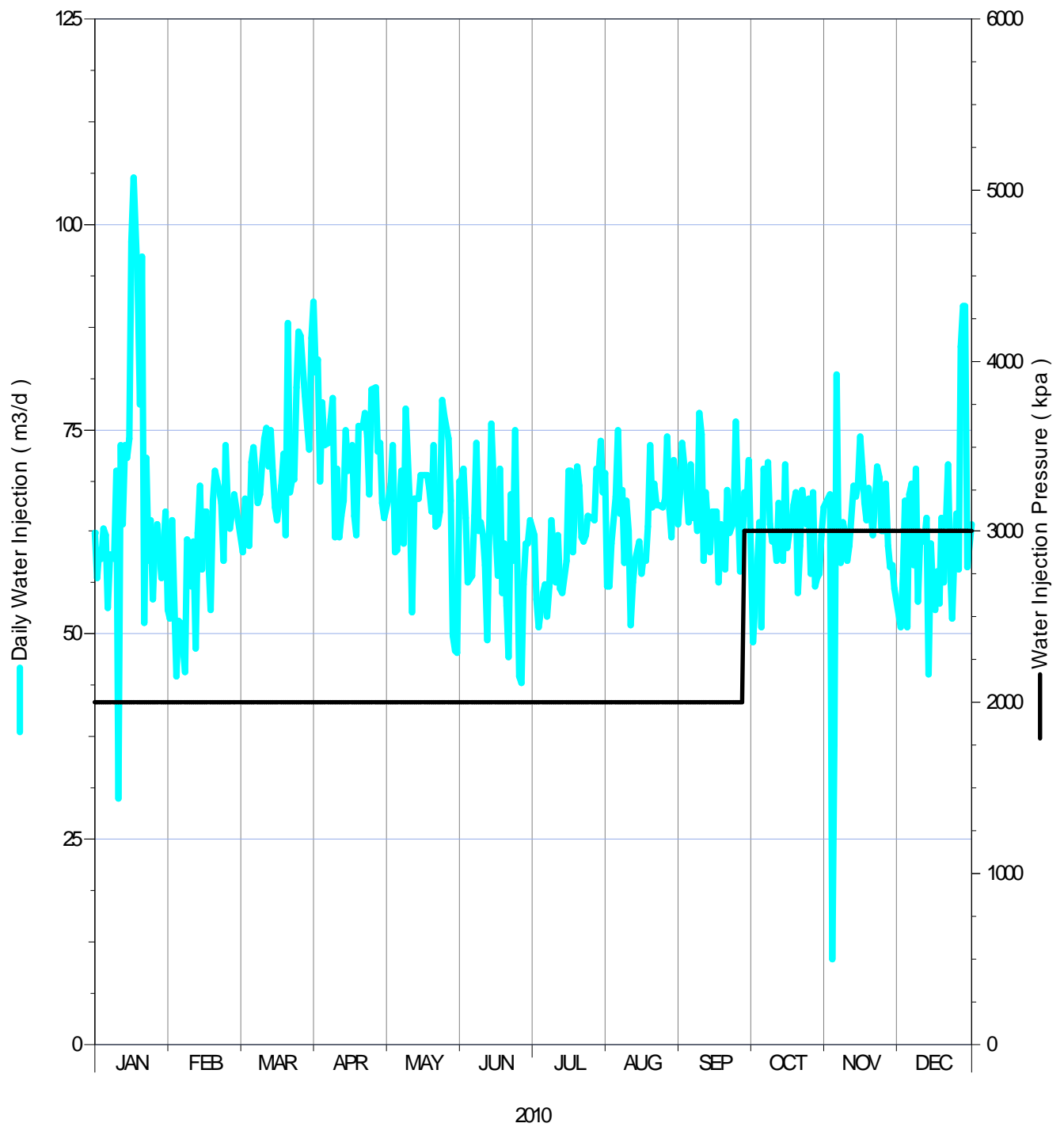


Figure D.28 – 2010 Daily Water Injection and Wellhead Injection Pressure

00/16-04-002-29W1/0

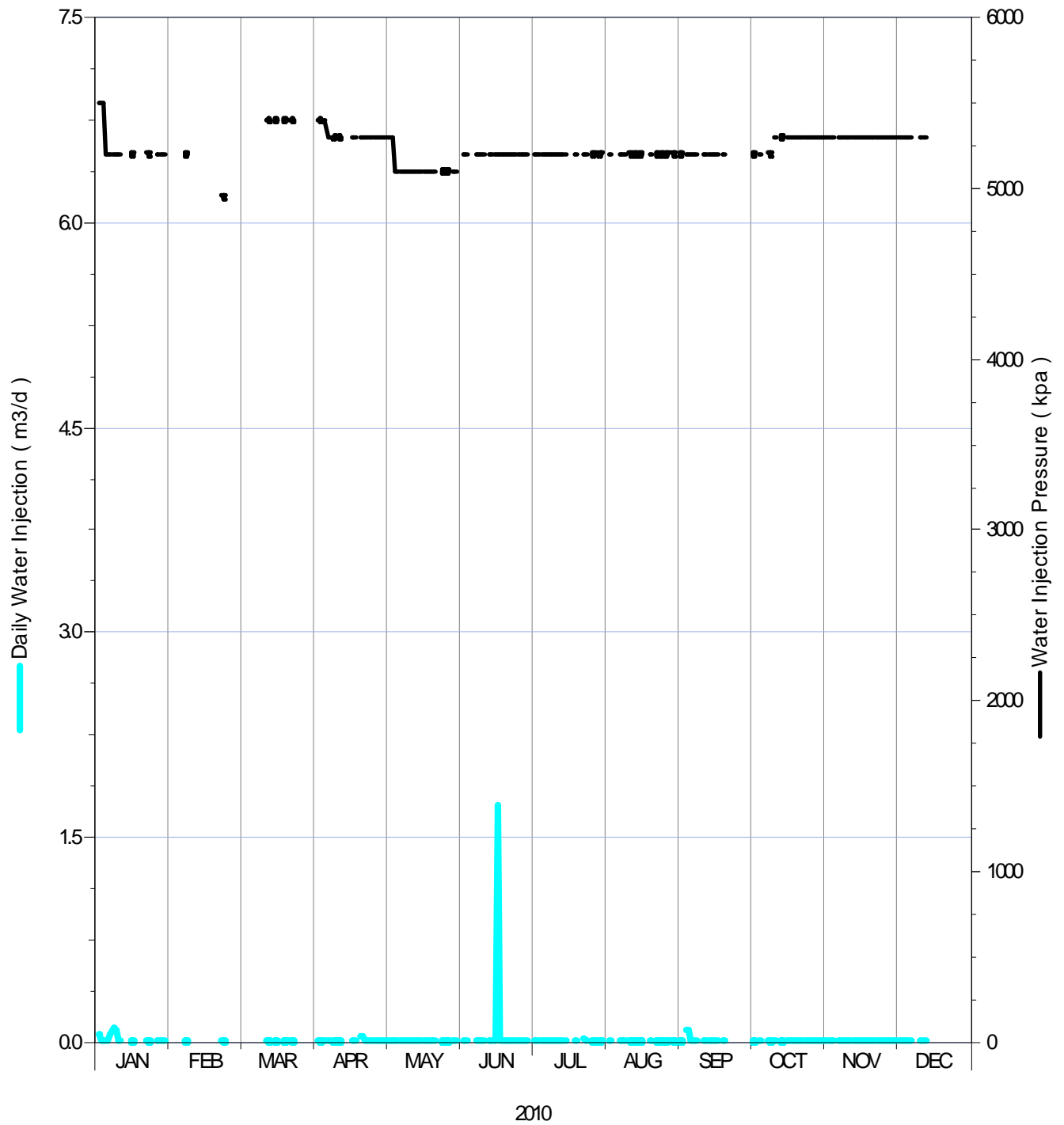


Figure D.29 – 2010 Daily Water Injection and Wellhead Injection Pressure

00/16-05-002-29W1/0

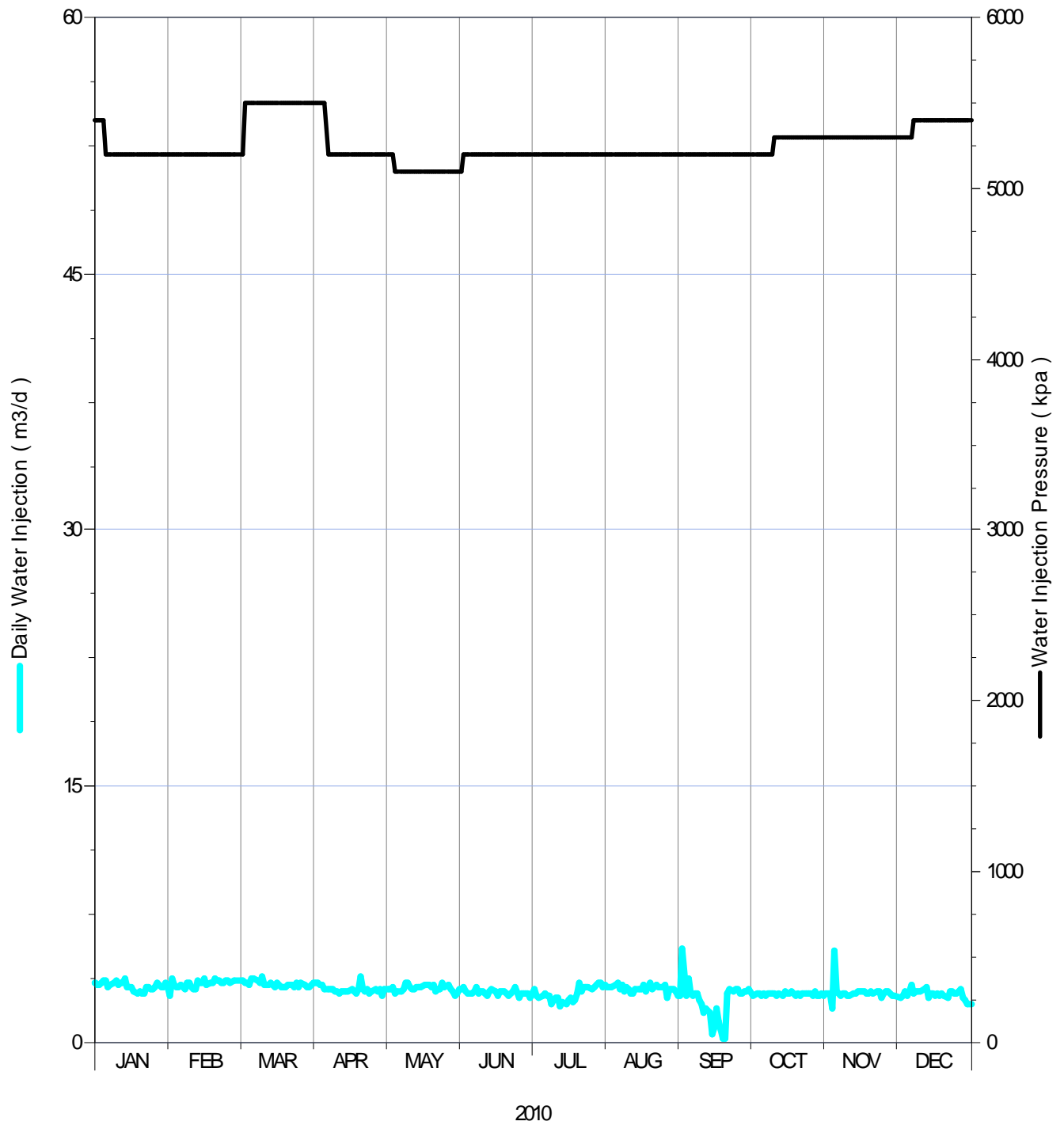


Figure D.30 – 2010 Daily Water Injection and Wellhead Injection Pressure

00/16-08-002-29W1/0

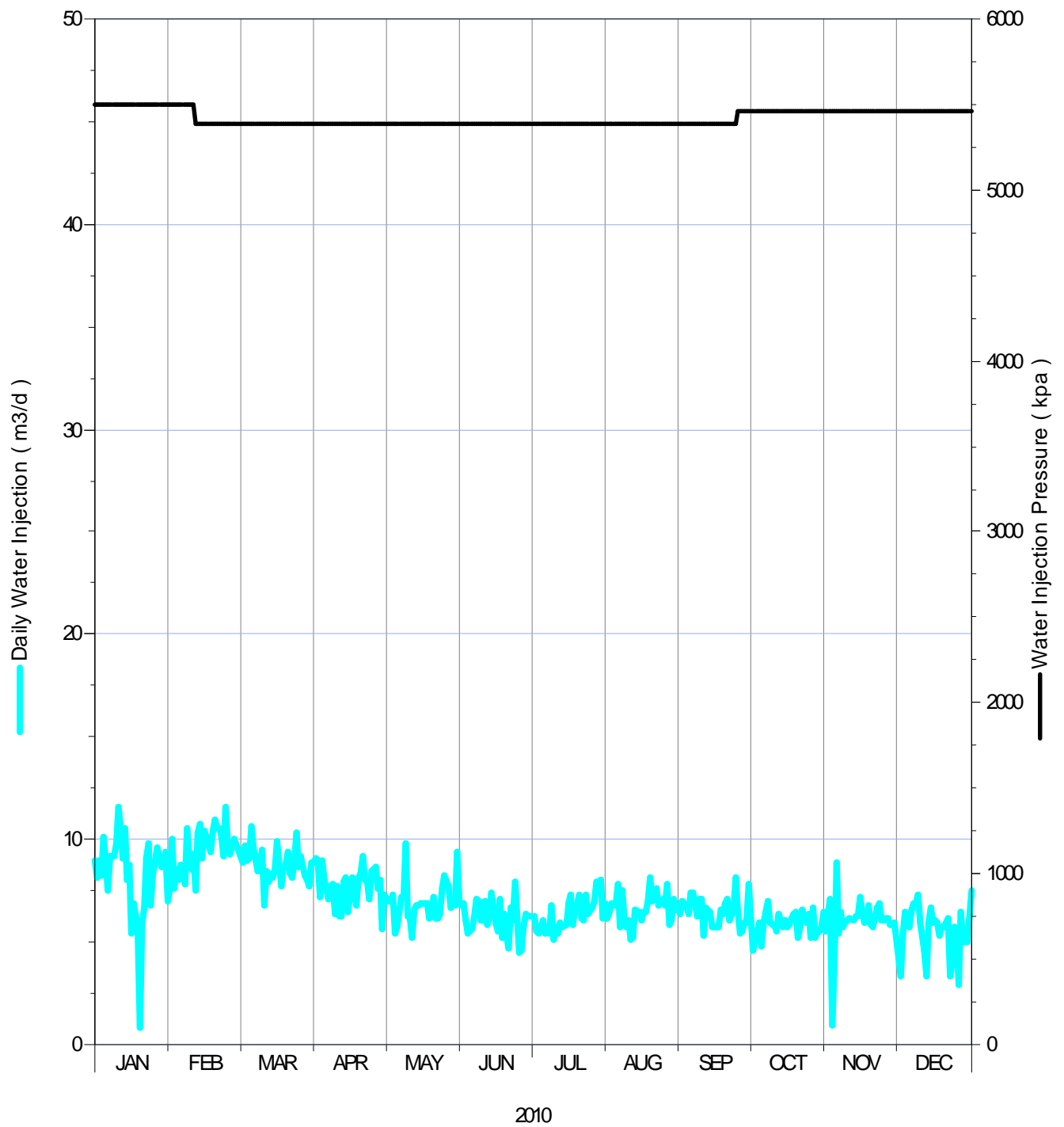


Figure D.31 – 2010 Daily Water Injection and Wellhead Injection Pressure

00/16-09-002-29W1/0

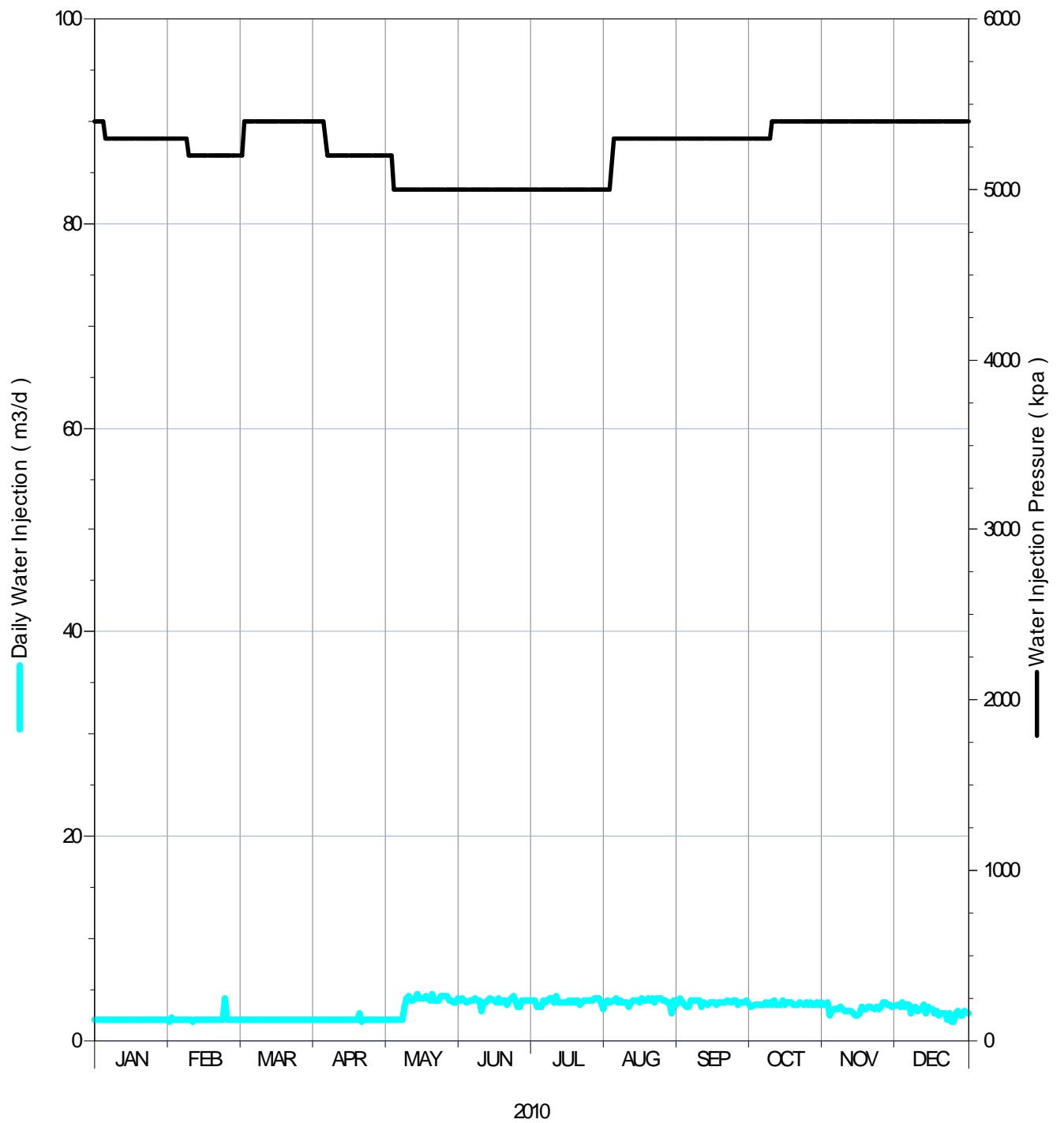


Figure D.32 – 2010 Daily Water Injection and Wellhead Injection Pressure

00/16-18-002-29W1/0

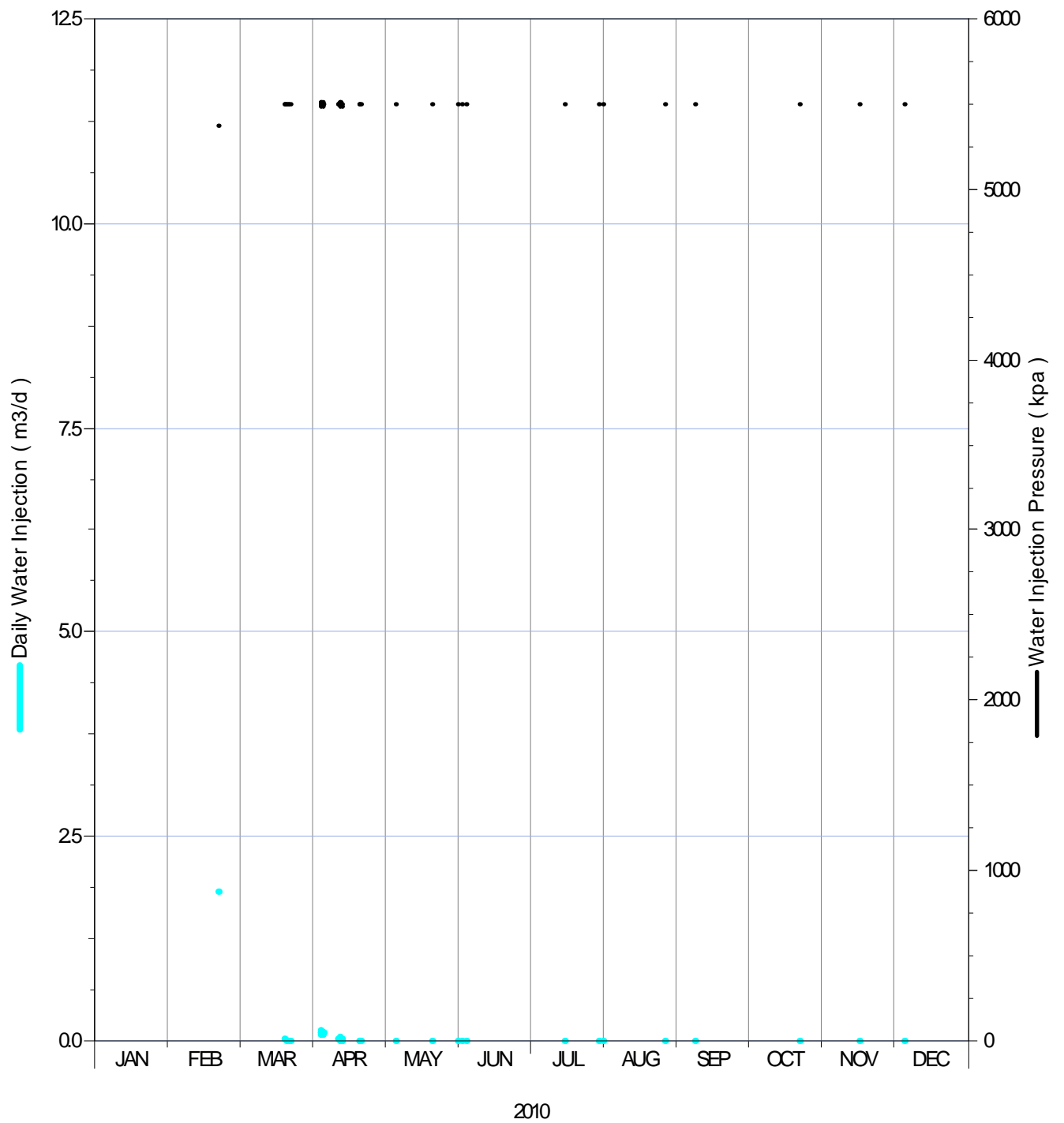


Figure D.33 – 2010 Daily Water Injection and Wellhead Injection Pressure

02/08-09-002-29W1/0

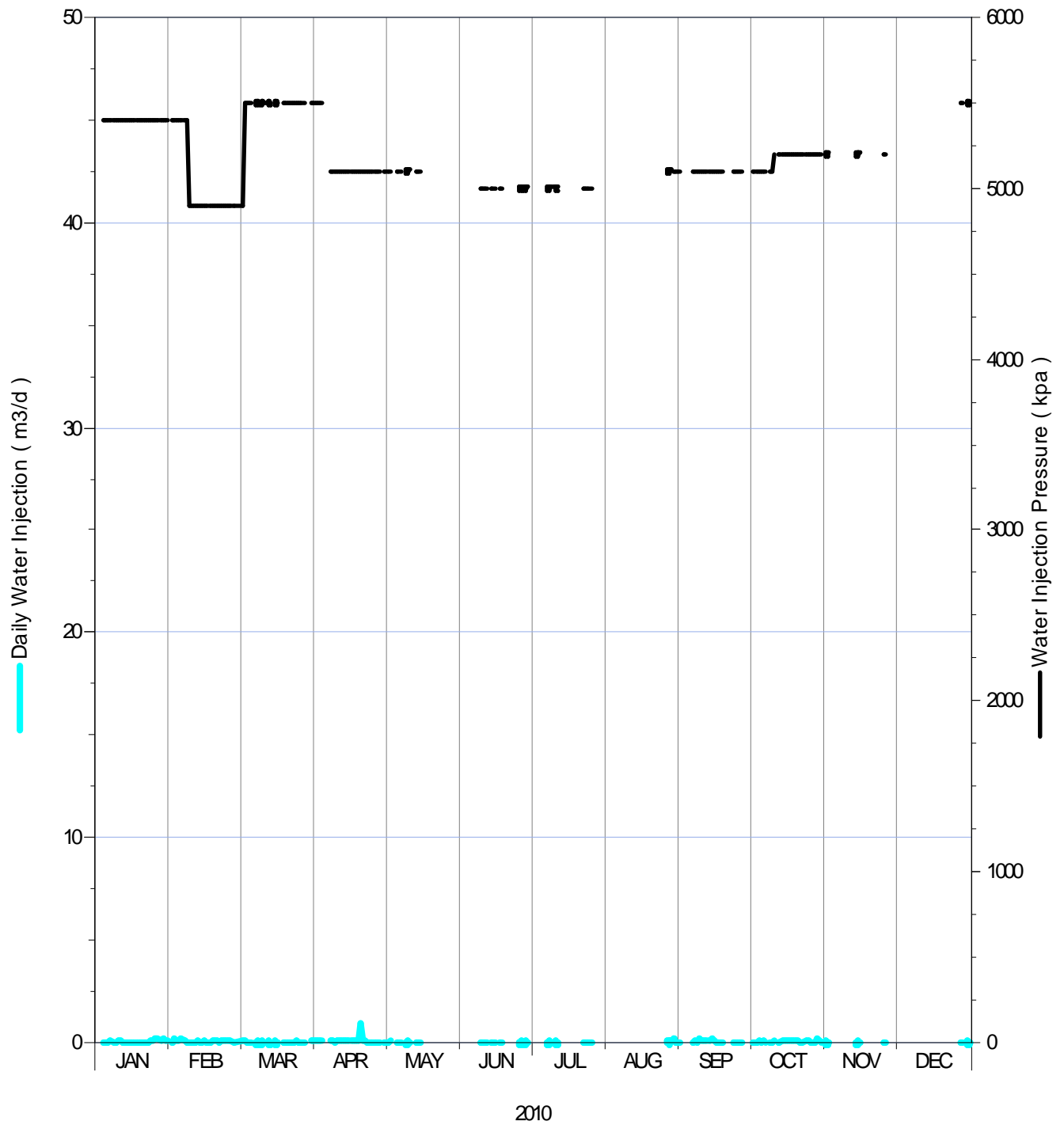


Figure D.34 – 2010 Daily Water Injection and Wellhead Injection Pressure

02/10-16-002-29W1/0

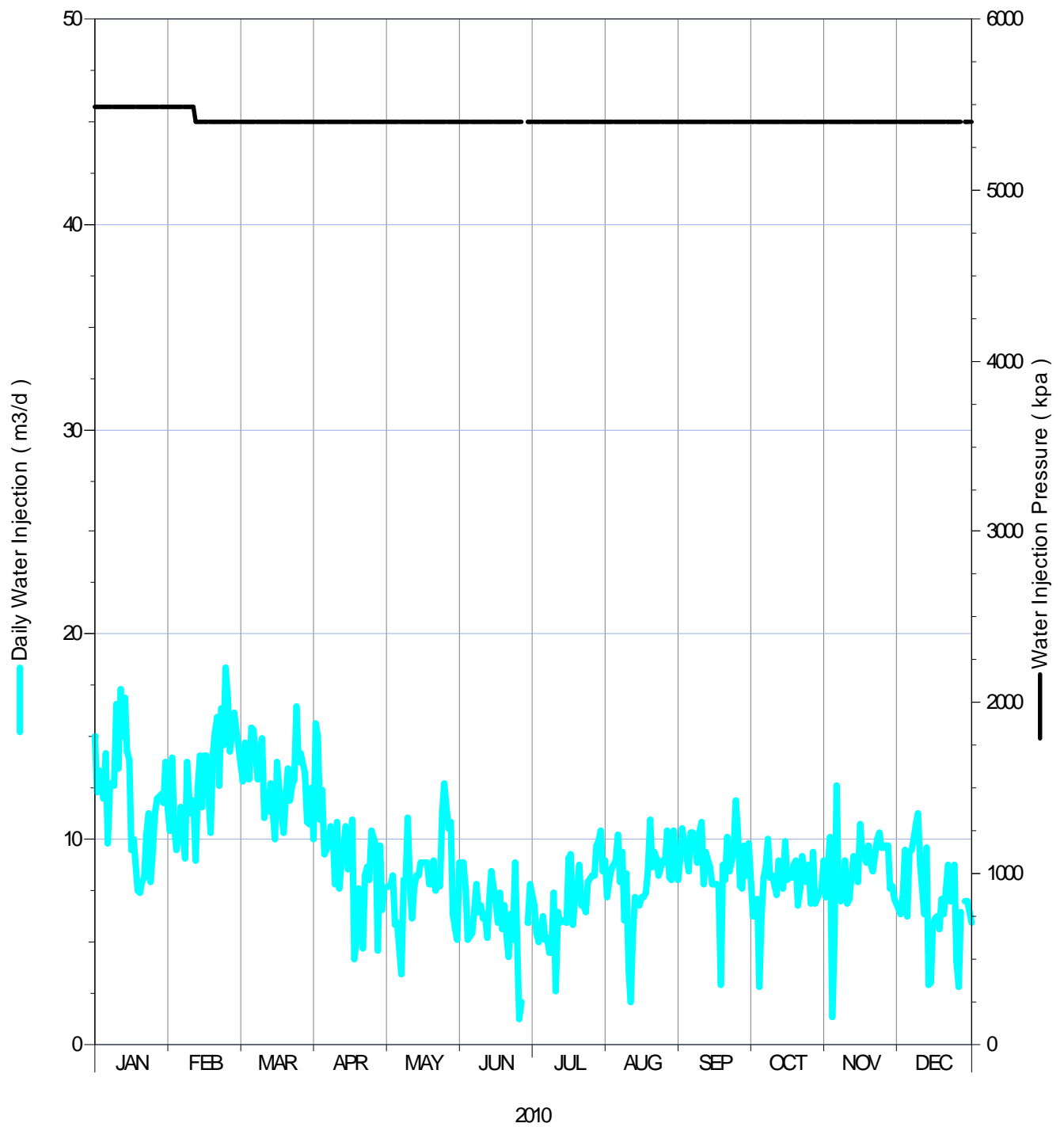


Figure D.35 – 2010 Daily Water Injection and Wellhead Injection Pressure

02/12-09-002-29W1/0

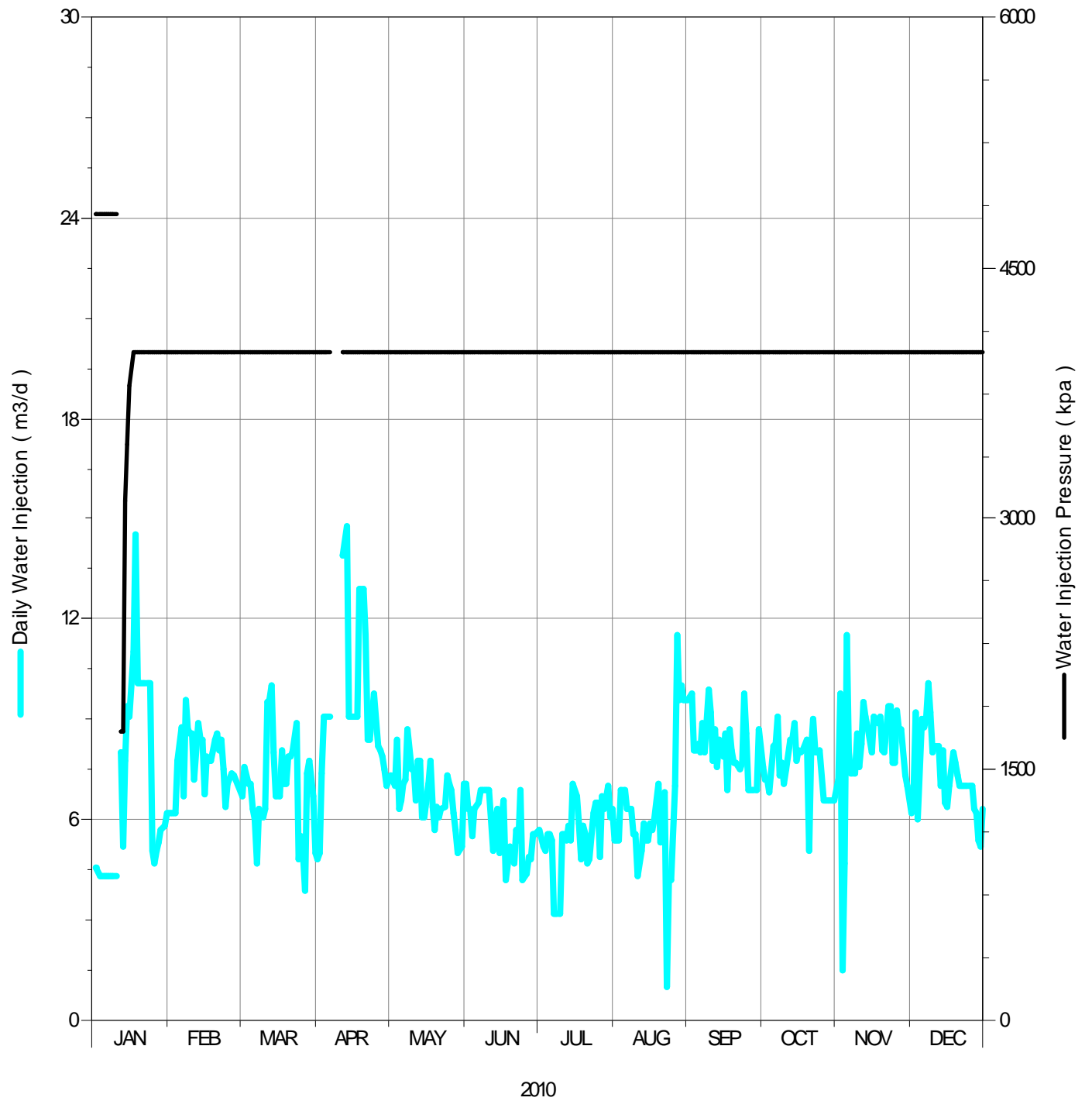


Figure D.36 – 2010 Daily Water Injection and Wellhead Injection Pressure

02/12-16-002-29W1/0

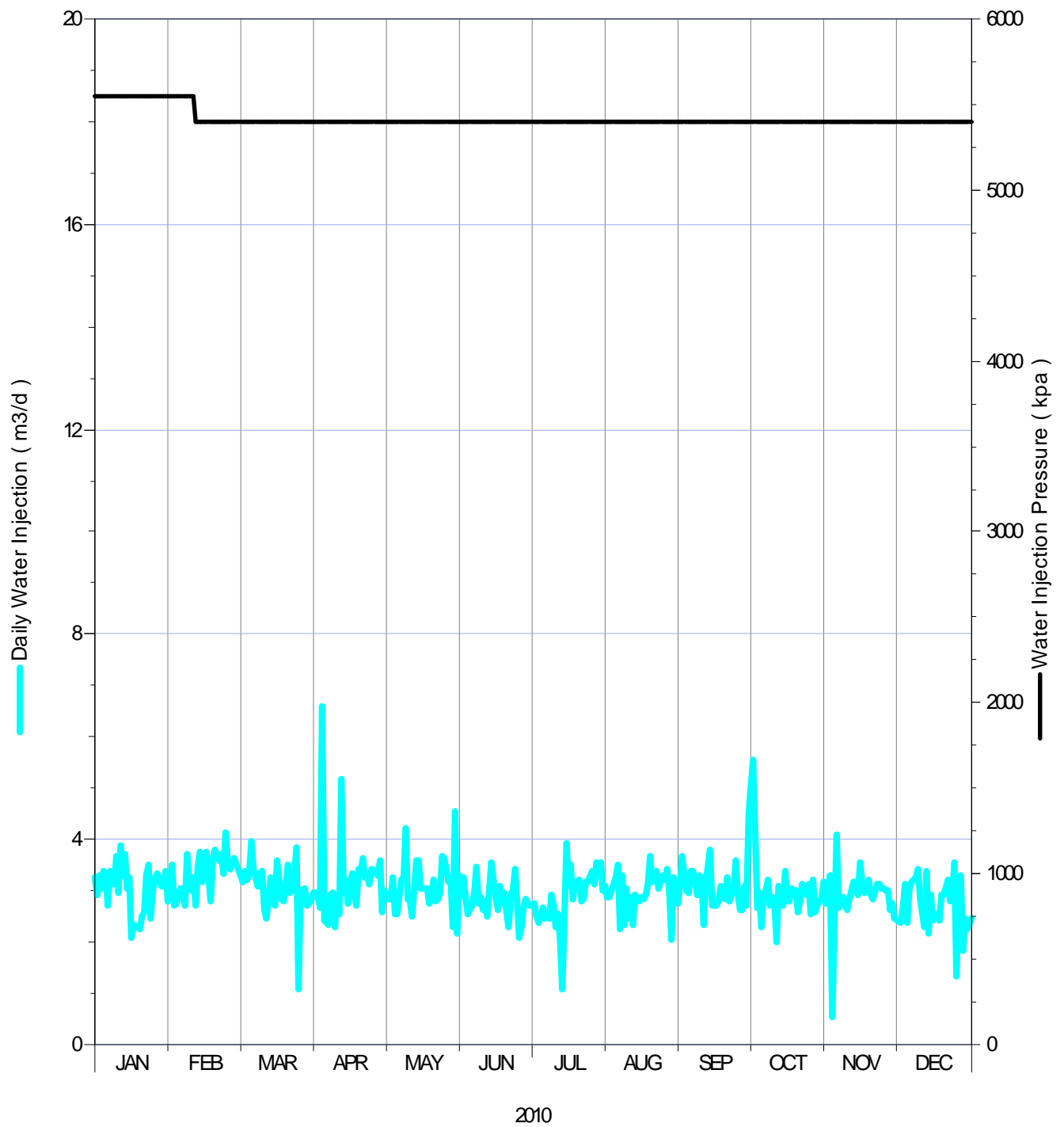


Figure D.37 – 2010 Daily Water Injection and Wellhead Injection Pressure

02/16-09-002-29W1/0

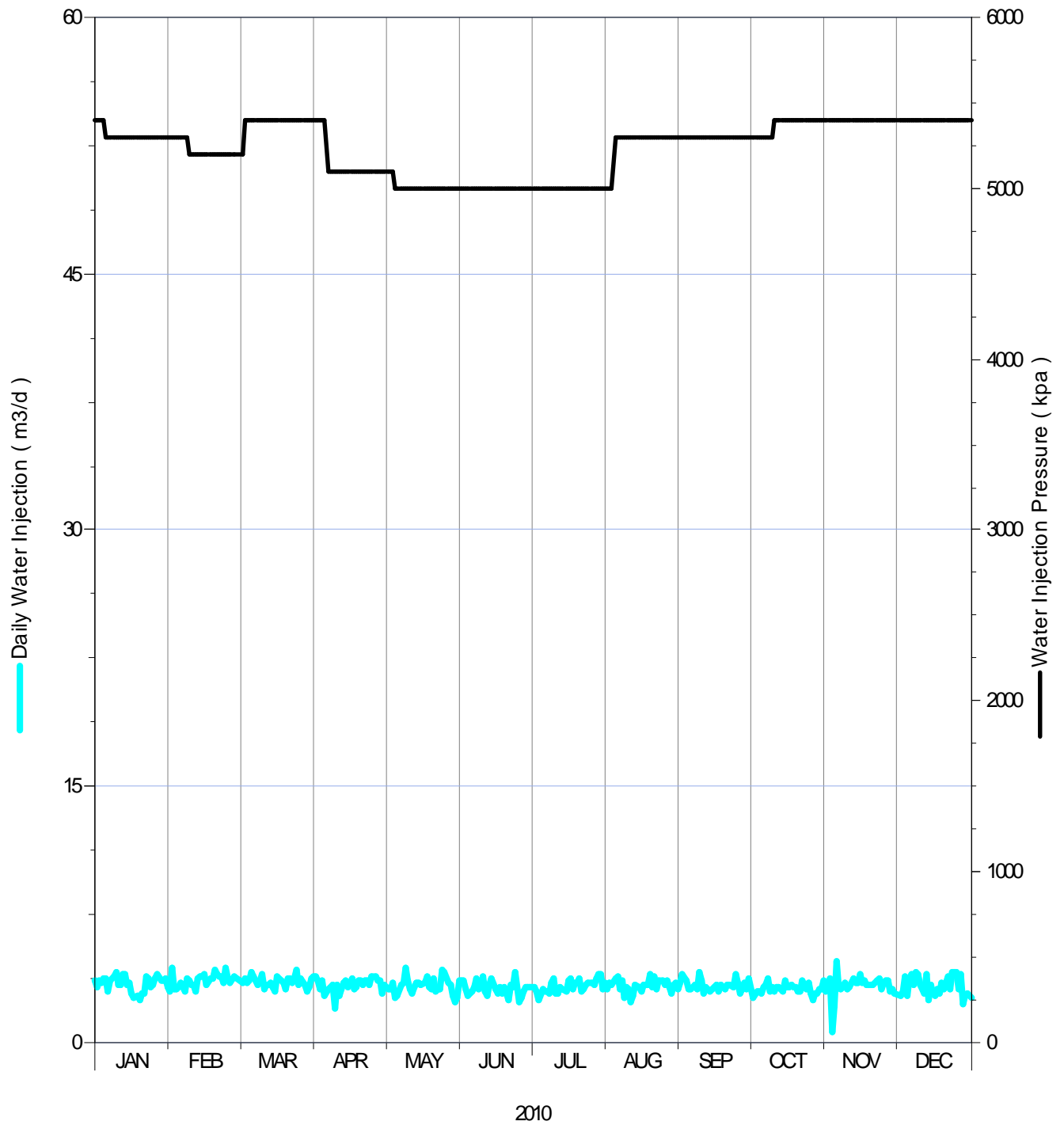


Figure D.38 – 2010 Daily Water Injection and Wellhead Injection Pressure

03/15-16-002-29W1/0

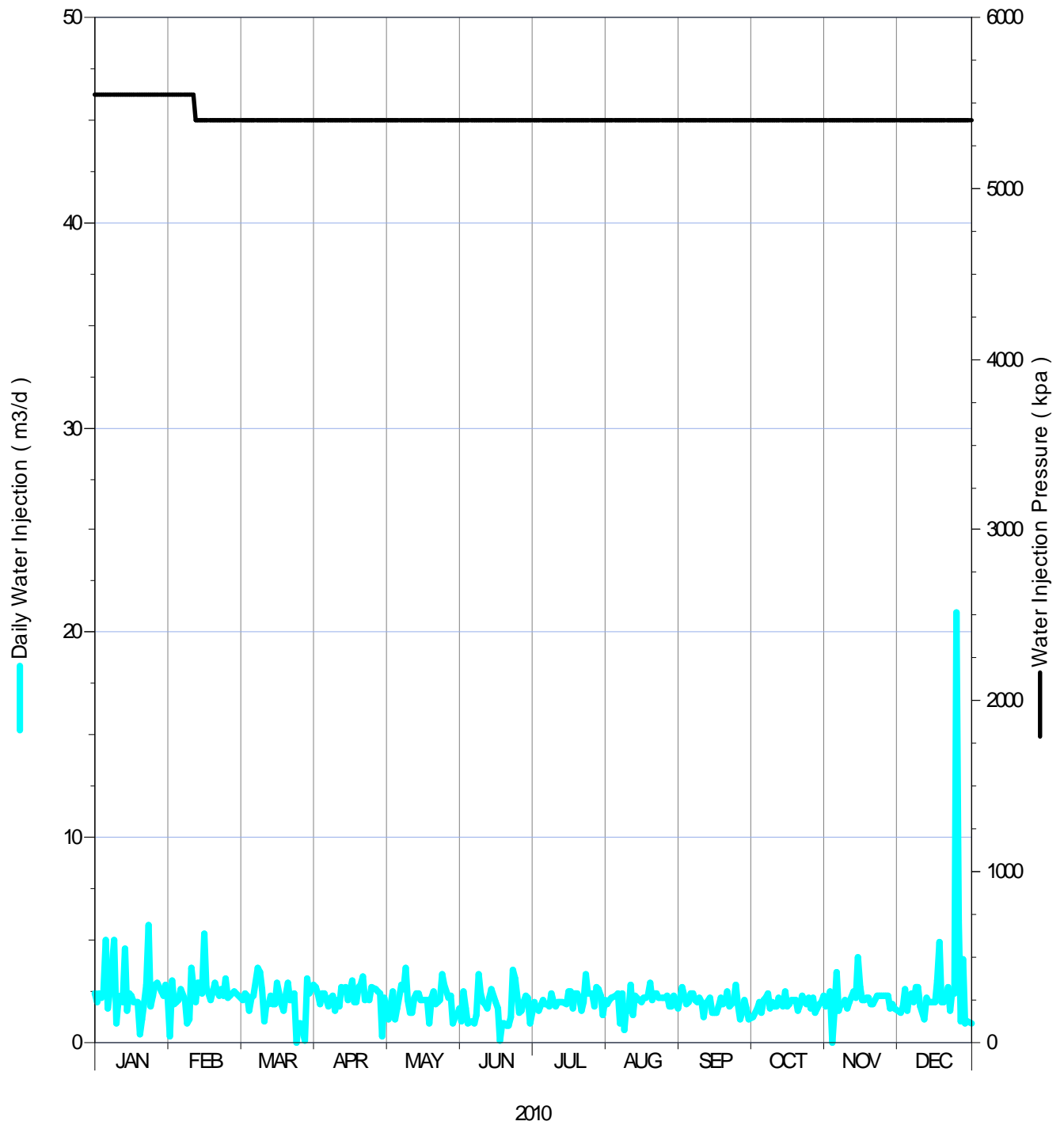


Figure D.39 – 2010 Daily Water Injection and Wellhead Injection Pressure

03/16-09-002-29W1/0

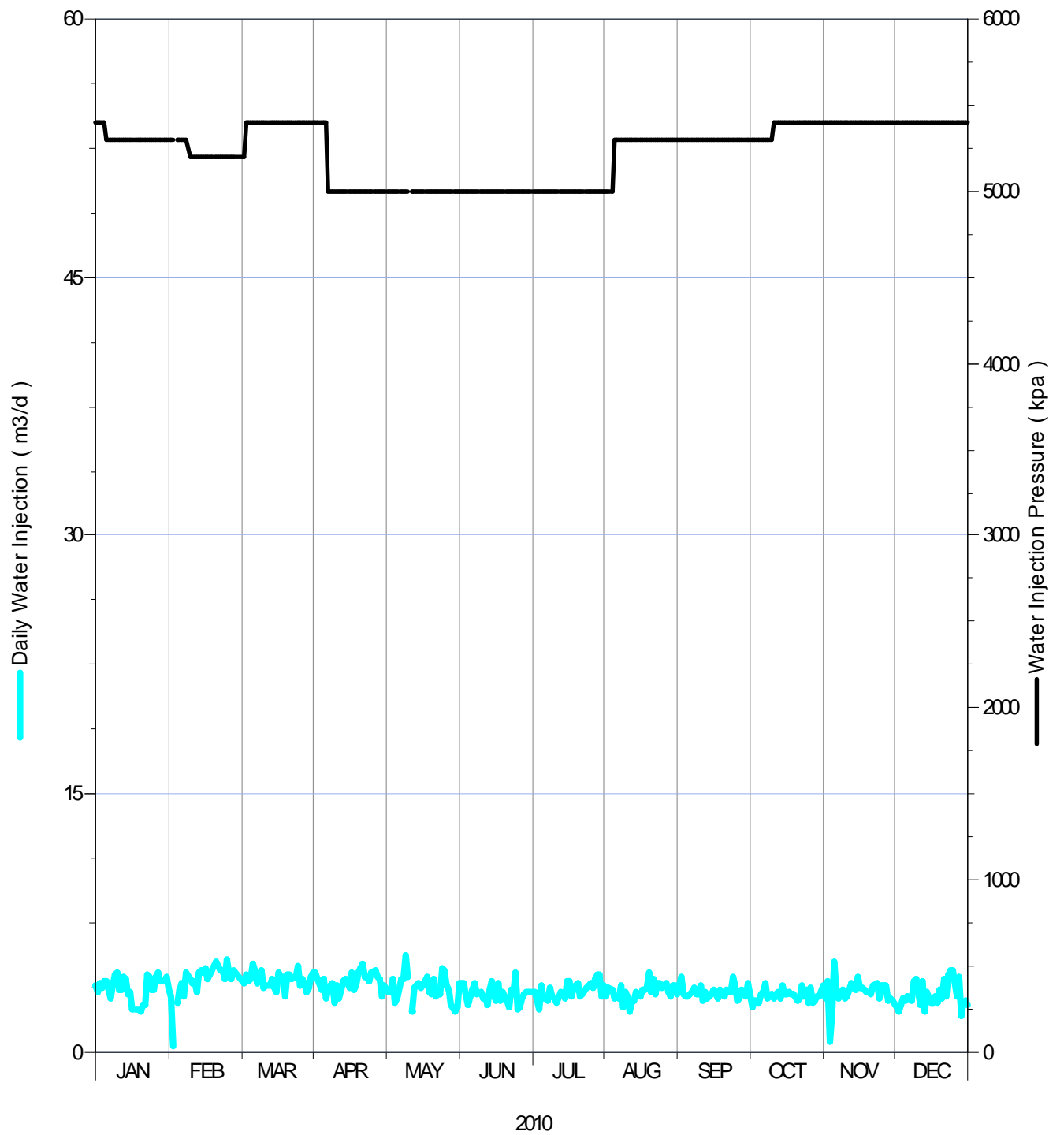


Figure D.40 – 2010 Daily Water Injection and Wellhead Injection Pressure

B0/02-17-002-29W1/0

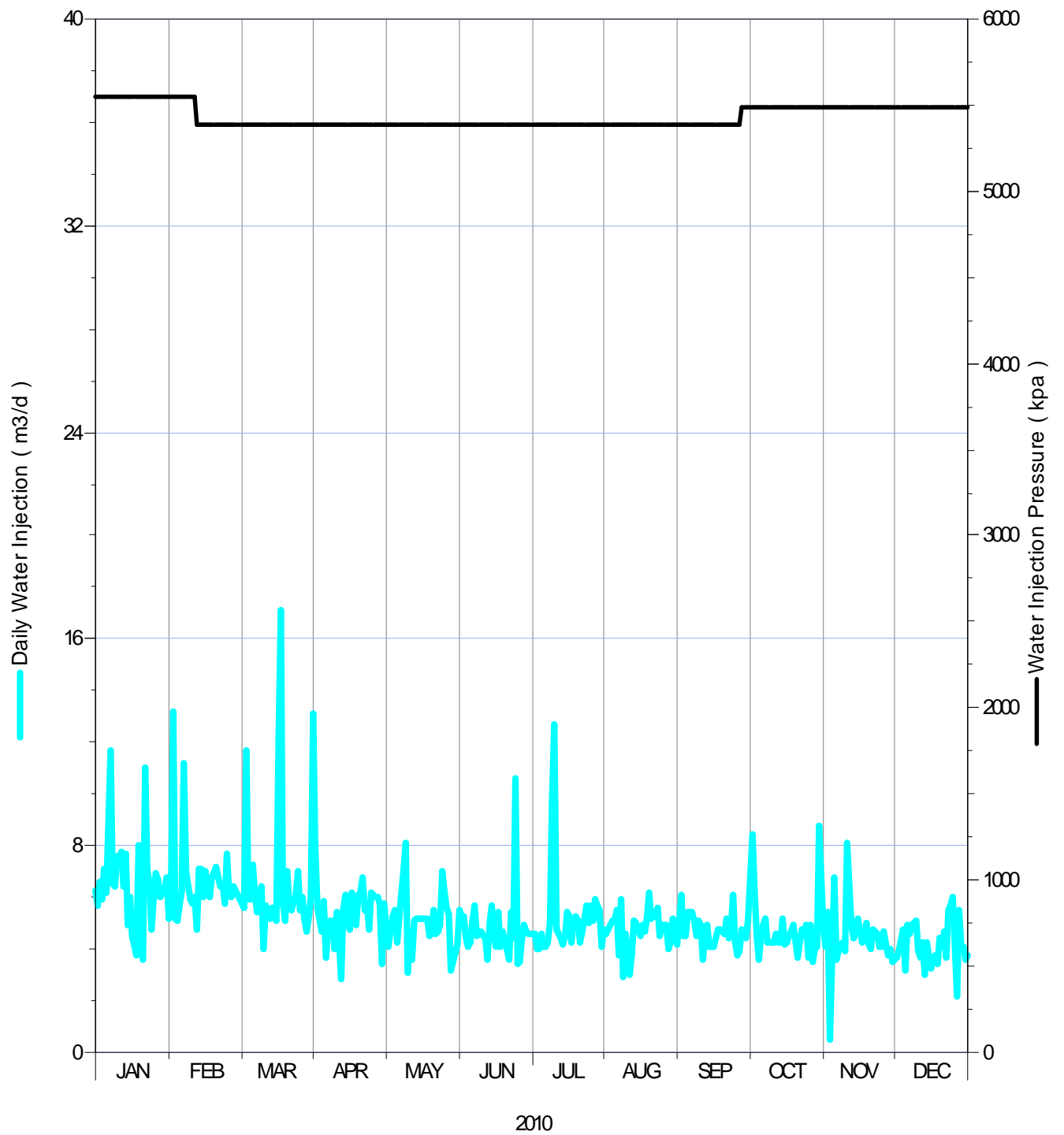


Figure D.41 – 2010 Daily Water Injection and Wellhead Injection Pressure

B0/04-16-002-29W1/0

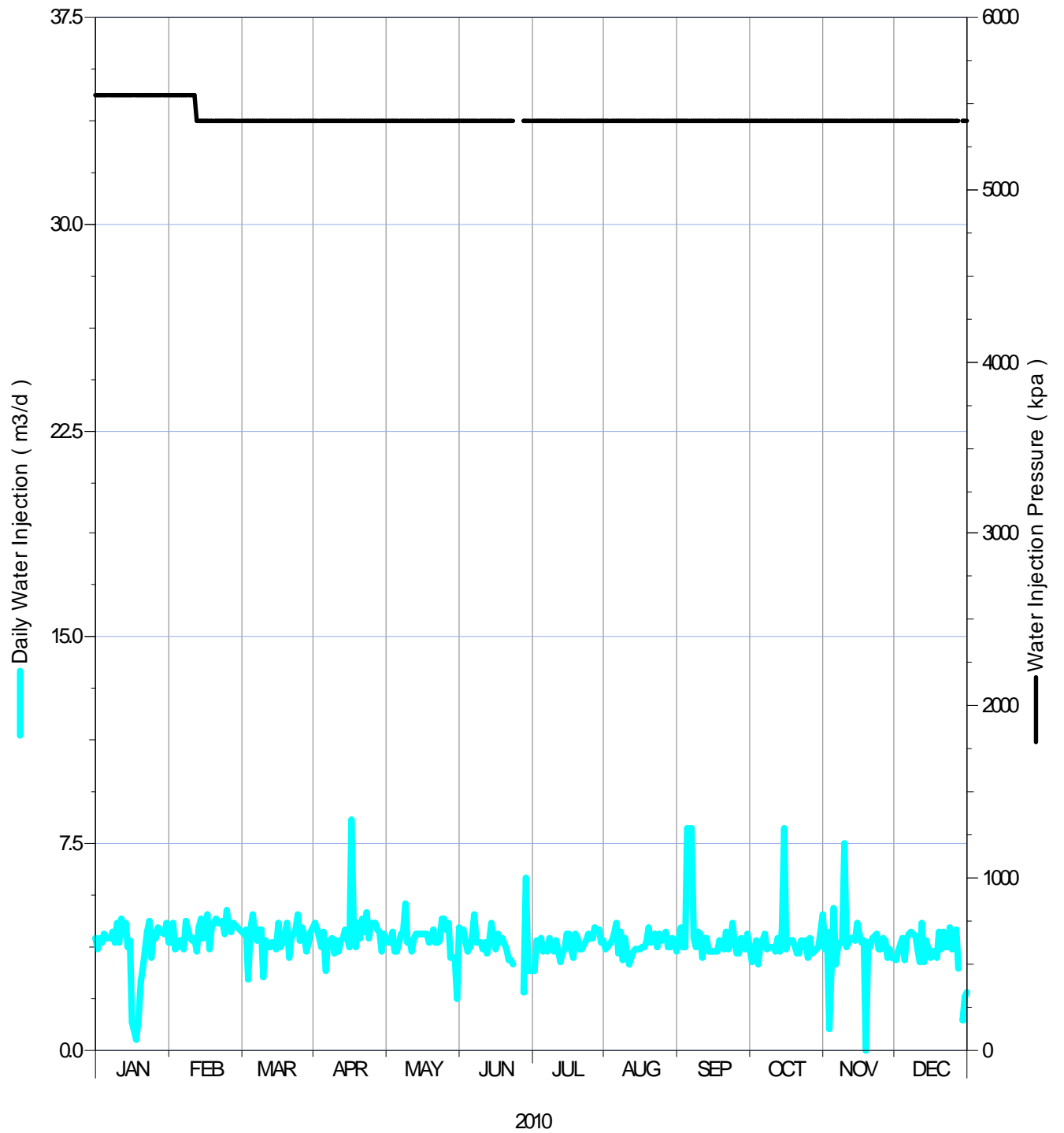


Figure D.42 – 2010 Daily Water Injection and Wellhead Injection Pressure

B0/06-09-002-29W1/0

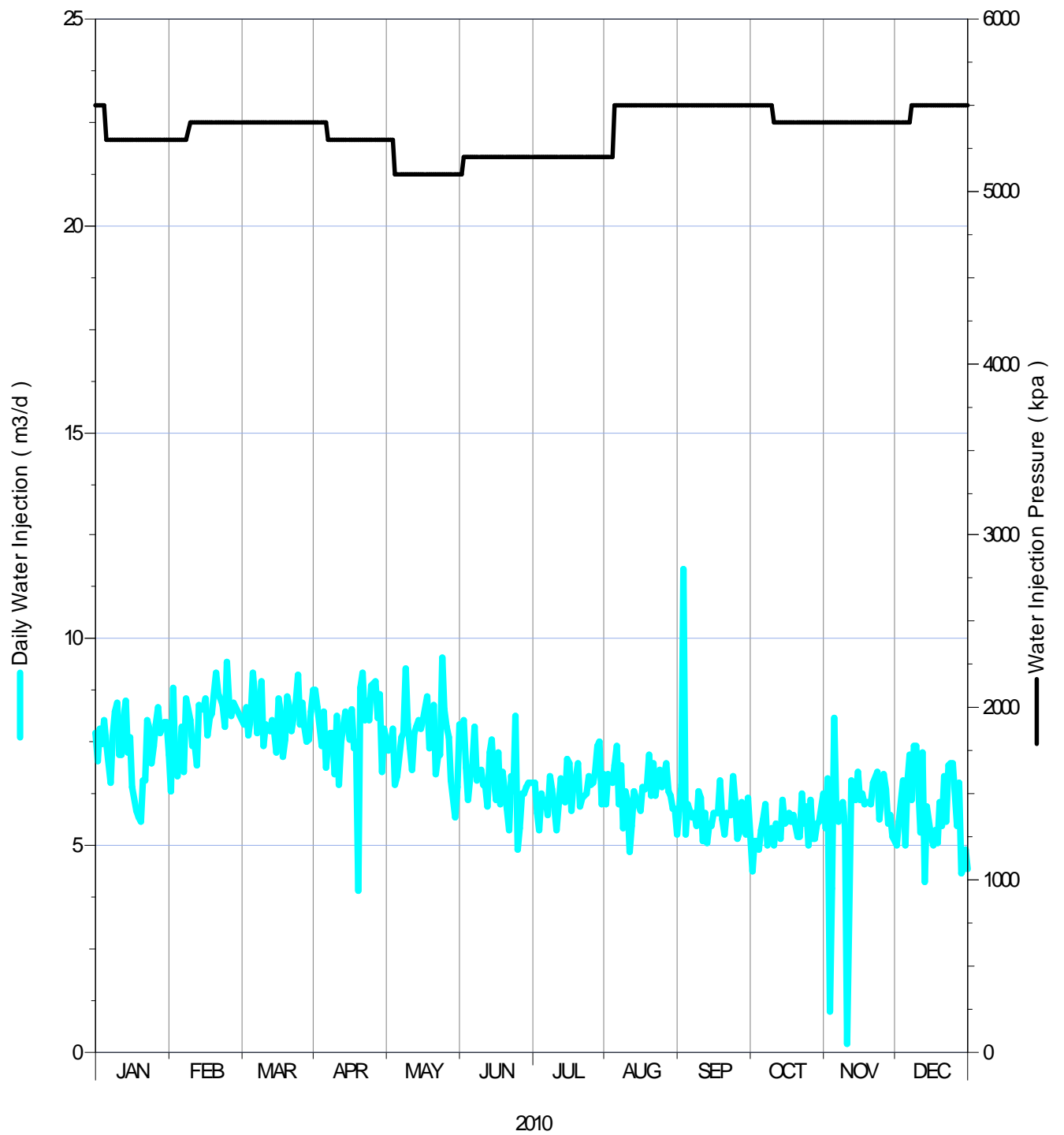


Figure D.43 – 2010 Daily Water Injection and Wellhead Injection Pressure

B0/06-16-002-29W1/0

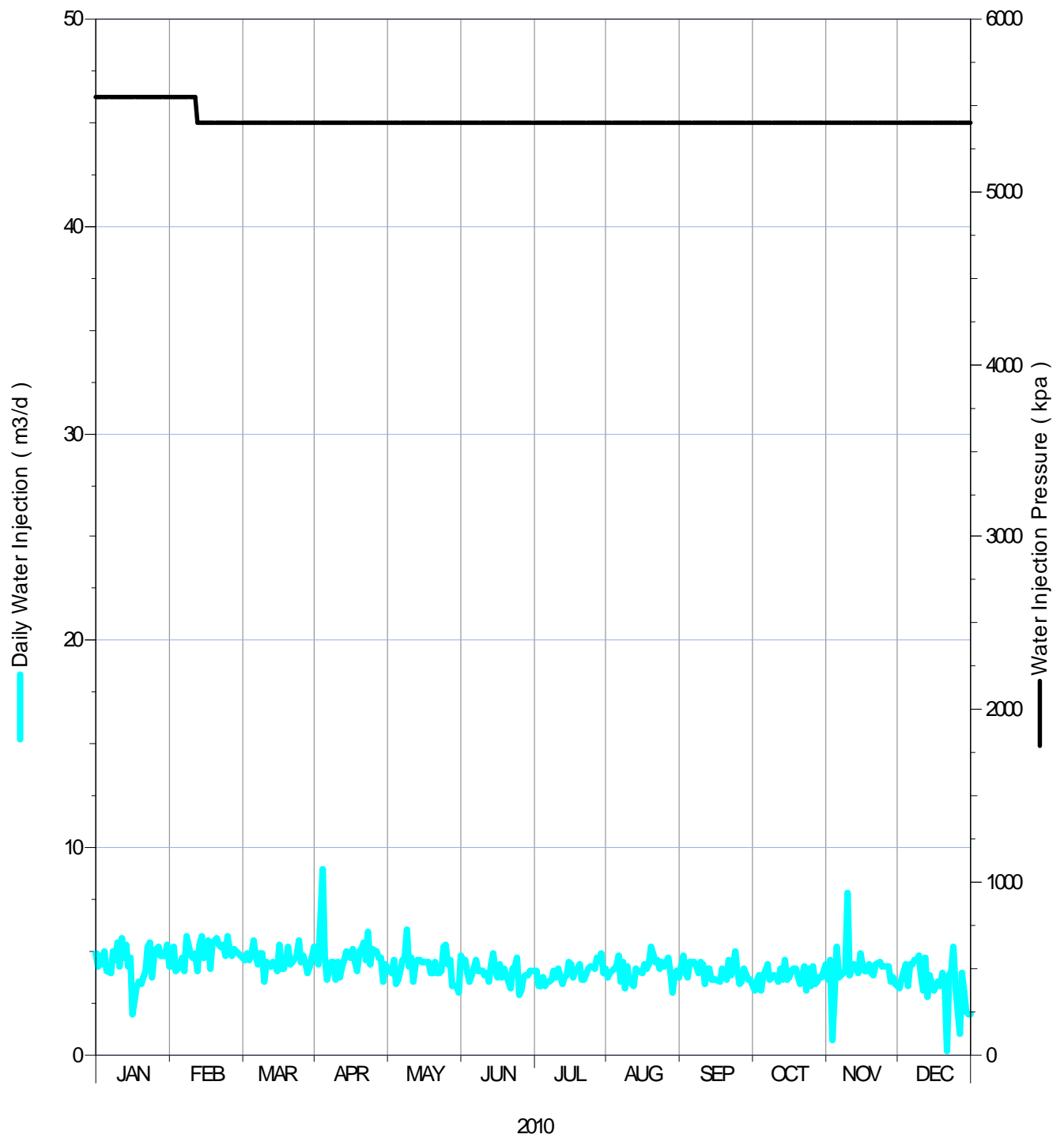


Figure D.44 – 2010 Daily Water Injection and Wellhead Injection Pressure

B0/08-09-002-29W1/0

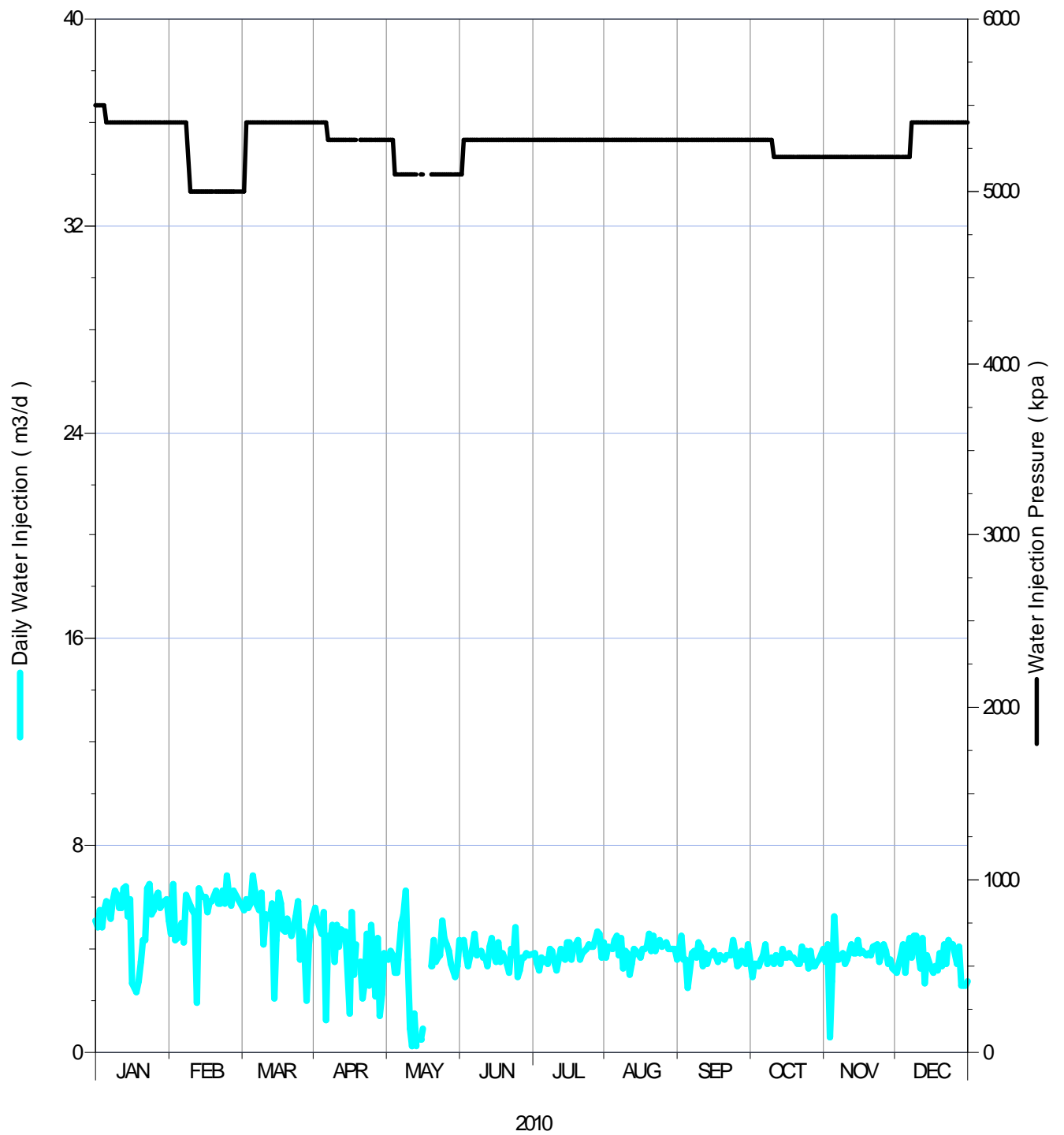


Figure D.45 – 2010 Daily Water Injection and Wellhead Injection Pressure

B0/08-16-002-29W1/0

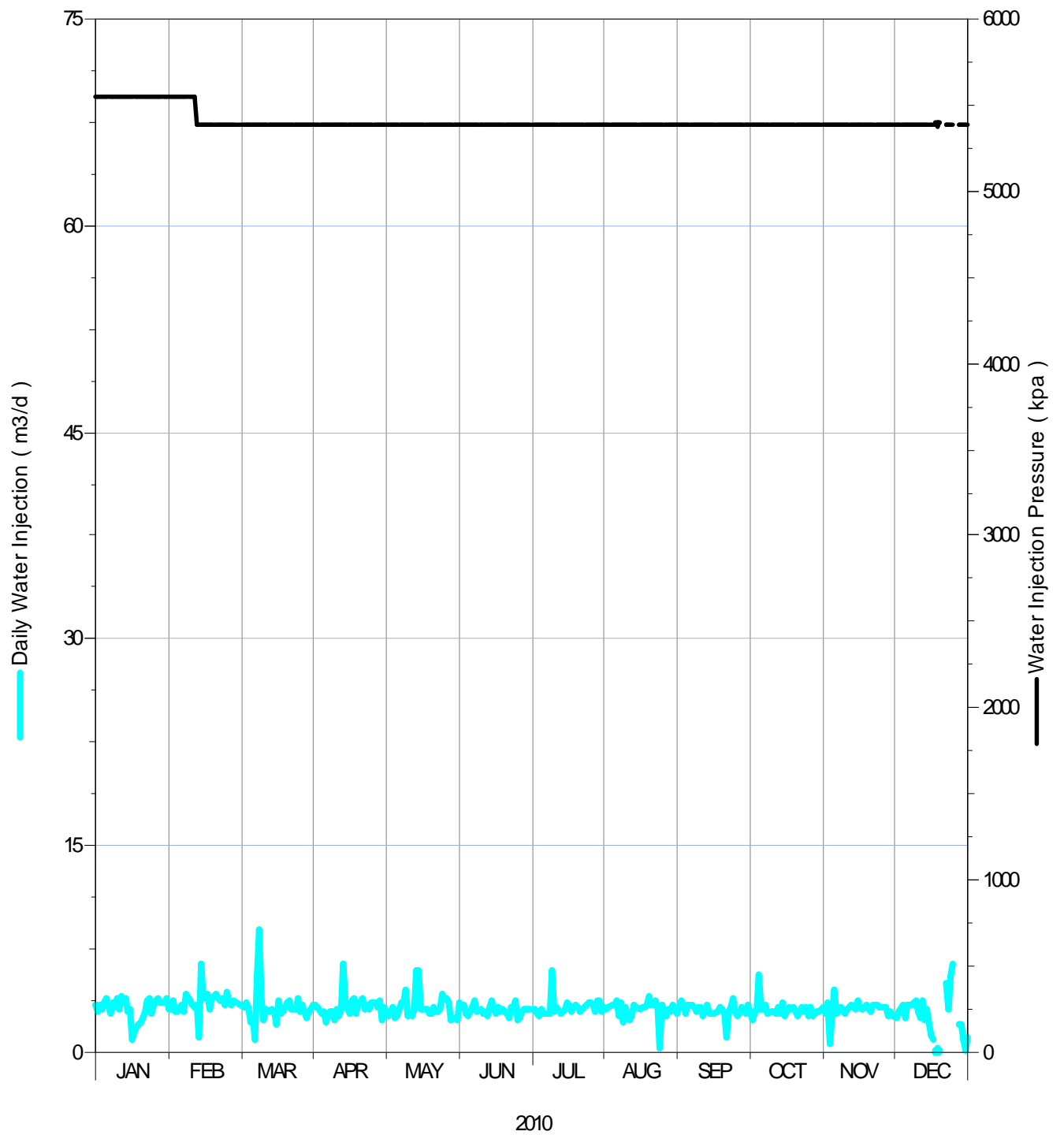


Figure D.46 – 2010 Daily Water Injection and Wellhead Injection Pressure

B0/12-17-002-29W1/0

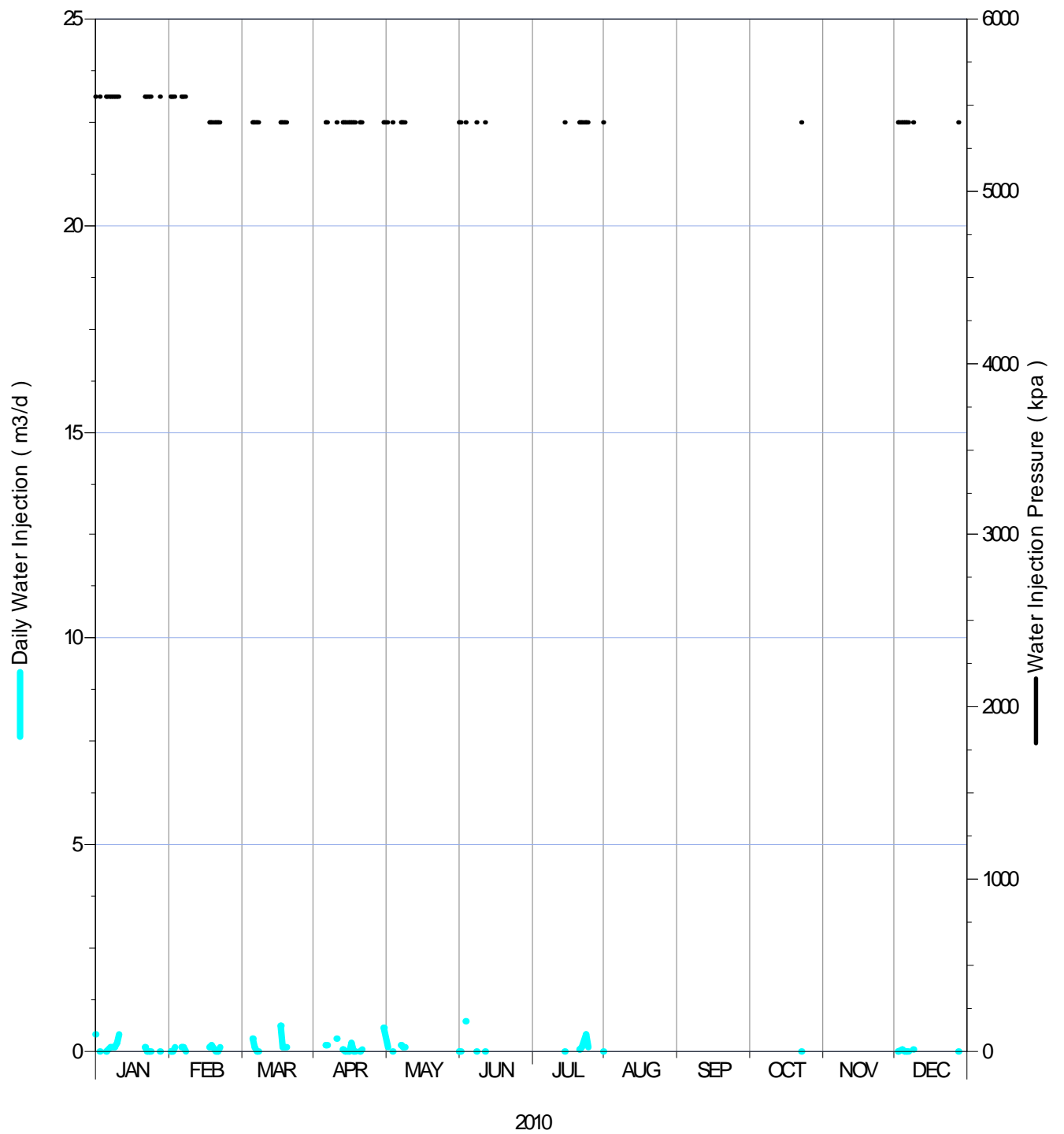


Figure D.47 – 2010 Daily Water Injection and Wellhead Injection Pressure

B0/14-04-002-29W1/0

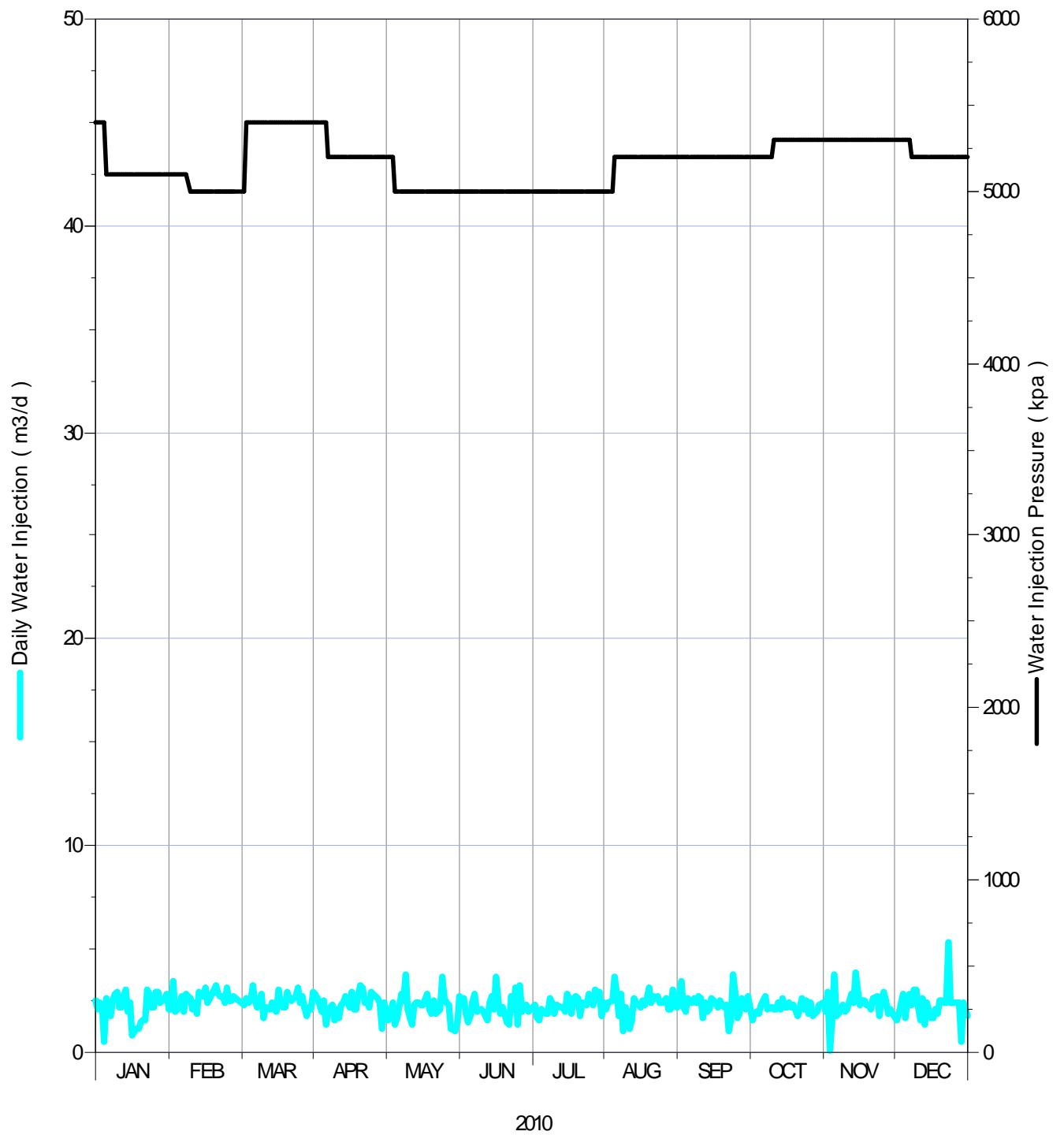


Figure D.48 – 2010 Daily Water Injection and Wellhead Injection Pressure

B0/14-08-002-29W1/0

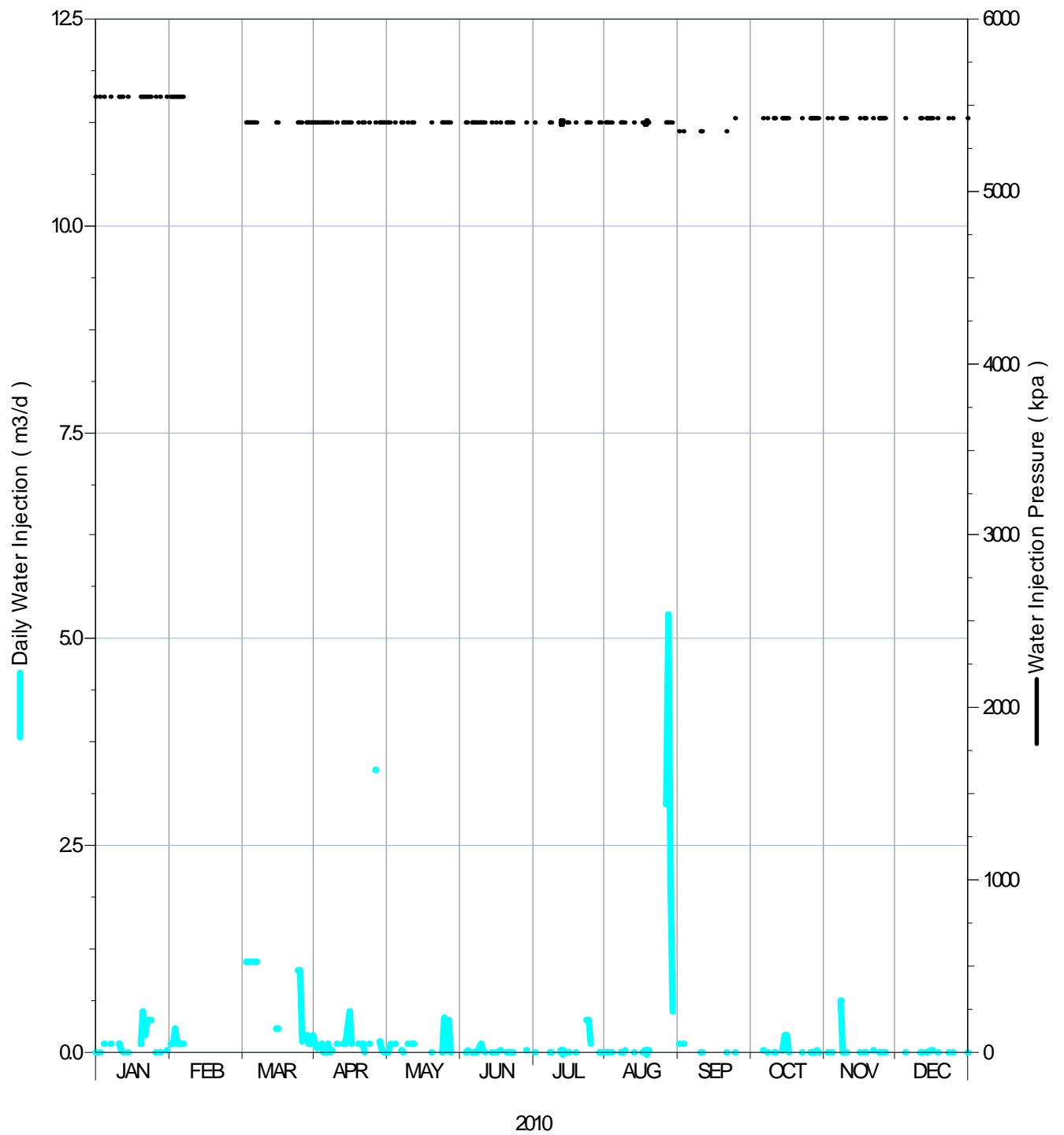


Figure D.49 – 2010 Daily Water Injection and Wellhead Injection Pressure

B0/16-17-002-29W1/0

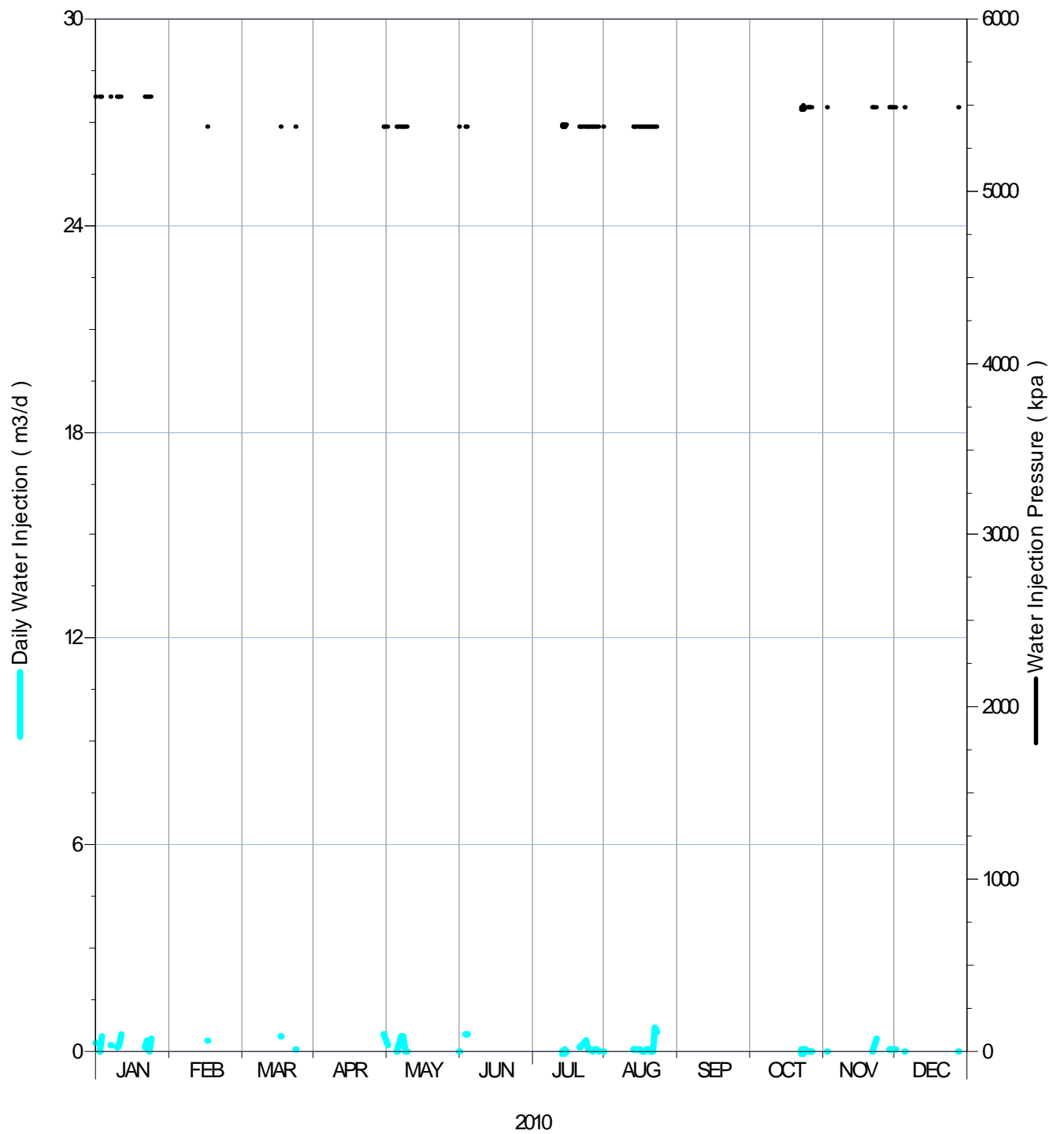


figure D.50 – 2010 Daily Water Injection and Wellhead Injection Pressure

C0/05-16-002-29W1/0

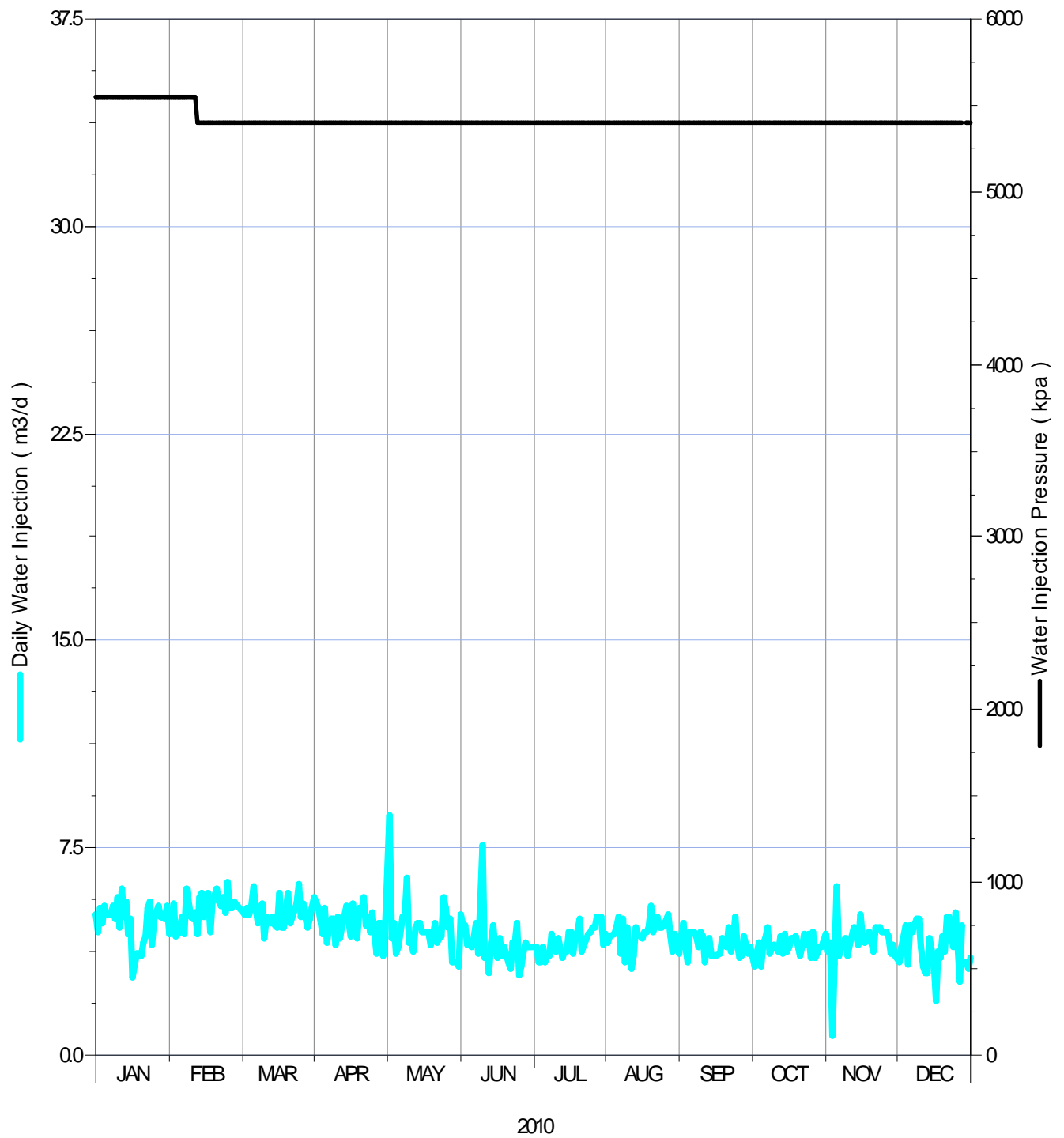


Figure D.51 – 2010 Daily Water Injection and Wellhead Injection Pressure

C0/11-16-002-29W1/0

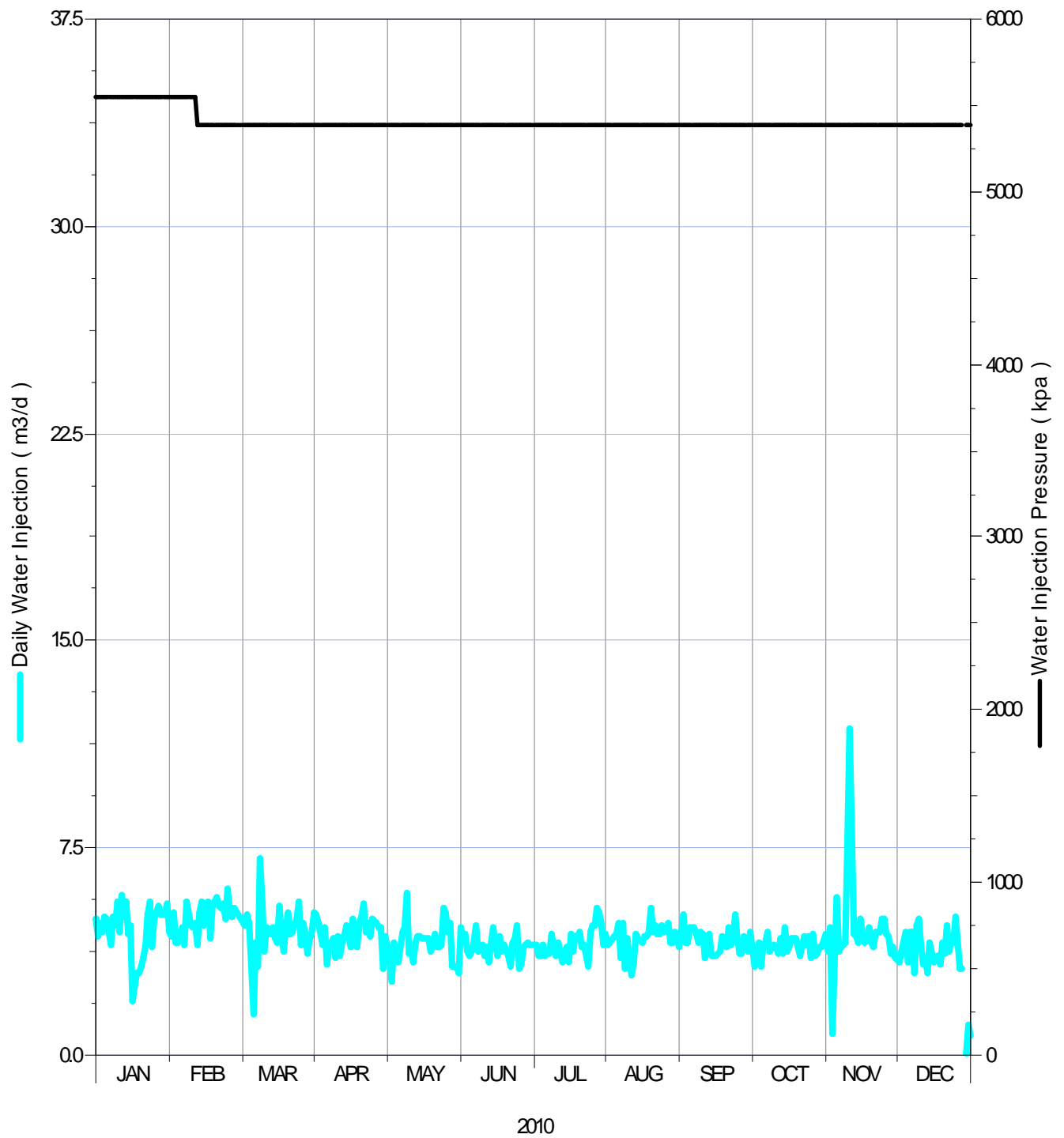


Figure D.52 – 2010 Daily Water Injection and Wellhead Injection Pressure

C0/15-04-002-29W1/0

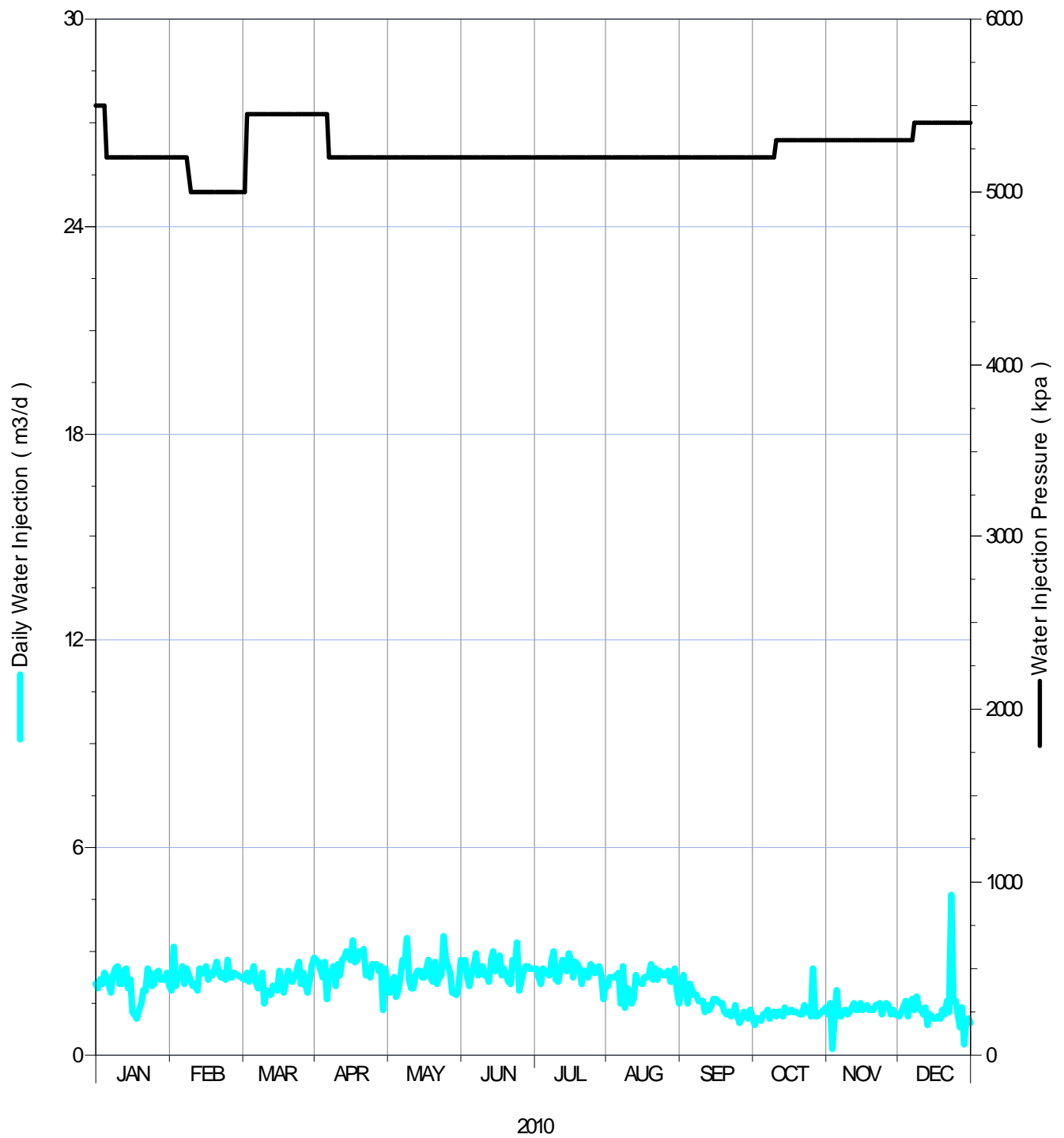


Figure D.53 – 2010 Daily Water Injection and Wellhead Injection Pressure

C2/07-16-002-29W1/0

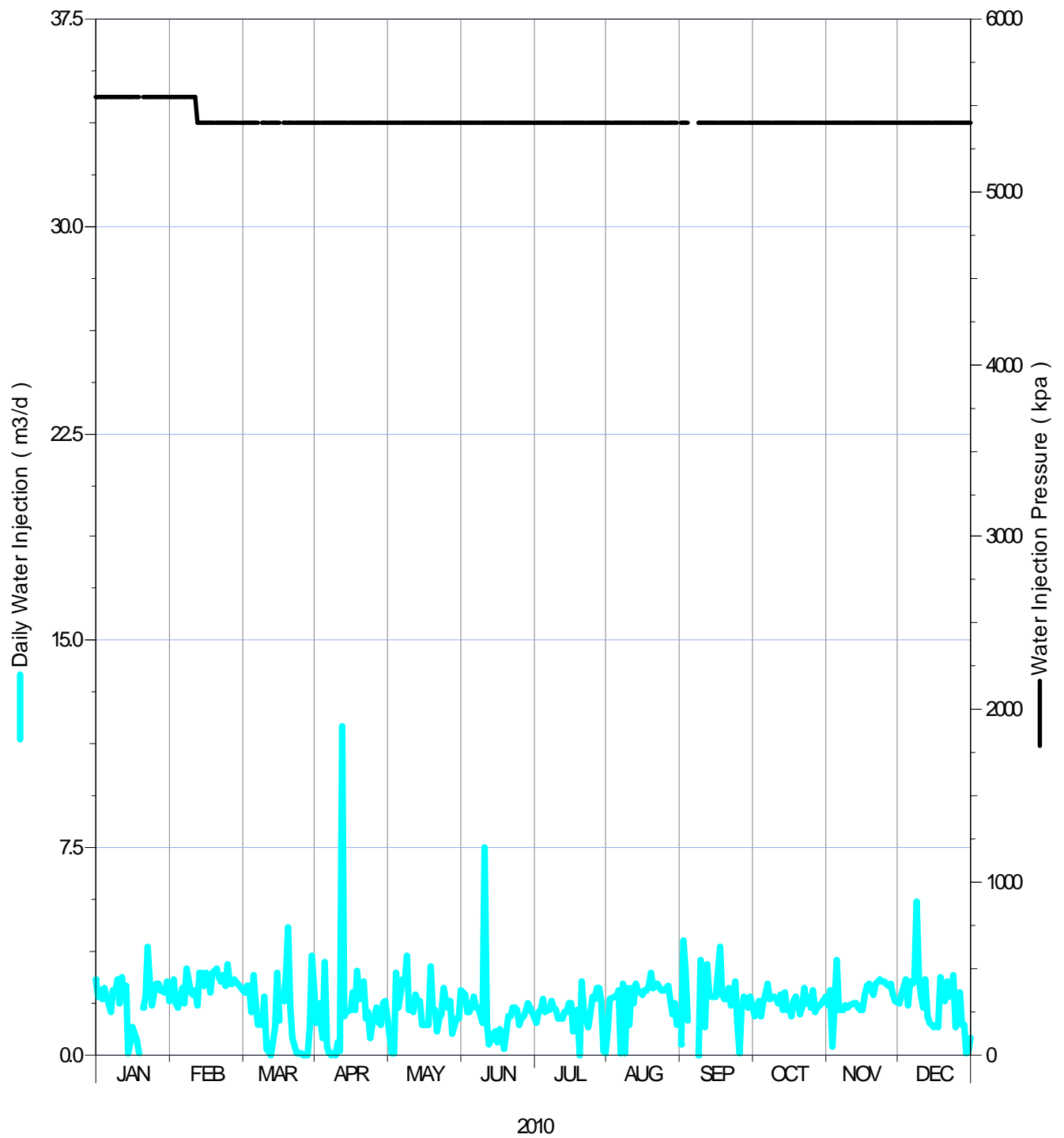


Figure D.54 – 2010 Daily Water Injection and Wellhead Injection Pressure

D0/02-09-002-29W1/0

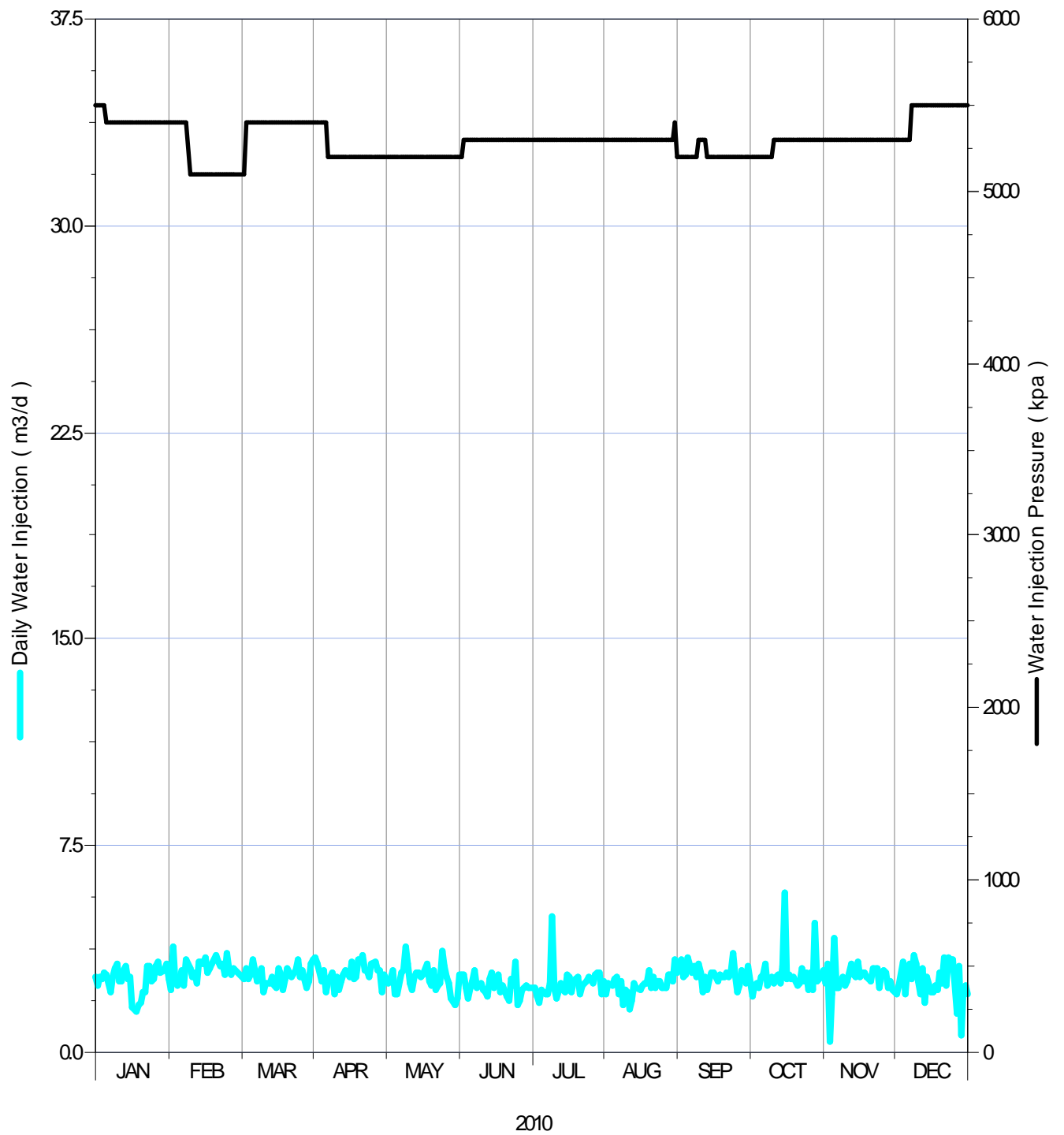


Figure D.55 – 2010 Daily Water Injection and Wellhead Injection Pressure

D0/02-17-002-29W1/0

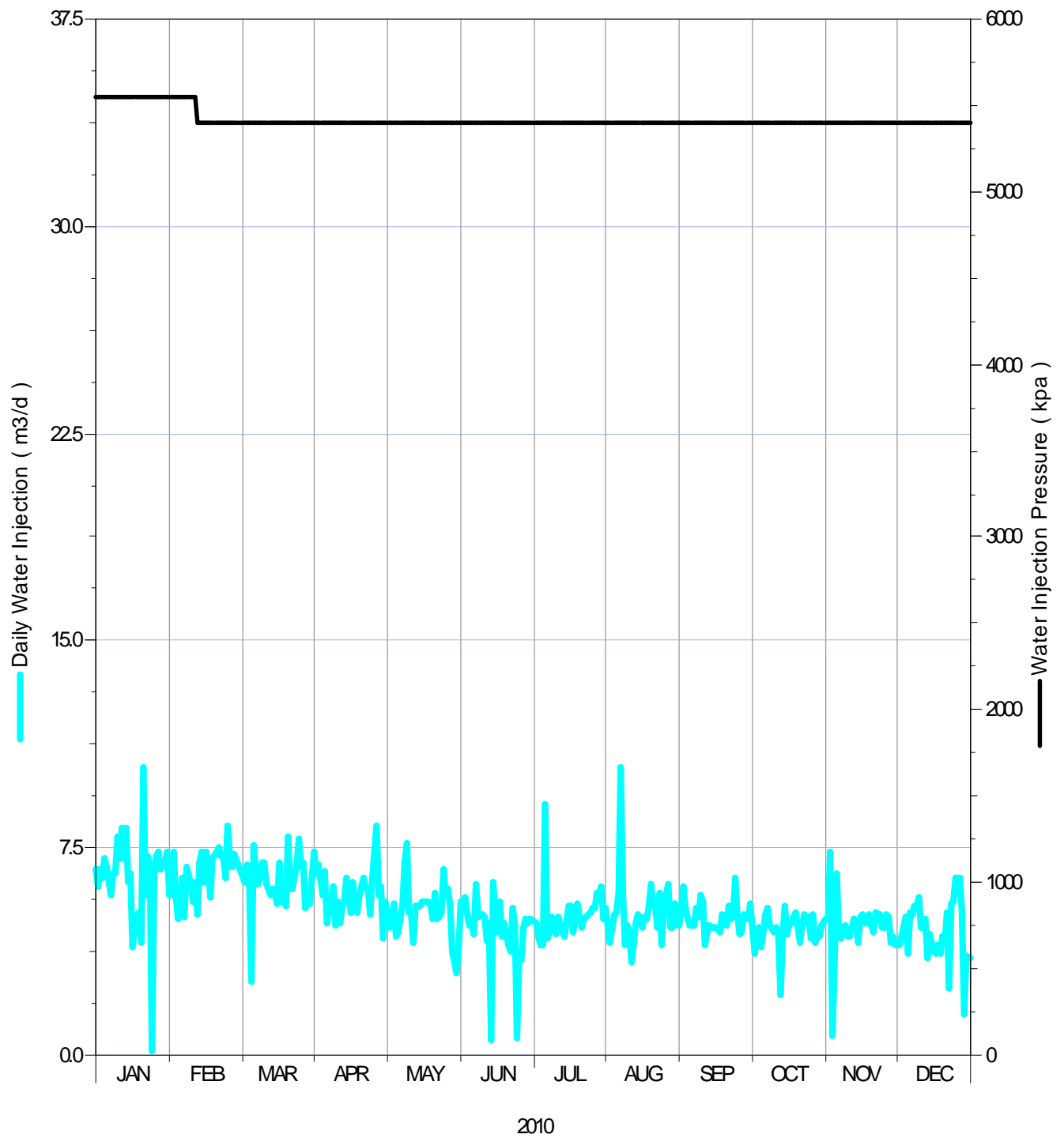


Figure D.56 – 2010 Daily Water Injection and Wellhead Injection Pressure

D0/04-09-002-29W1/0

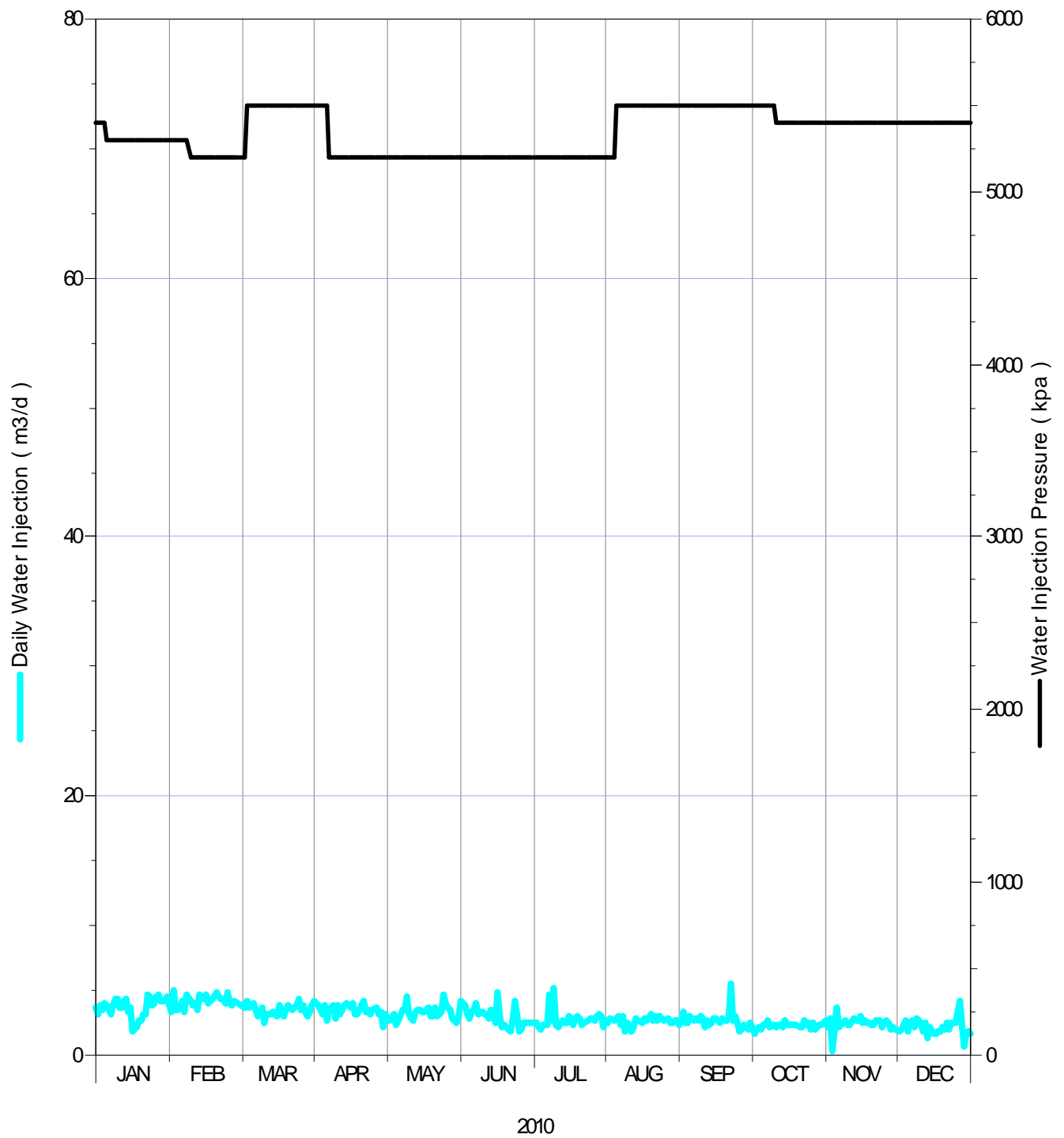


Figure D.57 – 2010 Daily Water Injection and Wellhead Injection Pressure

D0/04-17-002-29W1/0

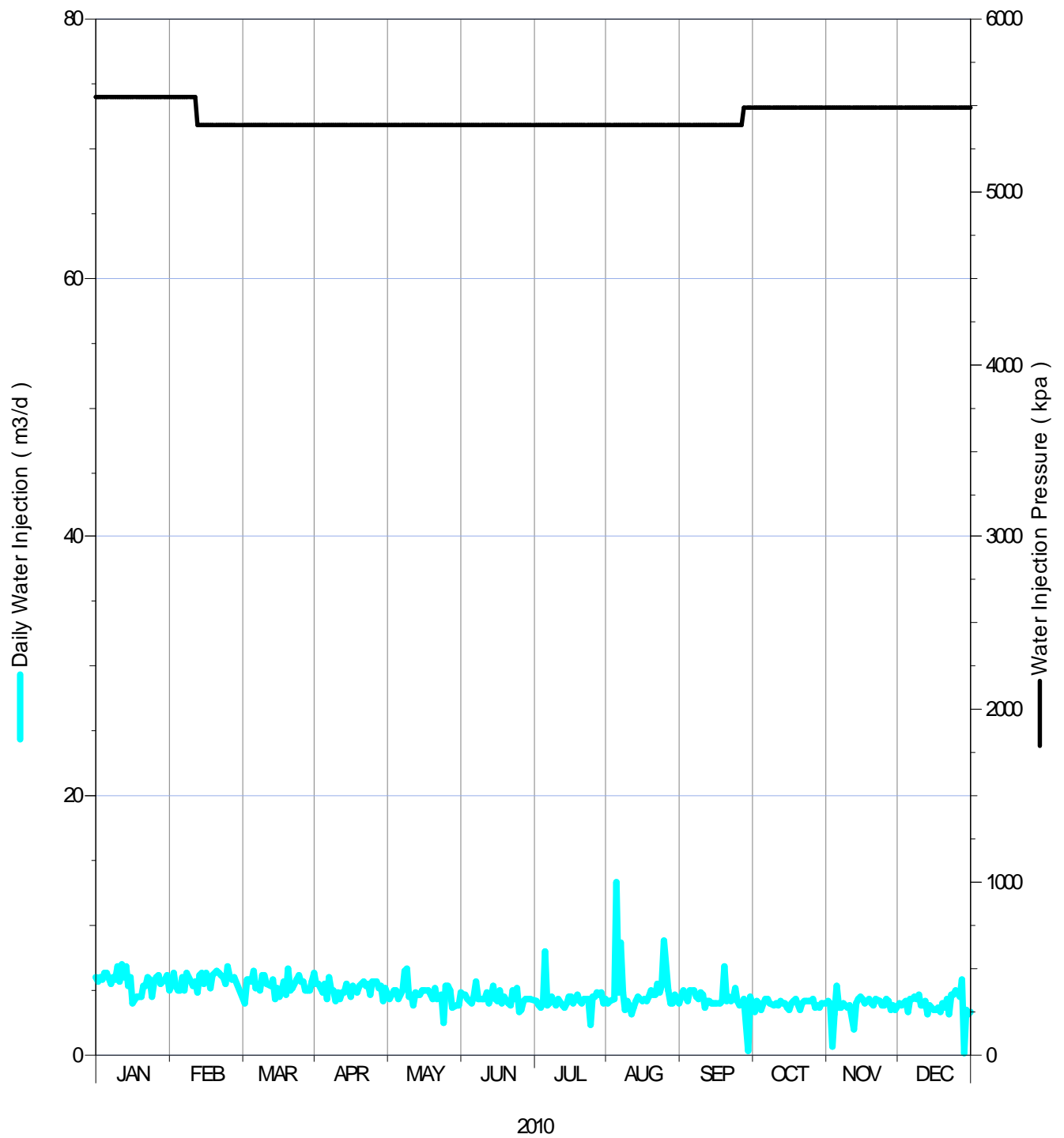


Figure D.58 – 2010 Daily Water Injection and Wellhead Injection Pressure

D0/06-09-002-29W1/0

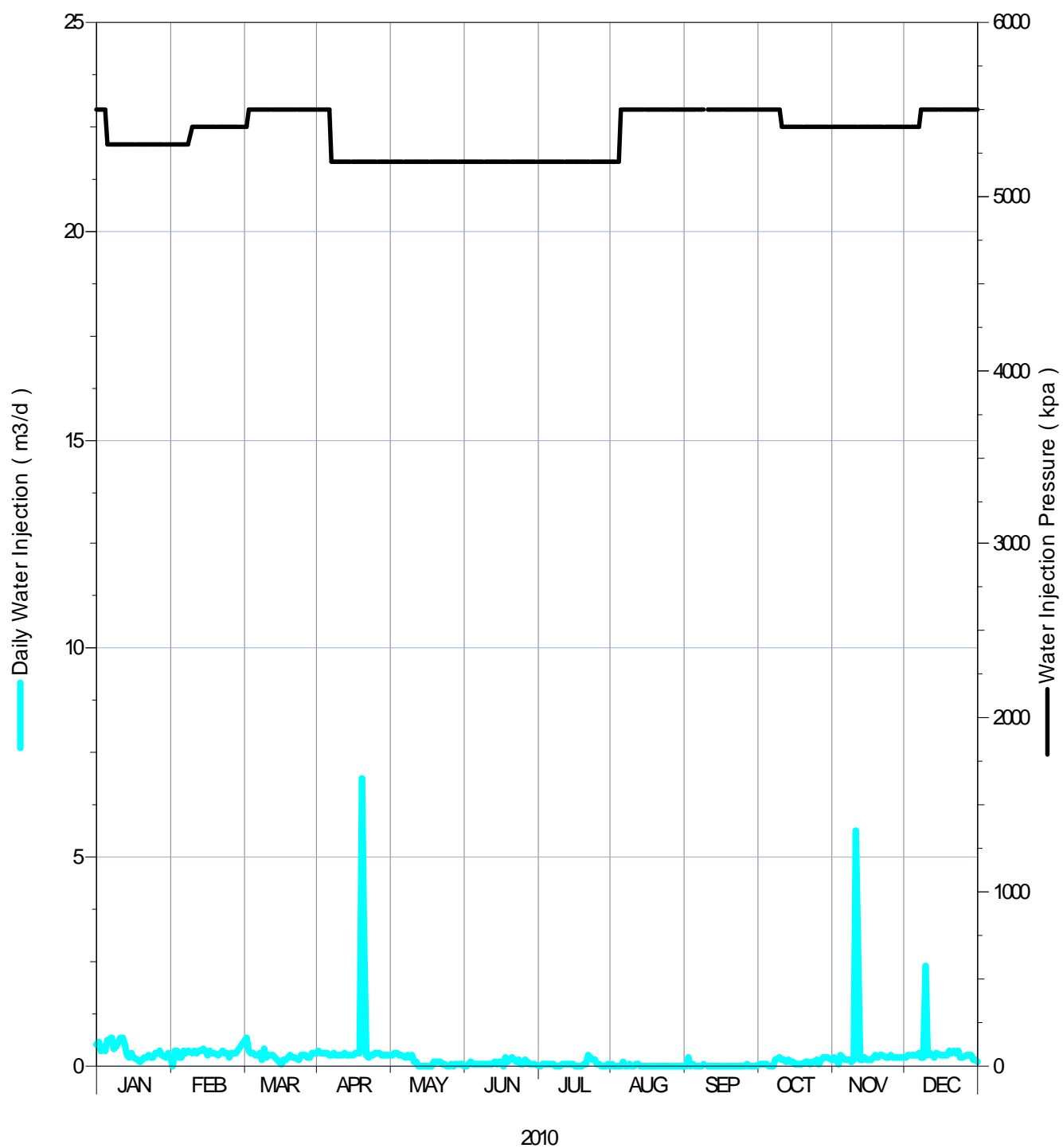


Figure D.59 – 2010 Daily Water Injection and Wellhead Injection Pressure

D0/06-17-002-29W1/0

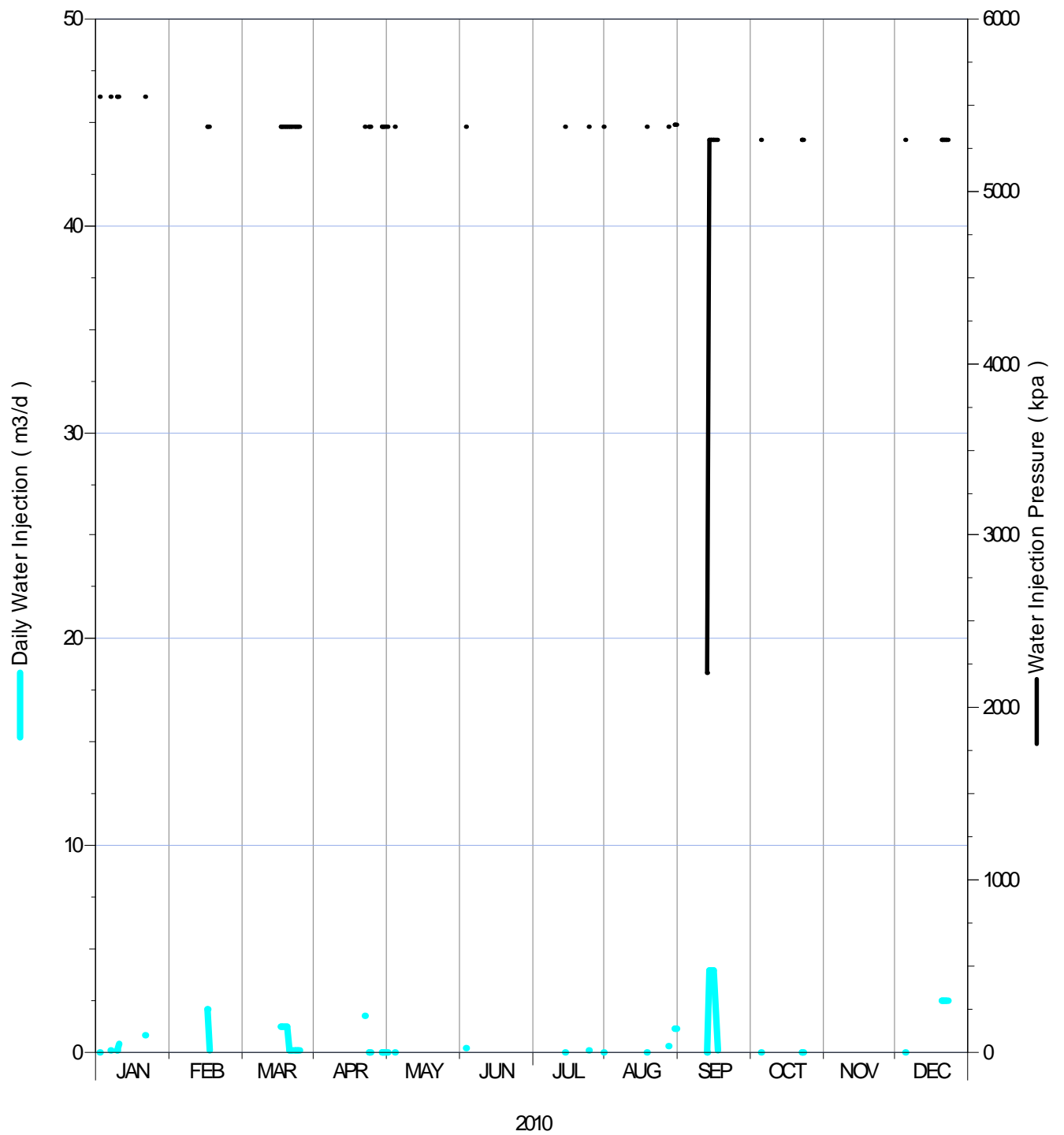


Figure D.60 – 2010 Daily Water Injection and Wellhead Injection Pressure

D0/14-09-002-29W1/0

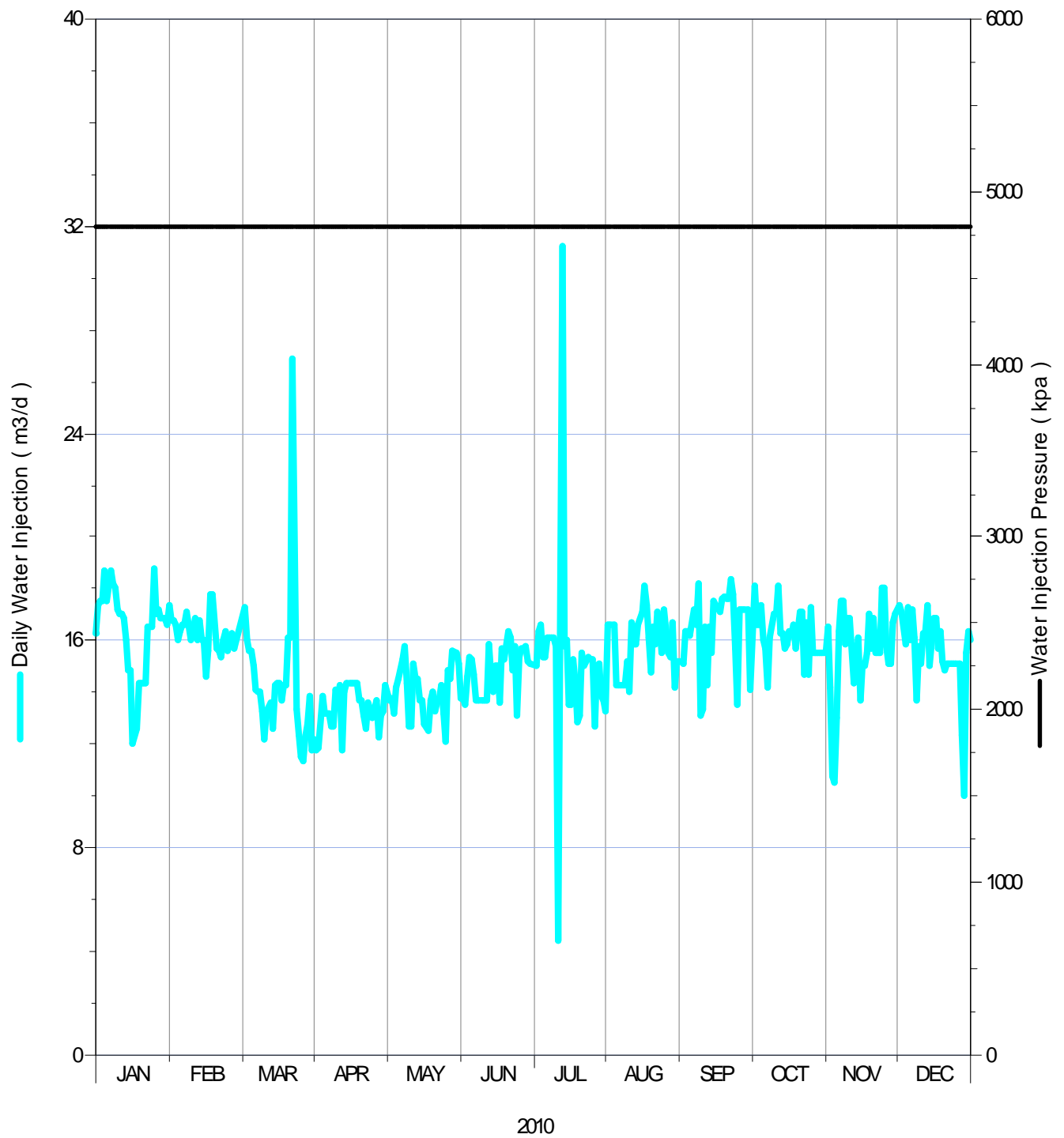


Figure D.61 – 2010 Daily Water Injection and Wellhead Injection Pressure

D0/16-05-002-29W1/0

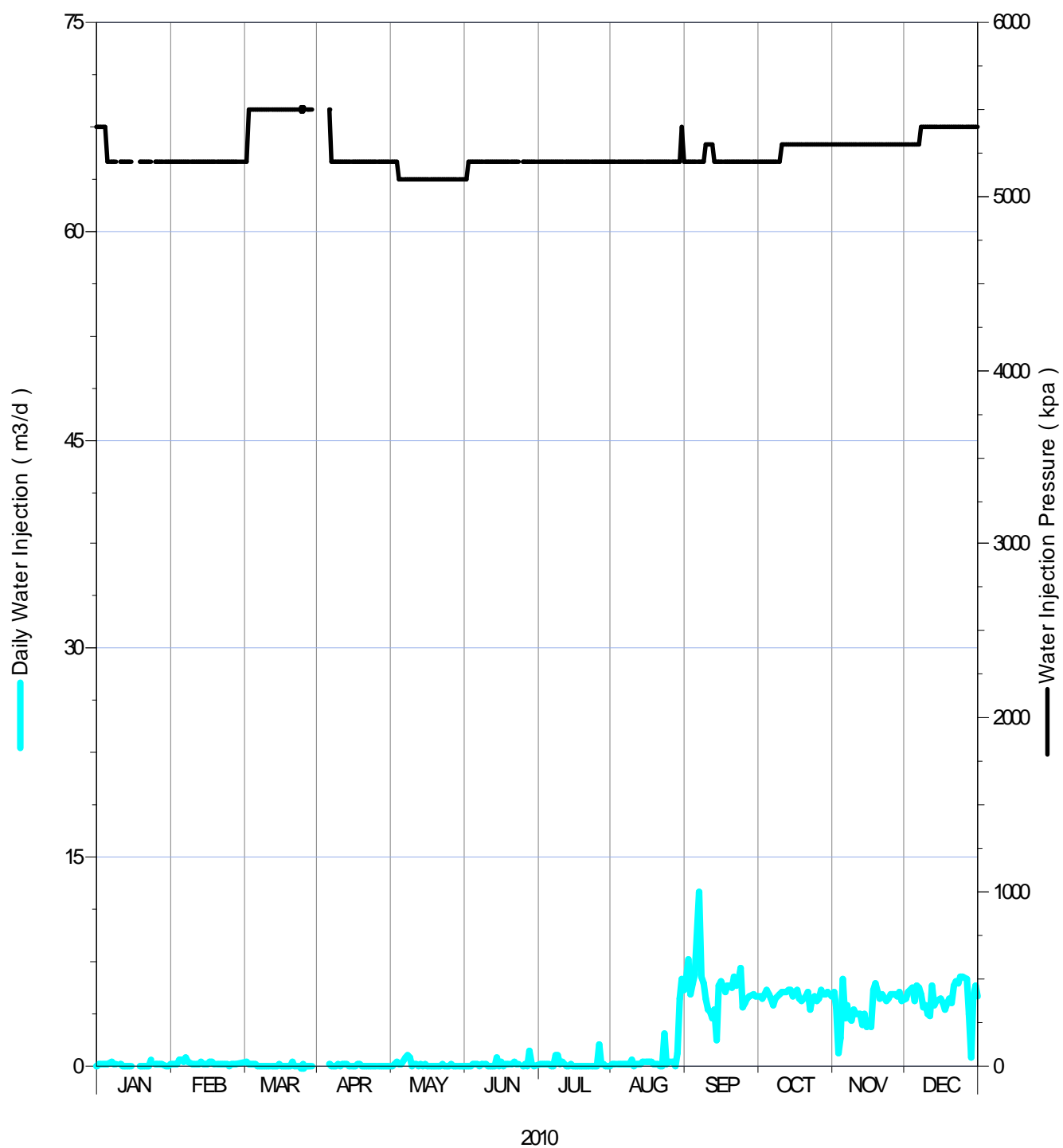


Figure D.62 – 2010 Daily Water Injection and Wellhead Injection Pressure

TABLE E.1: 2009 WELL SERVICING SUMMARY

WELL NAME & LOCATION	COMPLETED DATE	WELL STATUS/DESCRIPTION
A0/05-15-002-29W1/0	05-Jan	Waxed in rods - replaced polish rod
02/13-04-002-29W1/0	28-Jan	Solvent/Acid Stim
B0/11-08-002-29W1/0	10-Mar	Change seized bottomhole pump
C0/04-17-002-29W1/0	17-Mar	Waxed in rods - changed bottomhole pump
00/01-18-002-29W1/0	30-Jun	Waxed in rods - changed bottomhole pump
B0/11-16-002-29W1/0	18-Jul	Polish rod change
00/13-16-002-29W1/0	18-Jul	Polish rod change
A0/15-16-002-29W1/0	18-Jul	Polish rod change
A0/08-16-002-29W1/0	18-Jul	Polish rod change
B0/11-08-002-29W1/0	18-Jul	Polish rod change
B0/03-17-002-29W1/0	21-Jul	Changed failed pump
D0/05-17-002-29W1/0	22-Jul	Changed failed pump
D0/11-04-002-29W1/0	21-Aug	Tubing leak, replaced corroded tubing and used solvent/acid
D0/02-09-002-29W1/0	29-Aug	acidize injector
B0/14-08-002-29W1/0	29-Aug	acidize injector
D0/16-05-002-29W1/0	29-Aug	acidize injector
D0/06-17-002-29W1/0	31-Aug	acidize injector
00/05-17-002-29W1/0	01-Sep	Solvent/Acid Stim
B0/01-17-002-29W1/0	09-Sep	Tubing leak, replaced corroded tubing
A0/01-09-002-29W1/0	20-Sep	Tubing leak, replaced corroded tubing
B0/09-17-002-29W1/0	28-Sep	Tubing leak, replaced corroded tubing
00/01-09-002-29W1/0	29-Sep	Polish rod change
A0/10-09-002-29W1/0	29-Sep	Polish rod change
A0/06-08-002-29W1/0	25-Nov	Polish rod change
B0/05-15-002-29W1/0	11-Dec	Change bottomhole pump
A0/04-09-002-29W1/0	13-Dec	Changed bottomhole pump
00/09-16-002-29W1/0	13-Dec	Change bottomhole pump

PIERSON 00/05-17-002-29W1/0

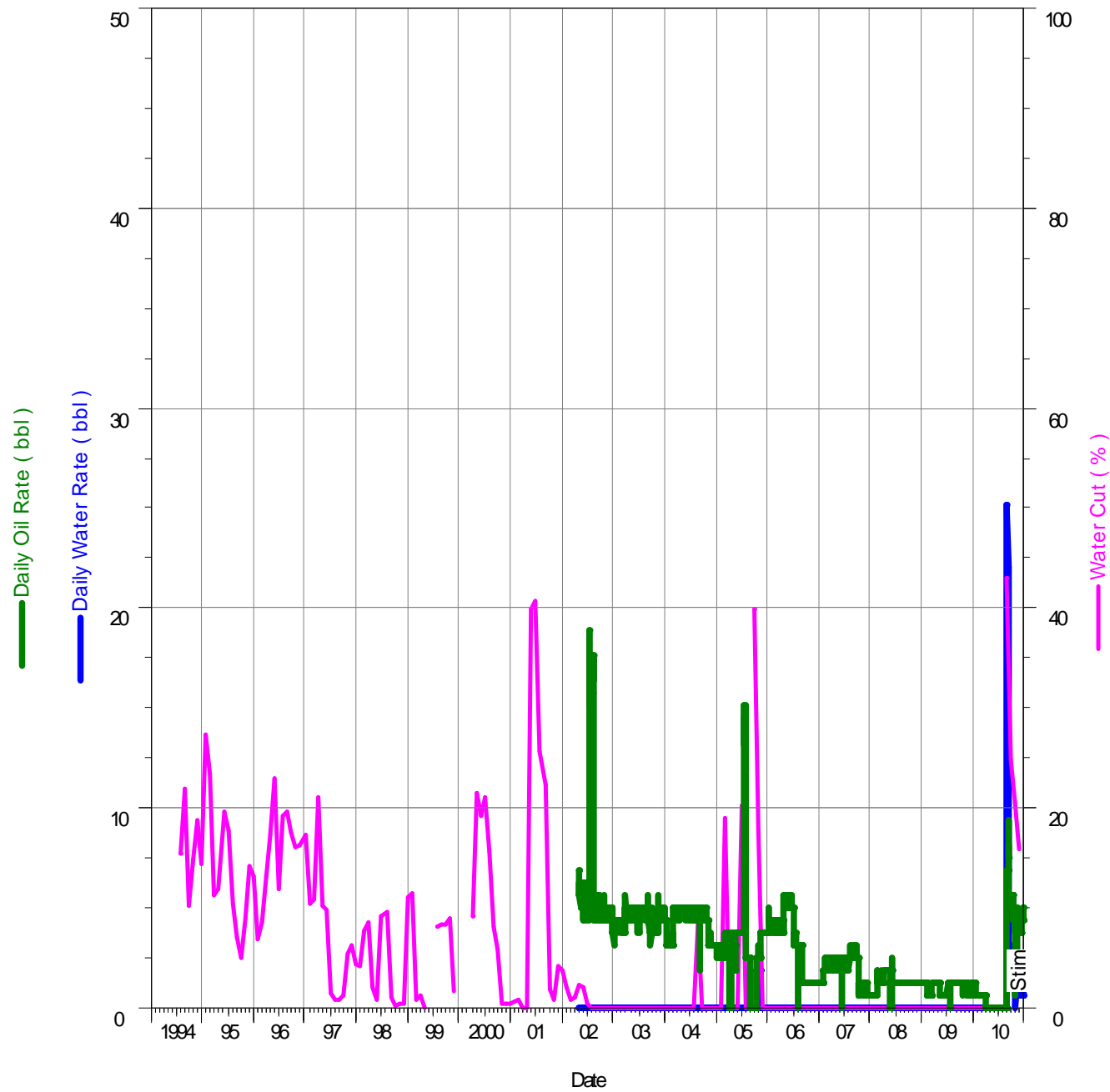


Figure E.1 – Stimulation Completed on Producing Well

PIERSON 02/13-04-002-29W1/0

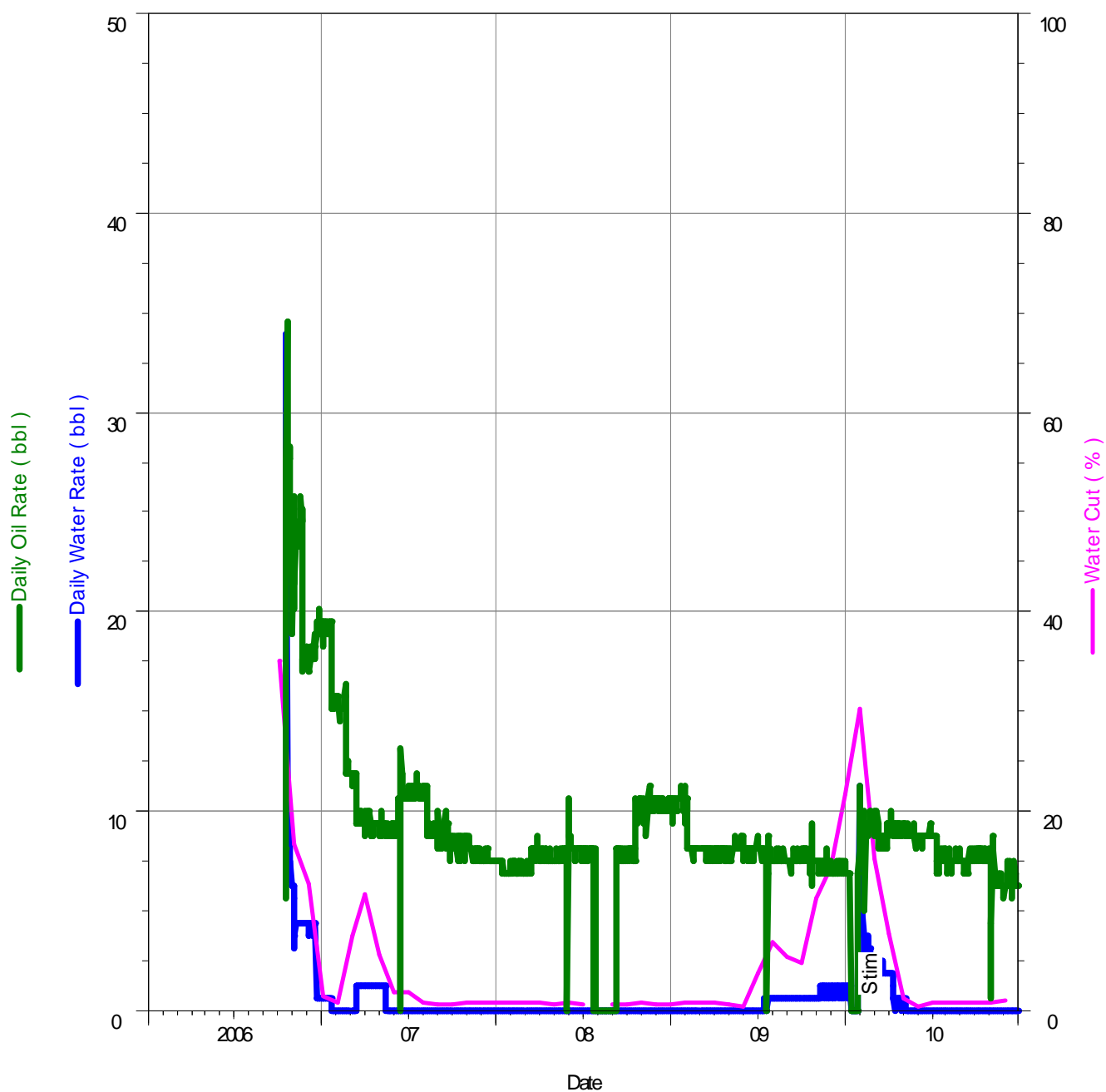


Figure E.2 – Stimulation Completed on Producing Well

B0/14-08-002-29W1/0

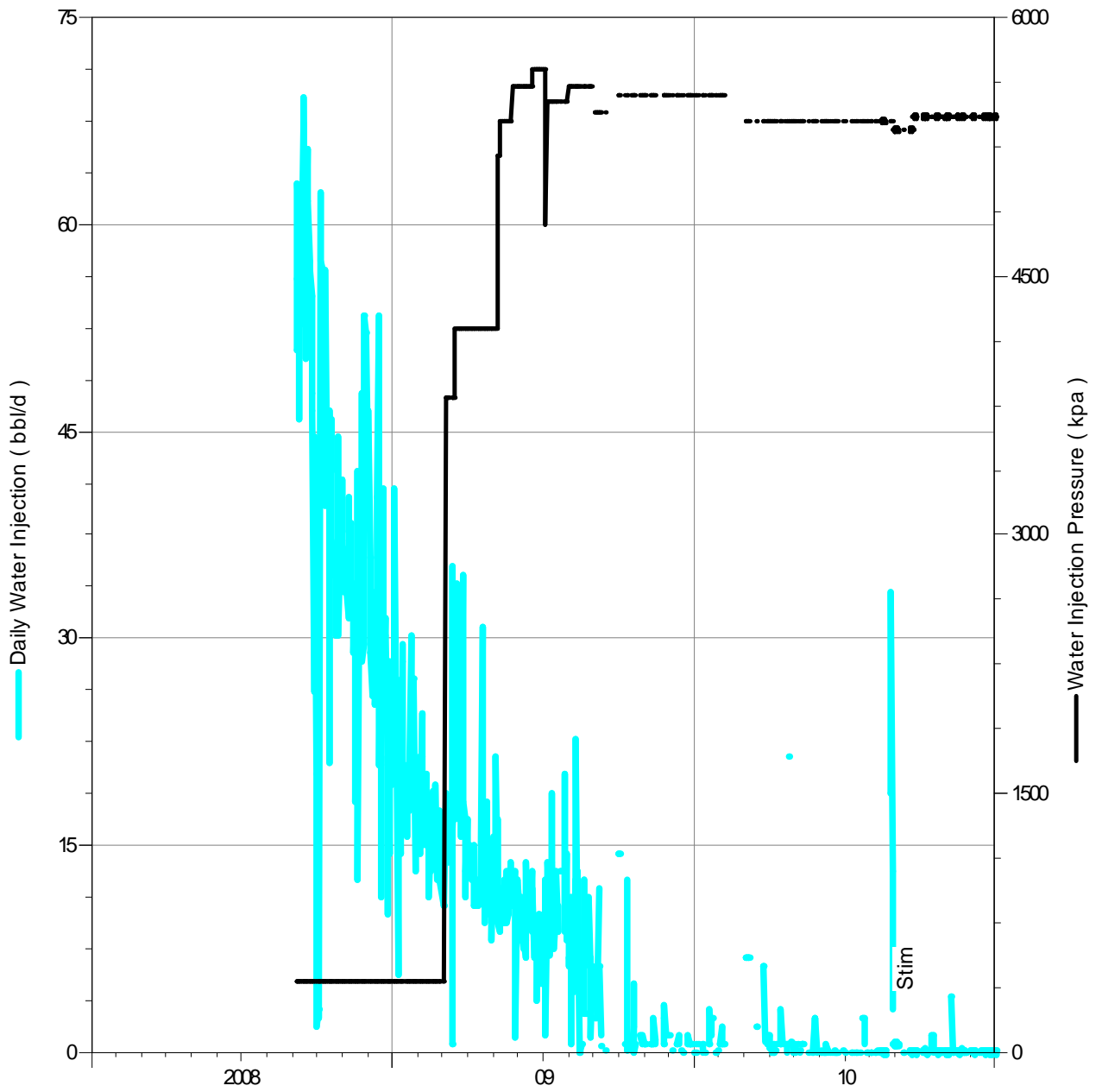


Figure E.3 – Stimulation Completed on Injection Well

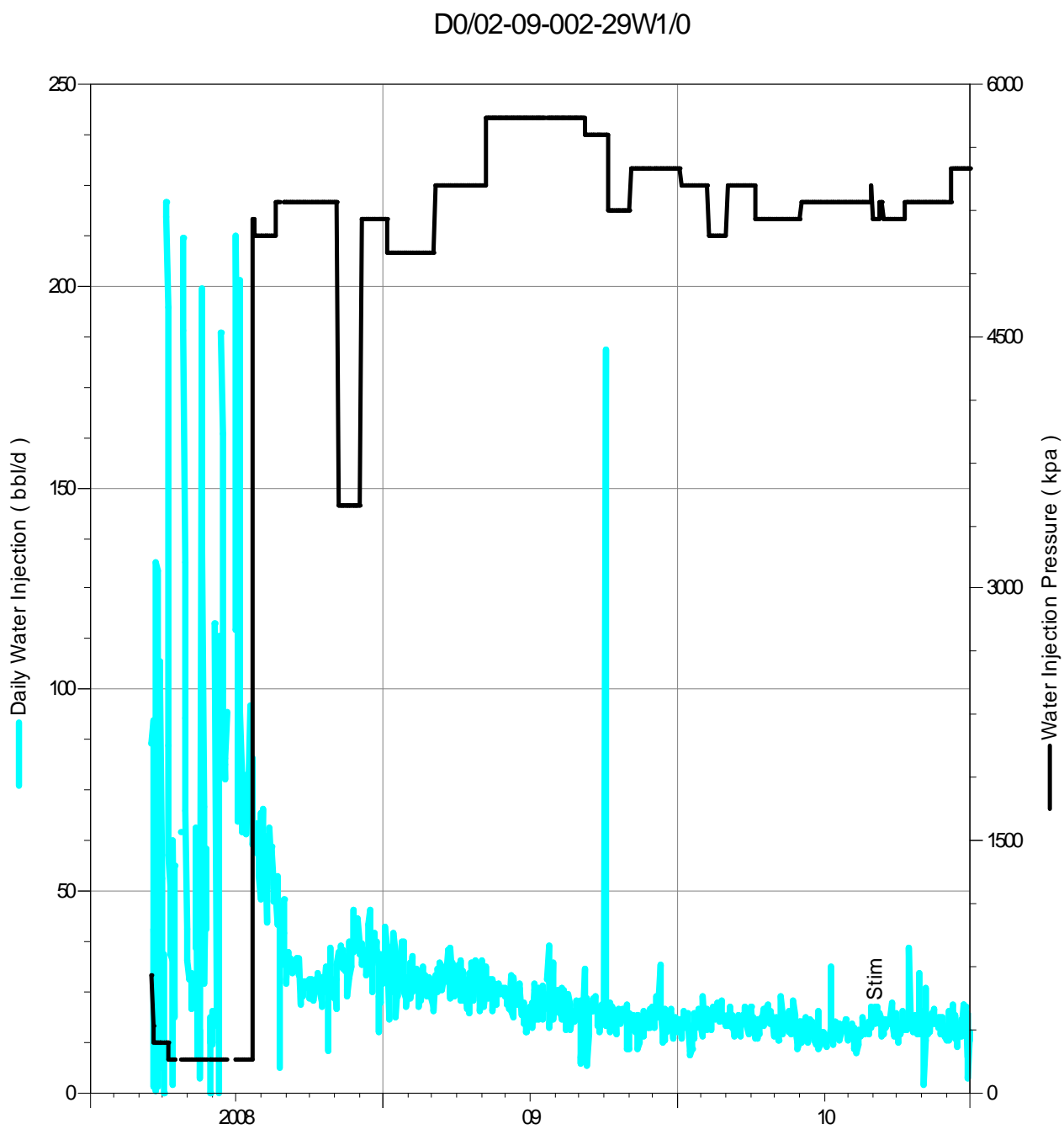


Figure E.4 – Stimulation Completed on Injecting Well

D0/06-17-002-29W1/0

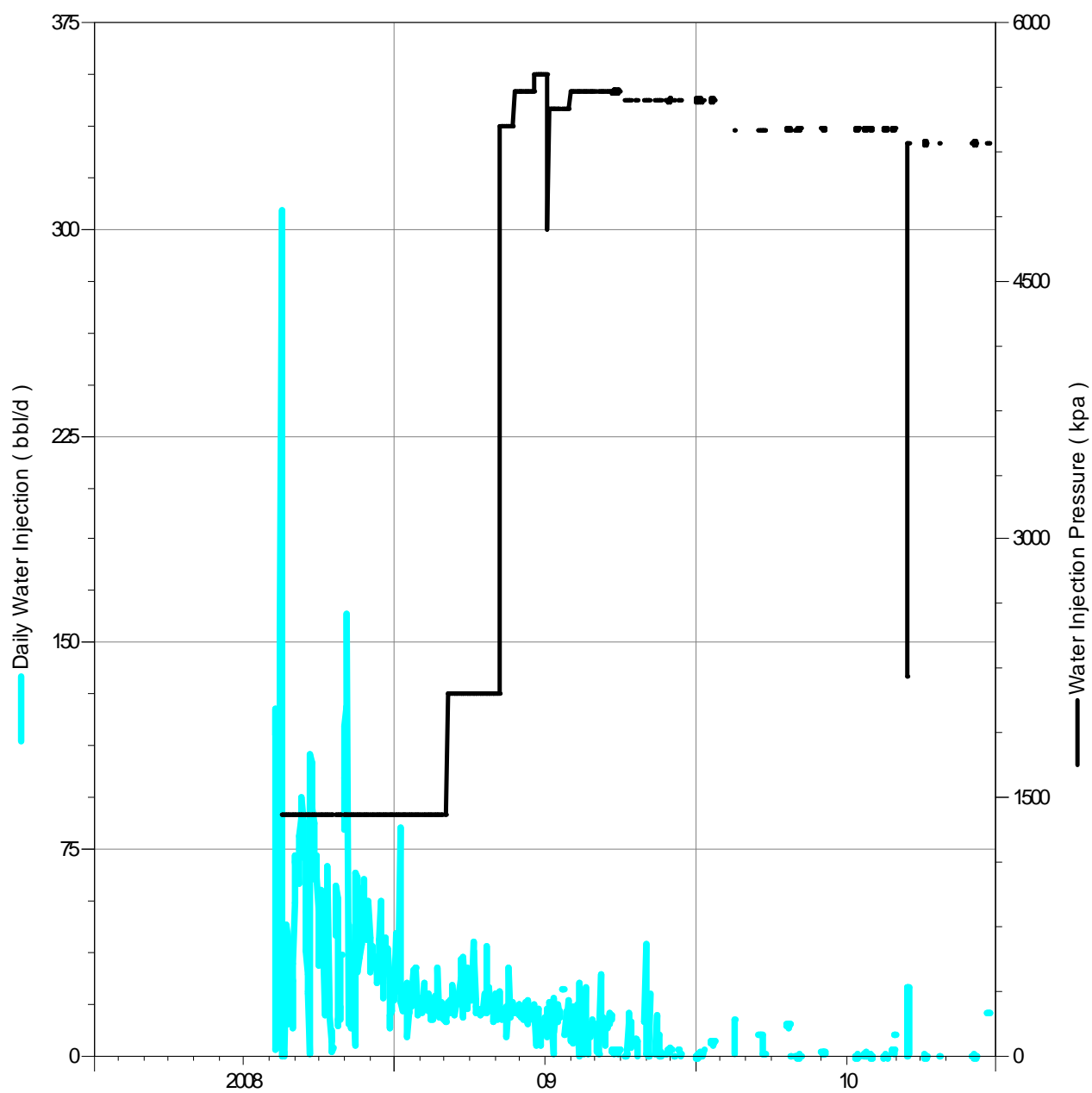


Figure E.5 – Stimulation Completed on Injecting Well

D0/16-05-002-29W1/0

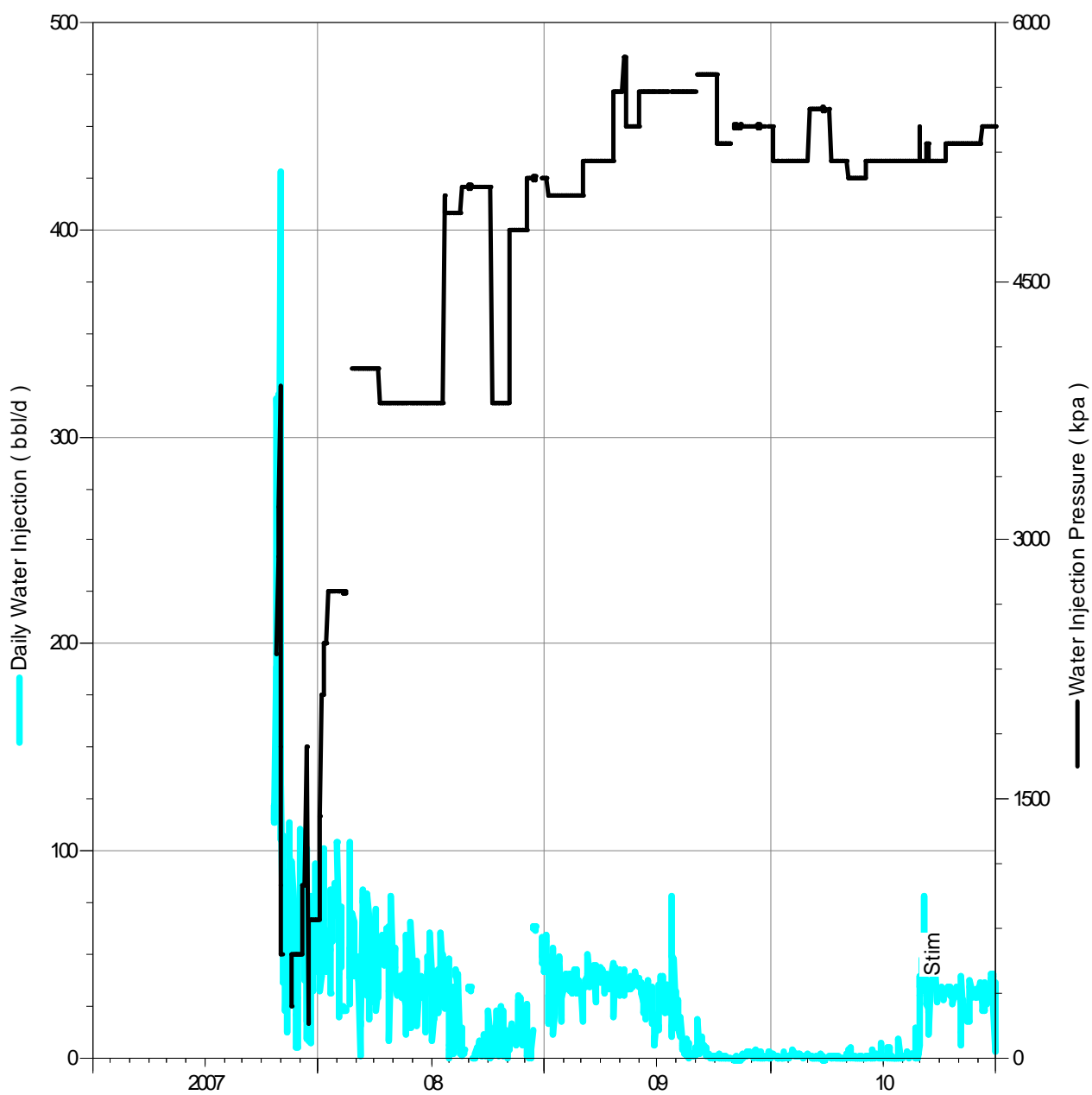


Figure E.6 – Stimulation Completed on Injection Well