APPENDIX 3D
GROUNDWATER MONITORING DATA

Summary of Groundwater Results 2020

Site	Water Level (mbgl)			pH			EC (uS/cm)		
	Min	Max	Ave	Min	Max	Ave	Min	Max	Ave
GWa1	4.97	5.02	5.00	0.00	0.00	0.00	0.00	0.00	
GWa2	1.33	5.42	2.32	6.80	6.90	6.82	916.00	1620.00	1371.60
GWa3	4.17	5.60	4.99	7.30	7.30	7.30	821.00	1160.00	
GWa4	4.91	5.17	5.04	7.20	7.30	0.00	0.00	0.00	0.00
GWa5	3.28	3.80	3.64	7.20	7.40	7.28	14600.00	17800.00	16450.00
GWa6	1.29	2.90	1.88	7.70	7.90	7.83	3060.00	10800.00	6436.00
GWa7	4.29	5.19	4.77	7.20	7.30	7.25	13500.00	13800.00	13650.00
GWa8	1.41	2.61	1.75	7.00	7.10	7.01	2450.00	2760.00	2632.73
GWa10	3.00	5.33	3.72	6.30	7.30	7.02	586.00	3430.00	1545.91
GWa11	3.47	4.74	3.78	7.40	7.60	7.51	1300.00	1520.00	1408.57
GWa12	3.05	5.80	3.80	7.60	8.10	7.83	394.00	1990.00	783.14
GWa14	1.72	4.96	2.61	7.60	7.70	0.00	907.00	1040.00	984.25
GWa15	2.50	4.02	2.77	7.00	7.00	7.00	1290.00	1780.00	1532.50
GWa16	1.40	4.05	2.41	0.00	0.00		15800.00	19400.00	17500.00
GWa32	1.72	2.72	1.95	7.10	7.40	7.29	3090.00	4780.00	3775.83
GWa34	3.89	4.80	4.41	3.80	5.70	4.63	748.00	4783.80	4783.80
GWa36	5.94	5.97	5.96	0.00	0.00		0.00	0.00	#DIV/0!
GWc1	10.64	21.11	12.58	7.00	7.30	7.11	2300.00	3960.00	2835.00
GWc2	13.34	21.19	16.74	7.10	7.20	7.16	1230.00	1390.00	1281.82
GWc3	13.97	16.46	15.24	7.00	7.00	7.00	4890.00	6000.00	5505.00
GWc4	15.19	16.42	15.88	6.50	6.80	6.70	2150.00	2460.00	2389.17
GWc5	5.71	6.74	6.32	6.60	6.90	6.71	5410.00	5630.00	5531.54
GWc10	5.74	11.60	7.45	6.90	7.30	7.10	3750.00	3910.00	3810.00
GWc11	13.95	22.68	17.18	6.20	6.60	6.42	2430.00	4280.00	3184.55
GWc12	21.74	39.59	29.33	7.00	7.50	7.24	1240.00	4740.00	3012.50
GWc14	21.29	37.13	28.41	7.10	7.50	7.33	1280.00	2060.00	1663.64
GWc15	22.31	32.91	27.46	7.10	7.20	7.14	1290.00	1780.00	1532.50
GWc16	30.39	32.36	31.54	7.20	7.30	7.26	1910.00	1990.00	1941.82
GWc17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GWc18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GWc19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GWc24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GWc25	32.44	35.27	34.05	6.80	6.90	6.85	2170.00	2190.00	2180.00
GWc26	43.01	44.91	43.76	7.00	7.50	7.28	1220.00	1350.00	1298.18
GWc27	16.62	16.62	16.62	4.80	5.90	5.23	16.62	16.62	16.62
GWc28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GWc29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GWc30	31.04	33.39	32.00	6.70	6.90	6.83	3070.00	3280.00	3126.67
GWc31	50.98	51.04	51.01	0.00	0.00		0.00	0.00	
GWc32	3.89	5.18	4.30	6.60	7.20	6.82	217.00	3590.00	2893.42
GWc33	40.54	49.57	42.60	12.10	12.40	12.28	2330.00	4450.00	3245.00
GWc34	20.26	20.51	20.35	7.20	7.20	7.20	4730.00	4730.00	4730.00
GWc35	49.95	49.95	49.95	0.00	0.00		0.00	0.00	
GWc36	15.31	18.67	16.49	6.00	6.50	6.34	3390.00	4160.00	3642.22

Summary of Groundwater Results 2019

Site	Water Level (mbgl)			pH			EC (uS/cm)		
	Min	Max	Ave	Min	Max	Ave	Min	Max	Ave
GWa1	4.97	4.97	4.97	0.00	0.00	0.00	0.00	0.00	0.00
GWa2	4.80	5.16	5.04	6.80	6.90	6.84	1390.00	1540.00	1482.73
GWa3	5.61	5.61	5.61	0.00	0.00	0.00	0.00	0.00	0.00
GWa4	5.12	5.17	5.15	0.00	0.00	0.00	0.00	0.00	0.00
GWa5	3.87	4.07	3.98	7.50	7.50	7.50	10900.00	11800.00	11225.00
GWa6	2.89	2.89	2.89	0.00	0.00	0.00	0.00	0.00	0.00
GWa7	5.19	5.19	5.19	0.00	0.00	0.00	0.00	0.00	0.00
GWa8	1.59	2.26	1.85	7.00	7.10	7.03	2220.00	2440.00	2355.00
GWa10	4.80	5.19	5.00	7.00	7.10	7.05	3260.00	3370.00	3340.83
GWa11	4.72	4.74	4.73	0.00	0.00	0.00	0.00	0.00	0.00
GWa12	5.80	5.80	5.80	0.00	0.00	0.00	0.00	0.00	0.00
GWa14	4.95	4.95	4.95	0.00	0.00	0.00	0.00	0.00	0.00
GWa15	3.80	3.88	3.84	0.00	0.00	0.00	0.00	0.00	0.00
GWa16	4.08	4.08	4.08	0.00	0.00	0.00	0.00	0.00	0.00
GWa32	1.92	2.54	2.13	7.20	7.50	7.29	3040.00	4070.00	3315.00
GWa34	4.51	4.73	4.63	4.30	4.90	4.60	6140.00	6298.33	6298.33
GWa36	5.94	5.94	5.94	0.00	0.00	0.00	0.00	0.00	#DIV/0!
GWc1	11.23	12.52	11.88	7.00	7.20	7.11	2740.00	3410.00	3010.00
GWc2	16.42	20.38	18.68	7.10	7.20	7.12	1190.00	1280.00	1249.17
GWc3	15.27	16.26	15.62	6.90	6.90	6.90	4380.00	4430.00	4413.33
GWc4	15.52	16.15	15.84	6.60	6.70	6.65	2340.00	2410.00	2374.17
GWc5	5.91	6.82	6.27	6.60	6.70	6.68	5310.00	5560.00	5447.50
GWc10	6.26	9.48	7.60	7.00	7.40	7.13	3750.00	3900.00	3835.00
GWc11	16.65	21.86	19.35	6.40	6.60	6.43	3760.00	4300.00	4160.00
GWc12	33.49	39.06	37.32	7.10	7.40	7.18	2040.00	4510.00	3645.00
GWc14	29.80	36.80	34.50	7.20	7.40	7.34	1110.00	1260.00	1180.00
GWc15	26.17	32.92	30.63	7.00	7.30	7.17	1570.00	1800.00	1702.50
GWc16	30.76	32.70	31.97	7.20	7.30	7.21	1870.00	2110.00	1935.83
GWc17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GWc18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GWc19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GWc24	23.62	26.28	24.91	4.60	4.80	4.73	3470.00	3620.00	3523.33
GWc25	29.66	48.31	32.94	6.80	7.00	6.87	1690.00	2140.00	1991.67
GWc26	40.81	42.52	41.85	7.10	7.30	7.15	1200.00	1270.00	1235.83
GWc27	16.14	16.57	16.44	4.90	5.80	5.34	16.14	16.57	16.44
GWc28	43.21	44.61	43.80	6.70	6.80	6.78	3210.00	3310.00	3280.00
GWc29	44.00	45.21	44.54	6.80	7.00	6.86	2250.00	2440.00	2360.00
GWc30	31.90	33.02	32.48	6.70	6.90	6.80	2920.00	3150.00	3033.33
GWc31	51.14	51.34	51.26	0.00	0.00	0.00	0.00	0.00	0.00
GWc32	4.43	4.89	4.59	6.60	6.80	6.69	3400.00	3550.00	3470.00
GWc33	40.45	42.75	41.42	12.30	12.50	12.41	4470.00	5010.00	4668.33
GWc34	20.26	20.50	20.36	7.10	7.20	7.15	4610.00	4760.00	4682.50
GWc35	47.73	48.17	47.90	7.00	7.20	7.08	1180.00	1220.00	1202.00
GWc36	16.37	17.77	17.26	6.10	6.30	6.23	4010.00	4350.00	4215.56

Summary of Groundwater Results 2018

Site	Water Level (mbgl)			pH			EC (uS/cm)		
	Min	Max	Ave	Min	Max	Ave	Min	Max	Ave
GWa1	4.95	4.97	4.96	0.00	0.00	0.00	0.00	0.00	0.00
GWa2	3.96	4.66	4.40	6.70	7.00	6.91	1310.00	1440.00	1395.00
GWa3	5.61	5.61	5.61	0.00	0.00	0.00	0.00	0.00	0.00
GWa4	4.87	5.17	4.97	0.00	0.00	0.00	0.00	0.00	0.00
GWa5	3.87	4.21	3.99	7.40	7.70	7.52	11700.00	14800.00	13360.00
GWa6	2.89	2.89	2.89	0.00	0.00	0.00	0.00	0.00	0.00
GWa7	4.61	5.20	4.97	7.10	7.10	7.10	10800.00	11000.00	10900.00
GWa8	1.56	2.34	1.87	6.90	7.10	7.03	2000.00	2580.00	2156.67
GWa10	4.39	4.64	4.55	6.90	7.20	7.07	3220.00	3400.00	3285.00
GWa11	3.42	4.20	3.68	7.50	7.80	7.69	1560.00	3570.00	2062.22
GWa12	5.39	5.80	5.70	0.00	0.00	0.00	0.00	0.00	0.00
GWa14	4.96	4.97	4.97	0.00	0.00	0.00	0.00	0.00	0.00
GWa15	3.57	3.66	3.62	0.00	0.00	0.00	0.00	0.00	0.00
GWa16	3.95	4.07	4.04	0.00	0.00	0.00	0.00	0.00	0.00
GWa32	1.91	3.16	2.40	7.10	7.40	7.24	3250.00	3800.00	3385.83
GWa34	4.49	4.55	4.53	4.30	4.90	4.57	5970.00	6060.83	6060.83
GWa36	5.84	5.94	5.92	0.00	0.00	0.00	0.00	0.00	0.00
GWc1	10.59	11.31	10.93	6.90	7.20	7.10	3410.00	3660.00	3535.83
GWc2	14.50	15.87	15.26	7.00	7.20	7.12	1210.00	1290.00	1249.17
GWc3	13.10	15.32	14.35	6.70	6.90	6.82	3840.00	4500.00	4133.33
GWc4	14.98	15.43	15.17	6.60	6.70	6.64	2300.00	2580.00	2385.00
GWc5	5.56	6.02	5.83	6.50	6.70	6.63	3570.00	5740.00	5221.67
GWc10	4.60	5.63	5.10	6.70	7.40	7.11	3660.00	3800.00	3726.36
GWc11	15.15	16.02	15.64	6.50	6.70	6.54	3300.00	3850.00	3615.00
GWc12	32.02	36.57	34.92	7.20	7.60	7.43	1270.00	1660.00	1425.00
GWc14	22.89	33.27	30.42	7.30	7.70	7.39	940.00	1160.00	1083.64
GWc15	22.60	29.37	26.91	6.60	7.10	6.88	1600.00	3260.00	2286.67
GWc16	25.61	29.79	27.73	7.10	7.40	7.20	1940.00	2520.00	2179.17
GWc17	42.76	43.81	43.37	6.90	7.10	6.97	1920.00	2800.00	2171.11
GWc18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GWc19	31.06	35.47	33.27	6.50	6.50	6.50	1860.00	1930.00	1895.00
GWc24	22.19	23.16	22.57	3.70	6.00	5.20	3450.00	3580.00	3530.00
GWc25	27.94	29.53	28.67	6.90	7.60	7.33	1550.00	1710.00	1653.33
GWc26	39.47	40.79	40.00	7.10	7.40	7.25	1240.00	1480.00	1333.33
GWc27	15.62	16.16	15.87	4.30	5.70	4.98	15.62	16.16	15.87
GWc28	39.16	44.77	41.81	6.70	6.80	6.78	3000.00	3540.00	3243.33
GWc29	39.91	45.01	42.21	6.80	7.10	6.93	2170.00	2580.00	2258.33
GWc30	31.09	33.25	32.21	6.70	7.00	6.80	2930.00	3100.00	3004.17
GWc31	50.61	51.29	51.03	6.80	6.80	6.80	4190.00	4190.00	4190.00
GWc32	4.06	4.36	4.24	6.50	6.80	6.68	3380.00	3650.00	3448.33
GWc33	39.39	42.22	40.62	12.40	12.60	12.48	5220.00	6950.00	6004.17
GWc34	20.31	20.70	20.48	7.00	7.10	7.08	4330.00	4700.00	4536.00
GWc35	42.06	47.37	44.13	6.90	7.40	7.10	538.00	1240.00	764.25
GWc36	15.13	15.89	15.67	6.30	6.50	6.41	3350.00	4150.00	3843.33

Summary of Groundwater Results 2017

Site	Water Level (mbgl)			pH			EC (uS/cm)		
	Min	Max	Ave	Min	Max	Max	Min	Max	Ave
GWa1	0.00	0.00	0.00	0.00	0.00	0.00	4.89	5.02	4.93
GWa2	2.58	3.70	3.33	6.50	6.60	6.53	1420.00	1690.00	1518.57
GWa3	4.10	4.51	4.31	7.20	7.30	7.22	1550.00	2000.00	1816.67
GWa4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GWa5	3.60	4.01	3.83	7.40	7.60	7.49	10400.00	15800.00	13296.36
GWa6	1.16	2.15	1.75	7.60	7.60	7.60	8210.00	13600.00	12101.67
GWa7	4.52	4.60	4.56	7.00	7.00	7.00	10400.00	10500.00	10450.00
GWa8	1.42	1.98	1.59	6.90	7.10	7.02	2330.00	2520.00	2430.00
GWa10	3.82	4.17	3.96	6.90	7.10	6.98	3320.00	3470.00	3399.17
GWa11	3.34	3.75	3.49	7.20	7.80	7.65	1450.00	1960.00	1707.50
GWa12	3.86	4.97	4.48	7.70	7.80	7.74	820.00	870.00	843.00
GWa14	4.97	31.45	18.21	0.00	0.00	0.00	0.00	0.00	0.00
GWa15	2.81	3.21	3.07	7.10	7.10	7.10	710.00	710.00	710.00
GWa16	3.47	3.52	3.50	7.30	7.40	7.35	18300.00	18500.00	18400.00
GWa22	-	-	-	-	-	-	-	-	-
GWa32	1.81	3.93	2.19	7.10	7.30	7.21	3480.00	4430.00	4062.50
GWa34	2.43	4.49	4.246818182	4.30	4.90	4.51	5190.00	6210.00	5843.333333
GWc1	9.51	10.20	9.77	7.00	7.30	7.15	2080.00	3540.00	2913.33
GWc2	12.85	14.43	13.80	7.00	7.20	7.11	1240.00	1300.00	1271.67
GWc3	9.27	11.46	10.21	6.80	6.90	6.81	3920.00	4410.00	4037.50
GWc4	14.55	14.85	14.69	6.60	6.70	6.65	2370.00	3110.00	2467.50
GWc5	5.71	6.33	6.00	6.50	6.70	6.61	5340.00	5620.00	5515.00
GWc10	1.84	3.93	2.44	6.50	7.00	6.79	3530.00	3710.00	3605.00
GWc11	14.19	14.59	14.37	6.50	6.60	6.55	3510.00	3710.00	3649.17
GWc12	30.04	34.60	32.61	7.10	7.50	7.28	1160.00	3580.00	1975.00
GWc14	26.33	31.45	29.27	7.30	7.40	7.34	1090.00	1120.00	1104.17
GWc15	2.81	3.21	3.07	7.10	7.10	7.10	710.00	710.00	710.00

Summary of Groundwater Results 2016

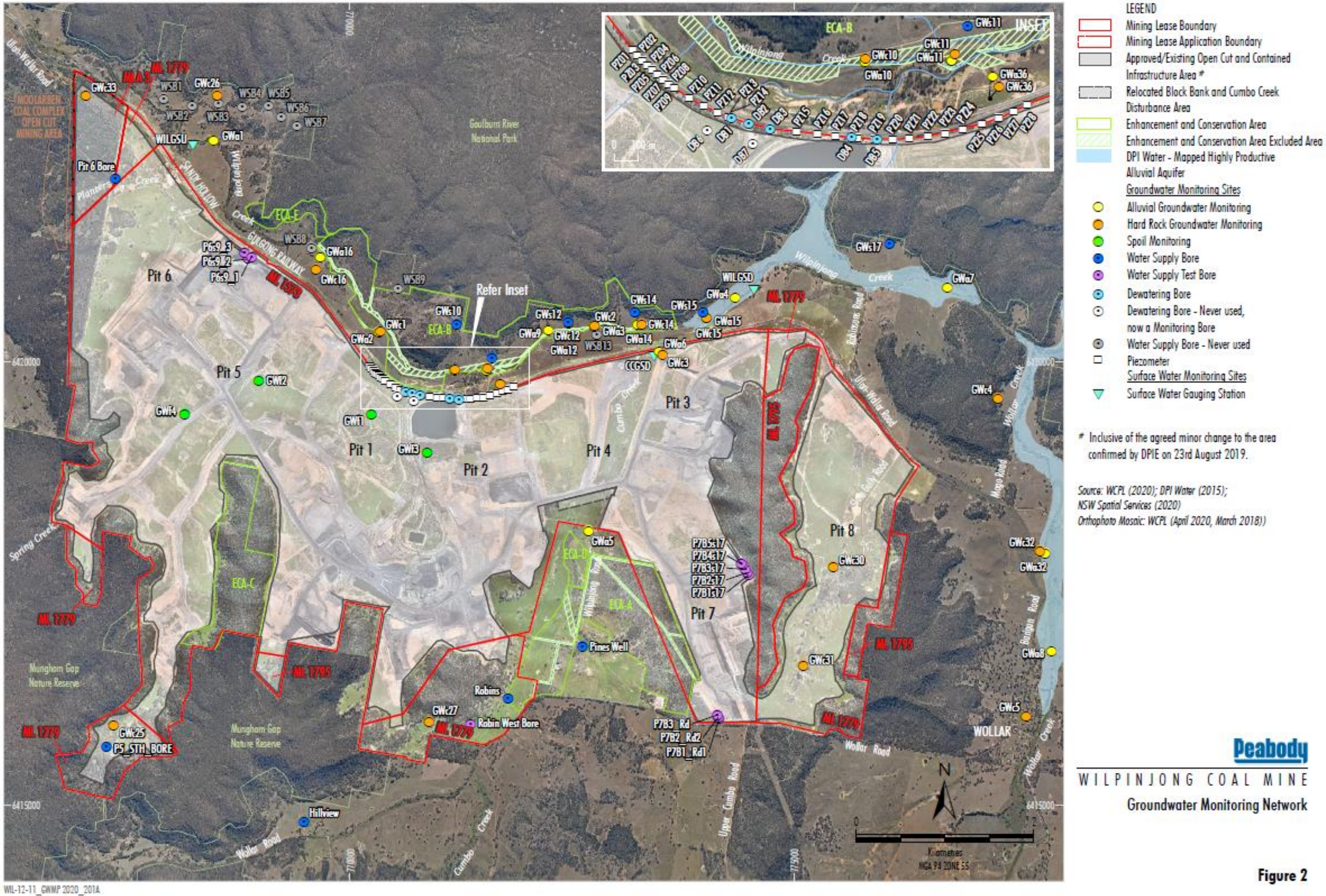
Site	Water Level (mbgl)			pH			EC (uS/cm)		
	Min	Max	Ave	Min	Max	Ave	Min	Max	Ave
GWa1	4.85	5.20	4.94	0.00	0.00	0.00	0.00	0.00	0.00
GWa2	1.37	4.27	3.09	6.60	7.00	6.76	1480.00	1910.00	1621.82
GWa3	3.62	5.12	4.22	7.00	7.40	7.17	500.00	2580.00	1281.43
GWa4	4.02	4.89	4.56	7.00	7.20	7.10	3040.00	3850.00	3546.67
GWa5	2.54	4.33	3.68	7.20	7.60	7.40	8920.00	14200.00	11310.91
GWa6	1.04	2.44	1.62	7.50	7.80	7.63	6640.00	13600.00	9832.00
GWa7	3.25	4.87	4.12	7.00	7.80	7.26	12.83	10800.00	5788.21
GWa8	1.10	2.28	1.59	6.80	7.20	7.03	2080.00	2520.00	2234.55
GWa10	3.03	3.99	3.62	6.80	7.30	6.98	2660.00	3590.00	3350.83
GWa11	3.16	3.62	3.40	7.40	7.70	7.53	1700.00	3070.00	2289.17
GWa12	3.28	5.54	3.93	7.60	7.70	7.63	890.00	1250.00	1030.00
GWa14	1.53	1.53	1.53	7.80	7.80	7.80	790.00	790.00	790.00
GWa15	2.48	3.73	3.41	7.20	7.60	7.38	290.00	2910.00	2354.00
GWa16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GWa22	3.87	3.92	3.90	6.90	7.10	7.00	5340.00	5470.00	5405.00

Site	Water Level (mbgl)			pH			EC (uS/cm)		
	Min	Max	Ave	Min	Max	Ave	Min	Max	Ave
GWa32	1.56	2.85	2.11	7.00	7.30	7.16	3740.00	5550.00	4255.00
GWa34	2.80	4.71	4.2275	4.10	6.50	5.25	190.00	6640.00	4740
GWc1	8.62	9.61	9.19	6.90	7.20	7.05	2050.00	3370.00	2762.73
GWc2	12.23	14.62	13.83	7.00	7.20	7.06	1240.00	1290.00	1260.91
GWc3	8.93	14.23	10.77	6.70	7.00	6.82	3810.00	4250.00	4044.55
GWc4	14.26	14.57	14.45	6.70	7.00	6.82	1980.00	2470.00	2348.00
GWc5	5.91	6.56	6.18	6.40	6.80	6.58	5480.00	5700.00	5582.73
GWc10	1.40	2.37	1.97	6.50	7.30	6.94	3580.00	4020.00	3847.50
GWc11	13.34	14.32	13.79	6.20	6.50	6.34	3470.00	3710.00	3573.33
GWc12	26.52	32.29	29.51	6.90	7.30	7.11	1180.00	4130.00	1842.73
GWc14	22.97	30.37	27.10	7.20	7.30	7.25	1080.00	1170.00	1107.27
GWc15	19.37	25.55	22.56	6.50	6.70	6.55	3180.00	3370.00	3266.36

Summary of Groundwater Results 2015

Site	Water Level (mbgl)			pH			EC (uS/cm)		
	Min	Max	Ave	Min	Max	Ave	Min	Max	Ave
GWa1	4.94	5.21	5.05	0.00	0.00	-	0.00	0.00	-
GWa2	3.78	4.20	4.01	6.70	6.90	6.81	1400.00	1510.00	1431.67
GWa3	4.88	5.45	5.22	6.90	7.20	7.03	2120.00	2640.00	2396.67
GWa4	3.80	13.67	5.08	6.50	7.20	6.92	2350.00	5260.00	4381.11
GWa5	3.24	4.19	3.67	7.00	7.50	7.23	9950.00	11070.00	10511.67
GWa6	2.47	2.79	2.72	7.50	7.60	7.55	8370.00	8830.00	8600.00
GWa7	4.66	5.21	4.95	7.00	7.30	7.05	12330.00	15270.00	13656.00
GWa8	1.42	2.25	1.72	6.80	7.10	6.95	2060.00	2290.00	2174.17
GWa10	3.43	4.18	3.87	6.80	7.00	6.90	3470.00	3840.00	3575.83
GWa11	3.16	4.07	3.57	7.40	7.70	7.53	2060.00	3920.00	2789.17
GWa12	5.04	5.85	5.62	0.00	0.00	-	0.00	0.00	0.00
GWa14	4.54	5.01	4.85	0.00	0.00	-	0.00	0.00	-
GWa15	3.54	3.69	3.62	7.20	7.40	7.30	2860.00	2960.00	2934.00
GWc1	9.62	10.12	9.85	6.90	7.10	7.03	2200.00	3320.00	2682.50
GWc2	12.47	14.51	13.61	7.00	7.30	7.13	1180.00	1300.00	1240.83
GWc3	9.88	10.73	10.27	6.70	6.80	6.74	4190.00	4630.00	4511.67
GWc4	13.23	14.09	13.83	6.40	6.70	6.56	2240.00	2480.00	2380.83
GWc5	5.81	6.47	6.08	6.40	6.70	6.56	5520.00	5770.00	5659.17
GWc10	2.66	5.04	3.98	6.90	7.50	7.22	3730.00	4020.00	3910.83
GWc11	13.49	14.80	14.20	6.10	6.40	6.23	3670.00	3820.00	3761.67
GWc12	24.28	32.33	27.79	7.10	7.60	7.24	1400.00	1700.00	1568.33
GWc14	19.64	29.58	24.56	7.20	7.40	7.26	1120.00	1170.00	1148.33
GWc15	15.32	23.11	19.53	6.50	6.70	6.55	3270.00	3370.00	3321.67

Groundwater Monitoring Locations



2020 Groundwater Monitoring Data

Sample Num	Sample Location	Sampling Date	Sampling Time	Aluminium mg/L	Arsenic mg/L	Barium mg/L	Bicarbonate Alkalinity as CaCO3 mg/L	Calcium - Dissolved mg/L	Carbonate Alkalinity as CaCO3 mg/L	Chloride mg/L	Copper mg/L	Depth to Standpipe m	Depth of Dry Bore to Standpipe m	Electrical Conductivity @ 25°C µS/cm (Field)	Hydroxide Alkalinity as CaCO3 mg/L	Ionic Balance %	Iron mg/L	Lead mg/L	Magnesium - Dissolved mg/L	Manganese mg/L	Molybdenum mg/L	Nickel mg/L	No Sample	pH - pH Unit (Field)	Potassium - Dissolved mg/L	Selenium mg/L	Sodium - Dissolved mg/L	Strontium mg/L	Sulfate mg/L	Temperature °C	Temperature - Client Supplied °C	Total Alkalinity as CaCO3 mg/L	Total Anions meq/L	Total Cations meq/L	Total Dissolved Solids @180°C - Dissolved mg/L	Turbidity NTU	Zinc mg/L
ME2000052002	GWA2	15-Jan-2020	1018																																		
ME2000052003	GWA3	15-Jan-2020	1248																																		
ME2000052004	GWA4	15-Jan-2020	1513																																		
ME2000052005	GWA5	17-Jan-2020	1249																																		
ME2000052006	GWA6	15-Jan-2020	1542																																		
ME2000052007	GWA7	10-Jan-2020	1327																																		
ME2000052008	GWA8	15-Jan-2020	1652																																		
ME2000052009	GWC1	15-Jan-2020	1025	0.1	<0.001	0.068	458	122	<1	497	0.008				3160	<1	0.42	1.16	<0.001	86	0.118	<0.001	0.004		7.2	30	<0.01	478	1.14	569	21		458	35	34.7		
ME2000052010	GWC2	15-Jan-2020	1239																																		
ME2000052011	GWC3	15-Jan-2020	1532																																		
ME2000052012	GWC4	15-Jan-2020	1624	0.06	<0.001	0.066	588	188	<1	360	0.003				2460	<1	1.06	3.01	<0.001	88	0.043	<0.001	0.002		6.5	50	<0.01	221	2.01	298	22		588	28.1	27.5		
ME2000052013	GWC5	15-Jan-2020	1712	0.02	<0.001	0.232	2220	295	<1	541	0.004				5630	<1	1.52	0.18	0.001	159	1.38	<0.001	0.029		6.6	88	<0.01	894	7.82	349	19.5		2220	66.9	68.9		
ME2000052014	GWA10	15-Jan-2020	1120																																		
ME2000052015	GWC10	15-Jan-2020	1134	0.4	<0.001	0.038	395	233	<1	470	0.126				3910	<1	6.12	1.62	0.002	133	0.187	<0.001	0.019		6.9	32	<0.01	519	2.08	1480	22		395	52	46		
ME2000052016	GWA11	15-Jan-2020	1159																																		
ME2000052017	GWC11	15-Jan-2020	1204																																		
ME2000052018	GWA12	15-Jan-2020	1304																																		
ME2000052019	GWC12	15-Jan-2020	1310	0.33	<0.001	0.137	1230	89	<1	287	0.005				4740	<1	1.12	1.55	0.001	35	0.121	<0.001	0.006		7	37	<0.01	1030	1.21	923	24		1230	51.9	53.1		
ME2000052020	GWA14	15-Jan-2020	1350																																		
ME2000052021	GWC14	15-Jan-2020	1402																																		

ME2000052022	GWA15	15-Jan-2020	1430																																		
ME2000052023	GWC15	15-Jan-2020	1442	0.12	<0.001	0.26	552	68	<1	211	0.005				1710	<1	3.09	1.51	0.001	31	0.056	<0.001	0.002		7.1	22	<0.01	284	0.696	36	21.5		552	17.7	18.9		
ME2000052024	GWC25	16-Jan-2020	1340																																		
ME2000052025	GWC35	16-Jan-2020	1251																																		
ME2000052026	GWC33	16-Jan-2020	1507	0.59	<0.001	0.174	<1	341	104	76	0.004				4400	708	1.3	0.14	0.002	<1	0.017	<0.001	0.002		12.4	17	<0.01	43	0.219	21	21.5		813	18.8	19.3		
ME2000052027	GWC26	17-Jan-2020	1145	0.09	<0.001	0.196	421	38	77	160	0.024				1310	<1	6.45	0.82	0.002	26	0.069	<0.001	0.004		7.2	18	<0.01	204	0.408	36	21		498	15.2	13.4		
ME2000052028	GWC16	09-Jan-2020	1210																																		
ME2000052029	GWA16	09-Jan-2020	1320																																		
ME2000052030	GWC30	09-Jan-2020	1500	0.03	<0.001	0.053	558	224	<1	638	0.004				3220	<1	0.8	2.87	<0.001	173	0.147	<0.001	0.009		6.9	48	<0.01	192	2.37	308	23.5		558	35.6	35		
ME2000052031	GWC31	09-Jan-2020	1810																																		
ME2000052032	GWC24	17-Jan-2020	1227																																		
ME2000052033	GWC27	17-Jan-2020	1318	0.57	0.003	0.057	27	32	<1	376	0.072				1660	<1	8.57	10.7	0.014	40	3.44	<0.001	0.085		5	35	<0.01	211	0.153	318	20		27	17.8	15		
ME2000052034	GWC32	09-Jan-2020	1600	0.04	<0.001	0.03	1300	145	<1	347	0.021				3590	<1	1.79	1.35	0.001	120	0.065	0.001	0.03		6.6	47	<0.01	568	4.42	276	20.5		1300	41.5	43		
ME2000052035	GWA32	09-Jan-2020	1642	<0.01	<0.001	0.036	358	128	<1	523	0.016				3130	<1	0.1	0.06	<0.001	148	0.27	0.002	0.002		7.1	20	<0.01	326	1.8	542	21.5		358	33.2	33.2		
ME2000052036	GWA34	09-Jan-2020	1725																																		
ME2000052037	GWC34	09-Jan-2020	1710																																		
ME2000052038	GWA36	09-Jan-2020	1345																																		
ME2000052039	GWC36	09-Jan-2020	1350																																		
ME2000052040	PZ13	16-Jan-2020	1547																																		
ME2000052041	PZ20	16-Jan-2020	1200																																		
ME2000052042	PZ21	16-Jan-2020	1205																																		
ME2000052043	PZ26	16-Jan-2020	1156																																		
ME2000052044	GWF1	10-Jan-2020	1500																																		
ME2000052045	GWF2	10-Jan-2020	1358																																		
ME2000052046	GWF3	10-Jan-2020	1358																																		
ME2000052047	GWF4	10-Jan-2020	1358																																		

ME2000053001	GWA1	09-Jan-2020	1145										4.973																								
ME2000053002	GWA2	15-Jan-2020	1018										5.22																								
ME2000053003	GWA3	15-Jan-2020	1248										5.6																								
ME2000053004	GWA4	15-Jan-2020	1513										5.17																								
ME2000053005	GWA5	17-Jan-2020	1249										3.8																								
ME2000053006	GWA6	15-Jan-2020	1542										2.9																								
ME2000053007	GWA7	10-Jan-2020	1327										5.12																								
ME2000053008	GWA8	15-Jan-2020	1656										2.475																								
ME2000053009	GWC1	15-Jan-2020	1025											13.75																							
ME2000053010	GWC2	15-Jan-2020	1239										20.7																								
ME2000053011	GWC3	15-Jan-2020	1532										16.46																								
ME2000053012	GWC4	15-Jan-2020	1624											16.18																							
ME2000053013	GWC5	15-Jan-2020	1712											7.35																							
ME2000053014	GWA10	15-Jan-2020	1155										5.25																								
ME2000053015	GWC10	15-Jan-2020	1148											10.98																							
ME2000053016	GWA11	15-Jan-2020	1159										4.74																								
ME2000053017	GWC11	15-Jan-2020	1158										22.31																								
ME2000053018	GWA12	15-Jan-2020	1304										5.8																								
ME2000053019	GWC12	15-Jan-2020	1318											39.44																							
ME2000053020	GWA14	15-Jan-2020	1350										4.955																								
ME2000053021	GWC14	15-Jan-2020	1407										37.125																								
ME2000053022	GWA15	15-Jan-2020	1430										4.02																								
ME2000053023	GWC15	15-Jan-2020	1446											33																							
ME2000053024	GWC25	16-Jan-2020	1349										33.28																								
ME2000053025	GWC35	16-Jan-2020	1251										49.95																								
ME2000053026	GWC33	16-Jan-2020	1508											41.4																							

ME2000053027	GWC26	17-Jan-2020	1134											43.05																							
ME2000053028	GWC16	09-Jan-2020	1235										32.355																								
ME2000053029	GWA16	09-Jan-2020	1320										4.05																								
ME2000053030	GWC30	09-Jan-2020	1436											33.09																							
ME2000053031	GWC31	09-Jan-2020	1815										50.98																								
ME2000053032	GWC24	17-Jan-2020	1227										23.45																								
ME2000053033	GWC27	17-Jan-2020	1324											16.48																							
ME2000053034	GWC32	09-Jan-2020	1555											5.035																							
ME2000053035	GWA32	09-Jan-2020	1632											2.65																							
ME2000053036	GWA34	09-Jan-2020	1738										4.76																								
ME2000053037	GWC34	09-Jan-2020	1710										20.505																								
ME2000053038	GWA36	09-Jan-2020	1345										5.94																								
ME2000053039	GWC36	09-Jan-2020	1350										18.67																								
ME2000053040	PZ13	16-Jan-2020	1547										2.33																								
ME2000053041	PZ20	16-Jan-2020	1200										4.16																								
ME2000053042	PZ21	16-Jan-2020	1205										3.95																								
ME2000053043	PZ26	16-Jan-2020	1156										4.4																								
ME2000053044	GWF1	10-Jan-2020	1500																																		
ME2000053045	GWF2	10-Jan-2020	1427																																		
ME2000053046	GWF3	10-Jan-2020	1427																																		
ME2000053047	GWF4	10-Jan-2020	1427																																		
ME2000053048	Barologger Office	17-Jan-2020	1042																																		
ME2000189001	GWA1	05-Feb-2020	1208																																		
ME2000189002	GWA2	13-Feb-2020	1154																																		
ME2000189003	GWA3	13-Feb-2020	1222																																		
ME2000189004	GWA4	07-Feb-2020	1415																																		

ME2000189005	GWA5	18-Feb-2020	1458																																		
ME2000189006	GWA6	13-Feb-2020	1305																																		
ME2000189007	GWA7	13-Feb-2020	1323																																		
ME2000189008	GWA8	13-Feb-2020	1442	5.11	0.003	0.263	250	115	<1	393	0.012				2450	<1	3.39	11	0.009	115	26.4	0.001	0.025		7	13	<0.01	237	1.58	556	22		250	27.6	25.8		
ME2000189009	GWC2	13-Feb-2020	1205	4.97	0.001	0.608	510	36	<1	114	0.016				1260	<1	13.7	9.93	0.008	26	0.187	<0.001	0.026		7.1	26	<0.01	162	0.676	93	21		510	15.3	11.6		
ME2000189010	GWC1	13-Feb-2020	1234	0.18	0.002	0.067	505	84	<1	405	0.004				3230	<1	3.58	2.76	<0.001	80	0.186	<0.001	0.004		7.3	31	<0.01	503	1.46	462	20.5		505	31.1	33.4		
ME2000189011	GWC3	13-Feb-2020	1255																																		
ME2000189012	GWC4	13-Feb-2020	1421	0.55	<0.001	0.08	604	134	<1	290	0.013				2150	<1	4.62	4.31	0.008	70	0.082	<0.001	0.006		6.8	67	<0.01	194	1.92	218	23		604	24.8	22.6		
ME2000189013	GWC5	13-Feb-2020	1459	0.07	<0.001	0.222	2220	173	<1	451	0.004				5490	<1	8.27	0.38	0.002	150	1.85	<0.001	0.031		6.7	86	<0.01	913	9.51	824	20		2220	74.2	62.9		
ME2000189014	GWA10	07-Feb-2020	1059	12.7	0.019	0.145	467	116	<1	729	0.244				3430	<1	1.34	22	0.047	124	2.52	<0.001	0.112		7	2	<0.01	454	1.46	330	21		467	36.8	35.8		
ME2000189015	GWC10	07-Feb-2020	1123	0.96	<0.001	0.051	420	214	<1	448	0.139				3830	<1	4.96	3.31	0.003	123	0.208	<0.001	0.017		7.1	33	<0.01	513	2.54	902	20		420	39.8	44		
ME2000189016	GWA11	07-Feb-2020	1132																																		
ME2000189017	GWC11	07-Feb-2020	1152	4.96	0.005	0.043	264	187	<1	393	0.058				4270	<1	0.8	40.9	0.024	198	2.3	0.003	0.035		6.6	40	<0.01	544	2.02	1670	21		264	51.1	50.3		
ME2000189018	GWA12	07-Feb-2020	1210																																		
ME2000189019	GWC12	07-Feb-2020	1234	0.82	<0.001	0.214	1300	73	<1	275	0.01				4610	<1	3.62	3.14	0.002	34	0.155	<0.001	0.008		7.1	38	<0.01	1040	1.5	732	22		1300	49	52.6		
ME2000189020	GWA14	07-Feb-2020	1257																																		
ME2000189021	GWC14	07-Feb-2020	1327	3.04	<0.001	5.34	635	45	<1	117	0.023				1470	<1	1.89	4.15	0.006	23	0.08	<0.001	0.016		7.5	20	<0.01	259	0.862	26	21.5		635	16.5	15.9		
ME2000189022	GWA15	07-Feb-2020	1343																																		
ME2000189023	GWC15	07-Feb-2020	1405	0.62	<0.001	0.578	611	53	<1	195	0.019				1680	<1	2.06	3.22	0.006	27	0.12	<0.001	0.01		7.2	23	<0.01	280	0.846	32	21		611	18.4	17.6	968	0.054
ME2000189024	GWC25	24-Feb-2020	1105																																		
ME2000189025	GWC35	24-Feb-2020	1046																																		
ME2000189026	GWC33	05-Feb-2020	1126	3.19	<0.001	0.27	<1	329	30	86	0.018				4450	718	3.15	0.49	0.002	<1	0.03	<0.001	0.004		12.4	18	<0.01	45	0.252	15	21.5		748	17.7	18.8	1080	0.042
ME2000189027	GWC26	05-Feb-2020	1158	0.22	<0.001	0.17	399	50	121	146	0.027				1330	<1	2.73	0.45	<0.001	25	0.049	<0.001	0.007		7.2	18	<0.01	216	0.412	34	20.5		520	15.2	14.4	829	0.024
ME2000189028	GWC16	05-Feb-2020	1233	3.96	<0.001	0.137	658	46	25	240	0.005				1920	<1	2.58	4.39	0.009	26	0.087	<0.001	0.003		7.3	21	<0.01	351	0.576	43	21		683	21.3	20.2	1070	0.024
ME2000189029	GWA16	05-Feb-2020	1241																																		
ME2000189030	GWC30	05-Feb-2020	1347	0.17	<0.001	0.085	644	222	<1	605	0.006				3150	<1	3.29	3.84	0.001	161	0.154	<0.001	0.011		6.8	49	<0.01	192	2.89	303	20.5		644	36.2	33.9	1990	0.027

1870 0

ME2000189031	GWC31	06-Feb-2020	1310																																				
ME2000189032	GWC24	06-Feb-2020	1330																																				
ME2000189033	GWC27	06-Feb-2020	1414	0.97	0.004	0.064	7	26	<1	352	0.042				1610	<1	4.59	9.33	0.02	35	3.84	<0.001	0.079		4.8	35	<0.01	212	0.178	269	18.5		7	15.7	14.3	1060	0.669	1390	0
ME2000189034	GWC32	05-Feb-2020	1437	0.09	<0.001	0.052	1450	142	<1	330	0.036				3500	<1	2.44	1.66	0.002	111	0.073	0.001	0.031		6.7	47	<0.01	562	5.46	273	19		1450	44	41.9	2240	0.024	3270	0
ME2000189035	GWA32	05-Feb-2020	1413	0.03	<0.001	0.046	385	113	<1	494	0.024				3090	<1	1.57	0.1	<0.001	142	0.43	0.003	0.004		7.4	22	<0.01	347	2.14	596	21		385	34	33	2310	0.023		
ME2000189036	GWA34	06-Feb-2020	1230	27.7	0.003	0.028	4	474	<1	364	0.36				6450	<1	0.7	129	0.008	566	17.7	<0.001	1.04		5	6	0.01	424	1.05	3830	20.5		4	90.1	88.8	6380	3.29	2290	0
ME2000189037	GWC34	06-Feb-2020	1246	0.52	0.002	0.087	1810	34	<1	243	0.037				4730	<1	0.1	2.3	0.012	77	0.158	0.002	0.144		7.2	21	0.01	1030	7.59	492	20		1810	53.3	53.4	2620	0.07		
ME2000189038	GWA36	05-Feb-2020	1252																																				
ME2000189039	GWC36	05-Feb-2020	1257																																				
ME2000189040	PZ13	13-Feb-2020	1135																																			2600	0
ME2000189041	PZ20	24-Feb-2020	1257	0.72	0.001	0.025	193	30	<1	47	0.008				812	<1	0.66	0.55	0.002	25	0.096	0.002	0.009		7.6	16	<0.01	94	0.273	143	24		193	8.16	8.05	505	0.012		
ME2000189042	PZ21	24-Feb-2020	1243	2.28	0.002	0.054	398	59	<1	163	0.007				1900	<1	1.96	2.41	0.003	41	0.503	0.002	0.01		7.7	13	<0.01	304	0.622	390	23.5		398	20.7	19.9	1220	0.028		
ME2000189043	PZ26	24-Feb-2020	1335																																				
ME2000189044	GWF1	13-Feb-2020	1027																																			963	0
ME2000189045	GWF2	13-Feb-2020	1052																																				
ME2000189046	GWF3	24-Feb-2020	1133	2.9	0.004	0.355	201	160	<1	1680	0.036				6320	<1	1.58	22.6	0.011	196	1.81	0.011	0.038		6.4	32	<0.01	787	1.61	284	22.5		201	57.3	59.2	3610	0.102		
ME2000189047	GWF4	24-Feb-2020	1212																																			950	0
ME2000190001	GWA1	05-Feb-2020	1208											5.12																								746	0
ME2000190002	GWA2	13-Feb-2020	1150											5.37																									
ME2000190003	GWA3	13-Feb-2020	1222											5.61																									
ME2000190004	GWA4	07-Feb-2020	1415											5.17																								2210	0
ME2000190005	GWA5	18-Feb-2020	1455											4.12																									
ME2000190006	GWA6	13-Feb-2020	1302											2.15																									
ME2000190007	GWA7	13-Feb-2020	1323											5.19																								876	0
ME2000190008	GWA8	13-Feb-2020	1436										2.605																									2320	0
ME2000190009	GWC1	13-Feb-2020	1158										21.11																									2280	0

ME2000190010	GWC2	13-Feb-2020	1225										13.335																								
ME2000190011	GWC3	13-Feb-2020	1255											16.5																							
ME2000190012	GWC4	13-Feb-2020	1350										16.24																								
ME2000190013	GWC5	13-Feb-2020	1453										6.74																								
ME2000190014	GWA10	07-Feb-2020	1050										5.33																								
ME2000190015	GWC10	07-Feb-2020	1110										11.6																								
ME2000190016	GWA11	07-Feb-2020	1131											4.74																							
ME2000190017	GWC11	07-Feb-2020	1140										22.68																								
ME2000190018	GWA12	07-Feb-2020	1210											5.8																							
ME2000190019	GWC12	07-Feb-2020	1219										39.59																								
ME2000190020	GWA14	07-Feb-2020	1257											4.96																							
ME2000190021	GWC14	07-Feb-2020	1332										37.12																								
ME2000190022	GWA15	07-Feb-2020	1343											4.02																							
ME2000190023	GWC15	07-Feb-2020	1350										32.905																								
ME2000190024	GWC25	24-Feb-2020	1105																																		
ME2000190025	GWC35	24-Feb-2020	1046											49.92																							
ME2000190026	GWC33	05-Feb-2020	1109										49.57																								
ME2000190027	GWC26	05-Feb-2020	1147										43.29																								
ME2000190028	GWC16	05-Feb-2020	1222										32.36																								
ME2000190029	GWA16	05-Feb-2020	1241											4.08																							
ME2000190030	GWC30	05-Feb-2020	1335										33.39																								
ME2000190031	GWC31	06-Feb-2020	1310											50.86																							
ME2000190032	GWC24	06-Feb-2020	1330											26.42																							
ME2000190033	GWC27	06-Feb-2020	1402										16.62																								
ME2000190034	GWC32	05-Feb-2020	1425										5.18																								
ME2000190035	GWA32	05-Feb-2020	1407										2.72																								

ME2000190036	GWA34	06-Feb-2020	1215										4.795																								
ME2000190037	GWC34	06-Feb-2020	1238										20.26																								
ME2000190038	GWA36	05-Feb-2020	1252											5.97																							
ME2000190039	GWC36	05-Feb-2020	1257											18.69																							
ME2000190040	PZ13	13-Feb-2020	1135											2.24																							
ME2000190041	PZ20	24-Feb-2020	1249										2.13																								
ME2000190042	PZ21	24-Feb-2020	1224										2.31																								
ME2000190043	PZ26	24-Feb-2020	1335											4.39																							
ME2000190044	GWF1	13-Feb-2020	1027											16.97																							
ME2000190045	GWF2	13-Feb-2020	1052											23.98																							
ME2000190046	GWF3	24-Feb-2020	1121										20.84																								
ME2000190047	GWF4	24-Feb-2020	1212											12.95																							
ME2000190048	Barologger Office	24-Feb-2020	1038																																		
ME2000401001	GWA1	11-Mar-2020	1307																																		
ME2000401002	GWA2	26-Mar-2020	1058	2.64	0.035	0.408	155	34	<1	338	0.05				1620	<1	4.3	103	0.017	52	3.81	<0.001	0.021		6.8	8	0.03	217	0.596	211	20.5		155	17	15.6	1280	0.056
ME2000401003	GWA3	26-Mar-2020	1323																																		
ME2000401004	GWA4	17-Mar-2020	1140																																		
ME2000401005	GWA5	19-Mar-2020	1451																																		
ME2000401006	GWA6	26-Mar-2020	1432																																		
ME2000401007	GWA7	17-Mar-2020	1203																																		
ME2000401008	GWA8	17-Mar-2020	1421	2.88	0.002	0.105	278	130	<1	457	0.018				2620	<1	7.03	6.4	0.008	123	28.7	<0.001	0.025		7	17	<0.01	221	1.94	588	21		278	30.7	26.6	1830	0.026
ME2000401009	GWC1	26-Mar-2020	1115	0.03	<0.001	0.038	584	136	<1	361	0.001				3780	<1	2.64	3.78	<0.001	105	0.354	<0.001	0.002		7	38	<0.01	608	1.54	1120	19		584	45.2	42.8	2870	<0.005
ME2000401010	GWC2	26-Mar-2020	1343	3	0.001	0.554	564	47	<1	113	0.015				1290	<1	8.45	6.7	0.008	32	0.249	<0.001	0.024		7.1	28	<0.01	165	0.673	38	19.5		564	15.2	12.9	744	0.011
ME2000401011	GWC3	26-Mar-2020	1416																																		
ME2000401012	GWC4	17-Mar-2020	1250	0.32	<0.001	0.062	662	163	<1	366	0.008				2400	<1	8.64	2.75	0.003	76	0.055	<0.001	0.004		6.7	57	<0.01	192	2.54	251	20.5		662	28.8	24.2	1450	0.025
ME2000401013	GWC5	17-Mar-2020	1437	0.05	<0.001	0.201	2690	262	<1	561	0.002				5570	<1	7.27	0.25	0.002	149	1.77	<0.001	0.034		6.9	87	<0.01	876	10.6	307	19		2690	76	65.7	3450	0.019

ME2000401014	GWA10	20-Mar-2020	1105	3.52	0.008	0.066	468	120	<1	777	0.058				3390	<1	8.8	6.84	0.006	118	1.91	<0.001	0.045		7	2	<0.01	391	1.5	375	22		468	39.1	32.8	2080	0.018		
ME2000401015	GWC10	20-Mar-2020	1147	0.11	<0.001	0.043	468	202	<1	489	0.097				3790	<1	7.69	0.66	<0.001	111	0.183	<0.001	0.034		7	41	<0.01	458	2.83	1140	20.5		468	46.9	40.2	2730	0.009		
ME2000401016	GWA11	20-Mar-2020	1204																																				
ME2000401017	GWC11	20-Mar-2020	1244	0.27	<0.001	0.018	257	185	<1	416	0.003				4280	<1	6.25	13.1	0.001	196	2.43	0.006	0.015		6.3	52	<0.01	493	2.15	1810	23		257	54.6	48.1	3580	0.054		
ME2000401018	GWA12	20-Mar-2020	1314																																				
ME2000401019	GWC12	20-Mar-2020	1349	0.17	<0.001	0.149	1440	74	<1	292	0.004				4620	<1	7.47	0.72	<0.001	30	0.074	<0.001	0.004		7	52	<0.01	916	1.65	863	24		1440	55	47.3	3080	<0.005		
ME2000401020	GWA14	20-Mar-2020	1409																																				
ME2000401021	GWC14	20-Mar-2020	1455	0.42	<0.001	1.62	873	62	<1	166	0.014				2060	<1	8.27	1.43	0.003	28	0.14	0.003	0.013		7.2	31	<0.01	332	1.18	107	22		873	24.4	20.6	1260	0.015		
ME2000401022	GWA15	26-Mar-2020	1205																																				
ME2000401023	GWC15	26-Mar-2020	1239	0.02	<0.001	0.143	618	59	<1	198	0.008				1720	<1	1.2	0.92	<0.001	30	0.052	<0.001	<0.001		7.1	23	0.01	294	0.679	63	20		618	19.2	18.8	934	<0.005		
ME2000401024	GWC25	25-Mar-2020																																					
ME2000401025	GWC35	25-Mar-2020																																					
ME2000401026	GWC33	11-Mar-2020	1127	1.41	<0.001	0.213	<1	344	38	129	0.008				4270	712	1.68	0.2	0.001	<1	0.013	<0.001	0.003		12.3	18	<0.01	47	0.242	19	21		750	19	19.7	1240	0.015		
ME2000401027	GWC26	11-Mar-2020	1246	1	<0.001	0.286	399	46	43	166	0.02				1340	<1	0.47	2.52	0.01	24	0.118	<0.001	0.011		7.2	18	<0.01	217	0.442	38	20		442	14.3	14.2	689	0.052		
ME2000401028	GWC16	17-Mar-2020	1054	3.65	<0.001	0.144	723	56	<1	252	0.008				1910	<1	6.61	4.04	0.011	27	0.095	<0.001	0.004		7.2	20	<0.01	333	0.57	62	20.5		723	22.8	20	1210	0.022		
ME2000401029	GWA16	17-Mar-2020	1105																																			1550	0
ME2000401030	GWC30	13-Mar-2020	1331	0.58	<0.001	0.194	568	212	<1	612	0.018				3110	<1	5.07	5.05	0.006	150	0.191	<0.001	0.02		6.9	57	<0.01	170	3.14	315	20.5		568	35.2	31.8	2000	0.047	716	0
ME2000401031	GWC31	13-Mar-2020	1231																																			2080	0
ME2000401032	GWC24	13-Mar-2020	1406																																				
ME2000401033	GWC27	13-Mar-2020	1426																																			1220	0
ME2000401034	GWC32	17-Mar-2020	1357	0.08	<0.001	0.047	1550	140	<1	348	0.02				3470	<1	8.7	1.84	0.002	105	0.064	<0.001	0.02		6.8	44	<0.01	515	6.03	280	19.5		1550	46.6	39.2	2120	0.012	3530	0
ME2000401035	GWA32	17-Mar-2020	1336	0.02	<0.001	0.04	427	137	<1	625	0.006				3470	<1	6.92	0.06	<0.001	158	0.19	0.003	0.005		7.4	30	<0.01	352	2.61	725	20.5		427	41.2	35.9	2510	<0.005	2130	0
ME2000401036	GWA34	13-Mar-2020	1119	27.3	0.003	0.03	<1	470	<1	388	0.324				6450	<1	9.62	119	0.007	550	17.6	<0.001	1.01		4.7	7	0.02	411	1.16	4530	21		<1	105	86.8	6550	3.13	3150	0
ME2000401037	GWC34	13-Mar-2020	1156																																				
ME2000401038	GWA36	17-Mar-2020	1119																																			3540	0
ME2000401039	GWC36	17-Mar-2020	1124																																				

ME2000401040	PZ13	26-Mar-2020	1030																																			3160	0
ME2000401041	PZ20	25-Mar-2020																																					
ME2000401042	PZ21	25-Mar-2020																																				890	0
ME2000401043	PZ26	25-Mar-2020																																					
ME2000401044	GWF1	11-Mar-2020																																					
ME2000401045	GWF2	11-Mar-2020																																					
ME2000401046	GWF3	11-Mar-2020																																					
ME2000401047	GWF4	11-Mar-2020																																					
ME2000402001	GWA1	11-Mar-2020	1207											5.12																									
ME2000402002	GWA2	26-Mar-2020	1043										5.42																										
ME2000402003	GWA3	26-Mar-2020	1323											5.65																									
ME2000402004	GWA4	17-Mar-2020	1140											5.17																									
ME2000402005	GWA5	19-Mar-2020	1447											4.085																									
ME2000402006	GWA6	26-Mar-2020	1425											2.19																									
ME2000402007	GWA7	17-Mar-2020	1203											5.19																									
ME2000402008	GWA8	17-Mar-2020	1410										1.95																										
ME2000402009	GWC1	26-Mar-2020	1105										12.73																										
ME2000402010	GWC2	26-Mar-2020	1327										21.19																										
ME2000402011	GWC3	26-Mar-2020	1409											16.32																									
ME2000402012	GWC4	17-Mar-2020	1242										16.315																										
ME2000402013	GWC5	17-Mar-2020	1431										6.59																										
ME2000402014	GWA10	20-Mar-2020	1050										5.02																										
ME2000402015	GWC10	20-Mar-2020	1126										9.53																										
ME2000402016	GWA11	20-Mar-2020	1200											4.78																									
ME2000402017	GWC11	20-Mar-2020	1228										21.43																										
ME2000402018	GWA12	20-Mar-2020	1314											5.8																									

ME2000402019	GWC12	20-Mar-2020	1326										38.215																								
ME2000402020	GWA14	20-Mar-2020	1409											4.96																							
ME2000402021	GWC14	20-Mar-2020	1424										33.6																								
ME2000402022	GWA15	26-Mar-2020	1205											4.07																							
ME2000402023	GWC15	26-Mar-2020	1218										31.23																								
ME2000402024	GWC25	25-Mar-2020																																			
ME2000402025	GWC35	25-Mar-2020																																			
ME2000402026	GWC33	11-Mar-2020	1103										46.12																								
ME2000402027	GWC26	11-Mar-2020	1205										43.39																								
ME2000402028	GWC16	17-Mar-2020	1039										31.855																								
ME2000402029	GWA16	17-Mar-2020	1105											4.08																							
ME2000402030	GWC30	13-Mar-2020	1304										32.82																								
ME2000402031	GWC31	13-Mar-2020	1222											51.25																							
ME2000402032	GWC24	13-Mar-2020	1400											26.41																							
ME2000402033	GWC27	13-Mar-2020	1426																																		
ME2000402034	GWC32	17-Mar-2020	1347										4.775																								
ME2000402035	GWA32	17-Mar-2020	1327										2.025																								
ME2000402036	GWA34	13-Mar-2020	1057										4.64																								
ME2000402037	GWC34	13-Mar-2020	1142											20.35																							
ME2000402038	GWA36	17-Mar-2020	1119											5.97																							
ME2000402039	GWC36	17-Mar-2020	1124											18.7																							
ME2000402040	PZ13	26-Mar-2020	1029											2.28																							
ME2000402041	PZ20	25-Mar-2020																																			
ME2000402042	PZ21	25-Mar-2020																																			
ME2000402043	PZ26	25-Mar-2020																																			
ME2000402044	GWF1	11-Mar-2020																																			

ME2000402045	GWF2	11-Mar-2020																																			
ME2000402046	GWF3	11-Mar-2020																																			
ME2000402047	GWF4	11-Mar-2020																																			
ME2000402048	Barologger Office	26-Mar-2020	1015																																		
ME2000538001	GWA1	17-Apr-2020	1307																																		
ME2000538002	GWA2	29-Apr-2020	1028	0.94	0.003	0.055	73	28	<1	325	0.005				1450	<1	6.72	6.28	<0.001	43	0.195	<0.001	0.004		6.8	7	<0.01	188	0.372	220	20		73	15.2	13.3	724	0.018
ME2000538003	GWA3	29-Apr-2020	1120																																		
ME2000538004	GWA4	29-Apr-2020	1104																																		
ME2000538005	GWA5	29-Apr-2020	1436	0.79	0.016	0.172	462	605	<1	3410	0.006				14600	<1	5.34	2.38	<0.001	904	0.141	0.002	0.02		7.4	34	0.01	2020	7.53	5270	21		462	215	193	12000	0.073
ME2000538006	GWA6	29-Apr-2020	1225	1.82	0.002	0.088	673	131	<1	693	0.011				5210	<1	6.98	1.05	0.002	172	0.085	0.004	0.004		7.9	14	0.01	883	1.39	1700	19		673	68.4	59.4	3830	0.013
ME2000538007	GWA7	29-Apr-2020	1245																																		
ME2000538008	GWA8	29-Apr-2020	1331	0.11	<0.001	0.025	273	124	<1	464	0.004				2570	<1	7.9	0.14	<0.001	126	1.81	<0.001	0.004		7	11	<0.01	244	1.41	654	19.5		273	32.2	27.4	1730	0.006
ME2000538009	GWC1	29-Apr-2020	1041	0.05	<0.001	0.04	614	153	<1	396	0.006				3960	<1	5.99	3.03	<0.001	111	0.533	<0.001	0.002		7	38	<0.01	639	1.69	1340	19		614	51.3	45.5	2770	0.016
ME2000538010	GWC2	29-Apr-2020	1133	3.22	0.001	0.49	599	71	<1	115	0.023				1330	<1	7.88	6.83	0.01	34	0.543	<0.001	0.029		7.2	27	<0.01	166	0.714	71	19.5		599	16.7	14.2	768	0.022
ME2000538011	GWC3	29-Apr-2020	1200																																		
ME2000538012	GWC4	22-Apr-2020	1150	0.05	<0.001	0.04	689	190	<1	343	<0.001				2400	<1	2.98	4.37	<0.001	83	0.039	<0.001	<0.001		6.6	52	<0.01	218	1.87	257	21		689	28.8	27.1	1270	0.008
ME2000538013	GWC5	29-Apr-2020	1350	0.04	<0.001	0.203	2080	286	<1	562	0.005				5520	<1	5.14	0.26	<0.001	162	1.34	<0.001	0.027		6.8	92	<0.01	953	8.66	337	19.5		2080	64.4	71.4	3610	0.031
ME2000538014	GWA10	17-Apr-2020	1409	1.05	<0.001	0.014	72	22	<1	119	0.009				889	<1	0.43	0.77	<0.001	21	0.043	<0.001	0.002		7	<1	<0.01	123	0.204	159	20		72	8.1	8.18	599	<0.005
ME2000538015	GWC10	17-Apr-2020	1439	0.06	<0.001	0.046	468	214	<1	405	0.148				3810	<1	0.68	0.17	<0.001	117	0.22	<0.001	0.03		7.1	30	<0.01	506	2.05	1100	19.5		468	43.7	43.1	2790	0.009
ME2000538016	GWA11	24-Apr-2020	1042																																		
ME2000538017	GWC11	24-Apr-2020	1119	0.17	<0.001	0.02	199	97	<1	174	0.009				2640	<1	3.61	4.73	0.002	98	1.39	<0.001	0.014		6.2	34	<0.01	332	0.851	834	20		199	26.2	28.2	1940	0.168
ME2000538018	GWA12	24-Apr-2020	1135																																		
ME2000538019	GWC12	24-Apr-2020	1224	0.22	<0.001	0.178	1340	89	<1	237	0.01				4340	<1	1.22	0.91	<0.001	35	0.164	<0.001	0.007		7	52	<0.01	867	1.24	675	22.5		1340	47.5	46.4	2460	0.01
ME2000538020	GWA14	24-Apr-2020	1315	44	0.002	0.092	395	17	<1	44	0.056				1010	<1	4.73	20	0.008	7	0.078	0.002	0.074		7.6	12	<0.01	183	0.24	73	21		395	10.6	9.69	1250	0.081
ME2000538021	GWC14	24-Apr-2020	1355	0.44	<0.001	0.406	899	62	<1	140	0.005				2020	<1	8.25	1.47	<0.001	27	0.268	<0.001	0.008		7.1	30	<0.01	322	0.728	86	20.5		899	23.7	20.1	1200	0.012
ME2000538022	GWA15	24-Apr-2020	1423																																		

ME2000538023	GWC15	24-Apr-2020	1449	0.71	<0.001	0.144	658	64	<1	206	0.006				1780	<1	8.04	0.4	<0.001	29	0.052	<0.001	0.002		7.1	29	<0.01	255	0.73	72	21		658	20.4	17.4	1010	0.014
ME2000538024	GWC25	20-Apr-2020	1149	0.09	<0.001	0.081	428	66	<1	443	0.059				2190	<1	2.02	0.09	<0.001	94	0.1	0.001	0.061		6.8	14	<0.01	253	0.667	109	20.5		428	23.3	22.4	1120	0.058
ME2000538025	GWC35	20-Apr-2020	1104																																		
ME2000538026	GWC33	17-Apr-2020	1123	1.26	<0.001	0.189	<1	216	53	66	0.005				3180	472	0.67	0.75	0.002	<1	0.03	<0.001	0.002		12.4	13	<0.01	44	0.173	24	19.5		525	12.8	13	815	0.033
ME2000538027	GWC26	17-Apr-2020	1251	2.45	0.001	0.528	423	51	60	137	0.034				1280	<1	4.42	3.84	0.015	24	0.203	0.001	0.016		7.4	17	<0.01	188	0.505	40	19		483	14.3	13.1	686	0.08
ME2000538028	GWC16	14-Apr-2020	1143	1.4	<0.001	0.154	698	50	<1	230	0.007				1910	<1	3.31	2.03	0.004	26	0.053	<0.001	0.002		7.3	19	<0.01	343	0.621	47	20.5		698	21.4	20	1110	0.021
ME2000538029	GWA16	14-Apr-2020	1211	0.74	0.002	0.126	442	259	<1	4980	0.015				16400	<1	0.59	0.61	0.001	323	0.037	0.01	0.005		8	20	0.03	3040	4.37	1200	23		442	174	172	9210	0.043
ME2000538030	GWC30	02-Apr-2020	1237	0.13	<0.001	0.082	622	215	<1	581	0.009				3070	<1	6.17	2.58	0.002	144	0.183	<0.001	0.018		6.9	42	<0.01	166	2.36	294	20		622	34.9	30.9	2100	0.026
ME2000538031	GWC31	02-Apr-2020	1315																																		
ME2000538032	GWC27	02-Apr-2020	1357																																		
ME2000538033	GWC32	14-Apr-2020	1437	2.64	0.003	0.04	96	11	<1	6	0.308				217	<1		3.42	0.006	9	0.039	0.002	0.112		7.2	16	<0.01	12	0.15	<1	20		96	2.09	2.22	208	0.034
ME2000538034	GWA32	14-Apr-2020	1417	0.01	<0.001	0.045	404	163	<1	728	0.013				4290	<1	0.17	<0.05	<0.001	206	0.107	0.004	0.004		7.4	24	<0.01	497	2.58	891	19		404	47.2	47.3	3110	0.006
ME2000538035	GWA34	02-Apr-2020	1139	21.4	0.002	0.017	3	455	<1	369	0.318				6480	<1	5.04	118	0.003	511	14.4	<0.001	1.02		4.6	6	0.01	387	0.875	3840	21		3	90.4	81.7	4120	3.16
ME2000538036	GWC34	02-Apr-2020	1156																																		
ME2000538037	GWA36	14-Apr-2020	1236																																		
ME2000538038	GWC36	14-Apr-2020	1251	0.69	0.01	0.021	75	194	<1	311	0.005				4160	<1	2.56	195	0.002	220	6.36	0.011	0.049		6	38	0.03	459	1.45	1970	20		75	51.3	48.7	3120	0.366
ME2000538039	PZ13	20-Apr-2020	1411																																		
ME2000538040	PZ20	20-Apr-2020	1327	0.7	0.002	0.021	247	18	<1	28	0.006				724	<1	4.2	0.59	0.001	22	0.094	0.002	0.008		7.6	15	<0.01	97	0.266	107	21.5		247	7.95	7.31	385	0.007
ME2000538041	PZ21	20-Apr-2020	1301	2.02	0.002	0.034	369	32	<1	138	0.003				1800	<1	0.85	1.39	<0.001	34	0.242	0.003	0.007		7.7	12	<0.01	323	0.578	375	21		369	19.1	18.8	958	0.011
ME2000538042	PZ26	20-Apr-2020	1227																																		
ME2000538043	GWF1	06-Apr-2020	1500																																		
ME2000538044	GWF2	06-Apr-2020	1233																																		
ME2000538045	GWF3	06-Apr-2020	1233																																		
ME2000538046	GWF4	06-Apr-2020	1233																																		
ME2000539001	GWA1	17-Apr-2020	1307											4.93																							
ME2000539002	GWA2	29-Apr-2020	1013										2.01																								

ME2000539003	GWA3	29-Apr-2020	1118											5.36																							
ME2000539004	GWA4	29-Apr-2020	1102											4.93																							
ME2000539005	GWA5	29-Apr-2020	1429										3.705																								
ME2000539006	GWA6	29-Apr-2020	1206										1.29																								
ME2000539007	GWA7	29-Apr-2020	1245											5.19																							
ME2000539008	GWA8	29-Apr-2020	1323										1.54																								
ME2000539009	GWC1	29-Apr-2020	1035										11.675																								
ME2000539010	GWC2	29-Apr-2020	1125										19.355																								
ME2000539011	GWC3	29-Apr-2020	1154											15.5																							
ME2000539012	GWC4	22-Apr-2020	1137										16.3																								
ME2000539013	GWC5	29-Apr-2020	1345										6.35																								
ME2000539014	GWA10	17-Apr-2020	1342										3.15																								
ME2000539015	GWC10	17-Apr-2020	1425										7.92																								
ME2000539016	GWA11	24-Apr-2020	1037											4.79																							
ME2000539017	GWC11	24-Apr-2020	1101										18.46																								
ME2000539018	GWA12	24-Apr-2020	1135											5.85																							
ME2000539019	GWC12	24-Apr-2020	1224										35.78																								
ME2000539020	GWA14	24-Apr-2020	1304										1.86																								
ME2000539021	GWC14	24-Apr-2020	1355										32.25																								
ME2000539022	GWA15	24-Apr-2020	1423											2.56																							
ME2000539023	GWC15	24-Apr-2020	1421										29.74																								
ME2000539024	GWC25	20-Apr-2020	1132										32.44																								
ME2000539025	GWC35	20-Apr-2020	1104											50.45																							
ME2000539026	GWC33	17-Apr-2020	1044										41.27																								
ME2000539027	GWC26	17-Apr-2020	1211										43.22																								
ME2000539028	GWC16	14-Apr-2020	1133										31.29																								

ME2000539029	GWA16	14-Apr-2020	1150										1.88																								
ME2000539030	GWC30	02-Apr-2020	1223										32.32																								
ME2000539031	GWC31	02-Apr-2020	1306											51.31																							
ME2000539032	GWC27	02-Apr-2020	1357																																		
ME2000539033	GWC32	14-Apr-2020	1425										4.54																								
ME2000539034	GWA32	14-Apr-2020	1401										1.72																								
ME2000539035	GWA34	02-Apr-2020	1131										4.61																								
ME2000539036	GWC34	02-Apr-2020	1147											20.47																							
ME2000539037	GWA36	14-Apr-2020	1236											5.97																							
ME2000539038	GWC36	14-Apr-2020	1240										17.725																								
ME2000539039	PZ13	20-Apr-2020	1411											2.37																							
ME2000539040	PZ20	20-Apr-2020	1316										1.83																								
ME2000539041	PZ21	20-Apr-2020	1249										2.52																								
ME2000539042	PZ26	20-Apr-2020	1227											4.42																							
ME2000539043	GWF1	02-Apr-2020	1500																																		
ME2000539044	GWF2	02-Apr-2020	1259																																		
ME2000539045	GWF3	02-Apr-2020	1259																																		
ME2000539046	GWF4	02-Apr-2020	1259																																		
ME2000539047	Barologger Office	24-Apr-2020	1016																																		
ME2000707001	GWA1	05-May-2020	1208																																		
ME2000707002	GWA2	18-May-2020	1320	0.27	<0.001	0.052	104	95	<1	328	0.004				1450	<1	1.16	1.12	<0.001	59	0.08	<0.001	0.002		6.8	19	<0.01	121	0.384	176	18.5		104	15	15.3	780	0.006
ME2000707003	GWA3	20-May-2020	1036																																		
ME2000707004	GWA4	11-May-2020	1248																																		
ME2000707005	GWA5	19-May-2020	1433																																		
ME2000707006	GWA6	18-May-2020	1445																																		
ME2000707007	GWA7	20-May-2020	1135																																		

ME2000707008	GWA8	28-May-2020	1415	1.08	<0.001	0.06	261	143	<1	424	0.009				2620	<1	0.39	2.2	0.006	136	22.9	<0.001	0.015		7	14	<0.01	260	1.42	627	18		261	30.2	30	1550	0.016
ME2000707009	GWC1	18-May-2020	1336	0.02	<0.001	0.028	412	70	<1	378	<0.001				2420	<1	4.65	0.82	<0.001	49	0.284	<0.001	0.002		7.1	24	<0.01	380	0.805	393	19		412	27.1	24.7	1440	<0.005
ME2000707010	GWC2	20-May-2020	1051	14.1	0.004	0.544	554	77	<1	114	0.028				1390	<1	5.12	15.8	0.014	36	0.652	0.002	0.04		7.1	27	<0.01	166	0.789	97	19.5		554	16.3	14.7	696	0.04
ME2000707011	GWC3	18-May-2020	1433																																		
ME2000707012	GWC4	20-May-2020	1324	0.09	<0.001	0.049	662	171	<1	353	0.003				2430	<1	3.85	3.12	0.001	83	0.044	<0.001	0.001		6.7	50	<0.01	219	1.95	244	20.5		662	28.3	26.2	1240	0.013
ME2000707013	GWC5	28-May-2020	1439	0.03	<0.001	0.225	2210	279	<1	493	0.003				5490	<1	4.29	0.81	0.002	156	1.49	<0.001	0.027		6.7	89	<0.01	944	8.36	301	18.5		2210	64.3	70.1	3200	0.019
ME2000707014	GWA10	07-May-2020	1125	0.95	0.002	0.015	102	28	<1	107	0.018				803	<1	2.26	1.41	0.001	19	0.097	<0.001	0.002		7.2	<1	<0.01	108	0.209	142	19.5		102	8.01	7.66	482	0.006
ME2000707015	GWC10	07-May-2020	1145	0.09	<0.001	0.046	474	206	<1	462	0.098				3810	<1	2.97	0.31	<0.001	118	0.237	<0.001	0.024		7.2	31	<0.01	504	2.2	852	19.5		474	40.2	42.7	2690	0.014
ME2000707016	GWA11	07-May-2020	1156																																		
ME2000707017	GWC11	07-May-2020	1221	0.27	<0.001	0.036	187	80	<1	180	0.012				2430	<1	5.77	3.34	0.003	84	1.56	<0.001	0.02		6.2	24	<0.01	328	0.784	680	19		187	23	25.8	1730	0.054
ME2000707018	GWA12	07-May-2020	1256																																		
ME2000707019	GWC12	07-May-2020	1326	0.77	<0.001	1.17	596	39	<1	76	0.05				1240	<1	4.38	1.3	0.002	22	0.186	0.001	0.009		7.4	16	<0.01	212	0.706	27	20		596	14.6	13.4	724	0.011
ME2000707020	GWA14	07-May-2020	1344	48.4	0.003	0.139	472	15	<1	35	0.055				980	<1	4.01	17.6	0.01	8	0.116	0.001	0.084		7.7	9	<0.01	209	0.28	58	19		472	11.6	10.7	1440	0.086
ME2000707021	GWC14	07-May-2020	1405	0.22	0.003	0.706	816	69	<1	92	0.013				1560	<1	5.87	1.99	0.003	33	0.83	0.001	0.011		7.3	22	<0.01	239	0.923	17	19		816	19.2	17.1	903	0.013
ME2000707022	GWA15	11-May-2020	1135	7.84	0.001	0.045	57	4	<1	52	0.019				493	<1	15.1	4.44	0.014	2	0.107	<0.001	0.012		7	<1	<0.01	95	0.051	34	18		57	3.31	4.5	418	0.028
ME2000707023	GWC15	11-May-2020	1208	0.31	<0.001	0.31	605	60	<1	200	0.009				1770	<1	1.85	1.16	0.004	30	0.084	<0.001	0.002		7.1	22	<0.01	287	0.777	71	17.5		605	19.2	18.5	1090	0.017
ME2000707024	GWC25	13-May-2020	1342	8.68	0.021	0.406	461	66	<1	399	0.326				2170	<1	4.13	13.7	0.071	94	3.9	0.002	0.143		6.9	13	<0.01	246	0.891	168	19.5		461	24	22.1	1090	0.114
ME2000707025	GWC35	13-May-2020	1217																																		
ME2000707026	GWC33	05-May-2020	1129	0.87	<0.001	0.147	<1	231	18	68	0.002				3120	522	1.86	0.11	0.001	<1	0.007	<0.001	0.002		12.4	13	<0.01	41	0.153	21	20.5		540	13.1	13.6	785	0.01
ME2000707027	GWC26	18-May-2020	1222	0.14	<0.001	0.178	418	58	<1	169	0.015				1220	<1	4.58	2.01	0.001	28	0.066	<0.001	0.005		7	17	<0.01	164	0.47	42	20		418	14	12.8	636	0.023
ME2000707028	GWC16	12-May-2020	1114	0.34	<0.001	0.113	713	54	<1	261	<0.001				1970	<1	6.89	1.38	<0.001	28	0.09	0.001	<0.001		7.2	20	<0.01	344	0.622	91	20.5		713	23.5	20.5	1060	0.006
ME2000707029	GWA16	12-May-2020	1147																																		
ME2000707030	GWC30	08-May-2020	1223	0.18	<0.001	0.122	630	223	<1	593	0.01				3090	<1	3.85	2.06	0.002	155	0.158	<0.001	0.012		6.8	47	<0.01	181	2.38	302	21		630	35.6	33	1980	0.02
ME2000707031	GWC31	08-May-2020	1311																																		
ME2000707032	GWC27	08-May-2020	1130																																		
ME2000707033	GWC32	12-May-2020	1352	2.2	0.002	0.047	98	13	<1	<10	0.85				224	<1		2.84	0.005	9	0.033	0.004	0.321		6.6	15	<0.01	10	0.158	<10	19.5		98	1.96	2.21	224	0.054

ME2000707034	GWA32	12-May-2020	1436	0.01	<0.001	0.056	442	155	<1	732	0.017				3930	<1	2.05	<0.05	<0.001	189	0.056	0.002	0.003		7.2	23	<0.01	442	2.31	741	18		442	44.9	43.1	2270	<0.005
ME2000707035	GWA34	08-May-2020	1409	2.16	<0.001	0.05	24	41	<1	62	0.015				748	<1	1.43	3.51	0.002	37	0.234	<0.001	0.03		5.7	2	<0.01	46	0.201	246	20.5		24	7.35	7.14	544	0.072
ME2000707036	GWC34	08-May-2020	1431																																		
ME2000707037	GWA36	12-May-2020	1214																																		
ME2000707038	GWC36	12-May-2020	1242	1.23	0.001	0.05	124	163	<1	335	0.004				3920	<1	9.16	55.6	0.003	194	5.14	<0.001	0.031		6.2	37	<0.01	453	1.21	2010	18.5		124	53.8	44.8	3010	0.11
ME2000707039	PZ13	13-May-2020	1047																																		
ME2000707040	PZ20	14-May-2020	1337	1.24	0.002	0.034	358	35	<1	43	0.004				997	<1	3.52	1.18	0.003	35	0.342	0.002	0.008		7.6	17	<0.01	124	0.396	137	18		358	11.2	10.4	581	0.016
ME2000707041	PZ21	14-May-2020	1323	1.61	0.002	0.054	467	52	<1	164	0.005				2070	<1	3.81	2.08	0.002	45	0.727	0.002	0.011		7.6	13	<0.01	352	0.729	467	19		467	23.7	21.9	1190	0.024
ME2000707042	PZ26	14-May-2020	1245																																		
ME2000707043	GWF1	14-May-2020	1210																																		
ME2000707044	GWF2	14-May-2020	1152																																		
ME2000707045	GWF3	14-May-2020	1129	1.79	0.004	0.158	634	169	<1	751	0.023				4600	<1	2.09	52.2	0.008	219	1.47	0.019	0.027		6.7	39	<0.01	560	2.13	969	20.5		634	54	51.8	3060	0.159
ME2000707046	GWF4	14-May-2020	1256																																		
ME2000708001	GWA1	05-May-2020	1208											4.94																							
ME2000708002	GWA2	18-May-2020	1313										1.81																								
ME2000708003	GWA3	20-May-2020	1036											5.18																							
ME2000708004	GWA4	11-May-2020	1245											4.93																							
ME2000708005	GWA5	19-May-2020	1433											4.1																							
ME2000708006	GWA6	18-May-2020	1445											1.66																							
ME2000708007	GWA7	20-May-2020	1135											5.12																							
ME2000708008	GWA8	28-May-2020	1410										1.555																								
ME2000708009	GWC1	18-May-2020	1326										11.42																								
ME2000708010	GWC2	20-May-2020	1041										17.36																								
ME2000708011	GWC3	18-May-2020	1433											15.64																							
ME2000708012	GWC4	20-May-2020	1314										16.42																								
ME2000708013	GWC5	28-May-2020	1424										6.31																								

ME2000708014	GWA10	07-May-2020	1114										3.165																								
ME2000708015	GWC10	07-May-2020	1135										6.62																								
ME2000708016	GWA11	07-May-2020	1153											4.33																							
ME2000708017	GWC11	07-May-2020	1213										16.315																								
ME2000708018	GWA12	07-May-2020	1251											5																							
ME2000708019	GWC12	07-May-2020	1310										33.55																								
ME2000708020	GWA14	07-May-2020	1320										1.915																								
ME2000708021	GWC14	07-May-2020	1451										29.91																								
ME2000708022	GWA15	11-May-2020	1119										2.61																								
ME2000708023	GWC15	11-May-2020	1150										28.63																								
ME2000708024	GWC25	13-May-2020	1330										34.025																								
ME2000708025	GWC35	13-May-2020	1217																																		
ME2000708026	GWC33	05-May-2020	1111										40.54																								
ME2000708027	GWC26	18-May-2020	1205										43.01																								
ME2000708028	GWC16	12-May-2020	1103										31.07																								
ME2000708029	GWA16	12-May-2020	1140											2.78																							
ME2000708030	GWC30	08-May-2020	1206										32.12																								
ME2000708031	GWC31	08-May-2020	1311											51.44																							
ME2000708032	GWC27	08-May-2020	1130																																		
ME2000708033	GWC32	12-May-2020	1342										4.61																								
ME2000708034	GWA32	12-May-2020	1413										1.93																								
ME2000708035	GWA34	08-May-2020	1358										3.89																								
ME2000708036	GWC34	08-May-2020	1431											20.35																							
ME2000708037	GWA36	12-May-2020	1214											6.02																							
ME2000708038	GWC36	12-May-2020	1222										16.32																								
ME2000708039	PZ13	13-May-2020	1045											2.245																							

ME2000708040	PZ20	14-May-2020	1332										2.21																								
ME2000708041	PZ21	14-May-2020	1317										3.095																								
ME2000708042	PZ26	14-May-2020	1245											4.39																							
ME2000708043	GWF1	14-May-2020	1202											16.25																							
ME2000708044	GWF2	14-May-2020	1152											23.79																							
ME2000708045	GWF3	14-May-2020	1113										18.74																								
ME2000708046	GWF4	14-May-2020	1256											12.95																							
ME2000708047	Barologger Office	18-May-2020	1121																																		
ME2000885001	GWA1	17-Jun-2020	1049																																		
ME2000885002	GWA2	25-Jun-2020	1024	0.2	0.001	0.052	176	29	<1	330	0.002				1530	<1	4.89	1.51	<0.001	44	0.585	<0.001	0.003		6.9	8	<0.01	203	0.367	131	15.5		176	15.6	14.1	728	0.009
ME2000885003	GWA3	25-Jun-2020	1059																																		
ME2000885004	GWA4	23-Jun-2020	1221																																		
ME2000885005	GWA5	17-Jun-2020	1411																																		
ME2000885006	GWA6	25-Jun-2020	1152	5.11	0.003	0.078	510	290	<1	1310	0.012				10000	<1	1.36	2.48	0.018	388	0.131	0.003	0.008		7.9	27	0.04	1620	2.52	3230	15		510	114	118	20100	0.026
ME2000885007	GWA7	17-Jun-2020	1238																																		
ME2000885008	GWA8	25-Jun-2020	1319	0.68	<0.001	0.042	272	133	<1	426	0.002				2730	<1	4	1.19	0.002	129	17.8	<0.001	0.011		7	12	<0.01	249	1.27	639	16		272	30.8	28.4	1820	0.013
ME2000885009	GWC1	25-Jun-2020	1036	0.13	<0.001	0.06	381	67	<1	366	0.003				2300	<1	4.05	1.37	<0.001	49	0.336	<0.001	0.003		7.1	22	<0.01	335	0.689	311	16.5		381	24.4	22.5	1390	0.037
ME2000885010	GWC2	25-Jun-2020	1108	10.5	0.002	0.386	562	68	<1	109	0.017				1290	<1	5.63	8.17	0.006	30	0.45	<0.001	0.02		7.2	26	<0.01	157	0.648	31	18		562	14.9	13.4	802	0.035
ME2000885011	GWC3	25-Jun-2020	1141	15.2	0.011	0.218	639	189	<1	708	0.022				4890	<1	0.09	23.4	0.024	162	0.37	0.001	0.026		7	40	<0.01	670	1.74	965	17.5		639	52.8	52.9	3470	0.075
ME2000885012	GWC4	25-Jun-2020	1225	0.32	<0.001	0.091	656	167	<1	324	0.005				2420	<1	3.83	4.67	0.006	80	0.065	<0.001	0.003		6.8	48	<0.01	212	1.64	247	18.5		656	27.4	25.4	1530	0.07
ME2000885013	GWC5	25-Jun-2020	1342	0.09	<0.001	0.203	2590	272	<1	495	0.003				5620	<1	3.53	0.83	0.004	152	1.3	<0.001	0.027		6.8	85	<0.01	898	6.8	314	17.5		2590	72.2	67.3	3680	0.149
ME2000885014	GWA10	19-Jun-2020	1300	0.64	0.002	0.017	182	54	<1	140	0.083				1080	<1	3.6	1.18	0.006	36	0.098	<0.001	0.003		7.3	<1	<0.01	152	0.297	184	16.5		182	11.4	12.3	619	0.04
ME2000885015	GWC10	19-Jun-2020	1320	0.28	<0.001	0.05	417	224	<1	412	0.094				3790	<1	3.14	1.32	0.002	143	0.414	0.001	0.028		7.2	35	<0.01	552	2.07	1200	18.5		417	44.9	47.8	2750	0.103
ME2000885016	GWA11	19-Jun-2020	1336	3.52	0.002	0.085	461	44	<1	79	0.009				1500	<1	4.52	3.32	0.004	38	0.595	0.001	0.01		7.6	14	<0.01	282	0.703	238	17		461	16.4	17.9	894	0.013
ME2000885017	GWC11	19-Jun-2020	1415	0.66	<0.001	0.056	254	150	<1	307	0.01				3430	<1	2.5	8.5	0.006	158	1.98	0.001	0.022		6.5	34	<0.01	485	1.22	1280	18		254	40.4	42.4	2540	0.119
ME2000885018	GWA12	23-Jun-2020	1020	13	0.002	0.048	180	9	<1	36	0.015				478	<1	6.96	5.27	0.007	6	0.097	0.003	0.022		8.1	2	<0.01	104	0.101	9	16.5		180	4.8	5.52	448	0.035

ME2000885019	GWC12	23-Jun-2020	1050	1.32	<0.001	0.626	787	59	<1	219	0.257				2610	<1	1.73	6.4	0.015	29	0.289	0.002	0.1		7.3	25	<0.01	554	0.948	443	16.5		787	31.1	30.1	1690	0.142
ME2000885020	GWA14	23-Jun-2020	1105																																		
ME2000885021	GWC14	23-Jun-2020	1130	0.39	<0.001	2.95	531	46	<1	182	0.037				1320	<1	5.04	1.91	0.009	22	0.136	0.001	0.018		7.3	20	<0.01	247	0.707	60	16.5		531	17	15.4	702	0.077
ME2000885022	GWA15	23-Jun-2020	1148	5.98	<0.001	0.178	83	8	<1	162	0.019				671	<1	2.95	3.59	0.01	4	0.094	<0.001	0.011		7	<1	<0.01	139	0.086	46	16		83	7.18	6.77	536	0.022
ME2000885023	GWC15	23-Jun-2020	1209	0.96	<0.001	1.63	614	56	<1	223	0.059				1620	<1	3.46	3.91	0.014	28	0.15	<0.001	0.009		7.2	23	<0.01	300	0.734	73	17		614	20.1	18.7	888	0.138
ME2000885024	GWC25	18-Jun-2020	1105																																		
ME2000885025	GWC33	18-Jun-2020	1357	1.26	<0.001	0.246	<1	222	47	60	0.005				2960	338	15.3	0.83	0.003	<1	0.034	<0.001	0.003		12.3	14	<0.01	46	0.169	23	18.5		385	9.86	13.4	783	0.119
ME2000885026	GWC26	18-Jun-2020	1433	0.68	<0.001	0.354	456	56	<1	149	0.016				1270	<1	0.96	3.45	0.006	27	0.088	<0.001	0.006		7.4	19	<0.01	206	0.45	42	19		456	14.2	14.5	704	0.049
ME2000885027	GWC16	19-Jun-2020	1054	2.36	<0.001	0.189	684	55	<1	245	0.006				1930	<1	0.37	4.18	0.011	29	0.1	0.001	0.003		7.3	21	<0.01	381	0.589	72	19		684	22.1	22.2	1100	0.053
ME2000885028	GWA16	19-Jun-2020	1112	2.37	0.001	0.138	487	270	<1	4980	0.009				15800	<1	2.16	2.4	0.004	424	0.208	0.002	0.004		7.4	15	0.02	2930	3.68	891	17		487	169	176	10200	0.044
ME2000885029	GWC30	01-Jun-2020	1251	0.71	<0.001	0.366	636	207	<1	591	0.018				3070	<1	6.09	3.92	0.006	158	0.231	0.001	0.04		6.9	52	<0.01	163	2.44	312	19		636	35.9	31.8	1620	0.052
ME2000885030	GWC31	01-Jun-2020	1319																																		
ME2000885031	GWC27	25-Jun-2020	1414																																		
ME2000885032	GWC32	16-Jun-2020	1306	0.72	<0.001	0.055	1120	132	<1	279	0.144				2970	<1	2.3	2.61	0.003	99	0.066	0.004	0.084		6.7	41	<0.01	482	3.62	233	18.5		1120	35.1	36.7	1620	0.109
ME2000885033	GWA32	16-Jun-2020	1233	0.02	<0.001	0.058	458	177	<1	739	<0.001				4040	<1	4.65	<0.05	<0.001	214	0.122	0.002	0.002		7.3	26	<0.01	503	2.38	703	15.5		458	44.6	49	2670	0.076
ME2000885034	GWA34	01-Jun-2020	1150	13.8	0.004	0.086	11	371	<1	136	0.361				3520	<1	4.6	36.8	0.011	253	8.06	<0.001	0.463		5.3	6	<0.01	155	0.956	2240	19		11	50.7	46.2	1850	1.35
ME2000885035	GWC34	01-Jun-2020	1205																																		
ME2000885036	GWA36	19-Jun-2020	1141																																		
ME2000885037	GWC36	19-Jun-2020	1207	2.98	0.004	0.216	194	146	<1	312	0.016				3410	<1	2.94	55.4	0.018	171	3.3	0.002	0.027		6.5	36	<0.01	467	1.07	1320	17.5		194	40.2	42.6	2540	0.186
ME2000885038	PZ13	18-Jun-2020	1325																																		
ME2000885039	PZ20	18-Jun-2020	1225	1.43	0.001	0.035	385	43	<1	44	0.003				1080	<1	5.24	1.14	0.002	46	0.32	0.002	0.006		7.7	20	<0.01	156	0.424	143	16.5		385	11.9	13.2	639	0.013
ME2000885040	PZ21	18-Jun-2020	1204	2.31	0.003	0.069	483	55	<1	148	0.005				1980	<1	2.55	2.48	0.003	50	1.36	0.002	0.014		7.6	15	<0.01	384	0.713	429	17		483	22.8	23.9	1240	0.024
ME2000885041	PZ26	18-Jun-2020	1142																																		
ME2000885042	GWF1	02-Jun-2020	1500																																		
ME2000885043	GWF2	02-Jun-2020	1012																																		
ME2000885044	GWF3	02-Jun-2020	1012																																		

ME2000885045	GWF4	02-Jun-2020	1012																																		
ME2000886001	GWA1	17-Jun-2020	1049											5.02																							
ME2000886002	GWA2	25-Jun-2020	1020										1.57																								
ME2000886003	GWA3	25-Jun-2020	1056										5.285																								
ME2000886004	GWA4	23-Jun-2020	1217											4.94																							
ME2000886005	GWA5	17-Jun-2020	1405											4.035																							
ME2000886006	GWA6	25-Jun-2020	1147										1.9																								
ME2000886007	GWA7	17-Jun-2020	1238											5.19																							
ME2000886008	GWA8	25-Jun-2020	1315										1.54																								
ME2000886009	GWC1	25-Jun-2020	1029										11.325																								
ME2000886010	GWC2	25-Jun-2020	1102										16.265																								
ME2000886011	GWC3	25-Jun-2020	1124										15.28																								
ME2000886012	GWC4	25-Jun-2020	1216										15.84																								
ME2000886013	GWC5	25-Jun-2020	1335										5.71																								
ME2000886014	GWA10	19-Jun-2020	1253										3.27																								
ME2000886015	GWC10	19-Jun-2020	1310										6.4																								
ME2000886016	GWA11	19-Jun-2020	1326										3.82																								
ME2000886017	GWC11	19-Jun-2020	1347										15.02																								
ME2000886018	GWA12	23-Jun-2020	1014										3.91																								
ME2000886019	GWC12	23-Jun-2020	1028										27.68																								
ME2000886020	GWA14	23-Jun-2020	1105											4.17																							
ME2000886021	GWC14	23-Jun-2020	1116										26.335																								
ME2000886022	GWA15	23-Jun-2020	1143										2.7																								
ME2000886023	GWC15	23-Jun-2020	1157										27.56																								
ME2000886024	GWC25	18-Jun-2020	1050											35																							
ME2000886025	GWC33	18-Jun-2020	1347										40.68																								

ME2000886026	GWC26	18-Jun-2020	1121										43.51																								
ME2000886027	GWC16	19-Jun-2020	1041										31.81																								
ME2000886028	GWA16	19-Jun-2020	1106										2.925																								
ME2000886029	GWC30	01-Jun-2020	1231										31.87																								
ME2000886030	GWC31	01-Jun-2020	1312											47.31																							
ME2000886031	GWC27	25-Jun-2020	1414																																		
ME2000886032	GWC32	16-Jun-2020	1243										4.03																								
ME2000886033	GWA32	16-Jun-2020	1222										1.795																								
ME2000886034	GWA34	01-Jun-2020	1129										4.225																								
ME2000886035	GWC34	01-Jun-2020	1200											20.56																							
ME2000886036	GWA36	19-Jun-2020	1141											5.97																							
ME2000886037	GWC36	19-Jun-2020	1149										15.875																								
ME2000886038	PZ13	18-Jun-2020	1320											2.28																							
ME2000886039	PZ20	18-Jun-2020	1218										2.31																								
ME2000886040	PZ21	18-Jun-2020	1156										3.54																								
ME2000886041	PZ26	18-Jun-2020	1142											4.39																							
ME2000886042	GWF1	02-Jun-2020	1500																																		
ME2000886043	GWF2	02-Jun-2020	1051																																		
ME2000886044	GWF3	02-Jun-2020	1051																																		
ME2000886045	GWF4	02-Jun-2020	1051																																		
ME2000886046	Barologger Office	25-Jun-2020	950																																		
ME2001084001	GWA1	07-Jul-2020	1100																																		
ME2001084002	GWA2	07-Jul-2020	1125	0.03	<0.001	0.045	101	32	<1	298	0.002				1430	<1	5.84	0.58	<0.001	44	0.091	<0.001	0.002		6.8	10	<0.01	167	0.352	187	15		101	14.3	12.7	830	<0.005
ME2001084003	GWA3	07-Jul-2020	1157																																		
ME2001084004	GWA4	07-Jul-2020	1240																																		
ME2001084005	GWA5	22-Jul-2020	1355	1.07	0.012	0.169	494	746	<1	3980	0.004				16300	<1	3.18	1.49	0.003	1050	0.095	0.002	0.017		7.3	55	0.01	2230	7.35	5500	16.5		494	237	222	14200	0.08

ME2001084006	GWA6	07-Jul-2020	1325	4.14	0.004	0.061	458	311	<1	1560	0.016				10800	<1	2.63	2.13	0.02	426	0.118	0.003	0.012		7.8	49	0.04	1630	2.96	3660	14.5		458	129	123	8550	0.02
ME2001084007	GWA7	07-Jul-2020	1347																																		
ME2001084008	GWA8	20-Jul-2020	1355	0.03	<0.001	0.029	269	145	<1	391	<0.001				2630	<1	0.64	<0.05	<0.001	127	12.1	<0.001	0.01		7.1	12	<0.01	237	1.51	589	15.5		269	28.7	28.3	2170	0.005
ME2001084009	GWC1	07-Jul-2020	1137	0.02	<0.001	0.05	370	70	<1	390	0.002				2300	<1	8.26	0.68	<0.001	49	0.295	<0.001	0.004		7.1	28	<0.01	297	0.694	316	17.5		370	25	21.2	1330	0.019
ME2001084010	GWC2	07-Jul-2020	1208	1.42	<0.001	0.342	502	67	<1	109	0.008				1300	<1	4.89	1.74	0.003	29	0.28	<0.001	0.008		7.2	30	<0.01	139	0.616	35	18		502	13.8	12.5	623	0.013
ME2001084011	GWC3	07-Jul-2020	1308																																		
ME2001084012	GWC4	07-Jul-2020	1415	0.05	<0.001	0.06	656	155	<1	336	0.002				2410	<1	8.53	2.18	0.001	76	0.04	<0.001	0.003		6.8	51	<0.01	186	1.83	248	19		656	27.7	23.4	1400	0.035
ME2001084013	GWC5	20-Jul-2020	1413	0.01	<0.001	0.205	2610	254	<1	456	0.002				5480	<1	4.81	0.84	0.003	148	1.42	<0.001	0.027		6.7	85	<0.01	869	8.02	306	17.5		2610	71.4	64.8	3780	0.11
ME2001084014	GWA10	17-Jul-2020	1050	0.06	0.001	0.015	206	56	<1	139	0.013				1180	<1	4.67	0.32	<0.001	38	0.049	<0.001	0.002		7.1	<1	<0.01	135	0.383	236	15.5		206	13	11.8	754	<0.005
ME2001084015	GWC10	17-Jul-2020	1112	0.08	<0.001	0.038	436	175	<1	368	0.059				3750	<1	5.7	0.64	<0.001	136	0.44	<0.001	0.015		7.2	34	<0.01	473	2.05	1310	18		436	46.4	41.4	2810	0.046
ME2001084016	GWA11	17-Jul-2020	1128	0.36	<0.001	0.056	455	37	<1	85	0.01				1390	<1	3.06	1.6	0.001	36	0.556	<0.001	0.01		7.5	13	<0.01	223	0.595	206	16		455	15.8	14.8	852	0.007
ME2001084017	GWC11	17-Jul-2020	1200	0.19	<0.001	0.026	265	130	<1	279	0.014				3260	<1	2.96	8.86	0.005	137	1.72	<0.001	0.009		6.5	31	<0.01	418	1.19	1240	17.5		265	39	36.7	2390	0.07
ME2001084018	GWA12	17-Jul-2020	1243	2.13	<0.001	0.024	194	6	<1	37	0.008				479	<1	3.75	0.36	0.002	4	0.042	0.001	0.006		8	1	<0.01	93	0.104	7	17.5		194	5.06	4.7	546	0.013
ME2001084019	GWC12	17-Jul-2020	1320	0.32	<0.001	0.089	1110	45	<1	224	0.081				4150	<1	3.4	2.73	0.004	36	0.191	0.001	0.015		7.3	33	<0.01	875	1.16	899	19		1110	47.2	44.1	3040	0.053
ME2001084020	GWA14	17-Jul-2020	1342																																		
ME2001084021	GWC14	17-Jul-2020	1414	0.21	<0.001	2.1	561	49	<1	100	0.037				1280	<1	3.8	1.2	0.006	23	0.07	<0.001	0.012		7.4	19	<0.01	208	0.69	45	18		561	15	13.9	746	0.044
ME2001084022	GWA15	20-Jul-2020	1129	1.58	<0.001	0.018	73	6	<1	122	0.003				716	<1	5.79	0.1	0.002	4	0.016	<0.001	0.002		6.9	<1	<0.01	133	0.074	39	15		73	5.71	6.41	500	0.006
ME2001084023	GWC15	20-Jul-2020	1203	0.08	<0.001	0.261	642	47	<1	119	0.006				1440	<1	3.56	0.65	0.002	23	0.052	<0.001	0.002		7.2	19	<0.01	253	0.57	34	18		642	16.9	15.7	901	0.022
ME2001084024	GWC25	10-Jul-2020	1043																																		
ME2001084025	GWC33	16-Jul-2020	1121	1.05	<0.001	0.168	<1	239	46	69	0.003				2950	453	6.05	0.44	0.002	<1	0.024	<0.001	0.002		12.3	13	<0.01	42	0.151	26	18.5		500	12.5	14.1	754	0.082
ME2001084026	GWC26	16-Jul-2020	1158	0.2	<0.001	0.29	480	53	20	144	0.016				1270	<1	5.54	1.59	0.004	25	0.076	<0.001	0.005		7.3	17	<0.01	186	0.461	35	18.5		500	14.8	13.2	728	0.037
ME2001084027	GWC16	16-Jul-2020	1320	2.89	<0.001	0.236	642	24	<1	226	0.01				1930	<1	5.4	4.4	0.014	25	0.09	0.001	0.003		7.3	20	<0.01	335	0.587	59	18.5		642	20.4	18.3	1110	0.061
ME2001084028	GWA16	16-Jul-2020	1341	2.41	0.001	0.126	472	218	<1	4630	0.009				15800	<1	<0.01	2.58	0.005	402	0.295	0.002	0.005		7.4	13	0.02	2620	4.08	874	15		472	158	158	10100	0.042
ME2001084029	GWC30	13-Jul-2020	1305	0.09	<0.001	0.062	643	227	<1	544	0.008				3070	<1	2.18	2.4	0.002	154	0.163	<0.001	0.024		6.8	44	<0.01	178	2.26	295	18.5		643	34.3	32.9	2040	0.033
ME2001084030	GWC31	13-Jul-2020	1325																																		
ME2001084031	GWC27	13-Jul-2020	1409																																		

ME2001084032	GWC32	13-Jul-2020	1121	0.17	<0.001	0.037	1220	130	<1	313	0.132				3350	<1	5.01	1.9	0.002	94	0.047	0.001	0.033		6.7	37	<0.01	450	4.17	250	18.5		1220	38.4	34.7	2180	0.06
ME2001084033	GWA32	13-Jul-2020	1059	0.19	<0.001	0.051	494	166	<1	678	0.002				4070	<1	1.23	<0.05	<0.001	198	0.028	0.002	0.004		7.3	22	<0.01	447	2.21	802	14		494	45.7	44.6	2790	0.006
ME2001084034	GWA34	13-Jul-2020	1203	10.3	<0.001	0.026	4	425	<1	209	0.285				4580	<1	4.08	43.2	0.001	345	9.22	<0.001	0.671		4.6	5	<0.01	245	0.819	2860	17.5		4	65.5	60.4	4450	1.95
ME2001084035	GWC34	13-Jul-2020	1223																																		
ME2001084036	GWA36	16-Jul-2020	1401																																		
ME2001084037	GWC36	16-Jul-2020	1421	1.65	0.002	0.085	197	137	<1	303	0.006				3520	<1	4.19	46.5	0.012	156	3.31	0.001	0.024		6.4	35	<0.01	416	1.06	1420	17.5		197	42	38.7	2640	0.104
ME2001084038	PZ13	10-Jul-2020	1324																																		
ME2001084039	PZ20	10-Jul-2020	1234	0.26	0.001	0.039	405	39	<1	40	0.003				1120	<1	4.22	0.43	0.001	40	0.773	0.002	0.008		7.6	20	<0.01	122	0.456	135	15.5		405	12	11	698	0.016
ME2001084040	PZ21	10-Jul-2020	1214	0.39	0.002	0.045	493	37	<1	122	0.004				1790	<1	8.57	0.7	0.001	35	0.544	0.002	0.009		7.5	15	<0.01	268	0.536	318	16		493	19.9	16.8	1140	0.021
ME2001084041	PZ26	10-Jul-2020	1148																																		
ME2001084042	GWF1	07-Jul-2020	1500																																		
ME2001084043	GWF2	07-Jul-2020	1150																																		
ME2001084044	GWF3	07-Jul-2020	1150																																		
ME2001084045	GWF4	07-Jul-2020	1150																																		
ME2001085001	GWA1	07-Jul-2020	1100											5.01																							
ME2001085002	GWA2	07-Jul-2020	1113										1.6																								
ME2001085003	GWA3	07-Jul-2020	1155											5.37																							
ME2001085004	GWA4	07-Jul-2020	1236											4.94																							
ME2001085005	GWA5	22-Jul-2020	1346										3.785																								
ME2001085006	GWA6	07-Jul-2020	1316										1.965																								
ME2001085007	GWA7	07-Jul-2020	1347											5.19																							
ME2001085008	GWA8	20-Jul-2020	1340										1.51																								
ME2001085009	GWC1	07-Jul-2020	1129										11.435																								
ME2001085010	GWC2	07-Jul-2020	1200										16.05																								
ME2001085011	GWC3	07-Jul-2020	1303											15.96																							
ME2001085012	GWC4	07-Jul-2020	1407										15.73																								

ME2001085013	GWC5	20-Jul-2020	1406										6.54																								
ME2001085014	GWA10	17-Jul-2020	1044										3.14																								
ME2001085015	GWC10	17-Jul-2020	1100										6.51																								
ME2001085016	GWA11	17-Jul-2020	1118										3.66																								
ME2001085017	GWC11	17-Jul-2020	1137										15.17																								
ME2001085018	GWA12	17-Jul-2020	1229										3.865																								
ME2001085019	GWC12	17-Jul-2020	1302										26.27																								
ME2001085020	GWA14	17-Jul-2020	1333											4.505																							
ME2001085021	GWC14	17-Jul-2020	1457										25.28																								
ME2001085022	GWA15	20-Jul-2020	1123										2.62																								
ME2001085023	GWC15	20-Jul-2020	1146										26.8																								
ME2001085024	GWC25	10-Jul-2020	1037											35.37																							
ME2001085025	GWC33	16-Jul-2020	1102										40.93																								
ME2001085026	GWC26	16-Jul-2020	1144										43.73																								
ME2001085027	GWC16	16-Jul-2020	1307										31.7																								
ME2001085028	GWA16	16-Jul-2020	1332										2.93																								
ME2001085029	GWC30	13-Jul-2020	1250										31.735																								
ME2001085030	GWC31	13-Jul-2020	1320											51.18																							
ME2001085031	GWC27	13-Jul-2020	1409																																		
ME2001085032	GWC32	13-Jul-2020	1110										3.915																								
ME2001085033	GWA32	13-Jul-2020	1051										1.72																								
ME2001085034	GWA34	13-Jul-2020	1143										4.36																								
ME2001085035	GWC34	13-Jul-2020	1212											20.28																							
ME2001085036	GWA36	16-Jul-2020	1401											5.97																							
ME2001085037	GWC36	16-Jul-2020	1407										16.135																								
ME2001085038	PZ13	10-Jul-2020	1321											2.25																							

ME2001085039	PZ20	10-Jul-2020	1226										2.68																								
ME2001085040	PZ21	10-Jul-2020	1101										3.62																								
ME2001085041	PZ26	10-Jul-2020	1148											4.39																							
ME2001085042	GWF1	07-Jul-2020	1500																																		
ME2001085043	GWF2	07-Jul-2020	1210																																		
ME2001085044	GWF3	07-Jul-2020	1210																																		
ME2001085045	GWF4	07-Jul-2020	1210																																		
ME2001085046	Barologger Office	20-Jul-2020	1028																																		
ME2001256001	GWA1	10-Aug-2020	1146																																		
ME2001256002	GWA2	27-Aug-2020	1123	0.12	0.001	0.047	112	30	<1	292	0.002				1380	<1	4.3	1.27	<0.001	43	0.152	<0.001	0.001		6.8	7	<0.01	181	0.373	182	13.5		112	14.3	13.1	798	0.016
ME2001256003	GWA3	27-Aug-2020	1158																																		
ME2001256004	GWA4	24-Aug-2020	1425																																		
ME2001256005	GWA5	27-Aug-2020	1508	0.88	0.018	0.13	534	615	<1	3440	0.006				16000	<1	9.41	2	0.008	958	0.132	0.002	0.02		7.3	31	0.01	2050	7.13	6400	15		534	241	199	10900	0.109
ME2001256006	GWA6	27-Aug-2020	1254																																		
ME2001256007	GWA7	27-Aug-2020	1313																																		
ME2001256008	GWA8	27-Aug-2020	1407	0.5	<0.001	0.072	237	143	<1	464	0.002				2760	<1	7.78	0.99	0.002	131	24.7	<0.001	0.013		7	13	<0.01	253	1.59	786	15		237	34.2	29.2	1940	0.016
ME2001256009	GWC1	27-Aug-2020	1134	0.04	<0.001	0.046	356	72	<1	408	0.002				2300	<1	4.92	1.22	<0.001	52	0.326	<0.001	0.002		7.1	23	<0.01	337	0.742	331	17.5		356	25.5	23.1	1320	0.028
ME2001256010	GWC2	27-Aug-2020	1207	0.14	<0.001	0.306	546	68	<1	115	0.004				1260	<1	4.13	0.23	<0.001	30	0.105	<0.001	0.003		7.2	26	<0.01	157	0.642	17	18.5		546	14.5	13.4	729	0.027
ME2001256011	GWC3	27-Aug-2020	1234																																		
ME2001256012	GWC4	27-Aug-2020	1340	0.11	<0.001	0.048	664	172	<1	333	0.002				2400	<1	4.23	5.95	0.001	81	0.042	<0.001	<0.001		6.7	50	<0.01	213	1.97	260	19		664	28.1	25.8	1450	0.028
ME2001256013	GWC5	27-Aug-2020	1435	0.04	<0.001	0.212	2060	273	<1	507	0.003				5540	<1	3.43	0.38	0.003	149	1.5	<0.001	0.027		6.7	87	<0.01	884	8.26	321	17.5		2060	62.1	66.6	3750	0.099
ME2001256014	GWA10	24-Aug-2020	1105	0.39	0.002	0.016	165	51	<1	155	0.01				1040	<1	6.36	0.74	<0.001	32	0.095	<0.001	0.002		7.1	<1	<0.01	112	0.305	180	14		165	11.4	10	626	<0.005
ME2001256015	GWC10	24-Aug-2020	1121	0.09	<0.001	0.037	409	204	<1	423	0.233				3820	<1	4.13	0.99	<0.001	138	0.19	<0.001	0.011		7.3	34	<0.01	470	1.9	1270	17		409	46.5	42.8	2760	0.023
ME2001256016	GWA11	24-Aug-2020	1135	0.45	0.003	0.063	449	38	<1	84	0.014				1380	<1	1.98	5.13	0.001	37	1.08	<0.001	0.007		7.6	12	<0.01	216	0.557	187	14.5		449	15.2	14.6	788	0.007
ME2001256017	GWC11	24-Aug-2020	1156	0.4	<0.001	0.037	271	123	<1	316	0.028				3170	<1	0.42	9.2	0.004	121	1.66	0.001	0.011		6.5	30	<0.01	386	1.09	942	17		271	33.9	33.6	2220	0.063
ME2001256018	GWA12	24-Aug-2020	1214	1.25	<0.001	0.068	405	60	<1	225	0.004				1990	<1	4.68	1.09	0.001	43	0.034	0.002	0.005		7.6	3	<0.01	319	0.685	387	15		405	22.5	20.5	1200	0.008

ME2001256019	GWC12	24-Aug-2020	1239	0.11	<0.001	0.08	989	60	<1	224	0.076				3470	<1	1.03	1.78	<0.001	27	0.158	<0.001	0.004		7.3	26	<0.01	718	0.741	567	17.5		989	37.9	37.1	2310	0.011
ME2001256020	GWA14	24-Aug-2020	1314	19.7	0.002	0.131	474	18	<1	13	0.041				907	<1	2.72	7.24	0.006	8	0.437	<0.001	0.051		7.6	8	<0.01	190	0.27	36	14		474	10.6	10	1680	0.042
ME2001256021	GWC14	24-Aug-2020	1332	0.17	<0.001	0.608	533	62	<1	125	0.017				1470	<1	5.31	1.1	0.003	27	0.062	<0.001	0.005		7.4	20	<0.01	212	0.694	123	17		533	16.7	15	854	0.028
ME2001256022	GWA15	24-Aug-2020	1347	2.28	<0.001	0.11	73	6	<1	90	0.008				620	<1	4.78	1.25	0.005	3	0.029	<0.001	0.004		6.9	<1	<0.01	107	0.064	35	14		73	4.73	5.2	438	0.011
ME2001256023	GWC15	24-Aug-2020	1409	0.07	<0.001	0.259	588	44	<1	129	0.006				1380	<1	5.45	0.52	0.002	20	0.052	<0.001	0.001		7.2	18	<0.01	229	0.525	25	17.5		588	15.9	14.3	721	0.015
ME2001256024	GWC25	12-Aug-2020	1150																																		
ME2001256025	GWC33	10-Aug-2020	1114	1.16	<0.001	0.161	<1	212	25	71	0.003				2660	423	4.68	0.53	0.002	<1	0.028	<0.001	0.002		12.2	13	<0.01	42	0.149	31	19		448	11.6	12.7	712	0.076
ME2001256026	GWC26	27-Aug-2020	1100																																		
ME2001256027	GWC16	10-Aug-2020	1220	1.36	<0.001	0.183	638	52	77	226	0.005				1920	<1	5.6	3.12	0.009	27	0.085	<0.001	0.002		7.3	18	<0.01	332	0.578	67	19		715	22	19.7	1160	0.031
ME2001256028	GWA16	10-Aug-2020	1250	0.3	<0.001	0.07	526	266	<1	4600	0.004				16600	<1	2.12	0.33	<0.001	414	0.03	0.002	0.002		7.6	18	<0.01	2860	3.97	1190	14		526	165	172	10500	0.022
ME2001256029	GWC30	06-Aug-2020	1315	0.23	<0.001	0.171	624	224	<1	616	0.009				3090	<1	4.79	1.48	0.002	156	0.175	<0.001	0.054		6.9	46	<0.01	182	2.34	317	18		624	36.4	33.1	1890	0.033
ME2001256030	GWC31	06-Aug-2020	1346																																		
ME2001256031	GWC27	06-Aug-2020	1007																																		
ME2001256032	GWC32	06-Aug-2020	1115	0.1	<0.001	0.044	1370	153	<1	346	0.215				3440	<1	3.45	1.09	0.002	106	0.058	0.001	0.02		6.9	41	<0.01	519	4.56	274	18		1370	42.8	40	2170	0.043
ME2001256033	GWA32	06-Aug-2020	1050	0.34	<0.001	0.06	533	185	<1	912	0.003				4780	<1	3.1	0.11	<0.001	234	0.052	0.002	0.002		7.4	23	<0.01	544	2.7	948	13		533	56.1	52.7	3280	0.006
ME2001256034	GWA34	06-Aug-2020	1157	12.9	0.001	0.028	4	413	<1	223	0.108				4490	<1	2.85	44.4	0.002	343	8.77	<0.001	0.621		4.3	4	0.01	243	0.795	2720	17		4	63	59.5	4280	1.89
ME2001256035	GWC34	06-Aug-2020	1218																																		
ME2001256036	GWA36	10-Aug-2020	1323																																		
ME2001256037	GWC36	10-Aug-2020	1352	1.11	0.002	0.057	194	129	<1	285	0.008				3390	<1	5.71	37	0.01	146	2.89	0.001	0.019		6.5	32	<0.01	399	1	1400	18		194	41.1	36.6	2480	0.12
ME2001256038	PZ13	12-Aug-2020	1432																																		
ME2001256039	PZ20	12-Aug-2020	1401	0.79	0.002	0.022	205	19	<1	34	0.002				629	<1	4.98	0.87	0.002	21	0.334	<0.001	0.006		7.6	11	<0.01	74	0.225	85	14.5		205	6.82	6.18	356	0.014
ME2001256040	PZ21	12-Aug-2020	1345	2.18	0.002	0.052	366	19	<1	56	0.002				1120	<1	5.39	1.96	0.001	19	0.353	0.002	0.006		7.6	7	<0.01	196	0.282	173	16.5		366	12.5	11.2	642	0.017
ME2001256041	PZ26	12-Aug-2020	1248																																		
ME2001256042	GWF1	12-Aug-2020	1028																																		
ME2001256043	GWF2	12-Aug-2020	1043																																		
ME2001256044	GWF3	12-Aug-2020	1120	0.33	<0.001	0.102	743	205	<1	421	0.005				4140	<1	5.59	5.16	0.002	250	1.21	0.005	0.008		6.8	38	<0.01	405	2.3	1370	20.5		743	55.2	49.4	2640	0.044

ME2001256045	GWF4	12-Aug-2020	1327																																		
ME2001257001	GWA1	10-Aug-2020	1146											5.11																							
ME2001257002	GWA2	27-Aug-2020	1120										1.34																								
ME2001257003	GWA3	27-Aug-2020	1155											4.96																							
ME2001257004	GWA4	24-Aug-2020	1419											4.88																							
ME2001257005	GWA5	27-Aug-2020	1458										3.69																								
ME2001257006	GWA6	27-Aug-2020	1247										1.83																								
ME2001257007	GWA7	27-Aug-2020	1313											5.19																							
ME2001257008	GWA8	27-Aug-2020	1358										1.52																								
ME2001257009	GWC1	27-Aug-2020	1129										11.31																								
ME2001257010	GWC2	27-Aug-2020	1202										14.91																								
ME2001257011	GWC3	27-Aug-2020	1230											15.05																							
ME2001257012	GWC4	27-Aug-2020	1334										15.49																								
ME2001257013	GWC5	27-Aug-2020	1426										5.84																								
ME2001257014	GWA10	24-Aug-2020	1054										3.12																								
ME2001257015	GWC10	24-Aug-2020	1114										6.28																								
ME2001257016	GWA11	24-Aug-2020	1128										3.525																								
ME2001257017	GWC11	24-Aug-2020	1145										14.78																								
ME2001257018	GWA12	24-Aug-2020	1212										3.275																								
ME2001257019	GWC12	24-Aug-2020	1225										24.47																								
ME2001257020	GWA14	24-Aug-2020	1300										1.72																								
ME2001257021	GWC14	24-Aug-2020	1321										24.2																								
ME2001257022	GWA15	24-Aug-2020	1342										2.5																								
ME2001257023	GWC15	24-Aug-2020	1357										26.36																								
ME2001257024	GWC25	12-Aug-2020	1143											35.13																							
ME2001257025	GWC33	10-Aug-2020	1053										41.195																								

ME2001257026	GWC26	27-Aug-2020	1100																																		
ME2001257027	GWC16	10-Aug-2020	1206										31.62																								
ME2001257028	GWA16	10-Aug-2020	1241										2.02																								
ME2001257029	GWC30	06-Aug-2020	1257										31.69																								
ME2001257030	GWC31	06-Aug-2020	1334											51.13																							
ME2001257031	GWC27	06-Aug-2020	1007																																		
ME2001257032	GWC32	06-Aug-2020	1107										3.89																								
ME2001257033	GWA32	06-Aug-2020	1040										1.805																								
ME2001257034	GWA34	06-Aug-2020	1138										4.35																								
ME2001257035	GWC34	06-Aug-2020	1208											20.36																							
ME2001257036	GWA36	10-Aug-2020	1323											5.97																							
ME2001257037	GWC36	10-Aug-2020	1331										15.9																								
ME2001257038	PZ13	12-Aug-2020	1430											2.25																							
ME2001257039	PZ20	12-Aug-2020	1356										1.45																								
ME2001257040	PZ21	12-Aug-2020	1337										2.9																								
ME2001257041	PZ26	12-Aug-2020	1248											4.38																							
ME2001257042	GWF1	12-Aug-2020	1024											16.41																							
ME2001257043	GWF2	12-Aug-2020	1043											24.78																							
ME2001257044	GWF3	12-Aug-2020	1057										17.81																								
ME2001257045	GWF4	12-Aug-2020	1323											12.94																							
ME2001257046	Barologger Office	27-Aug-2020	1012																																		
ME2001391001	GWA1	03-Sep-2020	1215																																		
ME2001391002	GWA2	03-Sep-2020	1327	0.14	<0.001	0.046	121	28	<1	318	0.001				1460	<1	4.24	1.12	<0.001	44	0.212	<0.001	<0.001		6.9	7	<0.01	198	0.377	175	15		121	15	13.8	811	<0.005
ME2001391003	GWA3	17-Sep-2020	1130																																		
ME2001391004	GWA4	17-Sep-2020	1212																																		
ME2001391005	GWA5	22-Sep-2020	1440	2.09	0.012	0.568	608	643	<1	3690	0.006				16600	<1	4.02	3.78	0.004	1090	0.31	0.002	0.024		7.2	32	<0.01	2220	7.29	4130	15.5		608	202	219	13800	0.083

ME2001391006	GWA6	17-Sep-2020	1345																																		
ME2001391007	GWA7	17-Sep-2020	1405																																		
ME2001391008	GWA8	22-Sep-2020	1344	0.43	<0.001	0.068	258	142	<1	482	0.002				2720	<1	2.41	0.91	0.002	131	22.7	<0.001	0.012		7	12	<0.01	253	1.5	570	16		258	30.6	29.2	1880	0.011
ME2001391009	GWC1	03-Sep-2020	1336	0.13	<0.001	0.071	351	70	<1	414	0.004				2360	<1	2.73	2.58	<0.001	52	0.377	<0.001	0.003		7.1	21	<0.01	359	0.766	316	18.5		351	25.3	23.9	1430	0.022
ME2001391010	GWC2	17-Sep-2020	1140	0.08	<0.001	0.298	540	69	<1	120	0.001				1270	<1	5.22	0.15	<0.001	29	0.089	<0.001	0.002		7.1	26	<0.01	152	0.632	18	20		540	14.5	13.1	658	0.012
ME2001391011	GWC3	17-Sep-2020	1321																																		
ME2001391012	GWC4	17-Sep-2020	1441	0.08	<0.001	0.042	641	174	<1	369	0.002				2400	<1	5.2	3.36	<0.001	80	0.038	<0.001	<0.001		6.7	47	<0.01	214	1.9	259	20.5		641	28.6	25.8	1460	0.016
ME2001391013	GWC5	22-Sep-2020	1408	0.02	<0.001	0.215	2040	280	<1	582	0.001				5580	<1	2.83	0.53	0.002	148	1.36	<0.001	0.022		6.6	89	<0.01	888	8.14	297	18		2040	63.4	67	3760	0.047
ME2001391014	GWA10	09-Sep-2020	1115	0.4	<0.001	0.013	143	37	<1	113	0.008				807	<1	3.55	0.63	<0.001	24	0.075	<0.001	0.002		7	<1	<0.01	100	0.24	131	14.5		143	8.77	8.17	406	0.008
ME2001391015	GWC10	09-Sep-2020	1136	0.06	<0.001	0.038	425	192	<1	428	0.15				3790	<1	4.74	0.88	<0.001	144	0.082	<0.001	0.008		7.1	31	<0.01	523	1.98	977	18		425	40.9	45	2300	0.016
ME2001391016	GWA11	09-Sep-2020	1157	0.6	0.002	0.046	456	37	<1	78	0.004				1300	<1	0.89	2.87	<0.001	37	0.442	0.001	0.003		7.5	11	<0.01	234	0.522	181	15.5		456	15.1	15.4	662	<0.005
ME2001391017	GWC11	09-Sep-2020	1234	0.24	<0.001	0.03	272	103	<1	288	0.015				2900	<1	5.63	8.9	0.002	115	1.43	<0.001	0.009		6.4	25	<0.01	397	1	744	19		272	29	32.5	1780	0.04
ME2001391018	GWA12	09-Sep-2020	1305	1.03	<0.001	0.026	304	30	<1	122	0.003				1180	<1	0.78	0.66	<0.001	23	0.018	0.002	0.003		7.6	2	<0.01	223	0.331	184	15.5		304	13.3	13.1	636	0.006
ME2001391019	GWC12	09-Sep-2020	1339	0.08	<0.001	0.119	580	43	<1	120	0.101				1510	<1	4.32	1.06	<0.001	21	0.151	<0.001	0.003		7.2	15	<0.01	278	0.453	137	18		580	17.8	16.3	800	0.014
ME2001391020	GWA14	22-Sep-2020	1055																																		
ME2001391021	GWC14	22-Sep-2020	1129	0.09	<0.001	0.355	496	72	<1	139	0.012				1580	<1	3.54	0.61	0.001	32	0.059	<0.001	0.003		7.4	21	<0.01	229	0.779	198	18.5		496	18	16.7	928	0.015
ME2001391022	GWA15	22-Sep-2020	1218	4.63	<0.001	0.078	98	12	<1	137	0.016				778	<1	1.85	2.84	0.022	5	0.088	<0.001	0.008		6.9	<1	<0.01	144	0.112	57	16		98	7.01	7.27	544	0.028
ME2001391023	GWC15	22-Sep-2020	1236	0.09	<0.001	0.198	579	43	<1	124	0.003				1340	<1	3.2	0.44	0.001	21	0.044	<0.001	0.001		7.2	18	<0.01	232	0.523	15	18.5		579	15.4	14.4	786	0.015
ME2001391024	GWC25	11-Sep-2020	1120																																		
ME2001391025	GWC33	03-Sep-2020	1114	1.02	<0.001	0.091	<1	200	54	74	0.003				2590	268	13.5	0.22	<0.001	<1	0.01	<0.001	0.001		12.2	13	<0.01	40	0.139	32	20.5		322	9.19	12	714	0.026
ME2001391026	GWC26	03-Sep-2020	1204	1.06	0.001	0.414	367	72	96	158	0.027				1300	<1	0.65	3.8	0.011	26	0.114	0.001	0.011		7.3	16	<0.01	197	0.495	39	20.5		463	14.5	14.7	697	0.059
ME2001391027	GWC16	03-Sep-2020	1259	4.75	0.001	0.241	666	52	<1	253	0.012				1960	<1	2.08	5.91	0.017	27	0.114	0.001	0.004		7.2	18	<0.01	364	0.596	75	20.5		666	22	21.1	1090	0.05
ME2001391028	GWA16	03-Sep-2020	1312	0.61	<0.001	0.088	449	285	<1	5440	0.004				18700	<1	5.74	0.66	0.001	494	0.026	0.002	0.004		7.5	17	<0.01	3400	4.61	898	15		449	181	203	12000	0.025
ME2001391029	GWC30	01-Sep-2020	1353	0.08	<0.001	0.081	641	213	<1	628	0.004				3130	<1	4	1.23	<0.001	165	0.155	<0.001	0.031		6.7	43	<0.01	201	2.4	306	19.5		641	36.9	34	1980	0.014
ME2001391030	GWC31	01-Sep-2020	1416																																		
ME2001391031	GWC27	01-Sep-2020	1437																																		

ME2001391032	GWC32	01-Sep-2020	1231	0.1	<0.001	0.042	1460	140	<1	337	0.157				3470	<1	2.15	0.93	0.002	116	0.056	0.001	0.015		6.9	40	<0.01	571	4.56	268	19		1460	44.2	42.4	2170	0.038
ME2001391033	GWA32	01-Sep-2020	1130	0.4	<0.001	0.049	512	152	<1	796	0.002				4240	<1	1.03	0.08	<0.001	210	0.062	0.002	0.001		7.3	21	<0.01	535	2.45	817	14		512	49.7	48.7	2910	0.011
ME2001391034	GWA34	01-Sep-2020	1306	13.9	<0.001	0.024	1	400	<1	244	0.171				4610	<1	0.93	42	0.002	366	8.39	<0.001	0.623		4.2	5	0.01	284	0.841	2730	17		1	63.7	62.6	4560	1.88
ME2001391035	GWC34	01-Sep-2020	1320																																		
ME2001391036	GWA36	03-Sep-2020	1346																																		
ME2001391037	GWC36	03-Sep-2020	1359	1.2	0.001	0.055	195	128	<1	308	0.003				3430	<1	2.22	28.8	0.006	165	2.4	0.001	0.017		6.4	31	<0.01	445	1.05	1410	19.5		195	41.9	40.1	2520	0.074
ME2001391038	PZ13	11-Sep-2020	1425																																		
ME2001391039	PZ20	11-Sep-2020	1359	1.11	0.001	0.033	352	40	<1	62	0.004				1040	<1	1.56	1.25	0.003	42	0.536	<0.001	0.006		7.6	15	<0.01	126	0.427	139	15		352	11.7	11.3	768	0.016
ME2001391040	PZ21	11-Sep-2020	1345	2.13	0.002	0.106	430	26	<1	60	0.004				1220	<1	3.84	1.97	0.002	24	0.444	0.002	0.006		7.6	8	<0.01	221	0.348	185	16.5		430	14.1	13.1	908	0.016
ME2001391041	PZ26	11-Sep-2020	1226																																		
ME2001391042	GWF1	02-Sep-2020	1500																																		
ME2001391043	GWF2	02-Sep-2020	1045																																		
ME2001391044	GWF3	02-Sep-2020	1045																																		
ME2001391045	GWF4	02-Sep-2020	1045																																		
ME2001392001	GWA1	03-Sep-2020	1215											5.11																							
ME2001392002	GWA2	03-Sep-2020	1327										1.34																								
ME2001392003	GWA3	17-Sep-2020	1124											4.83																							
ME2001392004	GWA4	17-Sep-2020	1208											4.905																							
ME2001392005	GWA5	22-Sep-2020	1433										3.28																								
ME2001392006	GWA6	17-Sep-2020	1330											1.955																							
ME2001392007	GWA7	17-Sep-2020	1405											5.19																							
ME2001392008	GWA8	22-Sep-2020	1335										1.405																								
ME2001392009	GWC1	03-Sep-2020	1336										11.315																								
ME2001392010	GWC2	17-Sep-2020	1130										14.5																								
ME2001392011	GWC3	17-Sep-2020	1314											15.53																							
ME2001392012	GWC4	17-Sep-2020	1434										15.35																								

ME2001392013	GWC5	22-Sep-2020	1401										6.44																								
ME2001392014	GWA10	09-Sep-2020	1107										3.13																								
ME2001392015	GWC10	09-Sep-2020	1125										6.43																								
ME2001392016	GWA11	09-Sep-2020	1147										3.48																								
ME2001392017	GWC11	09-Sep-2020	1223										14.84																								
ME2001392018	GWA12	09-Sep-2020	1251										3.28																								
ME2001392019	GWC12	09-Sep-2020	1319										23.89																								
ME2001392020	GWA14	22-Sep-2020	1055											3.02																							
ME2001392021	GWC14	22-Sep-2020	1110										23.5																								
ME2001392022	GWA15	22-Sep-2020	1146										2.51																								
ME2001392023	GWC15	22-Sep-2020	1205										25.71																								
ME2001392024	GWC25	11-Sep-2020	1112										35.24																								
ME2001392025	GWC33	03-Sep-2020	1100										41.44																								
ME2001392026	GWC26	03-Sep-2020	1142										44.3																								
ME2001392027	GWC16	03-Sep-2020	1249										31.64																								
ME2001392028	GWA16	03-Sep-2020	1312										1.995																								
ME2001392029	GWC30	01-Sep-2020	1345										31.66																								
ME2001392030	GWC31	03-Sep-2020	1412											51.16																							
ME2001392031	GWC27	01-Sep-2020	1437																																		
ME2001392032	GWC32	01-Sep-2020	1224										3.95																								
ME2001392033	GWA32	01-Sep-2020	1121										1.86																								
ME2001392034	GWA34	01-Sep-2020	1258										4.37																								
ME2001392035	GWC34	01-Sep-2020	1416											20.51																							
ME2001392036	GWA36	03-Sep-2020	1346											5.97																							
ME2001392037	GWC36	03-Sep-2020	1351										15.965																								
ME2001392038	PZ13	11-Sep-2020	1425											2.28																							

ME2001392039	PZ20	11-Sep-2020	1339										1.66																								
ME2001392040	PZ21	11-Sep-2020	1329										3.13																								
ME2001392041	PZ26	11-Sep-2020	1226											4.39																							
ME2001392042	GWF1	01-Sep-2020	1500																																		
ME2001392043	GWF2	11-Sep-2020	1035											23.78																							
ME2001392044	GWF3	11-Sep-2020	1054										19.1																								
ME2001392045	GWF4	11-Sep-2020	1245											12.93																							
ME2001392046	Barologger Office	22-Sep-2020	1021																																		
ME2001599001	GWA1	16-Oct-2020	1238																																		
ME2001599002	GWA2	16-Oct-2020	1425	0.32	0.001	0.036	102	18	<1	178	0.002				916	<1	3.14	6.49	<0.001	27	0.194	<0.001	0.002		6.8	6	<0.01	132	0.225	122	16		102	9.6	9.02	590	0.006
ME2001599003	GWA3	12-Oct-2020	1057																																		
ME2001599004	GWA4	23-Oct-2020	1207																																		
ME2001599005	GWA5	14-Oct-2020	1446	3.68	0.08	0.208	733	695	<1	3880	0.019				17800	<1	3.55	5.95	0.048	1150	0.506	0.001	0.042		7.2	36	0.01	2400	7.26	6140	17		733	252	235	15700	0.194
ME2001599006	GWA6	23-Oct-2020	1258																																		
ME2001599007	GWA7	22-Oct-2020	1430																																		
ME2001599008	GWA8	23-Oct-2020	1414	0.08	<0.001	0.057	246	136	<1	403	0.002				2670	<1	3.15	0.17	<0.001	122	18.1	<0.001	0.011		7	12	<0.01	238	1.33	624	18		246	29.3	27.5	2010	0.01
ME2001599009	GWC1	16-Oct-2020	1442	0.04	0.001	0.043	395	77	<1	449	0.001				2360	<1	5.62	2.13	<0.001	52	0.373	<0.001	0.004		7	23	<0.01	356	0.784	313	18.5		395	27.1	24.2	1430	0.015
ME2001599010	GWC2	12-Oct-2020	1045	0.05	<0.001	0.297	514	70	<1	108	0.003				1250	<1	0.12	0.12	<0.001	30	0.084	<0.001	0.002		7.2	27	<0.01	164	0.655	21	20		514	13.8	13.8	737	0.011
ME2001599011	GWC3	23-Oct-2020	1238	0.95	0.002	0.054	720	225	<1	765	0.005				5190	<1	0.42	4.76	0.005	175	0.513	<0.001	0.006		7	42	<0.01	689	2.1	972	23		720	56.2	56.7	3650	0.021
ME2001599012	GWC4	23-Oct-2020	1349	0.06	<0.001	0.044	650	174	<1	319	0.001				2400	<1	2.89	3.36	<0.001	79	0.042	<0.001	0.001		6.7	48	<0.01	210	1.82	244	21.5		650	27.1	25.5	1550	0.016
ME2001599013	GWC5	23-Oct-2020	1434	0.02	<0.001	0.211	1840	292	<1	489	0.001				5540	<1	9.57	0.41	0.002	153	1.35	<0.001	0.026		6.7	94	<0.01	902	7.6	299	18.5		1840	56.8	68.8	3670	0.037
ME2001599014	GWA10	29-Oct-2020	1106	0.09	<0.001	0.01	89	24	<1	63	0.008				586	<1	1.54	0.2	<0.001	16	0.042	<0.001	0.004		6.3	<1	<0.01	65	0.161	78	16.5		89	5.18	5.34	358	0.009
ME2001599015	GWC10	29-Oct-2020	1126	0.06	<0.001	0.041	451	213	<1	394	0.111				3800	<1	0.44	1.66	0.003	131	0.308	<0.001	0.004		7	34	<0.01	511	1.89	1190	18		451	44.9	44.5	2760	0.011
ME2001599016	GWA11	29-Oct-2020	1149	0.34	0.002	0.057	500	40	<1	61	0.007				1390	<1	1.92	3.94	0.002	39	2.55	<0.001	0.007		7.5	13	<0.01	232	0.49	160	17		500	15	15.6	806	0.007
ME2001599017	GWC11	29-Oct-2020	1234	0.24	<0.001	0.025	244	98	<1	227	0.031				2620	<1	2	6.57	0.003	100	1.14	<0.001	0.008		6.4	26	<0.01	347	0.801	791	19.5		244	27.7	28.9	1820	0.03
ME2001599018	GWA12	29-Oct-2020	1324	0.98	<0.001	0.013	169	11	<1	36	0.003				513	<1	0.75	0.17	0.001	7	0.054	0.002	0.002		7.8	1	<0.01	90	0.099	36	17		169	5.14	5.06	410	<0.005

ME2001599019	GWC12	29-Oct-2020	1353	0.26	<0.001	0.138	607	54	<1	110	0.054				1570	<1	0.62	0.93	0.004	25	0.138	0.002	0.011		7.4	19	<0.01	285	0.457	126	19.5		607	17.8	17.6	906	0.021
ME2001599020	GWA14	29-Oct-2020	1418																																		
ME2001599021	GWC14	29-Oct-2020	1447	0.23	<0.001	1.4	520	88	<1	128	0.015				1750	<1	0.36	1.15	0.004	39	0.082	<0.001	0.005		7.4	23	<0.01	262	0.852	275	19.5		520	19.7	19.6	1050	0.046
ME2001599022	GWA15	27-Oct-2020	1202	0.12	<0.001	0.213	122	13	<1	163	0.023				883	<1	4	3.72	0.002	5	0.06	<0.001	0.002		6.9	<1	<0.01	151	0.477	59	16.5		122	8.26	7.63	550	0.023
ME2001599023	GWC15	27-Oct-2020	1247	0.28	<0.001	0.018	596	45	<1	113	0.005				1350	<1	4.6	0.22	0.007	21	0.06	<0.001	0.003		7.1	19	<0.01	221	0.113	16	19.5		596	15.4	14.1	776	0.011
ME2001599024	GWC25	20-Oct-2020	1053																																		
ME2001599025	GWC33	22-Oct-2020	1140	0.97	<0.001	0.248	<1	265	74	74	0.009				3670	437	9.22	0.48	0.002	<1	0.025	<0.001	0.003		12.3	16	<0.01	44	0.219	29	21		512	12.9	15.5	980	0.043
ME2001599026	GWC26	22-Oct-2020	1241	0.28	<0.001	0.217	399	58	69	151	0.012				1350	<1	3.39	1.21	0.003	25	0.092	0.002	0.008		7.3	17	<0.01	186	0.47	39	21		468	14.4	13.5	684	0.026
ME2001599027	GWC16	23-Oct-2020	1133	0.6	<0.001	0.131	682	55	<1	248	0.004				1950	<1	5.82	2.47	0.008	27	0.066	<0.001	0.001		7.2	18	<0.01	330	0.585	77	21		682	22.2	19.8	1110	0.023
ME2001599028	GWA16	16-Oct-2020	1339	0.56	<0.001	0.1	551	353	<1	6020	0.006				19300	<1	0.51	0.43	0.002	518	0.049	0.002	0.003		7.4	18	<0.01	3250	5.04	1120	17		551	204	202	13000	0.042
ME2001599029	GWC30	12-Oct-2020	1251	0.05	<0.001	0.065	658	230	<1	621	0.004				3110	<1	3.92	0.71	<0.001	158	0.152	<0.001	0.038		6.8	48	<0.01	194	2.48	301	20.5		658	36.9	34.1	2210	0.017
ME2001599030	GWC31	12-Oct-2020	1324																																		
ME2001599031	GWC27	12-Oct-2020	1518	3.12	0.027	0.158	44	32	<1	357	2.11				1650	<1	5.4	40.1	0.027	48	4.05	0.002	0.227		5.9	35	<0.01	196	0.158	275	18		44	16.7	15	1090	0.32
ME2001599032	GWC32	07-Oct-2020	1145	0.04	<0.001	0.038	1530	160	<1	392	1.03				3480	<1	5.94	0.55	0.002	111	0.052	<0.001	0.02		7	44	<0.01	559	4.14	303	19.5		1530	47.9	42.6	2250	0.029
ME2001599033	GWA32	07-Oct-2020	1118	0.14	<0.001	0.044	444	154	<1	678	0.091				3550	<1	2.51	<0.05	<0.001	166	0.098	0.001	0.002		7.2	21	<0.01	413	1.98	668	17		444	41.9	39.8	2510	<0.005
ME2001599034	GWA34	07-Oct-2020	1305																																		
ME2001599035	GWC34	07-Oct-2020	1327																																		
ME2001599036	GWA36	22-Oct-2020	1331																																		
ME2001599037	GWC36	22-Oct-2020	1359	0.58	<0.001	0.024	148	163	<1	292	0.002				3910	<1	3.94	50.6	0.006	183	3.91	0.001	0.03		6.3	35	<0.01	405	1.22	1630	20.5		148	45.1	41.7	2760	0.115
ME2001599038	PZ13	20-Oct-2020	1400																																		
ME2001599039	PZ20	20-Oct-2020	1330	1.06	0.002	0.033	358	36	<1	46	<0.001				968	<1	0.93	1.21	0.002	37	1.32	0.002	0.008		7.6	16	<0.01	125	0.328	98	17.5		358	10.5	10.7	604	0.013
ME2001599040	PZ21	20-Oct-2020	1306	1.27	0.002	0.057	411	25	<1	55	0.001				1260	<1	3.47	1.63	<0.001	25	0.596	0.002	0.005		7.6	10	<0.01	248	0.284	174	19		411	13.4	14.3	786	0.012
ME2001599041	PZ26	20-Oct-2020	1230																																		
ME2001599042	GWF1	07-Oct-2020	1500																																		
ME2001599043	GWF2	07-Oct-2020	1014																																		
ME2001599044	GWF3	07-Oct-2020	1014																																		

ME2001599045	GWF4	07-Oct-2020	1014																																		
ME2001600001	GWA1	16-Oct-2020	1238										5.02																								
ME2001600002	GWA2	16-Oct-2020	1411											1.55																							
ME2001600003	GWA3	12-Oct-2020	1057										5.6																								
ME2001600004	GWA4	23-Oct-2020	1206										4.91																								
ME2001600005	GWA5	14-Oct-2020	1437											3.85																							
ME2001600006	GWA6	23-Oct-2020	1250										2.14																								
ME2001600007	GWA7	22-Oct-2020	1430										5.19																								
ME2001600008	GWA8	23-Oct-2020	1406											1.63																							
ME2001600009	GWC1	16-Oct-2020	1434											11.4																							
ME2001600010	GWC2	12-Oct-2020	1037											14.21																							
ME2001600011	GWC3	23-Oct-2020	1227											15.13																							
ME2001600012	GWC4	23-Oct-2020	1334											15.3																							
ME2001600013	GWC5	23-Oct-2020	1427											6.13																							
ME2001600014	GWA10	29-Oct-2020	1045											2.53																							
ME2001600015	GWC10	29-Oct-2020	1110											6.21																							
ME2001600016	GWA11	29-Oct-2020	1138											3.54																							
ME2001600017	GWC11	29-Oct-2020	1212											15.1																							
ME2001600018	GWA12	29-Oct-2020	1316											3.055																							
ME2001600019	GWC12	29-Oct-2020	1339											22.39																							
ME2001600020	GWA14	29-Oct-2020	1415										4.01																								
ME2001600021	GWC14	29-Oct-2020	1426											22.26																							
ME2001600022	GWA15	27-Oct-2020	1146											2.67																							
ME2001600023	GWC15	27-Oct-2020	1220											24.97																							
ME2001600024	GWC25	20-Oct-2020	1046										35.27																								
ME2001600025	GWC33	22-Oct-2020	1140											41.88																							

ME2001600026	GWC26	22-Oct-2020	1241											45.08																							
ME2001600027	GWC16	23-Oct-2020	1117											31.63																							
ME2001600028	GWA16	16-Oct-2020	1331											2.11																							
ME2001600029	GWC30	12-Oct-2020	1232											31.46																							
ME2001600030	GWC31	12-Oct-2020	1324										51.04																								
ME2001600031	GWC27	12-Oct-2020	1446											16.65																							
ME2001600032	GWC32	07-Oct-2020	1134											4.02																							
ME2001600033	GWA32	07-Oct-2020	1103											1.94																							
ME2001600034	GWA34	07-Oct-2020	1246										4.38																								
ME2001600035	GWC34	07-Oct-2020	1327										20.295																								
ME2001600036	GWA36	22-Oct-2020	1331										5.97																								
ME2001600037	GWC36	22-Oct-2020	1339											16.28																							
ME2001600038	PZ13	20-Oct-2020	1400										2.25																								
ME2001600039	PZ20	20-Oct-2020	1320											2.11																							
ME2001600040	PZ21	20-Oct-2020	1257											3.52																							
ME2001600041	PZ26	20-Oct-2020	1230																																		
ME2001600042	GWF1	07-Oct-2020	1500																																		
ME2001600043	GWF2	20-Oct-2020	1209										23.78																								
ME2001600044	GWF3	20-Oct-2020	1145											18.92																							
ME2001600045	GWF4	20-Oct-2020	1243											12.93																							
ME2001600046	Barologger Office	29-Oct-2020	1024																																		
ME2001758001	GWA1	04-Nov-2020	1253																																		
ME2001758002	GWA2	19-Nov-2020	1220	0.47	<0.001	0.04	127	20	<1	201	<0.001				1040	<1	7.55	8.59	<0.001	28	0.949	<0.001	0.002		6.8	6	<0.01	135	0.224	127	18		127	10.8	9.33	608	<0.005
ME2001758003	GWA3	20-Nov-2020	1136	2.19	<0.001	0.015	135	12	<1	97	0.002				821	<1	4.68	1.8	<0.001	15	0.043	<0.001	0.005		7.3	1	<0.01	126	0.136	60	19.5		135	6.68	7.34	514	0.012
ME2001758004	GWA4	19-Nov-2020	1441																																		
ME2001758005	GWA5	20-Nov-2020	1448	0.6	0.016	0.038	813	655	<1	3250	0.004				17400	<1	4.88	1.59	0.006	1110	0.158	0.002	0.019		7.3	37	<0.01	2290	6.07	4600	19		813	204	224	16000	0.068

ME2001758006	GWA6	20-Nov-2020	1255	1.92	0.002	0.048	695	97	<1	225	0.006				3060	<1	2.82	1.53	0.003	106	0.154	0.002	0.006		7.7	14	<0.01	481	0.783	610	18		695	32.9	34.8	2130	0.008
ME2001758007	GWA7	05-Nov-2020	1259	0.25	<0.001	0.065	1340	459	<1	3190	0.002				13800	<1	6.98	0.56	<0.001	634	0.17	0.001	0.003		7.2	34	<0.01	1820	7.47	2960	18.5		1340	178	155	10700	<0.005
ME2001758008	GWA8	20-Nov-2020	1349	0.85	<0.001	0.069	276	139	<1	401	<0.001				2650	<1	0.93	1.57	0.003	122	17	<0.001	0.011		7	12	<0.01	236	1.25	540	18.5		276	28.1	27.5	1880	0.011
ME2001758009	GWC1	19-Nov-2020	1242	0.02	<0.001	0.038	391	75	<1	396	<0.001				2340	<1	4.77	0.62	<0.001	51	0.101	<0.001	0.002		7.2	23	<0.01	332	0.634	302	19.5		391	25.3	23	1380	0.012
ME2001758010	GWC2	20-Nov-2020	1151	0.09	<0.001	0.235	503	69	<1	100	<0.001				1230	<1	0.92	0.2	<0.001	30	0.108	<0.001	0.002		7.2	26	<0.01	152	0.52	27	20.5		503	13.4	13.2	658	0.01
ME2001758011	GWC3	20-Nov-2020	1231	0.23	<0.001	0.044	620	236	<1	996	<0.001				6000	<1	2.82	0.83	<0.001	202	0.194	<0.001	0.004		7	45	0.01	820	2.21	1370	21		620	69	65.2	4160	0.014
ME2001758012	GWC4	05-Nov-2020	1342	0.03	<0.001	0.044	692	178	<1	362	0.002				2410	<1	6.04	1.98	<0.001	77	0.037	<0.001	0.001		6.7	50	<0.01	213	1.72	242	19.5		692	29.1	25.8	1200	0.013
ME2001758013	GWC5	20-Nov-2020	1412	0.02	<0.001	0.185	2220	264	<1	506	<0.001				5530	<1	1.16	0.3	0.002	148	1.18	<0.001	0.024		6.7	86	<0.01	887	6.57	288	19.5		2220	64.6	66.1	3590	0.036
ME2001758014	GWA10	05-Nov-2020	1135	0.12	<0.001	0.018	207	78	<1	230	0.004				1320	<1	4.35	0.31	<0.001	40	0.072	<0.001	0.002		7	<1	<0.01	139	0.388	183	16		207	14.4	13.2	678	<0.005
ME2001758015	GWC10	05-Nov-2020	1203	0.04	<0.001	0.038	448	217	<1	445	0.073				3800	<1	4.99	0.72	<0.001	121	0.262	<0.001	0.005		7	33	<0.01	487	1.9	828	18		448	38.7	42.8	2760	0.011
ME2001758016	GWA11	16-Nov-2020	1116	0.32	0.002	0.052	520	43	<1	72	0.002				1380	<1	1.39	1.82	<0.001	36	1.15	<0.001	0.002		7.5	14	<0.01	227	0.502	161	18		520	15.8	15.3	883	0.006
ME2001758017	GWC11	16-Nov-2020	1153	0.1	<0.001	0.025	268	134	<1	272	0.019				2940	<1	4.47	6.03	0.002	113	1.33	<0.001	0.01		6.5	29	<0.01	378	0.992	831	20		268	30.3	33.2	2080	0.048
ME2001758018	GWA12	16-Nov-2020	1236	9.11	<0.001	0.029	159	10	<1	37	0.008				448	<1	2.37	3.11	0.004	6	0.099	0.002	0.014		7.9	1	<0.01	81	0.094	26	19		159	4.76	4.54	413	0.018
ME2001758019	GWC12	16-Nov-2020	1314	0.17	<0.001	0.183	678	61	<1	131	0.119				1640	<1	4.12	0.85	0.002	25	0.108	<0.001	0.002		7.5	22	<0.01	285	0.535	114	21.5		678	19.6	18.1	1020	0.009
ME2001758020	GWA14	16-Nov-2020	1354	179	0.009	0.423	552	27	<1	17	0.129				1040	<1	0.3	65.1	0.042	12	0.683	<0.001	0.316		7.6	10	0.01	222	0.516	39	21		552	12.3	12.2	5680	0.318
ME2001758021	GWC14	16-Nov-2020	1428	0.14	<0.001	0.224	513	101	<1	135	0.008				1790	<1	1.5	0.78	0.002	39	0.063	<0.001	0.002		7.4	24	<0.01	252	0.865	306	20.5		513	20.4	19.8	1220	0.036
ME2001758022	GWA15	20-Nov-2020	1101	0.18	<0.001	0.004	95	13	<1	159	<0.001				805	<1	0.24	0.09	<0.001	5	0.008	<0.001	0.001		7	<1	<0.01	138	0.093	31	19		95	7.03	7.06	438	<0.005
ME2001758023	GWC15	16-Nov-2020	1455	0.06	<0.001	0.208	569	49	<1	109	0.009				1310	<1	1.32	0.74	<0.001	21	0.042	<0.001	0.002		7.1	20	<0.01	225	0.481	20	20.5		569	14.8	14.5	782	0.008
ME2001758024	GWC25	09-Nov-2020	1050																																		
ME2001758025	GWC33	04-Nov-2020	1127	1.07	<0.001	0.088	<1	158	38	58	0.005				2330	213	16.5	0.16	<0.001	<1	0.009	<0.001	0.002		12.1	13	<0.01	39	0.14	22	20.5		251	7.11	9.91	668	0.018
ME2001758026	GWC26	04-Nov-2020	1234	0.11	<0.001	0.176	434	57	78	157	0.009				1310	<1	7.06	1.13	0.001	24	0.072	0.001	0.007		7.3	18	<0.01	189	0.418	43	20.5		512	15.6	13.5	740	0.014
ME2001758027	GWC16	04-Nov-2020	1348	0.3	<0.001	0.13	738	49	<1	271	0.004				1970	<1	7.5	1.4	0.003	26	0.035	<0.001	0.001		7.3	20	<0.01	350	0.53	59	21		738	23.6	20.3	1180	0.022
ME2001758028	GWA16	04-Nov-2020	1412	0.05	<0.001	0.086	554	307	<1	5700	0.003				18000	<1	4.74	0.06	<0.001	444	0.028	0.002	0.002		7.4	17	<0.01	2870	4.23	1100	18		554	195	177	12600	0.024
ME2001758029	GWC30	03-Nov-2020	1406	0.14	<0.001	0.118	574	275	<1	607	0.025				3130	<1	7.84	2.96	0.002	138	0.125	<0.001	0.046		6.8	47	<0.01	164	4.03	505	20		574	39.1	33.4	2280	0.045
ME2001758030	GWC31	03-Nov-2020	1444																																		
ME2001758031	GWC27	03-Nov-2020	1446																																		

ME2001758032	GWC32	03-Nov-2020	1145	0.04	<0.001	0.044	1300	122	<1	351	0.967				3460	<1	7.48	0.48	0.001	95	0.055	<0.001	0.019		6.9	40	<0.01	480	4.11	275	18.5		1300	41.6	35.8	2150	0.022
ME2001758033	GWA32	03-Nov-2020	1118	0.02	<0.001	0.041	413	147	<1	634	0.099				3450	<1	5.06	0.05	<0.001	150	0.109	0.001	0.003		7.3	21	<0.01	374	1.74	684	17.5		413	40.4	36.5	2600	<0.005
ME2001758034	GWA34	03-Nov-2020	1240	16.4	0.002	0.018	<1	434	<1	304	0.269				5450	<1	7.43	60.8	0.002	407	10.3	<0.001	0.752		4.1	6	0.02	309	0.784	3420	17.5		<1	79.8	68.7	4680	2.31
ME2001758035	GWC34	03-Nov-2020	1309																																		
ME2001758036	GWA36	04-Nov-2020	1433																																		
ME2001758037	GWC36	04-Nov-2020	1446	1.24	<0.001	0.028	186	156	<1	319	0.002				3600	<1	4.56	39.4	0.003	165	3.28	<0.001	0.023		6.4	35	<0.01	406	1.04	1490	20		186	43.7	39.9	2640	0.092
ME2001758038	PZ13	09-Nov-2020	1516																																		
ME2001758039	PZ20	09-Nov-2020	1458	0.23	0.002	0.021	275	25	<1	33	0.003				660	<1	2.65	0.61	0.002	23	0.469	0.001	0.009		7.8	14	<0.01	86	0.208	58	18		275	7.63	7.24	460	0.011
ME2001758040	PZ21	09-Nov-2020	1411	0.43	0.001	0.057	392	28	<1	52	0.002				1080	<1	3.21	0.52	0.001	22	0.622	0.001	0.006		7.7	9	<0.01	187	0.286	146	18		392	12.3	11.6	690	0.015
ME2001758041	PZ26	09-Nov-2020	1307																																		
ME2001758042	GWF1	09-Nov-2020	1240																																		
ME2001758043	GWF2	09-Nov-2020	1214																																		
ME2001758044	GWF3	09-Nov-2020	1151	0.02	<0.001	0.073	756	178	<1	493	0.002				4110	<1	1.27	0.31	<0.001	231	1.07	0.003	0.007		6.9	38	<0.01	434	1.86	842	16.5		756	46.5	47.7	2650	0.018
ME2001758045	GWF4	09-Nov-2020	1336																																		
ME2001759001	GWA1	04-Nov-2020	1253											5.1																							
ME2001759002	GWA2	19-Nov-2020	1153										1.33																								
ME2001759003	GWA3	20-Nov-2020	1122										4.17																								
ME2001759004	GWA4	19-Nov-2020	1437											4.9																							
ME2001759005	GWA5	20-Nov-2020	1439										3.575																								
ME2001759006	GWA6	20-Nov-2020	1242										1.555																								
ME2001759007	GWA7	05-Nov-2020	1240										4.29																								
ME2001759008	GWA8	20-Nov-2020	1335										1.585																								
ME2001759009	GWC1	19-Nov-2020	1231										10.925																								
ME2001759010	GWC2	20-Nov-2020	1142										13.74																								
ME2001759011	GWC3	20-Nov-2020	1215										13.97																								
ME2001759012	GWC4	05-Nov-2020	1328										15.19																								

ME2001759013	GWC5	20-Nov-2020	1405										5.71																								
ME2001759014	GWA10	05-Nov-2020	1113										3																								
ME2001759015	GWC10	05-Nov-2020	1150										5.74																								
ME2001759016	GWA11	16-Nov-2020	1108										3.465																								
ME2001759017	GWC11	16-Nov-2020	1132										13.95																								
ME2001759018	GWA12	16-Nov-2020	1221										3.05																								
ME2001759019	GWC12	16-Nov-2020	1250										22.12																								
ME2001759020	GWA14	16-Nov-2020	1342										2.575																								
ME2001759021	GWC14	16-Nov-2020	1413										21.935																								
ME2001759022	GWA15	20-Nov-2020	1041										2.52																								
ME2001759023	GWC15	16-Nov-2020	1443										23.33																								
ME2001759024	GWC25	09-Nov-2020	1046											35.36																							
ME2001759025	GWC33	04-Nov-2020	1054										41.99																								
ME2001759026	GWC26	04-Nov-2020	1203										44.91																								
ME2001759027	GWC16	04-Nov-2020	1332										30.81																								
ME2001759028	GWA16	04-Nov-2020	1400										1.4																								
ME2001759029	GWC30	03-Nov-2020	1340										31.35																								
ME2001759030	GWC31	03-Nov-2020	1435											51.26																							
ME2001759032	GWC32	03-Nov-2020	1130										3.96																								
ME2001759033	GWA32	03-Nov-2020	1107										1.76																								
ME2001759034	GWA34	03-Nov-2020	1219										4.22																								
ME2001759035	GWC34	03-Nov-2020	1253											20.44																							
ME2001759036	GWA36	04-Nov-2020	1439											5.97																							
ME2001759037	GWC36	04-Nov-2020	1433											15.93																							
ME2001759038	PZ13	09-Nov-2020	1514											2.24																							
ME2001759039	PZ20	09-Nov-2020	1429										1.82																								

ME2001759040	PZ21	09-Nov-2020	1355										3.015																								
ME2001759041	PZ26	09-Nov-2020	1307											4.39																							
ME2001759042	GWF1	09-Nov-2020	1240											16.28																							
ME2001759043	GWF2	09-Nov-2020	1214											23.78																							
ME2001759044	GWF3	09-Nov-2020	1136										17.96																								
ME2001759045	GWF4	09-Nov-2020	1336											12.95																							
ME2001759046	Barologger Office	16-Nov-2020	1037																																		
ME2001909001	GWA1	03-Dec-2020	1310																																		
ME2001909002	GWA2	21-Dec-2020	1045	0.49	0.001	0.052	145	30	<1	319	0.002				1440	<1	6.56	5.42	<0.001	44	0.92	<0.001	0.003		6.8	7	<0.01	181	0.348	150	18		145	15	13.2	808	0.007
ME2001909003	GWA3	22-Dec-2020	1214	0.9	<0.001	0.026	181	18	<1	177	0.005				1160	<1	0.06	0.85	0.003	23	0.097	<0.001	0.005		7.2	1	<0.01	178	0.21	93	19		181	10.5	10.6	836	0.007
ME2001909004	GWA4	22-Dec-2020	1120																																		
ME2001909005	GWA5	15-Dec-2020	1433																																		
ME2001909006	GWA6	22-Dec-2020	1352	0.84	0.002	0.034	742	64	<1	240	0.006				3110	<1	4.25	0.54	0.002	82	0.066	0.003	0.004		7.9	10	<0.01	528	0.68	697	19.5		742	36.1	33.2	2220	<0.005
ME2001909007	GWA7	04-Dec-2020	1436	0.35	<0.001	0.095	1260	527	<1	2850	0.002				13500	<1	0.44	1.68	<0.001	549	1.4	0.001	0.013		7.3	49	<0.01	2000	7.65	2670	21.5		1260	161	160	9990	0.009
ME2001909008	GWA8	22-Dec-2020	1416	0.06	<0.001	0.052	252	122	<1	385	<0.001				2540	<1	6.19	0.17	0.001	115	16.6	<0.001	0.009		7	11	<0.01	229	1.34	639	19.5		252	29.2	25.8	1820	0.008
ME2001909009	GWC1	21-Dec-2020	1120	0.04	<0.001	0.063	511	137	<1	616	0.002				3510	<1	6.77	0.64	<0.001	100	0.639	<0.001	0.005		7.1	26	<0.01	445	1.49	605	18.5		511	40.2	35.1	2220	0.016
ME2001909010	GWC2	22-Dec-2020	1236	0.04	<0.001	0.27	508	60	<1	111	<0.001				1230	<1	6.79	0.26	<0.001	27	0.118	<0.001	0.002		7.2	24	<0.01	145	0.595	30	19.5		508	13.9	12.1	721	0.01
ME2001909011	GWC3	21-Dec-2020	1502	0.05	<0.001	0.047	594	214	<1	1010	0.003				5940	<1	7	0.18	<0.001	190	0.04	<0.001	0.004		7	42	0.01	784	2.4	1460	19		594	70.8	61.5	4120	0.018
ME2001909012	GWC4	21-Dec-2020	1428	0.05	<0.001	0.052	646	158	<1	351	0.002				2390	<1	8.08	2.03	<0.001	75	0.042	<0.001	<0.001		6.7	46	<0.01	200	1.83	256	20		646	28.1	23.9	1470	0.018
ME2001909013	GWC5	22-Dec-2020	1432	0.02	<0.001	0.2	2090	262	<1	530	0.001				5510	<1	0.81	0.24	0.002	144	1.3	<0.001	0.026		6.7	82	<0.01	859	7.47	319	18.5		2090	63.4	64.4	3680	0.037
ME2001909014	GWA10	04-Dec-2020	1208	1.11	0.003	0.041	312	127	<1	495	0.021				2480	<1	6.79	1.84	0.002	84	0.33	<0.001	0.007		7.2	1	<0.01	248	0.848	354	19		312	27.6	24.1	1580	0.009
ME2001909015	GWC10	04-Dec-2020	1236	0.04	<0.001	0.041	437	191	<1	435	0.207				3820	<1	5.56	0.3	<0.001	117	0.038	<0.001	0.007		7.1	37	<0.01	475	2.02	1180	19		437	45.6	40.8	2880	0.012
ME2001909016	GWA11	04-Dec-2020	1318	1.73	0.003	0.053	588	37	<1	83	0.017				1520	<1	6.62	3.5	0.003	36	0.992	<0.001	0.006		7.4	14	<0.01	224	0.57	141	19		588	17	14.9	893	0.016
ME2001909017	GWC11	04-Dec-2020	1346	0.07	<0.001	0.022	281	111	<1	287	0.026				3090	<1	1.4	2.63	<0.001	112	1.41	<0.001	0.009		6.5	32	<0.01	372	1.06	910	20.5		281	32.6	31.8	2170	0.103
ME2001909018	GWA12	08-Dec-2020	1130	5.04	<0.001	0.032	135	9	<1	34	0.01				394	<1	0.37	1.89	0.005	5	0.132	<0.001	0.012		7.8	1	<0.01	73	0.093	18	17.5		135	4.03	4.06	450	0.016
ME2001909019	GWC12	08-Dec-2020	1207	0.08	<0.001	0.165	647	55	<1	133	0.072				1650	<1	7.76	0.48	<0.001	22	0.096	<0.001	<0.001		7.4	21	<0.01	255	0.546	107	18.5		647	18.9	16.2	1050	0.007

ME2001909020	GWA14	08-Dec-2020	1228																																		
ME2001909021	GWC14	08-Dec-2020	1321	0.1	<0.001	1.33	567	88	<1	152	0.051				2000	<1	9.06	0.73	0.002	38	0.073	<0.001	0.002		7.2	30	<0.01	239	0.926	326	19.5		567	22.4	18.7	1350	0.053
ME2001909022	GWA15	08-Dec-2020	1356	1.92	<0.001	0.022	123	14	<1	162	0.004				851	<1	5.2	1.06	0.003	6	0.038	<0.001	0.004		7.1	<1	<0.01	135	0.109	39	17.5		123	7.84	7.06	590	0.009
ME2001909023	GWC15	08-Dec-2020	1430	0.04	<0.001	0.19	569	41	<1	108	0.007				1290	<1	8.06	0.88	<0.001	18	0.042	<0.001	0.004		7.1	19	<0.01	197	0.472	18	18.5		569	14.8	12.6	794	0.008
ME2001909024	GWC25	15-Dec-2020	1119																																		
ME2001909025	GWC33	03-Dec-2020	1138	1.39	<0.001	0.187	<1	196	37	83	0.017				2360	199	22.6	0.88	0.004	<1	0.049	<0.001	0.004		12.1	16	<0.01	49	0.184	35	22		236	7.78	12.3	631	0.062
ME2001909026	GWC26	03-Dec-2020	1252	2.08	0.001	0.518	446	47	<1	142	0.042				1300	<1	7.73	3.66	0.02	22	0.155	0.002	0.013		7.5	17	<0.01	166	0.511	42	22		446	13.8	11.8	744	0.116
ME2001909027	GWC16	03-Dec-2020	1402	0.82	<0.001	0.154	651	55	<1	232	0.005				1990	<1	6.53	3.28	0.005	26	0.13	<0.001	0.002		7.3	22	<0.01	312	0.578	102	21		651	21.7	19	1170	0.028
ME2001909028	GWA16	03-Dec-2020	1424	1.15	<0.001	0.124	504	338	<1	5110	0.006				19400	<1	7.4	1.06	0.002	477	0.081	0.002	0.003		7.4	29	<0.01	3460	4.83	1180	20.5		504	179	207	12600	0.042
ME2001909029	GWC30	02-Dec-2020	1307				674	221	<1	584					3280	<1	7.58			150					6.7	45		169		344	22.5		674	37.1	31.9	2150	
ME2001909030	GWC31	02-Dec-2020	1343																																		
ME2001909031	GWC27	02-Dec-2020	1427																																		
ME2001909032	GWC32	02-Dec-2020	1108				1560	136	<1	306					3550	<1	8.59			101					6.8	45		509		279	20		1560	45.6	38.4	2150	
ME2001909033	GWA32	02-Dec-2020	1041				449	125	<1	498					3270	<1	5.74			137					7.2	23		330		643	20.5		449	36.4	32.4	2110	
ME2001909034	GWA34	02-Dec-2020	1152				<1	479	<1	300					5060	<1	3.79			366					3.8	5		302		3080	20		<1	72.6	67.3	4820	
ME2001909035	GWC34	02-Dec-2020	1214																																		
ME2001909036	GWA36	04-Dec-2020	1046																																		
ME2001909037	GWC36	04-Dec-2020	1128	0.59	<0.001	0.04	230	129	<1	285	0.007				3440	<1	4	17.6	0.004	145	2.08	<0.001	0.016		6.4	38	<0.01	411	1.04	1330	21		230	40.3	37.2	2510	0.082
ME2001909038	PZ13	15-Dec-2020	1320																																		
ME2001909039	PZ20	15-Dec-2020	1252	0.83	0.003	0.037	386	39	<1	47	0.002				950	<1	0.6	1.72	0.002	37	0.68	0.002	0.007		7.6	17	<0.01	117	0.388	77	20.5		386	10.6	10.5	586	0.014
ME2001909040	PZ21	15-Dec-2020	1223	1.78	0.004	0.055	464	30	<1	54	0.003				1280	<1	1.31	2.44	0.002	26	0.772	0.003	0.007		7.6	10	<0.01	232	0.366	171	19		464	14.4	14	696	0.018
ME2001909041	PZ26	15-Dec-2020	1155																																		
ME2001909042	GWF1	02-Dec-2020	1027																																		
ME2001909043	GWF2	02-Dec-2020	1027																																		
ME2001909044	GWF3	02-Dec-2020	1027																																		
ME2001909045	GWF4	02-Dec-2020	1027																																		

ME2001910001	GWA1	03-Dec-2020	1310											5.11																							
ME2001910002	GWA2	21-Dec-2020	1027										1.57																								
ME2001910003	GWA3	22-Dec-2020	1153										4.29																								
ME2001910004	GWA4	22-Dec-2020	1114											4.88																							
ME2001910005	GWA5	15-Dec-2020	1423											3.915																							
ME2001910006	GWA6	22-Dec-2020	1322										1.42																								
ME2001910007	GWA7	04-Dec-2020	1422										4.475																								
ME2001910008	GWA8	22-Dec-2020	1409										1.51																								
ME2001910009	GWC1	21-Dec-2020	1053										10.64																								
ME2001910010	GWC2	22-Dec-2020	1224										13.77																								
ME2001910011	GWC3	21-Dec-2020	1452										14.38																								
ME2001910012	GWC4	21-Dec-2020	1419										15.025																								
ME2001910013	GWC5	22-Dec-2020	1424										5.665																								
ME2001910014	GWA10	04-Dec-2020	1150									04/12/2020	3.39																								
ME2001910015	GWC10	04-Dec-2020	1217									04/12/2020	5.235																								
ME2001910016	GWA11	04-Dec-2020	1305										3.78																								
ME2001910017	GWC11	04-Dec-2020	1333									04/12/2020	14.06																								
ME2001910018	GWA12	08-Dec-2020	1115										3.385																								
ME2001910019	GWC12	08-Dec-2020	1150										21.74																								
ME2001910020	GWA14	08-Dec-2020	1221											4.015																							
ME2001910021	GWC14	08-Dec-2020	1252									08/12/2020	21.29																								
ME2001910022	GWA15	08-Dec-2020	1346										2.65																								
ME2001910023	GWC15	08-Dec-2020	1409									08/12/2020	22.31																								
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ME2001910026	GWC26	03-Dec-2020	1216									03/12/2020	44.44																								

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ME2001910032	GWC32	02-Dec-2020	1058									02/12/2020	4.12																								
ME2001910033	GWA32	02-Dec-2020	1034									02/12/2020	2.14																								
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ME2001910035	GWC34	02-Dec-2020	1204											20.41																							
ME2001910036	GWA36	04-Dec-2020	1041											5.76																							
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ME2001910041	PZ26	15-Dec-2020	1155											4.39																							
ME2001910042	GWF1	03-Dec-2020	1051																																		
ME2001910043	GWF2	23-Dec-2020	915											23.78																							
ME2001910044	GWF3	23-Dec-2020	935										18.18																								
ME2001910045	GWF4	23-Dec-2020	1144										12.95																								
ME2001910046	Barologger Office	30-Dec-2020	938									30/12/2020																									

Groundwater Review & Water Licence Review

WILPINJONG ANNUAL REVIEW 2020

Groundwater

Prepared for:

Wilpinjong Coal Pty Ltd

SLR Ref: 665.10014.00105-R01
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BASIS OF REPORT

This report has been prepared by SLR Consulting Australia Pty Ltd (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Wilpinjong Coal Pty Ltd (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

DOCUMENT CONTROL

Reference	Date	Prepared	Checked	Authorised
665.10014.00105-R01-v2.0	30 March 2020	Emma Watts, Adam Skorulis	Adam Skorulis	Ines Epari
665.10014.00105-R01-v1.0	5 March 2021	Emma Watts, Adam Skorulis	Adam Skorulis	Ines Epari

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APPENDICES

1 Introduction

SLR Consulting Australia Pty Ltd (SLR) was commissioned by Wilpinjong Coal Pty Ltd (WCPL) to conduct the Groundwater Annual Review 2020 for the Wilpinjong Coal Mine (WCM).

This report contributes to the requirements of the Annual Review (AR) for the WCM for the 2020 calendar year. It also contains the analysis and information required to address the relevant water licence conditions 'water year' 01 July 2019 - 30 June 2020. The report is presented in two sections that address the following requests:

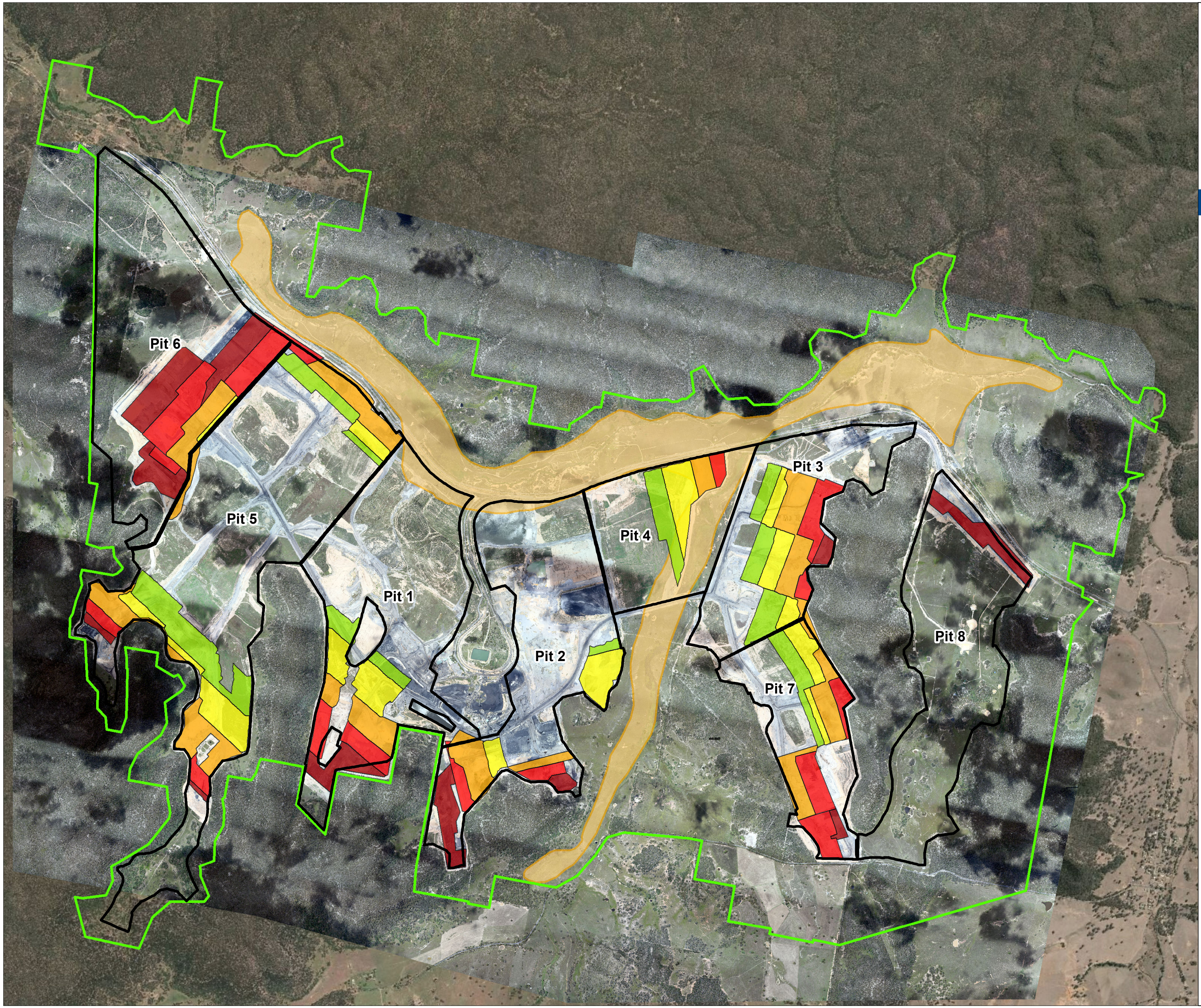
1. Reporting against the commitments in the WCM Groundwater Monitoring Program (GWMP)[1] – 01 January 2020 to 31 December 2020.
2. Reporting against water licence conditions for WAL41862 – 01 July 2019 to 30 June 2020 with review of inferred inflows from water balance and groundwater modelling.

While the commitments in the GWMP occupy a later period in time than the water licence conditions, the data presented in reporting on the GWMP commitments will also be used in addressing water licence conditions.

Open cut pit names and pit progression during 2019-2020 are indicated in **Figure 1**. Groundwater monitoring bore locations are displayed in **Figure 2**.

It should also be noted that cause and effect analysis and assessment against water level and quality triggers during 2020 has occurred during a year of above average rainfall. Previously, over the period from 2017 to early 2020, there was an extended period of intense drought conditions that made the separation of mining versus climatic effects difficult to analyse and interpret.

[1] Currently approved GWMP (Version 3) August 2017



WILPINJONG COAL

Open Cut Progression 2019-2020

FIGURE 1

- 2020 Mining Area
- 2019 Mining Area
- 2018 Mining Area
- 2017 Mining Area
- 2016 Mining Area
- Wilpinjong Extension Project (2019)
- Wilpinjong Extension Project (2015)

Western Coalfield Geological Mapping

- Quaternary Alluvium

Coordinate System:	GDA 1994 MGA Zone 55
Scale:	1:52,000 at A4
Project Number:	665.10014
Date:	12-Feb-2021
Drawn by:	JG

SLR

H:\Projects-SLR\620-BNE\665-WOL\665.10014\GIS\66510014 F01 Open Cut Progression 2019-2020.mxd

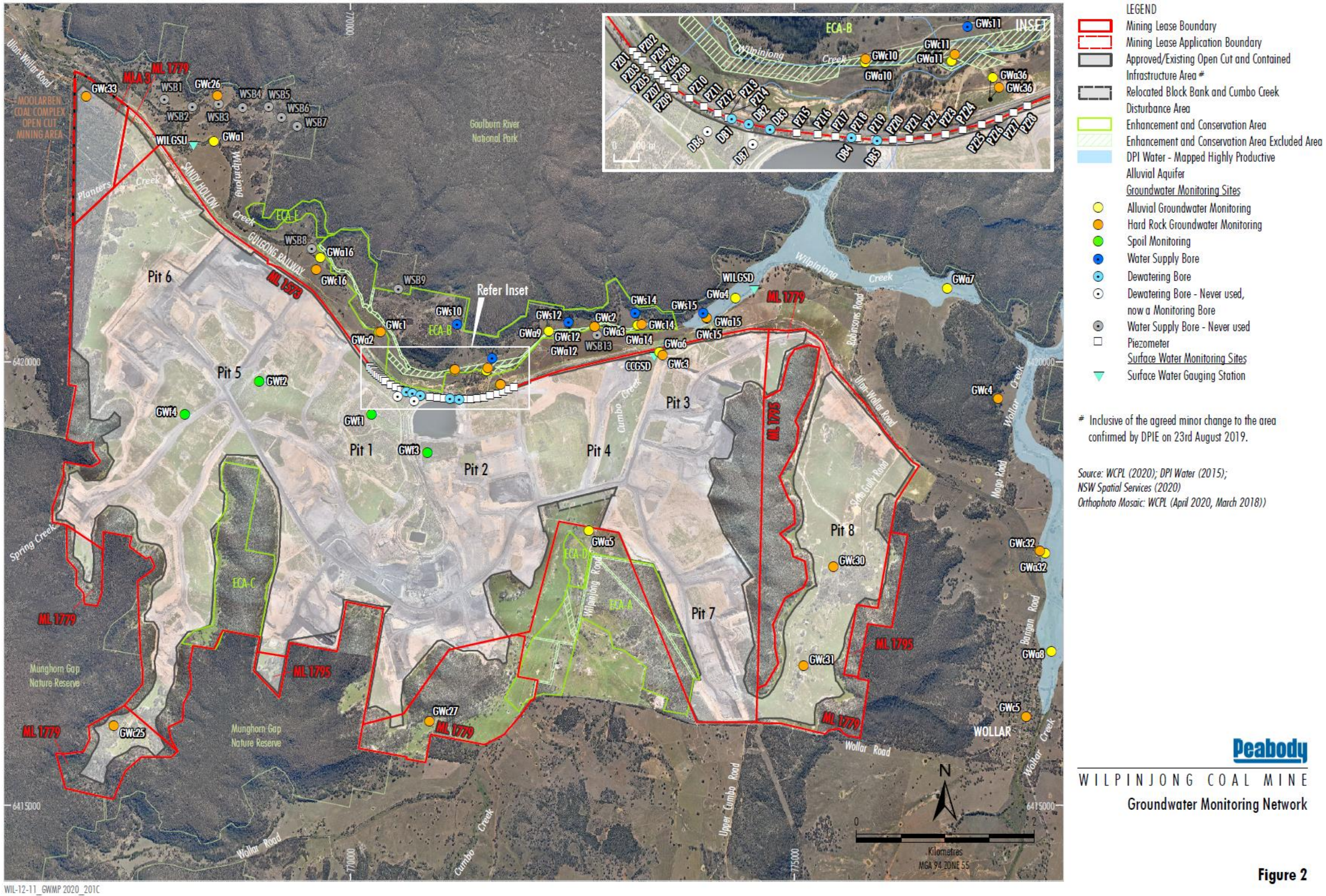


Figure 2 Groundwater Monitoring Sites at Wilpinjong Coal Mine

2 Groundwater Monitoring Program

This section presents key groundwater level and groundwater quality data for the 2020 AR reporting period to address the conditions within the WCM GWMP (Peabody, 2017) relating to:

- Groundwater cause and effect analysis (**Section 2.1**);
- Assessment of groundwater trigger Levels (**Section 3**); and
- Groundwater modelling verification (**Section 4**).

Trends from the entire period of observation (2006-2020) have also been assessed to provide context for the 2020 monitoring period.

The location, depth, and monitoring frequency of spoil monitoring bores has also been included in this report (**Section 2.2**). These bores have been constructed at in-pit spoil locations with the intent of monitoring saturation and water quality within spoil on site at WCM.

2.1 Cause and effect analysis

A groundwater monitoring network has been in place at the WCM since April 2006, as illustrated in **Figure 2**. Many paired monitoring bores have been drilled and installed along the Wilpinjong Creek alluvium, with a shallow bore screened in the alluvium and a deeper bore screened across the coal seam. Several additional monitoring bores were drilled in late 2013 around the periphery of the site, in Slate Gully and along Wollar Creek (**Figure 2**).

The numerical modelling conducted for the Wilpinjong Coal Mine predicts minimal drawdown (approximately 1 m) in the aquifers of the shallow alluvial groundwater system along Wilpinjong Creek. Drawdowns are predicted to be even less pronounced in the more distant alluvial aquifers associated with Wollar Creek (Peabody, 2017). Numerical modelling predicts a substantial reduction in potentiometric head in the deeper porous rock groundwater system (Illawarra Coal Measures) in the near vicinity of the Wilpinjong Coal Mine because of cumulative mining activities. Accordingly, trigger levels for water levels in the coal measures are not considered to be warranted (Peabody, 2017).

For monitoring bores with sufficient records, groundwater levels around the WCM site have been investigated in detail to check for cause and effect responses in temporal water level changes which could result from rainfall recharge, creek dynamics, short-term dewatering/production pumping, or a mining effect. The detailed analysis and presentation of hydrographs for all bores are included in **Appendix A** (**Figure 10** to **Figure 28**).

2.1.1 Review of climate data

Table 1 displays monthly and annual rainfall compared to the long-term average at the Wollar (Barrigan St) BOM station for 2016-2020, which further demonstrates the wet conditions experienced in 2020. The annual total rainfall recorded in 2020 was 792.7 mm, 35 per cent higher than the long-term average of 586.8 mm and nearly three times higher than the 2019 annual total. Rainfall measurements taken on-site at WCM meteorological station recorded a slightly higher cumulative annual rainfall of 915.8 mm in 2020 at the WCM site.

Table 1 Recent monthly and annual rainfall vs average at Wollar (Barrigan St) BOM station -062032

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Avg	66.5	62.6	53.0	38.7	37.5	43.8	41.9	40.8	41.2	50.7	55.7	59.6	**586.8**
2016	101.2	10.4	21.4	3.0	67.0	114.2	82.4	44.0	181.2	74.2	41.0	36.2	**776.2**
2017	13*	31.0	127.0	19.0	24.4	12.0	1.4	25.6	2.0	30.0	62.6	86.4	**421.4**
2018	13.4	66.2	41.4	47.0	12.6	22.0	6.5	25.5	51.0	48.5	44.4	117.6	**496.1**
2019	72.0	5.0	110.5	0.0	20.0	6.0	4.0	10.0	23.0	7.0	30.0	6.0	**293.5**
2020	45.0*	151.0	110.2	118.0	35.0	31.3	86.0	36.0	75.7	128.0	21.5	178.0*	**792.7**
* No rainfall recorded at Wollar (Barrigan St). Rainfall from Bylong (Glenview) – 062107 used.													

The cumulative rainfall departure (CRD) graphically shows trends in recorded rainfall compared to long-term averages and provides a historical record of relatively wet and dry periods. A positive slope in the CRD indicates periods of above average rainfall, while a negative slope indicates periods of below average rainfall. A level slope indicates rainfall conditions are equal to average historic rainfall conditions.

The 2020 calendar year has had above average rainfall conditions, as indicated by an upward trend in the CRD. This contrasts with the declining rainfall residual mass trend characteristic of mid-2017 to the end of 2019 (**Figure 3**). The NSW DPI State Seasonal Update for December 2020 (DPI, 2020) indicates the Western Coalfield/ Central Tablelands Region is in a 'non-drought' and has recovered from the period of 'intense drought' observed in December 2019 at the end of the last reporting period.

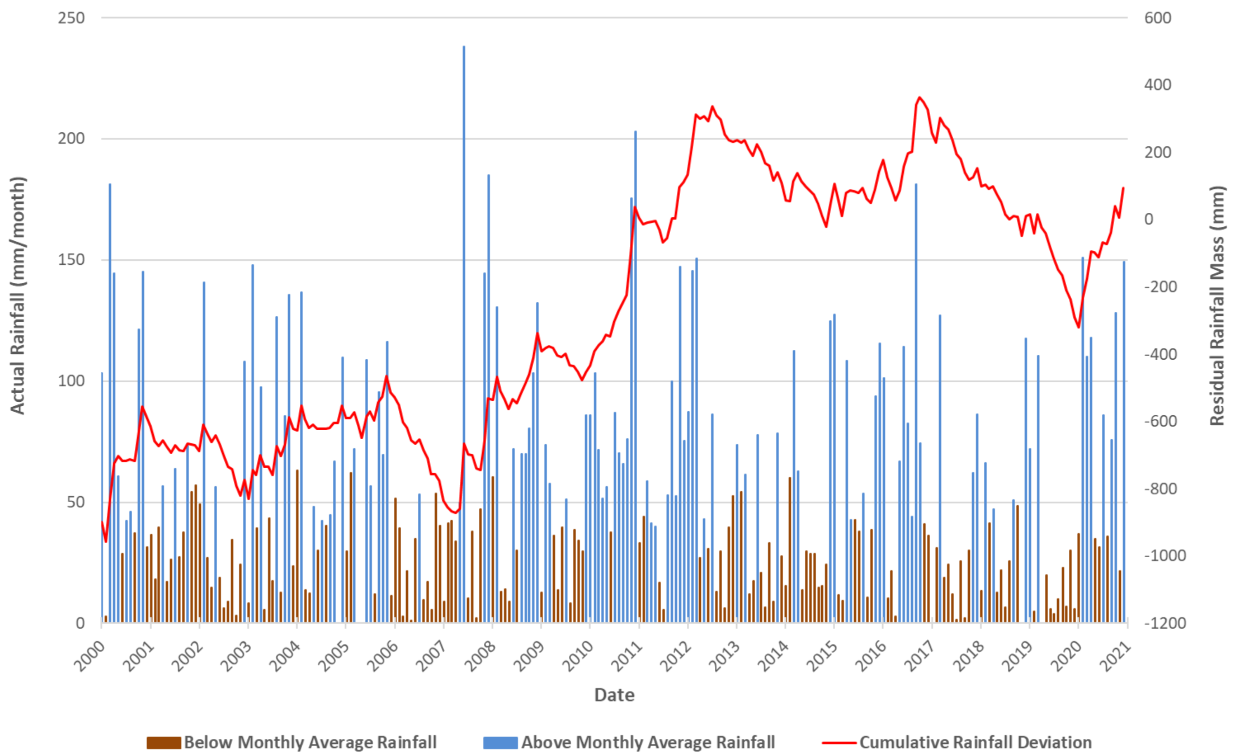


Figure 3 Monthly rainfall and CRD

2.1.2 Review of groundwater level data

Figure 4 presents the groundwater hydrographs for all alluvial bores from the west (higher elevations) to the east (lower elevations), in relation to the long-term rainfall trend, along Wilpinjong Creek. The groundwater table in the alluvium varies between approximately 385 mAHD and 345 mAHD over approximately 8.4 km, from GWa1 to GWa7, with a hydraulic gradient of 0.5% (0.005). Groundwater responds to this gradient by flowing to the east through the alluvium.

Water table rises are evident at most bores in correlation with rises in the rainfall trend. This confirms the expectation that rainfall is an important source of recharge for the alluvial aquifer. Given the proximity of the alluvium to the elevated Goulburn River National Park (GRNP) to the north, groundwater discharge from the GRNP Narrabeen sediments will provide another stable source of recharge to the alluvium.

Since mining commenced at WCM the climate has undergone substantial variation. The cutting of open cut pits (referred to as 'Pits' for the rest of this report) 1 and 2 occurred during a pronounced dry period from late 2006 to early 2007. Following the mining of these Pits, the annual rainfall began to rise steadily to a peak in annual rainfall in 2012 (refer to **Section 2.1.1**).

The transition from a very dry period to a very wet period explains the observation of unexpectedly low pit inflows followed by excessive groundwater discharges. The decrease in rainfall following the peak in mid-2012 coincided with the beginning of mining at Pit 4 and Pit 3, complicating the detection of potential mining effects that may have resulted from these Pits.

A return to wetter conditions occurred in 2016, with most alluvial bores showing a response to this increase in rainfall. From 2017 to 2019 conditions became progressively drier causing a widespread decline in monitored groundwater levels, with several alluvial bores recording 'dry' conditions. Over the course of 2020 the increase in rainfall has again caused a groundwater level response, with alluvial bores near WCM generally showing rising groundwater levels.

Where mining effects are considered a possibility, the individual hydrographs in **Appendix A** are annotated to that effect.

Based on the analysis of the hydrographs in **Appendix A**, some mining effects are considered to have occurred, or be ongoing, at the following bores located in the Wilpinjong alluvium and Cumbo Creek alluvium (albeit these effects are minor and therefore are difficult to discern from climatic variations). A mining effect is considered to have occurred when a groundwater level decline occurs outside of normal climatic variation, and in the absence of other known stresses. A lack of increase, or muted response in groundwater level associated with a period of rainfall can also be interpreted as a mining effect:

- GWa3 (**Figure 15**) is 450 m north of Pit 4; a groundwater level decline in the order of 1 m occurred during 2014; and then reported as dry from mid-2017 to March 2020. Groundwater levels increased by approximately 1.5 m during the last half of 2020 with the bore becoming wet again. Groundwater level trends follow climatic trends, however, peak recovered groundwater level in 2020 is approximately 1 m lower than 2012 observations.
- GWa14 (**Figure 16**) is 300 m north of Pit 4; a groundwater level decline of approximately 1 m during 2013 and 2014. This bore was dry from 2014 to late 2016, and again from 2017 to early 2020, possibly due to a combination of climate and mining. Groundwater levels have since rebounded in 2020, though large variations (in the order of 3 m) between monthly measurements may indicate some mining influence at this bore.

- GWa5 (**Figure 10**) is located at Cumbo Creek between Pit 2 and Pit 3, 500 m south of Pit 4; groundwater levels declined in the order of approximately 3 m between 2013 to 2019. After a period of stabilisation around this reduced level and responses to rainfall events, the bore recorded dry conditions from May 2019 to April 2020. Groundwater levels have since increased in 2020 by up to 0.8 m during wetter months. It is noted that WCM is approved to relocate and excavate the lower reaches of Cumbo Creek, however this has not been undertaken to date.
- GWa4 **(Figure 4**) is 450 m north of Pit 3; groundwater declined in the order of 1 m from 2014 to 2016 and then was reported dry or near-dry through to the end of 2020. While groundwater levels appear to have rebounded slightly from April 2020 onward by approximately 0.25 m, a lack of water quality sampling at GWa4 indicates ongoing near-dry conditions at this bore. Significant recovery at nearby alluvial monitoring site GWa15 is not observed at GWa4, which should be investigated to determine if it is functioning correctly.
- GWa15 (**Figure 18**) is 250 m north of Pit 3; this bore was dry throughout the entire 2019 monitoring period and was considered in previous Annual Reviews to show some mining effect. However, groundwater levels have significantly risen in this bore from April 2020 onwards, with levels 1.5 m higher in December 2020 in comparison to late 2019 water levels.
- GWa6 (**Figure 17**) at the northern junction of Pit 3 and Pit 4; groundwater level declined approximately 1 m during 2014 and was dry until mid-2016, likely due to a combination of climate and mining drivers. GWa6 was dry again from 2018 to early-2020. GWa6 groundwater levels have risen by 1.5 m during 2020, with the highest levels observed around 0.75 m below 2012 peak observations.
- GWa10 (**Figure 12**) is located to the north-west of Pit 4 along Wilpinjong Creek; groundwater level at GWa10 declined by approximately 1 m associated with nearby Pit 2 extraction in 2008 and declined gradually by almost 2 m from the start of Pit 4 mining (2013) until early-2020. Response to rainfall events in late 2016 (1.5 m recovery) and again in 2020 (2 m recovery) suggest that the main driver of decreasing levels at GWa10 during Pit 4 extraction was the dry climatic conditions.
- GWa11 (**Figure 13**) is 500m north of Pit 4; groundwater level at GWa11 declined by ~1 m associated with the nearby Pit 4 extraction in 2012, and subsequently went dry in 2019 likely related to the period of below average rainfall. Water levels in 2020 have risen by 1.25 m, to an elevation consistent with observations following the interpreted Pit 4 mining effect.
- GWa12 (**Figure 14**) is 300m north of Pit 4; groundwater level at GWa12 may have shown minor impacts (<0.5 m) due to Pit 2 extraction in 2008 before declining ~3 m in 2014 likely due to the excavation of Pit 4, before reporting dry in early 2015. Recovery to ~1 m below the pre-mining water levels was observed in mid-2016, before reporting dry from mid-2018 to early 2020 associated with below average rainfall. As observed in 2016, groundwater levels in 2020 recovered by 2.5 m, to a level ~1 m below pre-mining observations.

GWa32 (**Figure 21**) and GWa34 (**Figure 27**) both have probable mining effects though monitoring has only been present since 2014. Therefore, no pre-mining data is available to determine potential influence of mining at these monitoring locations. GWa32 shows a groundwater level response to rainfall levels in 2020, whereas GWa34 shows no response to rainfall events in 2020.

The other bore hydrographs from the Wilpinjong Creek alluvium (e.g., GWa2 (**Figure 11**), GWa7 (**Figure 19**), GWa8 (**Figure 20**)) show no discernible mining effects. Water levels in GWa2 and GWa7 have recovered by 3.5 m and 1 m respectively across 2020. GWa8 did not show a significant climate response to the 2017-2019 drought, with groundwater levels during these years staying consistent with historical levels, with no noticeable prolonged drawdown, and seasonal variations remaining at the same magnitude as those in earlier years.

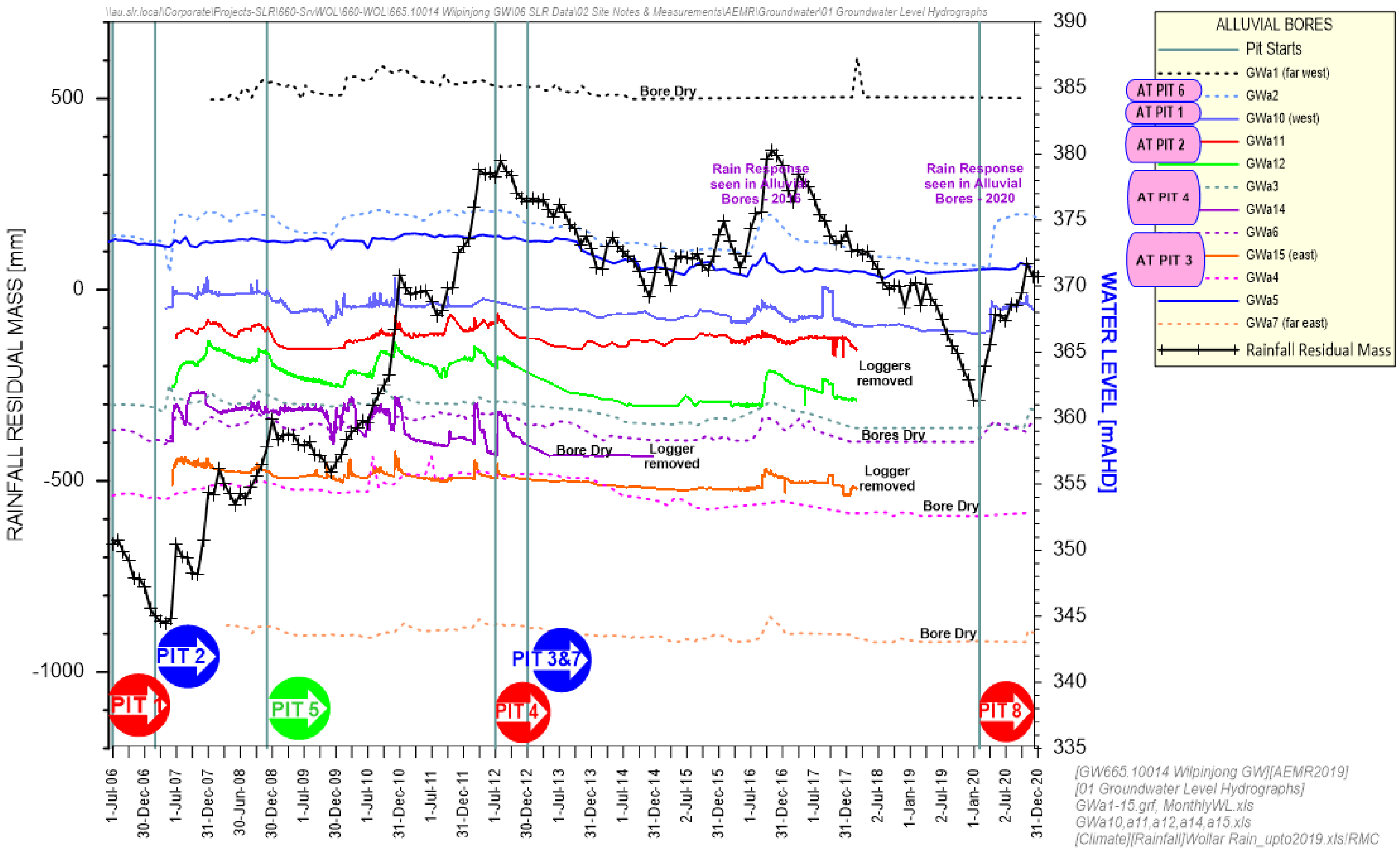


Figure 4 Transition in Alluvial Bore Groundwater Levels from West to East along Wilpinjong Creek

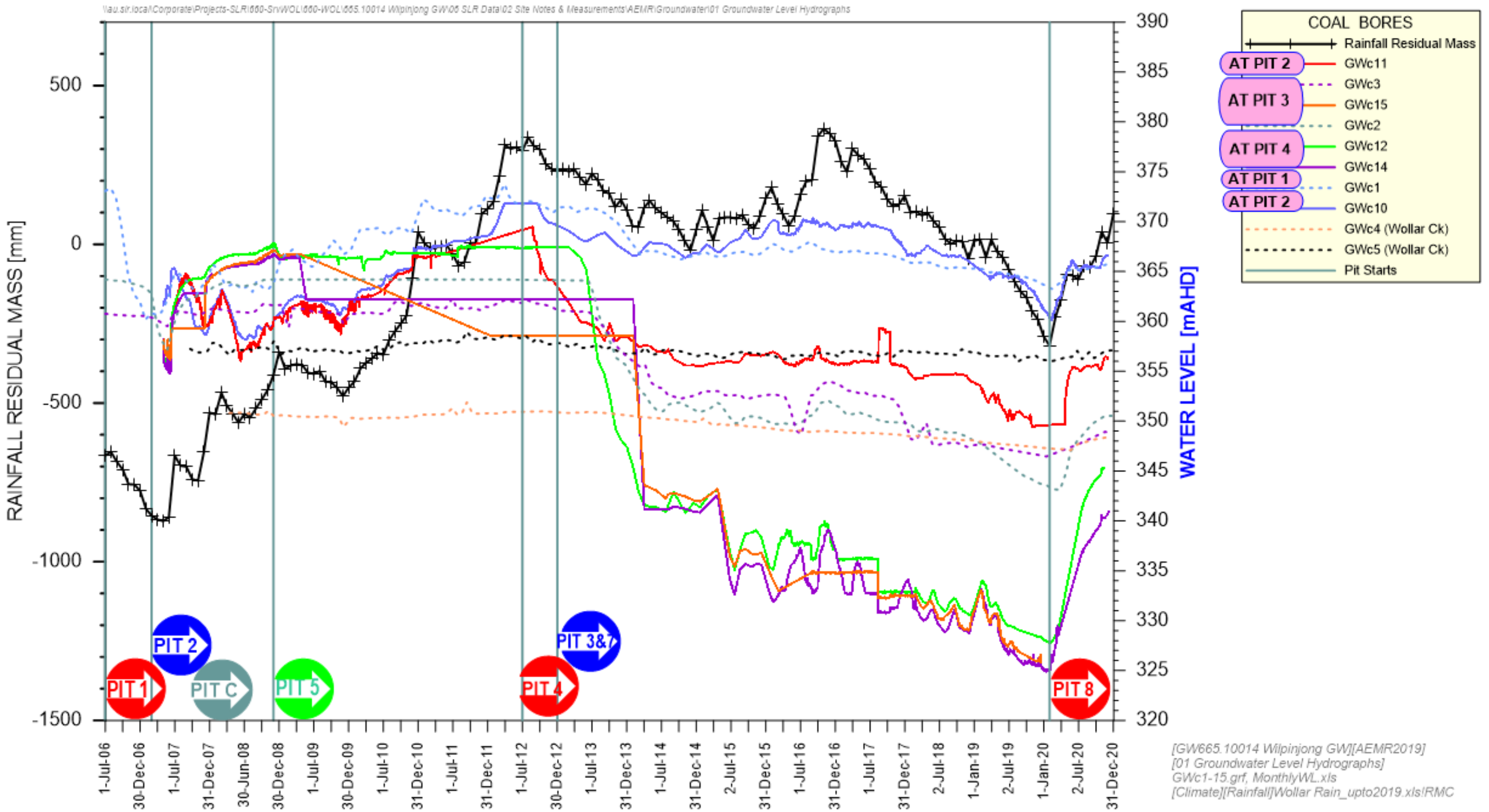


Figure 5 Transition in Coal Bore Groundwater Levels from West to East along Wilpinjong Creek

Figure 5 presents the groundwater hydrographs for all coal monitoring bores from the west (higher elevations) to the east (lower elevations), in relation to rainfall residual mass and the commencement of mining in each Pit.

Three monitoring bores (GWc1, GWc2 and GWc3) have records extending back to 2006. These hydrographs show clearly the drawdown caused by excavation of Pit 1 and Pit 2. At the monitoring bore closest to mining in Pit 1 (GWc1), the drawdown was about 13 m.

At the monitoring bores closest to Pit 2 mining (GWc2, GWc3), the early drawdowns were about 7 m and 1 m respectively. The water level at GWc1 commenced recovering in mid-2007 and had returned to pre-mining levels by 2012. Some of the coal monitoring bores (GWc2, GWc10, GWc11, GWc12, GWc14, and GWc15) displayed artesian conditions pre-2014. This is considered consistent with other sites in the Ulan Coal Seam where artesian conditions have been observed prior to mining activities.

Some monitoring bores, for example GWc14 and GWc15, show response to short periods of pumping at production bores at WCM. This is exemplified by the short-term, sharp drawdowns with subsequent recovery seen in early to mid-2007 as well as in mid to late-2019. These 2019 drawdowns are observed only in the monitoring bores close to the dewatering bores (GWc10 to GWc15, see **Section 7** for more details), which are likely to have influenced the pumping responses seen in these bores.

The hydrographs show the expected response of drawdown contingent upon the distance from mining, with gradual recovery over about five years in line with the long-term rainfall trend. The most distant site (GWc5 at Wollar) shows no discernible drawdown effect from mining.

Readings from 2014 onwards show depressurisation in the Ulan Seam, likely caused by the combined effect from the start of mining activity in Pits 3, 4, and 7.

In **Appendix A**, definite mining effects on monitored coal groundwater levels are noted at the following bores:

- GWc1 – impacted primarily by Pit 1 and Pit 5 (**Figure 11**) – an approximate 3 m increase in groundwater levels throughout 2020 after a sustained, long-term drawdown of 4 to 5 m in the bore from mid-2013 to 2019, 1 m of which occurred in 2019. Levels have recovered back to similar levels observed before the 2017-2019 NSW drought. A decline in groundwater level was recorded in February 2020, with a groundwater level measurement approximately 8.4 m below the next lowest recorded. It is suspected this was a result of a measurement error and all groundwater measurements since have shown groundwater levels to steadily increase over time.
- GWc10 – an approximate 7m recovery over the 2020 year after a 10 m decline water level since July 2017 (**Figure 12**). The water levels in this bore correlate with the rainfall trend and the start of declining water levels corresponding with the start of the 2017-2019 NSW drought. However, levels have not recovered to pre-drought levels, with GWc10 showing a ~5 m decline in water level since 2012 which is likely influenced by WCM mining activity.
- GWc11 – impacted primarily by Pit 2 and Pit 4 (**Figure 13**); 9 m of groundwater recovery observed in this bore since the beginning of 2020. Levels have recovered back to similar levels observed before the 2017-2019 NSW drought. However, there is still noticeable drawdown in this bore of about 9 to 12 m since pre-Pit 4 conditions.
- GWc12 - impacted primarily by Pit 4 (**Figure 14**); 18 m recovery in this GWc12 in 2020 has increased levels to their highest since start of Pit 4, however there is still an observable drawdown of more than 20 m since the commencement of mining in Pit 4.
- GWc2 - impacted primarily by Pit 4 (**Figure 15**); groundwater levels have been decreasing in GWc2 since late 2013, with a ~20 m drawdown observed in this bore since late 2013. In 2020 there was a recovery of observed water levels by 7 m, increasing levels near to those observed before the 2017-2019 NSW drought. However, groundwater levels are still 14 m below pre-mining observations.

- GWc14 - impacted primarily by Pit 3 and Pit 4 (**Figure 16**); a 16 m recovery was observed in GWc14 in 2020 associated with above average rainfall, bringing levels to their highest since start of Pit 3. However, current observations are still ~20 m lower than those made prior to the commencement of mining in Pit 3 and Pit 4, indicating a continued effect of these Pits in 2020.
- GWc3 – impacted primarily by Pit 3 and Pit 4 (**Figure 17**); there has been a slight recovery of groundwater levels after the 2017 to 2019 drought, however the 2020 recovery is a lot less than other coal seam bores in the area, which is likely due to the proximity of GWc3 to the Pit 4 void. Groundwater levels are ~14 m lower than prior to Pit 3 and Pit 4 extraction.
- GWc15 - primarily due to Pit 3 and Pit 4 (**Figure 18**); ~11 m recovery was observed in GWc15 during 2020, however there is still an observable drawdown of more than 20 m since the commencement of mining in Pit 3 and Pit 4, and therefore there is likely to be a continued effect of these Pits in 2020.
- GWc4 – primarily due to Pit 3 (**Figure 19**); relatively small drawdown has been observed at GWc4 (~3 m), located 2.9km east of Pit 3. A 1 m recovery was observed in 2020 in response to above average rainfall.
- GWc33 – primarily due to Pit 5 (**Figure 26**); no significant recovery or rainfall response observed in this bore throughout 2020, groundwater levels continue to decline with about 1m of drawdown from December 2019 to December 2020.
- The monitoring bores GWc16, GWc17, GWc24, GWc25, GWc26, GWc27, GWc30, GWc31, and GWc34 all have probable mining effects though monitoring has only been present since late-2013 or early-2014. Therefore, no pre-mining data is available to determine possible drawdowns as a result of mining at these monitoring locations. It is noted that most of these bores do not show a significant recovery of groundwater levels to the above average rainfall in 2020; this muted recovery is interpreted as a mining effect (**Figure 24** to **Figure 28)**.

For bores not displayed in **Figure 4** or **Figure 5:**

- There is a probable mining effect on the coal monitoring bore GWc22 adjacent to Cumbo Creek. There is assumed to be no effect on the companion alluvial monitoring bore GWa22, however this monitoring bore has been too close to the mining area to allow data collection since early 2016 (**Figure 22**).
- The monitoring bores GWc28 and GWc29 in Slate Gully were decommissioned in May 2019 to allow initial support infrastructure for future mining and therefore are not included in this report as no 2020 monitoring data exists (**Figure 23**).
- There are no obvious mining effects at the coal monitoring bores GWc5 and GWc32 (**Figure 20** and **Figure 21**).

The general trend is for mining-related drawdown to be apparent in coal seam hydrographs, typically within a few hundred metres of active mine areas, but drawdown is much less, if apparent at all, in alluvial bore hydrographs. This is due to the following:

- alluvial bodies not being directly connected to mined areas;
- rock strata overlying the coal seams and underlying the alluvium serving to mitigate the drawdown response because of low vertical hydraulic conductivity; and
- unconfined conditions and a greater aquifer storage in the alluvium than in the confined coal seams resulting in much lower head variation (drawdown) in the alluvium.

2.1.3 Review of groundwater quality data

Groundwater electrical conductivity (EC) statistics have been computed from 1,680 measurements from April 2006 to December 2020 (**Table 2**). The median value of the measurements at the 13 monitoring sites is about 2,500 micro Siemens per centimetre (µS/cm). The average for all monitoring sites is approximately 4,100 µS/cm, considerably higher than the median. However, the standard deviation of approximately 3,400 µS/cm is commensurate with the mean.

The lowest mean salinity in the alluvium monitoring bores is 1,500 µS/cm at GWa2, whereas the highest mean is 10,600 µS/cm at GWa5. The lowest mean salinity in the coal monitoring bores is 1,200 µS/cm at GWc2, whereas the highest mean is 5,100 µS/cm at GWc5.

Overall, groundwater at alluvial monitoring sites is more saline than groundwater at coal seam monitoring sites. This suggests that the alluvial waters are sourced from Permian sediments and are concentrated through evapotranspiration which is expected to be an active process.

Table 2 Groundwater Electrical Conductivity Statistics

Alluvium Monitoring Bores	Mean (µS/cm)	Standard Deviation (µS/cm)	Coal Monitoring Bores	Mean (µS/cm)	Standard Deviation (µS/cm)	Location
GWa1	7900	3300	-	-	-	North of Pit 6: Far west
GWa2	1500	460	**GWc1**	2400	650	North of Pit 1
GWa3	1700	480	**GWc2**	1200	120	North of Pit 4
GWa4	2500	790	-	-	-	North-east of Pit 3
GWa5	10600	2800	-	-	-	South of Pit 4 on Cumbo Ck
GWa6	6200	3000	**GWc3**	3700	580	Northern end of Cumbo Ck
GWa7	10000	2200	**GWc4**	2400	440	North-east of Slate Gully
GWa8	2200	410	**GWc5**	5100	530	Wollar: SE of Slate Gully

The highest salinities recorded occur near Cumbo Creek to the south of Pit 4, near Wilpinjong Creek near Pit 6 and near Wilpinjong Creek to the north-east of Slate Gully. The lowest salinities recorded are along Wilpinjong Creek from Pit 1 to Pit 4, upstream of the Cumbo Creek junction, and on Wollar Creek.

Temporal variations in groundwater salinity are illustrated in **Appendix A** (**Figure 29** for alluvium and **Figure 30** for the coal seam bores) and are compared with rainfall residual mass and pit commencements. Alluvial sites have a large variability in salinities, from very high with large fluctuations to near fresh and stable that bear some apparent relationship with rainfall and mining. This is examined further in **Section 3**. The salinities in the coal monitoring bores are consistently stable. The different salinity signatures for shallow and deep waters reflect dynamic evapotranspiration acting preferentially on shallow groundwater.

2.2 Spoil Monitoring Bores

Details relating to the location, depth, and sampling frequency of the GWf series, spoil monitoring bores, are provided in **Table 3**.

These bores have been constructed at in-pit spoil locations with the intent of monitoring saturation and water quality within spoil on site at WCM. There is currently insufficient data available to analyse water level and quality trends at GWf1, GWf2 and GWf4 due to persistent dry conditions at each bore. However, GWf3 has recorded six groundwater level observations in 2020 above the base of the bore, with four of these able to be sampled for full-suite chemical analysis.

Saturated spoil at GWf3 was observed from February to December 2020 with a maximum of around 3 m saturation observed in August and November. EC was recorded at 6320 µS/cm in the February sampling event but declined during 2020 and was observed at 4110 µS/cm in the November observation. This is likely due to increased rainfall recharge infiltrating the spoil during 2020. Water level and quality observations are displayed in **Appendix B**.

The following comments are made on the persistent dry conditions at the other spoil monitoring bores following review of void depths, rehabilitated landform elevations, and site water storage elevations:

- GWf1 – bore likely drilled to the base of spoil as determined by review of bore depth, pit floor elevation and ground elevation. Dry conditions at bore likely due to historical Pit 1 floor elevation north of GWf1 being around 10 m lower than the base of GWf1. 10 m of saturation in the spoil is likely required before groundwater will be observed at GWf1.
- GWf2 – bore may not be drilled to the base of the spoil as determined by review of bore depth, pit floor elevation and ground elevation. There may be around 4 m of spoil between the base of GWf2 and the pit floor elevation, limiting the ability to observe some saturation if it is present. Nearby Pit 5 and Pit 6 mining is also likely to be limiting groundwater recovery in the spoil at this location.
- GWf4 - bore likely drilled to the base of spoil as determined by review of bore depth, pit floor elevation and ground elevation. Saturated levels within the spoil near GWf4 are likely to be strongly influenced by Pit 2 dam water storage elevation, which has a historical maximum storage level of 372 mAHD. This below the inferred base elevation of GWf4 (~373.5 mAHD)

Initially, it is recommended that the full chemical suite be analysed at these sites whenever a successful sample can be taken. If there is persistent water found at these sites (>1 yr), with no significant changes to water quality, every second sample should have the full chemical suite analysed (max 6 per year).

Top of casing elevation data was not available for GWf3 and GWf4 in this assessment, it is recommended this data be collected or provided to assist in determining the accurate elevation of any saturation within the spoil.

Table 3 WCM Spoil Monitoring bores

Bore ID	WCM Mine Area	Coordinate Reference System (GDA94 Z55)		Bore Depth (m)	Bore Est.	Sampling Frequency	Date From	Date to	# Taken	What Sampled
		Easting	Northing							
GWF1	Pit 1	770237	6419400	16.97	2014	Monthly	17-05-19	13-02-20	0	N/A
GWF2	Pit 5 (Centre)	768969	6419776	23.98			17-05-19	13-02-20	0	N/A
GWF3	Pit 5 (South)	768130	6419405	21.05	2018		30-04-19	23-12-20	2	pH, EC & full chemical suite
GWF4	Pit 2	770864	6418970	12.97			30-04-19	24-02-20	0	N/A

3 Trigger Compliance

The following section addresses the compliance of groundwater level and groundwater quality observations during the 2020 AR reporting period in relation to analysis performed, baseline monitoring data. **Table 4** presents the trigger levels from the GWMP (Peabody, 2017).

Time series charts showing groundwater level, electrical conductivity (EC) and pH in comparison with the trigger levels can be found in **Appendix B.**

Table 4 Peabody (2017) Groundwater Level and Quality Trigger Levels

Monitoring Site	Aquifer Type	Groundwater Level	Groundwater Quality		
		Trigger RWL (mAHD)	EC (µS/cm)	pH min	pH max
GWa1	Alluvium	No Trigger[1]	12,272	6.5	8
GWa2	Alluvium	372.4	2,280		
GWa3	Alluvium	Dry[2]	1,970		
GWa4	Alluvium	Dry[2]	2,596		
GWa5	Alluvium	371.4	13,926		
GWa6	Alluvium	N/A[#]	6,720		
GWa7	Alluvium	No Trigger[1]	10,126		
GWa8	Alluvium	Dry[2]	2,898		
GWa10	Alluvium	366.1	N/A[#]	N/A[#]	N/A[#]
GWa11	Alluvium	Dry[2]			
GWa12	Alluvium	361.3			
GWa14	Alluvium	Dry[2]			
GWa15	Alluvium	Dry[2]			
GWc1	Coal	N/A[#]	2,844	6.5	8
GWc2	Coal		1,290		
GWc3	Coal		3,304		
GWc4	Coal		2,412		
GWc5	Coal		4,798		

Not applicable – No trigger defined in GWMP (Peabody, 2017)

[1] GWa1 and GWa7 both had 'dry' observations prior to mining. No effective trigger level could be developed for these bores.

[2] Historical observations at these groundwater bores have indicated SWLs that represent less than 1 m of head in the bore. Therefore, these bores could go dry without indicating a mining effect that exceeds the predicted 1 m drawdown.

3.1 Trigger Level Exceedances Summary

As stated in **Section 2.1**, numerical modelling conducted for WCM (SLR, 2020a) predicts minimal drawdown (approximately 1m) to the alluvial groundwater system along Wilpinjong Creek, and less in the more distant alluvial aquifers associated with Wollar Creek.

Trigger levels are required for alluvial monitoring bores to detect impacts and effects beyond those predicted by the groundwater modelling. As such, trigger levels have been established for alluvial monitoring bores at 1m below the minimum recorded water level during the baseline period. Three consecutive monthly exceedances (or two successive quarterly exceedances) of the lower threshold level will trigger an investigation (Peabody, 2017).

An alluvium monitoring bore that has indicated a head of less than 1 m prior to the approach of Wilpinjong Mining has a trigger level set at the base of the bore (**Table 4**). These monitoring bores could go dry without indicating a mining effect that exceeds the predicted 1 m drawdown. A statistical analysis on the number of dry observations at these bores is recommended within the GWMP (Peabody, 2017) to determine whether more dry days are occurring than under natural conditions. No statistical analysis has been completed for the 2020 monitoring period due to the recovery of water levels in the majority of alluvial bores, with groundwater levels having recovered sufficiently and being above the trigger for groundwater levels at the end of 2020.

The persistent dry period that occurred from 2017 to early2020 (more detail in **Section 2.1.1**) had caused bores not impacted by mining, such as GWa7, to go dry and exceed the defined trigger level, as reported in the 2019 AR (SLR, 2020b). Groundwater levels have since recovered across most alluvial bores across WCM, including GWa7, which observed a recovery with groundwater levels being 1 m above the base of the bore at the end of 2020.

Water quality statistics for April 2006 to December 2009 were analysed at alluvium and coal monitoring bores to develop trigger levels for EC and pH. An exceedance of a trigger level on three consecutive monthly (or two consecutive quarterly) observations will result in the initiation of the groundwater impact investigation protocol found in the WCM Groundwater Trigger Action Response Plans (TARPs) in Section 8 of the GWMP.

A single trigger exceedance may also result in a preliminary investigation to identify anomalous data or whether further testing is required.

- EC trigger levels are based on 80th percentile values from the historical monitoring period.
- The 20th and 80th percentile values for pH taken at Wilpinjong monitoring locations between April 2006 and December 2009 are captured within the ANZECC and ARMCANZ (2000) default trigger values (6.5-8). As such, these are used for triggers at all coal and alluvial monitoring sites.

Table 5 presents the occurrence of trigger level exceedances for the 2020 AR monitoring period. The groundwater level trends and water quality trends for all those alluvium and coal monitoring bores that have exceeded their defined trigger level are discussed in the following sections.

Table 5 Trigger Level exceedances in the 2020 monitoring year

<table>
<tr><th rowspan="2">Bore</th><th colspan="4">Trigger Level Exceedance in 2020 Observations</th></tr>
<tr><th>Minimum RWL (mAHD)</th><th>EC</th><th>pH min</th><th>pH max</th></tr>
<tr><td>GWa1^</td><td>N/A#</td><td colspan="3">No measurement in 2020</td></tr>
<tr><td>GWa2</td><td>Y</td><td>N</td><td>N</td><td>N</td></tr>
<tr><td>GWa3</td><td>Y</td><td>N</td><td>N</td><td>N</td></tr>
<tr><td>GWa4^</td><td colspan="2">Y^</td><td colspan="2">No measurement in 2020</td></tr>
<tr><td>GWa5</td><td>Y</td><td>Y</td><td>N</td><td>N</td></tr>
<tr><td>GWa6</td><td>N/A#</td><td>N</td><td>N</td><td>N</td></tr>
<tr><td>GWa7</td><td>N/A#</td><td>Y</td><td>N</td><td>N</td></tr>
<tr><td>GWa8</td><td>N</td><td>N</td><td>N</td><td>N</td></tr>
<tr><td>GWa10</td><td>Y</td><td rowspan="5">N/A#</td><td rowspan="5">N/A#</td><td rowspan="5">N/A#</td></tr>
<tr><td>GWa11</td><td>Y</td></tr>
<tr><td>GWa12</td><td>Y</td></tr>
<tr><td>GWa14^</td><td>Y^</td></tr>
<tr><td>GWa15</td><td>Y</td></tr>
<tr><td>GWc1</td><td rowspan="5">N/A#</td><td>Y</td><td>N</td><td>N</td></tr>
<tr><td>GWc2</td><td>Y</td><td>N</td><td>N</td></tr>
<tr><td>GWc3</td><td>Y</td><td>N</td><td>N</td></tr>
<tr><td>GWc4</td><td>Y</td><td>N</td><td>N</td></tr>
<tr><td>GWc5</td><td>Y</td><td>N</td><td>N</td></tr>
</table>

#Not applicable, Y= Yes (trigger exceedances recorded), N= No (trigger exceedances not recorded), ^Bore was dry/near dry during most of 2020

3.2 Groundwater Level Trigger Exceedances

The following section examines trigger exceedances at WCM alluvial monitoring bores during the 2020 AR monitoring period (**Table 5**), to identify whether their cause can be attributed to a climatic or mining effect. If a mining effect is likely, further investigation may be required as per the GWMP (Peabody, 2017). All graphs showing the water levels within each monitoring bore and their associated trigger levels are shown in **Appendix B**.

It is noted that data provided by WCM reports bores as ‘dry’ when a water quality sample is unable to be taken, even where a depth to water observation indicates there may be a small amount of water within the bore. This avoids reporting water levels where moisture, mud, or small volumes of water are located within the bore that are not representative of nearby groundwater conditions. The following has been concluded based on the WCM classification of a bore as ‘dry’.

3.2.1 GWa2

Groundwater levels recorded for GWa2 (**Figure 11**) during 2020 exceeded the trigger level for the first three months, before a rapid recovery of groundwater levels was observed in April. As discussed in **Section 2.1.1**, no discernible mining effect is identified at this location. It is likely that the groundwater level trigger exceedance at GWa2 was being caused by the reduced rainfall that occurred from 2017 and lasted into early 2020. Due to the groundwater level recovery at GWa2 during 2020, to levels consistent with peaks in 2012 and 2016, no further investigation is recommended.

3.2.2 GWa3

Groundwater level observations at GWa3 reported the bore as 'dry' for the first three months of 2020, with groundwater fluctuating between dry and just above the base of the bore. From April to December 2020 groundwater level recovered by 1.25 m, consistent with the above average rainfall conditions. Previous reporting by HydroSimulations (2018) identified a potential mining effect from WCM during 2011, noting the magnitude of groundwater fluctuation in response to rainfall had decreased. This behaviour is believed to be ongoing, with recovery observed in 2016 and 2020 placing groundwater levels approximately 1 m below peaks observed prior to 2011. It is likely that the groundwater level trigger exceedance at GWa3 from 2018 to the first quarter of 2020 was being caused by both reduced rainfall since 2017 and a mining effect. As groundwater levels recovered in 2020, and the observed mining effect is consistent with approved impacts, no further investigation is recommended.

3.2.3 GWa4

GWa4 has reported dry or near-dry conditions from early 2017 through to the end of 2020, as evident from the lack of water quality observations. For most of the 2019 monitoring period, and the first three months of 2020 groundwater level at GWa4 was exceeding the trigger value as the bore continued to report dry conditions. Since April 2020, observations indicate the groundwater level has risen by 0.25 m to just above the base of GWa4, no longer exceeding the groundwater level trigger, however no water quality samples have been taken and the WCM groundwater database indicates the bore remains dry throughout 2020.

As discussed in **Section 2.1.1**, significant recovery at nearby alluvial monitoring site GWa15 is not observed at GWa4. Further investigation such as the bore being dipped for total depth, or downhole camera investigation should be undertaken to determine it is functioning correctly.

3.2.4 GWa5

Groundwater levels collected for GWa5 during 2020 continued to exceed the trigger level for the entire period. While there is some response to rainfall events in 2020, only six out of 12 monitoring events had sufficient saturation to collect a quality sample. A potential, ongoing mining effect beginning in late 2011 as a result of mining in Pit 2, Pit 3, and Pit 7, and the excavation in the lower reaches of Cumbo Creek has been identified in previous reporting by SLR (HydroSimulations, 2018 and SLR, 2020b). This effect intensifies during 2014 with groundwater levels falling by around 2 m from early 2014 to the end of 2020.

This ongoing trigger exceedance related to an apparent mining effect within the Cumbo Creek alluvium is greater than predicted impacts for alluvium (~1 m) as reported in the WEP EIS groundwater modelling (HydroSimulations, 2015), subsequently updated by SLR (2020a). Further investigation is recommended to understand why apparent mining impacts in this location are greater than predicted.

3.2.5 GWa10

Groundwater levels recorded for GWa10 during 2020 exceeded the trigger level for the first three months, before a rapid recovery of groundwater levels during early April associated with above average rainfall conditions. As discussed in **Section 2.1.1**, no discernible mining effect is identified at this location. It is likely that the groundwater level trigger exceedance at GWa10 was being caused by the reduced rainfall since 2017 which lasted into early 2020. As groundwater levels recovered in 2020, and the observed mining effect is consistent with approved impacts, no further investigation is recommended.

3.2.6 GWa11

GWa11 reported dry conditions and exceeded the trigger level from early 2019 through to the first half of the 2020 monitoring period (trigger exceedance is set at the base of the bore). From April to June 2020 groundwater levels rose by around 1 m, above the trigger level at GWa11. From the 2020 WCM Annual Review (SLR, 2020b) it was proposed that a mining effect due to Pit 4 extraction as well as climate impacts were the main influences on the decrease in groundwater levels. This mining effect may still be evident, with GWa11 groundwater levels recovering to a peak approximately 1 m lower than observations in 2012, consistent with approved impacts for alluvium from the WEP EIS.

As groundwater levels recovered above the trigger level in 2020, and the observed mining effect is consistent with approved impacts, no further investigation is recommended.

3.2.7 GWa12

GWa12 reported dry conditions, exceeded the trigger level for the first half of the 2020 monitoring period, and has been below the groundwater level trigger since early 2017. From May to November 2020 groundwater levels rose by almost 2.5 m, above the defined trigger level, to an elevation approximately 1 m lower than observed in 2012. This reduced recovery indicates a potential mining effect can be observed in data collected following the commencement of extraction at Pit 4 in mid-2012, with levels not rebounding to those observed prior to Pit 4 commencement. This impact is consistent with approved impacts for alluvium from the WEP EIS and it is likely that the observed decline from 2017-2020 in GWa12 is influenced by a combination of both mining and climatic factors.

As groundwater levels recovered above the trigger level in 2020, and the observed mining effect is consistent with approved impacts, no further investigation is recommended.

3.2.8 GWa14

Observations at GWa14 located 340 m north of Pit 4 were dry from early 2017 through to March 2020, before fluctuating for the remainder of the 2020 monitoring period alternating between 'dry' and showing water levels about 3 m above the base of the bore. Consequently, this bore exceeded the trigger level for the first quarter of 2020 but did not exceed for the remainder of 2020 as three consecutive levels below the trigger were not observed. The monitoring record at GWa14 prior to Pit 4 extraction did not observe the bore going dry, which has occurred at this location since 2013, and indicates a potential Pit 4 mining impact. Some impact to alluvial groundwater levels is approved at GWa14 as predicted in the WEP EIS groundwater assessment (HydroSimulations, 2015). However, groundwater levels in 2020 recovered to elevations observed in 2012 and may indicate some recovery from the Pit 4 effect. Continued monitoring will help determine the presence and magnitude of an ongoing mining effect at GWa14.

3.2.9 GWa15

The groundwater levels in GWa15 during 2020 exceeded the trigger level for the first three months and had been below the trigger level since early 2018. Groundwater levels recovered rapidly (~1.5 m) during early April to the same peak elevation as observations in 2012 and 2016. It is likely that the groundwater level trigger exceedance at GWa15 was being caused by the reduced rainfall since 2017 which lasted into early 2020.

As groundwater levels recovered above the trigger level in 2020, and no significant mining impacts were observed, no further investigation is recommended.

3.2.10 Additional Bores with Drawdown Impacts

This section analyses groundwater levels at bores that have not been assigned a trigger level in the WCM GWMP (Peabody, 2017) but are displaying trends not consistent with historical data. The monitoring bores that will be discussed are GWa1, GWa6, and GWa7.

3.2.10.1 GWa1

Downhole camera investigation undertaken during 2020 identified the presence of roots within the screen of GWa1, which are impacting the ability of the bore to be sampled. As GWa1 is an isolated alluvial in an important location to monitor potential impacts to Wilpinjong Creek alluvium as Pit 6 progresses. WCM have committed to replacing GWa1 in early 2021.

3.2.10.2 GWa6

The previous annual report (SLR, 2020b) mentioned concerns regarding GWa6, which reported dry conditions from September 2017 to January 2020. Interpretation of the available data determined that GWa6 may be experiencing a mining effect of greater magnitude than approved impacts due to nearby mining in Pit 3 and Pit 4. However, 2020 observations show groundwater levels in this bore have recovered to elevations around 0.75 m lower than observed levels prior to Pit 3 and Pit 4 extraction. This is consistent with approved impacts at GWa6 which predict a decrease in peak groundwater level of similar magnitude. It is likely that GWa6 going dry from 2014 to 2016 and again from 2017 to 2020 is related to combined climatic and mining effects.

As groundwater levels recovered above the trigger level in 2020, and the observed mining effect is consistent with approved impacts, no further investigation is recommended.

3.2.10.3 GWa7

GWa7 is no longer assessed using a trigger level in the current GWMP (Peabody, 2017). GWa7 is located over 1.6 km north-east of current mining at WCM (3 km east prior to the commencement of Pit 8), so it is not likely to be directly affected by mining. The decrease in water level from 2017 through to 2020 correlates with the declining rainfall trend, and dry observations also made at GWa7 in 2006 and 2007 during the millennium drought. However, recovery associated with above average rainfall in 2020 is delayed and somewhat muted at GWa7, with the first non-dry observation made in November 2020, and the recovered groundwater elevation around 0.75 m below peak observations in 2012 and 2016. At other sites closer to active mining, similar responses have been interpreted as a mining effect.

If observations in early 2021 do not respond consistently with historical data, a downhole camera investigation is recommended at GWa7. This will aim to confirm the condition of the bore and determine whether it is still providing representative samples.

3.3 EC Trigger Exceedances

The following section provides analysis and assessment of the EC trigger exceedances recorded in **Table 3** based on the time series plots from **Appendix B**.

3.3.1 Alluvial Bores

Two instances of trigger exceedances in EC at alluvial bores occurred during the 2020 AR reporting period in the following two bores:

- GWa5 on all occasions - 29th April, 22nd July, 27th August, 22nd September, 14th October, and 20th November;
- GWa7 on all occasions – 5th November 2020 and 4th December 2020

3.3.1.1 GWa5

EC at GWa5 is highly variable with exceedance of the EC trigger level at GWa5 historically occurring during periods of below average rainfall (2007, 2009, 2015, 2017). This had been attributed to natural variation, with less dilution of saline groundwater in the Cumbo Creek alluvium during dry periods resulting in higher EC observations.

EC observations in 2020 do not continue to follow this trend, with EC increasing to its maximum recorded level (17,800 µS/cm) in October 2020, despite the above average rainfall conditions. Further investigation is recommended at GWa5 to determine whether it remains connected to Cumbo Creek alluvium and is providing representative data. Further downstream in the Cumbo Creek alluvium, GWa6 saw recovery in groundwater level of >1 m and a decline in EC observations from 10,000 µS/cm to 3,500 µS/cm. Cumbo Creek passes between Pit 4 and Pit 3 upstream of GWa6 and is predicted and anticipated to have greater impacts than upstream at GWa5.

3.3.1.2 GWa7

The two measurements at GWa7 from late 2020 show EC levels exceeding the trigger value, with prior measurements of EC at GWa7 (last taken in February 2018 due to the bore being dry) also exceeding the EC trigger level. These EC trigger exceedances may relate to the near-dry conditions in GWa7, with further investigation recommended to determine whether GWa7 is still providing representative groundwater data from the Wilpinjong Creek Alluvium.

It is not known how EC responded during the drought conditions in late 2018 and 2019 at this bore, and if the EC is currently receding from 2018/2019, or if the EC has been continuing to increase independent of climate conditions during the dry period at this bore.

3.3.1.3 GWa1 and GWa4

Monitoring bores GWa1 and GWa4 have continued to be dry, or have not contained enough groundwater to sample, throughout the 2020 AR reporting period with the last recorded EC value being above the designated trigger level. The increased EC at these monitoring bores is expected to be correlated to dry conditions with the last measurements taken when alluvial groundwater was exposed to high evaporation rate for a long time. In addition, the reduction of groundwater levels across the less saline Permian groundwater could also explain higher EC values, due to level reductions associated with mining and the dry climate conditions, with less upward leakage and mixing from Permian waters with the alluvial waters in the alluvium.

3.3.2 Coal Measures Bores

Trigger exceedances for coal monitoring bores are observed in GWc1, GWc2, GWc3, and GWc5 (**Appendix B**).

The increases in EC observed at GWc1, GWc2, and GWc5 appear to be occurring independently of climatic and groundwater level influences.

3.3.2.1 GWc1

As reported in the recent Annual Reviews (HydroSimulations, 2018, 2019 and SLR, 2020b) EC at GWc1 recorded exceedances of the assigned trigger in both 2013, 2015/16 and 2017 to 2020. The increases that exceed the trigger level are sudden, with EC generally recording values around 500-1,000 µS/cm above the trigger level for the period of the exceedance.

In 2020 EC peaked during April at around 1,100 µS/cm above the trigger level, before returning to beneath the trigger level, and then climbing back to around 670 µS/cm above the trigger level in December. It is possible that since Pit 1 and Pit 2 extraction, there is a more direct pathway (through spoil and backfill material) for fresh water associated with periods of above average rainfall to report at coal seam monitoring sites, with returns to higher EC consistent with observations at other coal measures bores when there is little rainfall. Further monitoring in early 2021 is recommended at GWc1 to determine if the high EC levels observed in December 2020 are indicative of an increasing EC trend in the aquifer at this location or if a trigger level review should be undertaken.

3.3.2.2 GWc2

From 2015 to early 2020 GWc2 fluctuated around 50 µS/cm below the EC trigger level, then started to climb in early 2020, reaching a peak in May 2020 at 100 µS/cm above the trigger level (1,390 µS/cm). The higher EC correlates (with a lag time of a couple of months) to the below average rainfall at end of 2019/beginning of 2020 and is likely a result of the exposure to high evaporation rates and low rainfall recharge. EC observations declined following the May 2020 peak and return below the EC trigger level from August to December 2020. As the EC trigger exceedance is likely related to climatic influences and not WCM mining activity, and the level is no longer being exceeded, no further investigation is recommended.

3.3.2.3 GWc3

EC has been exceeding the defined trigger level at GWc3 since 2013 and has previously been suggested to be occurring due to WCM mining activity, corresponding to the 8 m decline in groundwater level following extraction at Pit 3 (HydroSimulations, 2018). It is suspected that the mining related drawdown has allowed groundwater from more saline aquifers, such as the Cumbo Creek alluvium, to enter the area monitored by GWc3.

Groundwater levels at GWc3 continued to decrease during 2018 and reported dry or near-dry from April 2019 to September 2020, indicating groundwater levels had fallen below the base of the bore. Observations made during 2020 show that EC has continued to increase despite above average rainfall, with a maximum EC of 6,000 µS/cm recorded in November 2020. It is likely the trigger exceedances in 2020 are consistent with trends observed in other bores since 2013 and that the high EC observations may be related to re-saturation of the strata intersected by GWc3.

It is recommended that EC at GWa3 be reviewed in early 2021 to determine whether EC has continued to increase. If it has stabilised, review of the trigger level at GWc3 should be considered.

3.3.2.4 GWc5

GWc5 is located on Wollar Creek, upstream of the confluence of Wilpinjong Creek and 3.5 km from active mining in Pit 7. EC increased gradually from early 2010 to 2018, separate to climatic or groundwater level influence and stabilised around 5,500 µS/cm at the end of 2017 through to the end of 2020. Drawdown at GWa5 (approximately 1.5 m) associated with the mining of Pit 7, may have allowed groundwater from more saline aquifers (such as the overlying Cumbo Creek alluvium) to enter the strata monitored by GWc5. As the EC observations at GWc5 are within the bounds of other coal measures and alluvial monitoring bores at WCM, the revision of the EC trigger level at GWc5 is recommended so that it is not constantly in exceedance.

3.3.3 Summary

The exceedances of EC in GWc1, GWc3 and GWc5 since 2012 indicate that there might have been a change in groundwater quality. EC triggers for GWc1, GWc3 and GWc5 are recommended to be revised based on 80th percentiles of the full monitoring record at each site. These revised values are well below the values in naturally found in the alluvium and below the guideline value (ANZG, 2018) for stock watering (beef cattle[2], 5,900 µS/cm).

3.4 pH Trigger Exceedances

No exceedances of pH trigger levels were observed during the 2020 AR monitoring period.

[2] The WEP report (Hydrosimulations, 2015) states that dryland grazing of cattle and sheep is a relevant land use surrounding the mine. Beef cattle are more sensitive and were hence used to derive the guideline value.

4 Analysis of metal concentrations

This section has been included in the 2020 Annual Review report in consideration of the Independent Expert Scientific Committee (IESC) advice on the Wilpinjong Extension Project (EPBC 2015/7431, SSD6764) which was provided in two documents in 2016 (IESC 2016-075, and IESC 2016-78). The advice identified that key potential impacts related to adverse effects on water resources within Wilpinjong and Wollar Creek catchments and requested the presentation of baseline data for metal concentrations including comparison with ANZECC/ ARMCANZ guidelines. As the GWMP does not have any site-specific triggers for metals and in consideration of the IESC advice, to put the observed metal concentration into context, the observed values were compared to:

- default guideline values for freshwater (ANZG, 2018), and
- ANZECC stock watering guideline (ANZECC & ARMCANZ, 2000) for cattle. The WEP groundwater investigation report (Hydrosimulations, 2015) states that dryland grazing of cattle and sheep is a relevant land use surrounding the mine. Beef cattle are more sensitive and were hence used to derive the guideline value.

The default water quality guidelines have different limits for freshwater, marine water and the level of protection. For this comparison, the freshwater values for 90% ecosystem protection were used, given the waters are in a moderately to highly disturbed environment.

The metal concentrations in comparison with these two guideline values are presented in **Appendix C.** Note that only bores that had a 2020 observation available, were included. For further context, the groundwater level, EC and pH observations and the cumulative rainfall departure (CRD) are presented as well. The analysis was undertaken by visually comparing the water quality observations at selected bores and analytes with the water level and CRD. Five alluvial bores, thirteen coal bores and one spoil bore were selected based on the continuity of their data set up to December 2020.

Figure 6 shows an example plot for the plots shown in **Appendix C**. Each page of the Appendix shows the results of one bore. In all plots, the CRD is shown as a black dashed line. The groundwater level in **Figure 6** (top left) follows the CRD, i.e. the groundwater level is decreasing between 2017 to March 2020 when the CRD was decreasing during a prolonged drought. The rainfall for the remainder of 2020 was above average conditions, which is shown in the recovery of the CRD as well as the water level.

Where available, groundwater level, EC and pH triggers are also displayed for context.

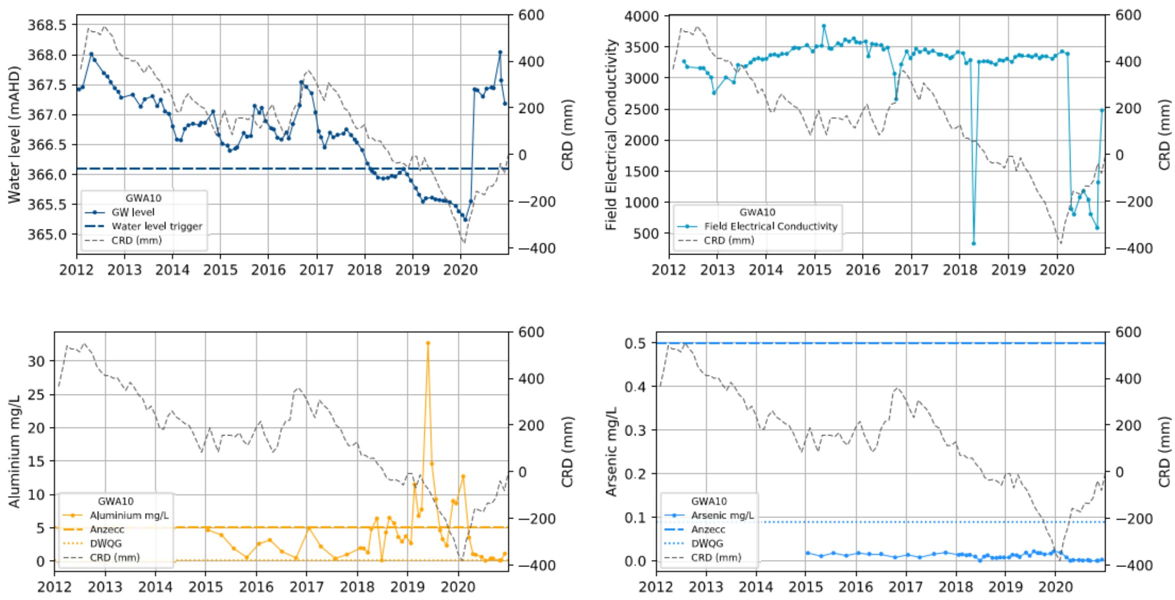


Figure 6 Example plot of water quality versus CRD

4.1 Alluvial bores

Of the five alluvial bores presented for this water quality analysis, two (GWa2 and GWa10) show some evidence of a mining and climate impact from 2017 to early 2020, before recovering by 4 m and 2.5 m respectively, showing a good match with the climate response. From a long-term view, metal concentrations were relatively stable prior to the drought observed from 2017 to early 2020, during which time the two bores showed a decrease in water quality. With water levels decreasing, the metal concentrations increased, potentially due to evapo-concentration.

In both bores, the groundwater levels experienced were the lowest since 2012 and were likely at or around the bottom of the wells. Observations made at GWa2 were closer to the base of the bore than GWa10 during this period and shows higher peaks for Aluminium, Arsenic, Barium, Manganese and Selenium. Since the above average rainfall in 2020, water levels have recovered, and water quality has improved with all metal observations now at the same or lower levels than pre-2017.

Two other bores (GWa8 and GWa32) are observed to respond to climatic trends but are further away from WCM mining activity, and don't show the large decline and near dry conditions from 2017-20. These sites show some increases in metal concentrations between 2017 and 2020 that are generally seen to decline following the increase in rainfall during 2020.

Groundwater level observations at GWa5 have been near the base of the bore or dry since late 2014 and have only shown a minor response to the above average rainfall in 2020. Observations in 2015 indicate high concentrations in all metal species that have subsequently declined and stabilised in observations to the end of 2020.

Most metal species are well below the ANZECC stock watering guidelines and below or at the level for the freshwater guidelines, with the following exceptions for this statement:

- Aluminium has been observed higher, ranging from approximately 1 mg/L higher to up to 40 mg/L higher, than the stock watering guidelines values in four of the five bores, generally correlated to low rainfall and near-dry conditions in the bores.
- Manganese has been observed higher than the stock water guideline at GWa2 during the 2017-20 drought (maximum 11 mg/L above guideline in June 2019), while GWa8 is consistently above the guideline (maximum of 27.5 mg/L above in March 2020), somewhat independent of climate trends for most observations.

4.2 Coal Bores

In general, all metals are well below the ANZECC stock watering guidelines and below or at the level for the freshwater guidelines at WCM coal monitoring bores. Similar to the alluvial bores, the coal bores that show a stronger climatic response (water level follows the climate trend) also show a higher variability in the metal concentrations, with the highest metal concentrations observed when the water levels were at their lowest level. In those times, the observations exceed the freshwater guidelines. These guidelines are only relevant if the groundwater (in this case in the coal measures) is expected to discharge into surface water of a different quality.

In bore GWc3, the observations in February 2018 show a spike for most metals. It cannot be established if these observations were reflective of the groundwater environment at that time or if a sampling error had occurred. It is noted that a decline in groundwater level of >3 m occurred from December 2017 to February 2018 to an elevation within 1 m of the base of the bore and that only 6 sampling events were able to be completed in 2018 due to dry or near dry conditions in GWc3.

GWC12, GWC13 and GWC14 show a high correlation with rainfall and a high variability in metal concentrations. As for the alluvial bores, the metal concentrations were highest during 2019, and have returned to similar or lower levels than pre-2019 after the rainfall received in 2020.

4.3 Tailings Storage and Spoil Bores

Of the four constructed spoil bores, only one had groundwater present since installation in late 2019. This bore, GWF3, showed an increase in groundwater level in 2020 of three metres, which also resulted in a reduction of EC from over 6,000 µS/cm to approximately 4,000 µS/cm. Metal concentrations also decreased in that time period. It is concluded that the bore had low water levels when it was drilled. The water quality would reflect concentration of analytes by evaporation. With the high rainfall experienced in 2020, the groundwater received fresher water that improved the water quality.

All metal concentrations are well below the ANZECC stock watering guidelines and below or at the level for the freshwater guidelines.

4.4 Summary and Recommendations

The analysis of metal concentrations showed that bores showing a strong response to the climate trend (larger variability in groundwater level) have higher variability in the metal concentrations. The highest metal concentrations were found at times when the water levels were at their respective historical minimum and often close to the base of the bore. This indicates that the water sample may not be representative of the aquifer, but rather to the stagnant water in the bore. Most bores with elevated metal concentrations from 2017 to early 2020 showed a significant decline following the above average rainfall in 2020.

Currently there are no trigger values for metals. If looking at future land use, the ANZECC stock water guidelines could be used. However, they might be too generous and not pick up trends within a useful time frame to address potential changes in trends that may be related to WCM activity. Given that the 2015-2020 observation period contains both severe drought conditions and a significant recharge event, an alternative approach is to use the 80th percentile in each bore and each analyte as an 'investigation level'. The 80th percentile is the value that 80% of observations are below and 20% of observations exceed. Hence, a single exceedance of the 80% percentile is expected to occur in 20% of observations. If the observations exceed the investigation level in three consecutive rounds, this could indicate a long-term change in water quality that needs an assessment.

5 Groundwater Model Verification and Refinement

Previous reporting (HydroSimulations, 2015a; Peabody, 2016) has utilised the HydroSimulations (2013) and (2015) groundwater model to assess likely impacts of WCM and ensure sufficient water licences are purchased prior to a water year. This groundwater model was converted from the original numerical groundwater model used by AGE (2005).

As 2018 was the third year in which the model constructed in 2015 (HydroSimulations, 2015b) was assessed for verification, the groundwater model (HydroSimulations, 2015b) was updated in 2020 by SLR (2020a), in line with the recommendations from the 2018 Annual Review (HydroSimulations, 2019). These changes aimed to verify if the model calibration was still appropriate by updating climatic inputs and revising mine progression to reflect actual extraction.

As is required by the GWMP (Peabody, 2017), the following section reports on the new model (SLR, 2020a) and presents the results of the model verification. SLR is also required to assess the performance and suitability of the model triennially to ensure predictions are consistent with observed data.

5.1 Updated groundwater model

5.1.1 Model Updates (2015)

The numerical model (HydroSimulations, 2015b) was rebuilt from previous WCM groundwater models to be compatible with MODFLOW_USG. This allowed refinement of the model grid to allow greater detail to be obtained from areas of interest. Further information on the model can be found in Section 5 of the SLR (2015b) report for the proposed Wilpinjong Extension Project (WEP). Key features have been summarised below:

- The active model extent is centred on Wilpinjong Coal Mine and includes the full extent of the neighbouring Moolarben Coal Complex as part of the cumulative impact assessment. The Wilpinjong and Cumbo Creek catchments as well as most of the Upper Goulburn River catchment are also included within the active model extent.
- The stratigraphic section is represented by eight (8) layers.
- The model domain is discretised into 56,430 cells for each layer, using a Voronoi-based mesh. This has the advantage being irregular while maintaining the property that a line connecting adjacent cell-centres is perpendicular to the shared cell boundary. The mesh was generated using the proprietary HydroAlgorithmics (2014) software 'AlgoMesh', which provides significant control over the mesh generation process.
- Model grid resolution in key areas of interest is as follows:
    - 70 m in most WCM open cut pit areas;

    - 80 and 100 m in Moolarben longwalls and 100 m in Moolarben open cut areas;
    - 20 m in the area between Pit 4 and Pit 3, which is the area of the mine lease through which Cumbo Creek flows;
    - 30 m regular hexagonal grid in alluvium near to WCM (Wilpinjong Creek, Wollar Creek and Cumbo Creek); and
    - 100 m regular hexagonal grid in alluvium in areas away from the WCM.
- Maximum cell dimension of about 1 km in areas away from the WCM.
- Spatially and temporally variable groundwater recharge rates based upon outcropping geology.
    - Temporal variation in rainfall recharge based on a daily timestep water balance that accounts for runoff, soil moisture deficit and recharge from inputs of rainfall and potential evaporation.

5.1.2 Model Updates (2020)

The numerical groundwater model (SLR, 2020a) was updated from the (HydroSimulations, 2015b) groundwater model. The changes undertaken in 2020 included:

- Updated the rainfall-recharge series utilised in the model to reflect the actual rainfall experience in the years following the creation of the model in 2015.
- Updated the simulated mining schedule to reflect the actual schedule and extent of mining more closely in the years following the creation of the model in 2015.
- Updated simulated MODFLOW River (RIV) stage heights to reflect time-series observations made in the years since the creation of the model in 2015.
- Incorporated pumping from existing approved and installed water supply bores, pumping rates based on available site data.
- Updated the observation target file with any additional bores and recent groundwater level data (observed data).

5.2 Model Verification

Hydrographs of observed groundwater levels and SLR (2020a) modelled groundwater levels are found in **Appendix C**. The following section contains an assessment of the modelled groundwater levels where potential mining impacts are observed.

5.2.1 Model Performance at Alluvium Monitoring Bores

The SLR (2020a) modelling predictions are consistent with HydroSimulations (2015) predictions at the alluvial monitoring sites along Wilpinjong Creek, with approximately 1 m drawdown for the life of approved mining (GWa6 has the maximum predicted drawdown in an alluvial monitoring bore of about 1.5 m occurring in 2029). However, substantial drawdowns of more than 2 m are expected at most of the coal monitoring bores.

The alluvial bores examined in this section have been identified from the cause and effect analysis (**Section 2.1**) or the trigger level analysis (**Section 3**) as likely to show a WCM mining effect. The performance of the model at these sites can be seen in **Appendix C**.

The timing of the mining effects modelled at the alluvial monitoring bores shows good correlation with the observed effect and often indicates a repressed response to rainfall that is also seen in the observed data. Most of the modelled groundwater levels at the alluvial monitoring bores respond to the new modelled rainfall recharge series included into the model. The performance of the SLR (2020a) model has improved at GWa3 (Wilpinjong Creek) and GWa6 (Cumbo Creek) where modelled groundwater levels better capture the observed groundwater responses to rainfall recharge after 2015 and in 2020.

Amplitudes and overall base levels are generally well represented for the alluvium monitoring bores along Wilpinjong Creek, for example GWa1, GWa2 (in the west) through GWa10, GWa12, GW14 and GWa15.

Groundwater levels along Cumbo Creek are generally well represented in the alluvium (GWa5 and GWa6), although the recent observations at GWa5 are not well replicated by the groundwater model due to an underestimation of Pit 3 and 7 impacts, or unreliable data being collected from GWa5.

The observed desaturation of the alluvium (GWa4, GWa5, GWa6, GWa12, GWa14) is often seen to occur at earlier times than is seen in the (SLR, 2020a) modelled data. Differences between observed and modelled data at GWa6, GWa12, and GWa14 (**Figure 36** and **Figure 37**) are similar for a majority of the WCM alluvial monitoring locations. The decline in observed groundwater level from 2013 to 2016 and from 2017 to 2020 is about 1.5 m greater than that predicted by the model, with dry observations during these periods of below average rainfall not being replicated by the model. However, groundwater level response in most alluvial bores following rainfall events in 2017 and 2020 is well matched by model predictions.

This may be attributed to transferring the hydraulic, storage and climatic parameters from the (HydroSimulations, 2015b) model into the (SLR, 2020a) model. Some improvements to model performance may be made by making minor revisions to the aquifer properties of the alluvium. A calibration exercise could be undertaken in the future.

5.2.1.1 Comments on possible discrepancies

Large discrepancies that were thought to exist between observed and modelled groundwater levels for GWa1 (**Figure 31**) for the period from 2015 to 2017 (HydroSimulations, 2018, 2019 and SLR, 2020b) now require review and reconsideration. A downhole camera investigation in 2020 identified roots within the screens of GWa1, which may have resulted in the collection of non-representative data for some time. GWa1 is scheduled for replacement in early 2021, with the new bore used to verify model predictions in that area of the Wilpinjong Creek alluvium.

Observed drawdown at GWa5 (**Figure 34**) is approximately 1.5 to 2.5 m greater than the drawdown predicted by the model for the period between 2013 and the end of 2020. Previous reporting identified a lack of inflow at Cumbo Creek due to reduced rainfall and a possible under-prediction of Pit 3 and Pit 7 mining impacts have been attributed to this difference (HydroSimulations, 2018, 2019 and SLR, 2020b). Despite this, modelled and observed data both show good correlation with the fluctuation in rainfall, with a groundwater level increase of approximately 0.5 m in 2020 in both the observed and modelled data. Additional investigation has also been recommended at GWa5 to determine whether it is still connected to the Cumbo Creek alluvial aquifer and returning representative data.

5.2.2 Model Performance at Coal Monitoring Bores

Figure 39 to **Figure 48** compare modelled and observed groundwater levels at coal monitoring bores identified as being affected by mining. The largest drawdowns predicted by the model were expected to occur during the excavation of Pit 3 and Pit 4, with continued drawdown predicted at several bores following the extraction of Pit 5. Noting the uncertainty in distinguishing between climate and mining-related drawdown in observed data, modelled groundwater levels at the coal monitoring bores generally show a good correlation with the timing and magnitude of observed drawdown.

The simulated groundwater levels in the revised groundwater model (SLR, 2020a) shows a reduction in the rate of drawdown between 2006 and 2009 (when Pit 1, 2 and 5 starts) at GWc2, GWc3, GWc12, GWc14 and GWc15. The timing in drawdown is still captured in (SLR, 2020a) for these bores and the simulated groundwater levels match well the observed levels prior to the extraction of Pit 4 in 2013. The model (SLR, 2020a) better captures the maximum drawdown following the extraction of Pit 1 and 2 at GWc1 and GWc11 located near Pit 2, although the groundwater level recovers quicker and above the observed levels.

The groundwater model (SLR, 2020a) improved the timing in drawdown after the extraction of Pit 4 and following below average rainfall conditions at GWc1 and GWc2. The maximum predicted drawdown better aligns with the observed depressurisation at GWc3 (Cumbo Creek) and is matching the drawdown gradient at GWc15 following the extraction of Pit 4, 3 and 7.

The observed data at Slate Gully monitoring bores GWc28 and GWc29 is relatively well matched by the model although the observed drawdown is greater than the modelled.

The simulated depressurisation of the coal seams between 2013 and 2019 is generally lower than the observed data in the revised model (SLR, 2020a) at GWc12, GWc15, GWc14, GWc28 and higher at GWc1, GWc2 and GWc3. Recovery in 2020 is in general lower than that observed at all coal monitoring bores and will be a function of the rainfall recharge series in the model only updated to the end of 2019. As such, the model used long term quarterly averages throughout 2020.

A comparison of maximum predicted and observed drawdowns at coal bores following the mining at Pits 1 to 5 (Jan 2006 to Dec 2011) and Pits 3 to 7 (from Jan 2012 to Dec 2018) is presented in **Table 6** and **Table 7** respectively.

Table 6 Maximum Predicted and Observed Drawdown (m) at Coal Monitoring Bores due to mining at Pits 1-5 (Jan 2006 to Dec 2011).

	GWc1	GWc2	GWc3	GWc11	GWc12	GWc14	GWc15
Predicted	14	7	6	11	8	6.5	5
Observed	12	4	-	9^	-^	-^	-^

*No drawdown observed at this bore. ^Monitoring began after mining had commenced

Table 7 Maximum Predicted and Observed Drawdown (m) at Coal Monitoring Bores due to mining at Pits 3-7 (Jan 2012 to Dec 2020).

	GWc1	GWc2	GWc3	GWc11	GWc12	GWc14	GWc15	GWc28	GWc29
Predicted	12	25	29	11	22	26	25	17	13

	GWc1	GWc2	GWc3	GWc11	GWc12	GWc14	GWc15	GWc28	GWc29
Observed	8	25	14	20	37	33	29	22.5	18

*No drawdown observed at this bore. ^Monitoring began after mining had commenced

6 Review of Water Balance and Groundwater 'Take'

The following describes a review of dewatering or pumping records at the WCM, and the method used to estimate 'groundwater take' from those records.

6.1 Trends in Inflow

Figure 7 presents the 'inferred groundwater inflow' at WCM, with the most recent values for the 2019-2020 water year provided by SLR (2021), which estimated the gross inflow at 1.7 ML/day. The 'Rainfall Residual Mass' (rainfall trend) curve shows the prevalent rain patterns over time. Steep slopes, in either direction, are indicative of more extreme rainfall patterns.

Figure 5 also includes the historical data used in previous groundwater licensing audits for 2013-2014 and 2014-2015 water years (SLR, 2014; SLR 2015a). Moving average trends of 6-months and 12-months have also been plotted for these years.

It should be noted that the 2006-2011 data is not corrected for runoff or other processes, and so represents the inferred maximum groundwater inflow. The monthly data for 2006-2011 is distinguishable from both:

- the daily data in the period late-2012 to 2014; and
- the 2014-2015 data, that is presented as a daily average based on the WRM (2015) estimated upper limit of total annual inflow.

Figure 5 suggests that there is some correlation between the mine inflow trend (12-monthly dotted trend line) and the rainfall trend, although the commencement of new Pits at WCM is also a strong driver of increased inflow. Recent water balance modelling completed in March 2021 (SLR, 2021 and SLR *pers comm*) indicates that inflow estimates of 1.7 ML/day for the 2019-20 water year are influenced by the dry conditions experienced from 2017 to early 2020. It is expected that predictions incorporating above the average rainfall in late-2020 will likely result in higher inflow estimates for the 2020-21 water year.

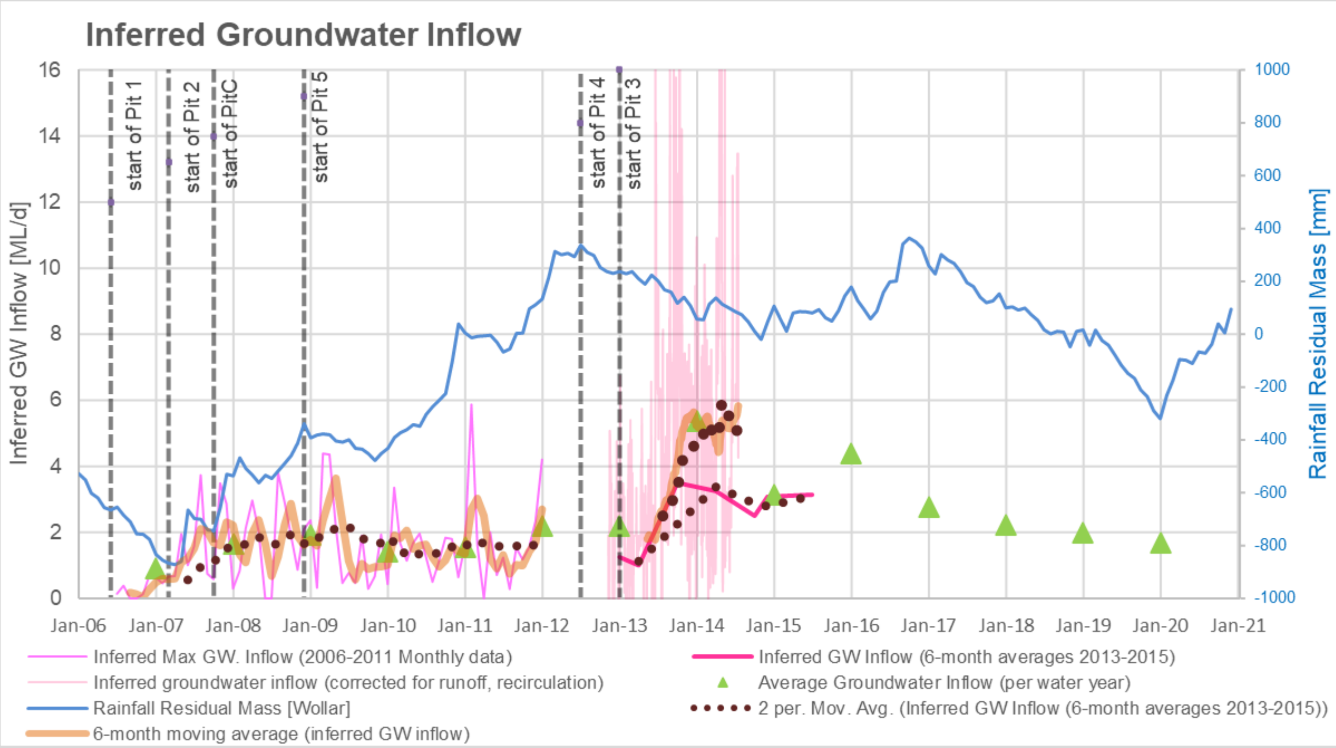


Figure 7 Historical Trends in Inferred Groundwater Inflow

6.2 Assessment of Annualised Groundwater Inflow against License

WCPL holds a consolidated licence (WAL41862) to cover the extraction of water from all Pits.

The total authorised volume of groundwater extraction is 3,121 Unit Shares[3] which is equivalent to the combined total of the individual Pit entitlements for the 2019-20 water year (authorised by licences 20BL173513, 20BL173514, 20BL173515, 20BL173516, and 20BL173517).

Previously:

- WCM held two licences from 2006 until 2008 that entitled a combined groundwater take of 697 ML in any 12-month period.
- A third licence was added in 2008 that covered another mine pit, but without additional volume attached (i.e. still a combined 697 ML).
- In 2013 WCPL sought additional licensed volume, to a total of 1,730 ML/a. Licences were granted to cover each of the five active or soon-to-be-active pits (Pits 1-5). The total entitlement held by WCPL at that time was 2,021 ML/a.
- In 2018 WCM sought additional licensed volume, to a total of 1,100 ML/a. Licenses were granted to cover each of the six active pits (i.e. Pits 1-6). The total entitlement held by WCPL from 2018-19 onwards is 3,121 ML/a.

[3] One unit is currently equivalent to 1.0 ML as per the *Available Water Determination Order for Various NSW Unregulated and Alluvial Water Sources (No. 1) 2013*

When annualised from a daily inflow value of 1.7 ML/day, the SLR (2021) March estimate for the 2019-2020 water year is about 621 ML/a. **Table 8** presents the relevant entitlement volume for the consolidated licence, the estimated inflow or 'take' for 2019-20 and 2018-19 Water Years.

Table 8 also presents an assessment of compliance to the allocated licence volumes for each water year. The SLR (2020c) annualised estimate is within the allocated licence volume for the 2019-20 water year.

The modelled estimate for groundwater take (SLR, 2020a) also indicates the predicted inflow falls beneath the licensed volume for the 2019-20 water year. The groundwater volume extracted by the dewatering bores during the water year 2019-20 are also presented in **Table 8.**

Table 8 Summary of Annual Volume of Inferred Maximum Groundwater Take (water years: 2018-2020)

Water Access License	Limit [ML/a]	2018-2019		2019-2020	
		WRM Inflow (2020)	Modelled inflow (SLR, 2020)	SLR Water Balance Inflow (SLR, 2021)	Modelled inflow (SLR, 2020)
Pits	3,121 ML/a (WAL 41862)	730	797	621	740
Dewatering Bores		56.1		275.6*	
TOTAL		786	848	897	1,016

*Volume of water pumped from dewatering bores [ML] for the water year 2019-20, refer to Section **7**.

6.3 Assessment of Annualised Groundwater Take

Comparisons of the annualised total inferred inflow to the mine (based on pumping records) and WCPL's groundwater extraction licence are made in **Figure 6** using predicted total annual inflows from the updated groundwater model for WCM (SLR, 2020a).

Figure 6 shows the results from the updated SLR (2020a) groundwater model, which has updated the model developed in 2015 by HydroSimulations (2015), as used to support the Wilpinjong Extension Project (WEP).

Figure 6 displays the total entitlement volumes as a red dashed line and the bar charts show the annualised inflow volumes from groundwater modelling (predicted inflows for Pits 1 to 7). The inflow estimates from water balance estimates (WRM, 2019 and SLR, 2020c) are shown as a continuous brown line (the "Annualised Inferred GW inflow").

For the 2019-2020 water year the groundwater model predicts an inflow of 740 ML/a. These estimates are marginally greater than the 621 ML/a estimated by SLR for the 2019-2020 water year (SLR, 2020).

Inflows predicted by both the groundwater model (SLR, 2020a) and the independent water balance assessments (SLR, 2020c) are all below the licenced allocation of 3,121 ML/a.

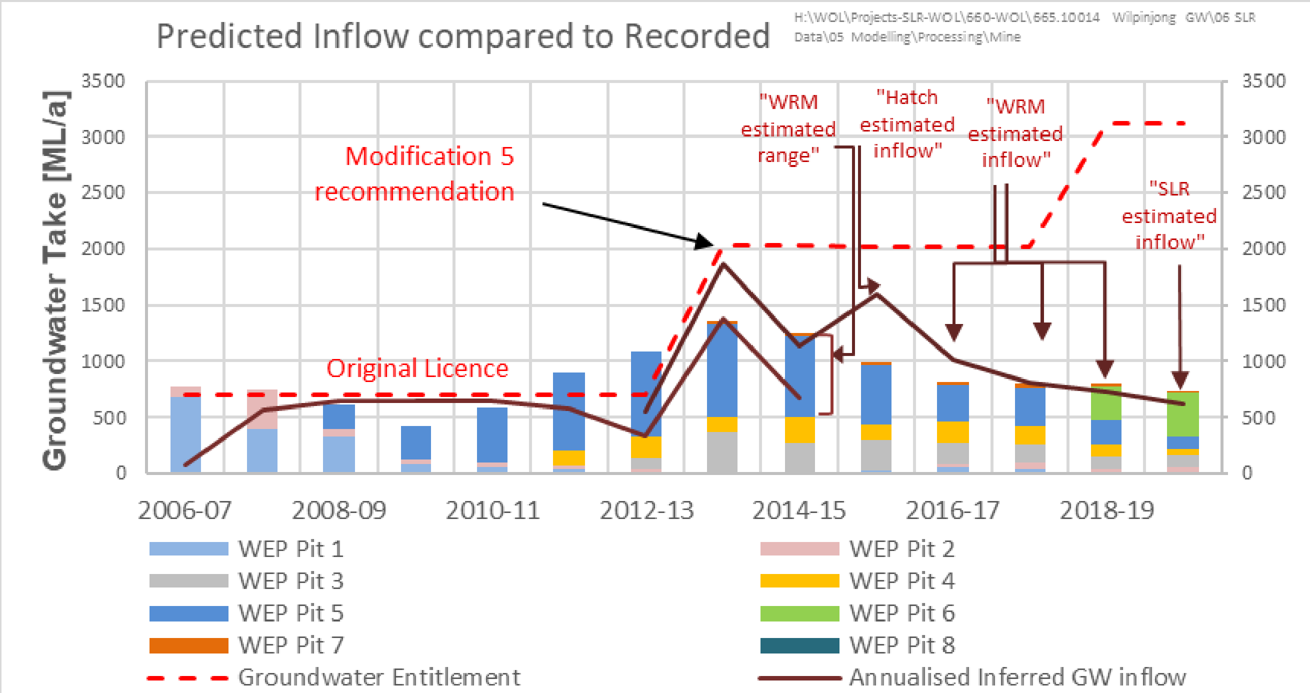


Figure 8 Comparison of Predicted and Pumped Volumes against Groundwater Entitlement for the HydroSimulations (2020) Groundwater Model

6.4 Alluvial Groundwater Inflow

Groundwater can be lost from alluvium to underlying Permian sediments through natural processes or as incidental take in response to mining. As there are no physical means by which this volume of alluvial water can be measured, groundwater modelling is necessary to quantify the expected loss.

The SLR (2020b) model has predicted the likely alluvial take during the 2019-2020 water year, as shown in **Figure 9** for both Wilpinjong Creek alluvium and Cumbo Creek alluvium. The predicted loss from Wollar Creek is negligible.

For the 2019-2020 water year the additional alluvial water loss, over and above what occurs naturally, is estimated to be about 0.23 ML/day from Wilpinjong Creek alluvium and about 0.18 ML/day from Cumbo Creek alluvium.

This gives a predicted alluvial groundwater take of about 150 ML/year. WCM holds 474 ML of groundwater licence from the Wollar Creek Water Source under the *Water Sharing Plan for the Hunter Unregulated and Alluvial Sources, 2009*. This take is within and compliant with the licence volume held by WCM.

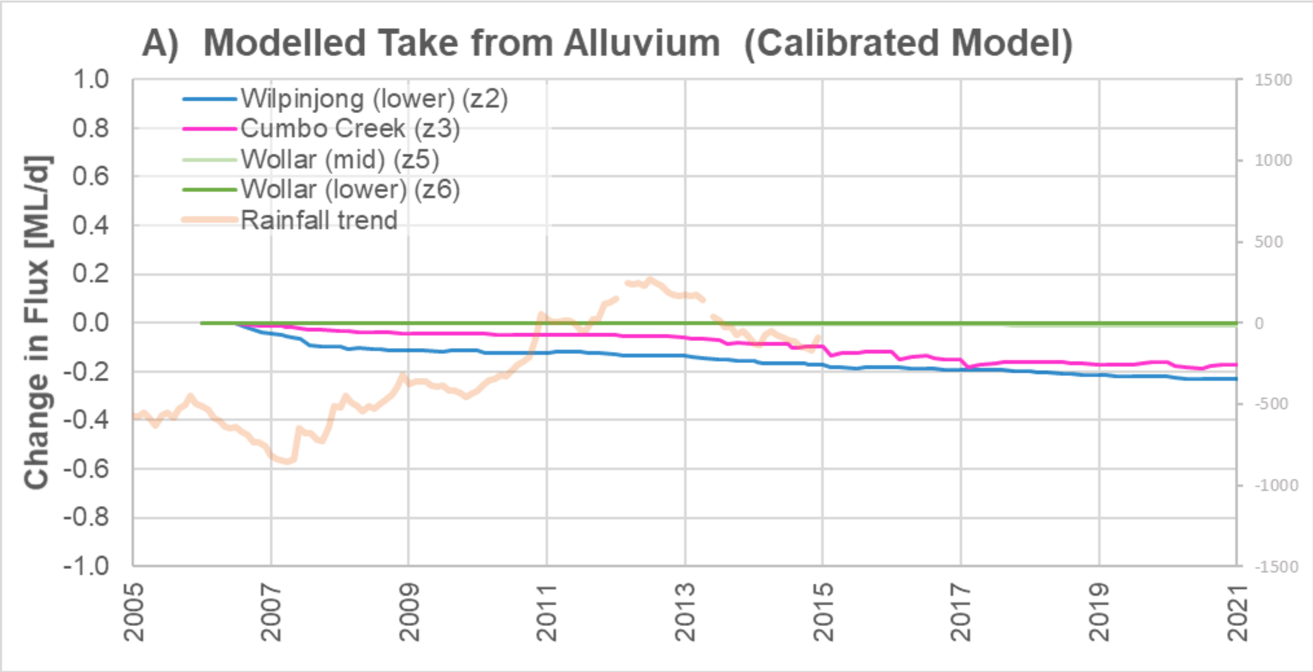


Figure 9 Modelled Take from Alluvium (SLR, 2020a)

7 Dewatering Bores

7.1 Groundwater Take

Six water supply production bores (GWs10, GWs11, GWs12, GWs14, GWs15, PB1) are located north of the active WCM mine area at locations both north and south of Wilpinjong Creek (**Figure 2**). In addition, one production bore designed for dewatering was constructed near a turkey's nest dam north of Pit 2 and Pit 4 during the 2018-19 water year at E: 771905.67 N: 6149868.56 (GDA94 Z55), screened from a depth of 42 to 84 metres below ground level (mbgl) (**Figure 2**). Of these seven production bores, five bores were extracted from in the 2019-20 water year, while only PB1 and GWs11 were extracted from in the 2020 calendar year.

Table 9 Pumping records for production bores for the 2019-20 water year

Production Bores	2019-20 Water Year
	Total Pumped (ML)
GWs10	0
GWs11 (deepened in 2019)[1]	See **Table 10**
GWs12	11.2
GWs14	37.5
GWs15	34.7
PB1[1]	45.8
TOTAL	**129.2**

[1] PB1 (Cumbo Shed), GWs11 and WB2 (Turkey Nest) are not metered individually, with the pumped volume for the 2019/20 water year from the turkey's nest dam 137.5 ML. This has been divided equally between the three bores contributing to water at this site.

In early 2020, in response to ongoing dry conditions and diminishing operational water supply levels, several additional water supply bores were drilled. The location, screened interval, inferred target geology for these bores, as well as extracted volumes for the 2019/20 water year is provided in **Table 10**. The intersected geology has been inferred from groundwater model layering (SLR, 2020a).

Table 10 Detail and pumping records for new production bores

Production Bore ID	Easting	Northing	Screened Interval (mbgl)	Inferred Target Geology	Pump on Bore	2019-20 Water Year Extraction Volume (ML)
WB2 (Turkey Nest)[1]	771906	6149869	42-84	Marangaroo FM to Shoalhaven GP	Yes	45.85
WB3 (GWs11 deepened)[1]	771591.2	6420041	36-78	Ulan Seam to Shoalhaven GP	Yes	45.85
WB5 (Pit 6 W)	767356.1	6422058	60-90	Ulan Seam to Shoalhaven GP	Yes	10.2
WB11 (Robyn Cumbo)	771777	6416204	24-66	Shoalhaven GP	Yes	8.4

Production Bore ID	Easting	Northing	Screened Interval (mbgl)	Inferred Target Geology	Pump on Bore	2019-20 Water Year Extraction Volume (ML)
WB15 (Pit 5S)	767262	6415636	30-84	Marangaroo FM to Shoalhaven GP	No	2.2
Pit 5N	768844	6421155			Yes	2.4
Pit 2	770922	6419174			Yes	31.5
Total						146.4
Total (including historically installed supply bores, Table 9 + Table 10)						**275.6**

[1] PB1 (Cumbo Shed), GWs11 and WB2 (Turkey Nest) are not metered individually, with the pumped volume for the 2019/20 water year from the turkey's nest dam 137.5 ML. This has been divided equally between the three bores contributing to water at this site.

The consolidated licence WAL 41862 now covers groundwater extraction for both water supply bores and WCM open cut pits. WAL 41862 has an entitlement of 3,121 ML/a.

The water supply production bores have recorded an extraction volume of 275.6 ML during the 2019-20 water year.

Compliance of this extraction associated with relevant licence conditions is addressed in **Section 6.2.**

7.2 Cease to Pump Trigger Levels

In 2005, WCPL commissioned AGE to investigate and determine reporting and cease-to-pump triggers for licensed production bores GWs10, GWs11, GWs12, GWs14, and GWs15. Triggers have been determined based on the expected maximum drawdown, as a result of the development of the open cut and water supply borefield. These cease-to-pump trigger levels and the exceedances in the 2019-2020 water year are shown in **Table 11**.

Table 11 Water Supply Borefield - Cease to Pump Trigger Level Exceedances

Production Bore	Monitoring Bore	Cease-to-pump trigger level (mAHD)	Lowest observed water level 2019-2020 (mAHD)	Trigger Exceedance (Y/N)
GWs10	GWc10	346	360.1	N
GWs11	GWc11	348.5	347.6	Y
GWs12	GWc12	332.5	327.8	Y
GWs14	GWc14	319.5	324.8	N
GWs15	GWc15	314.5	325.5	N

Two bores used as water level proxies for GWs11 and GWs12 (GWc11 and GWc12), recorded water level observations below their respective cease-to-pump trigger levels during 2020. Declining water levels are observed at both sites from the start of 2018 to early 2020, with an increase in rate of decline at GWc11 from early 2019 to early 2020. The observed decline in water level from 2018-2020 correlates with a decline in the long-term rainfall trend, while the increased rate in GWs11 from 2019 onwards correlates with the declining rainfall trend and may indicate some effect from nearby Wilpinjong production bores.

7.2.1 GWc12

The groundwater level at GWc12 was below the Cease-to-Pump trigger level since March 2019 and remained below the trigger level until the June 2020 observation. Pumping has occurred from GWs12 in the 2019-2020 water year of 11.2 ML.

Large magnitude groundwater level recovery is observed at GWc12 in 2020, associated with the period of above average rainfall experienced from February to December 2020. Groundwater level was observed to increase from 327.8 mAHD to 345.65 mAHD, 13.15 m above the Cease-to-Pump trigger level.

GWa12, the corresponding alluvial bore, reported dry conditions for the first half of the 2020 monitoring period, though has been dry since 2018, prior to pumping in GWc12. From May to November 2020 groundwater levels rose by almost 2.5 m, above the defined trigger level, to an elevation approximately 1 m lower than observed in 2012. It is therefore considered that the water levels in this bore are influenced by other factors outside of the pumping in the bores (other mining activities and climatic factors).

7.2.2 GWc11

No site-specific pumping data has been provided for GWs11, with pumping volumes at this site accounted for as a component of the water volume extracted from the turkey's nest dam north of Pit 2. Cumbo Homestead bore (PB1) and the recently installed WB2 (Turkey's Nest Bore) also contribute water to the turkey's nest dam and are not individually metred. Data provided for this assessment indicates water was pumped from the turkey's nest from May 2019 to March 2020, with the component from GWs11 likely beginning after the deepening of GWs11 was completed in June 2019.

Groundwater level observations at GWc11 were below the Cease-to-Pump trigger level for both the January and February 2020 observations, by 0.54 m and 0.91 m respectively. Recovery above the trigger level was observed from March through to December 2020 associated with above average rainfall. The December 2020 water level observation is 7.7 m above the Cease-to-Pump trigger level. Inferred pumping from GWs11 during February and March 2020 constitutes an exceedance of the Cease-to-Pump trigger level for this site.

No evidence of a pumping effect is observable at adjacent alluvial bore GWa11, which was dry from early 2019 through to early 2020, associated with below average rainfall and no flow within Wilpinjong Creek.

The exceedance in January and February 2020 is likely related to a combination of severe below average rainfall conditions from 2017 to early 2020, nearby open-cut mining operations, and extraction from GWs11, PB1 and the 'Turkey's Nest' bores. While the magnitude of the exceedance is minor, and recovery above the Cease-to-Pump trigger was observed when pumping stopped and rainfall increased in March 2020, the following recommendations aim to reduce the likelihood of future exceedances:

- Telemetered water level loggers should be installed in monitoring bores adjacent to water supply bores. These bores could be linked to a messaging system that automatically notifies Wilpinjong staff when the cease to pump trigger is being approached and/or exceeded.
- A review of the monitoring network near the turkey's nest dam north of Pit 2 should be undertaken to determine whether currently installed bores are at an adequate depth and distance from the water supply bores to monitor their impacts during use.

7.2.3 Other water supply bores

The additional water supply bores constructed from mid-2019 to early 2020 are generally screened at a greater depth than the existing groundwater monitoring network. This means there is a lack of observed data available to assess the extent and magnitude of any impacts associated with these new supply bores. This section considers findings from the WEP EIS groundwater assessment (HydroSimulations, 2015), and the observed groundwater level response to extraction from the historically establish supply bores (**Table 9**) to infer the likely impacts of extraction from these new supply bores in early 2020 and provides a series of recommendations to allow for ongoing monitoring and the development of appropriate trigger levels.

The inferred impacts of extraction from the new water supply bores in early 2020 consider the following points:

- The Marangaroo Conglomerate combined with the Nile Sub-Group, and Shoalhaven Group underlying the Ulan Seam are aquifer systems considered within the HydroSimulations (2015) investigation and are included into the groundwater model.
- HydroSimulations (2015) considers a scenario in which extraction from the previously defined borefield is simulated to supplement annual water demand. This scenario had three years where extraction was higher than the observed 2019/20 extraction volumes (276.5 ML), up to 503 ML/a, and showed minimal additional drawdown at sites within the Ulan Seam.
- HydroSimulations (2015) predicts a maximum drawdown at registered bores identified within the Marangaroo Conglomerate and Shoalhaven Group of >20 m due to WCM/ WEP activity. Many of the locations are within the project approval boundary and near the newly installed supply bores.
- The groundwater level response to extraction of a similar volume during the 2019/20 water year at historically established coal measures bores (**Table 9** and **Table 11**) was minor. Response to extraction from the supply bores was difficult to separate from both mining and climatic effects, and no impact was observable in adjacent alluvial monitoring sites. GWc11 is the site that most likely shows a borefield extraction impact and is likely related to ~50% of water extracted from Wilpinjong supply bores in the 2019/20 water year coming from the three bores nearby (GWs11 (deepened), PB1, WB2 (Turkey's Nest)) at 137.5 ML.

While supply bore extraction from units underlying Ulan Seam has not been considered as part of previous assessments, it is unlikely that the short period of extraction, and subsequent above average rainfall conditions has impacted the groundwater level in the units underling the Ulan Seam by greater than predicted in the WEP EIS groundwater assessment (HydroSimulations, 2015).

The following recommendations are provided to confirm the above inferred impacts, and to enable ongoing monitoring of the groundwater system adjacent to the newly installed supply bores:

- Groundwater level observations should be made at the newly installed supply bore locations where practical.
- The installation of monitoring bores within the units underlying the Ulan Seam should be undertaken prior to further extraction. Trigger levels could be developed at these sites based on approved impacts (HydroSimulations, 2015 and SLR, 2020).
- The representation of the Marangaroo Conglomerate, Nile Sub-Group and Shoalhaven Group within the groundwater model is recommended for review prior to the widespread use of the new supply bores. Revision of these units may provide greater confidence in model predictions and help quantify whether their use will increase impacts to other water sources, such as the Wollar Creek Water Source.

8 Recommendations

8.1 Groundwater Level Measurements

To improve the quality of the manually recorded groundwater level data, it is recommended that any outliers to previous groundwater levels at monitoring bores are checked and remeasured on site at the time of taking the groundwater level sample. This should reduce any error associated with taking manual groundwater level samples. To illustrate this point, the February 2020 groundwater level in GWc1 is at least 8.4 m below the other measurements observed in this bore, and for the purposes of the 2020 Annual Review, it is unsure if this measurement is representative of the groundwater level at this time or if this is just a mistake in the data collection and recording process.

In addition to the above, it is noted that the WCM groundwater database utilises the ‘depth to dry bore’ column and ‘depth to water column’ for observations within the same bore with similar water levels. This has led to ambiguity in the results as to when a bore is completely dry and the criteria for stating when a bore is dry. It is recommended that if a bore is dry and no water level measurement can be taken this is stated explicitly as ‘dry’ rather than providing a water level measurement.

Since a lot of monitoring bores have observed an increase in groundwater levels in 2020 and are again indicating saturated strata, it is recommended that groundwater level loggers are reinstalled in the monitoring bores where they have previously been removed.

8.2 Bore Investigations

It is recommended that GWa4, GWa5, and GWa7 undergo further investigation to determine if they are functioning correctly and are representative of the aquifer they are monitoring. This bore investigation should be in the form of:

- GWa4 - Further investigation such as the bore being dipped for total depth, or downhole camera investigation should be undertaken to determine it is functioning correctly.
- GWa5 - Further investigation such as the bore being dipped for total depth, or downhole camera investigation should be undertaken to determine it is functioning correctly. Rehabilitation, landform data, and other catchment change information should be acquired to determine why this bore may be displaying greater drawdown than predicted.
- GWa7 - If observations in early 2021 do not respond consistently with historical data, a downhole camera investigation is recommended at GWa7. This will aim to confirm the condition of the bore and determine whether it is still providing representative samples.

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APPENDIX A

Groundwater Level Hydrographs

Figure 10 Alluvial Groundwater Hydrograph at GWa5 between Pit 2 and Pit 3, adjacent to Cumbo Creek

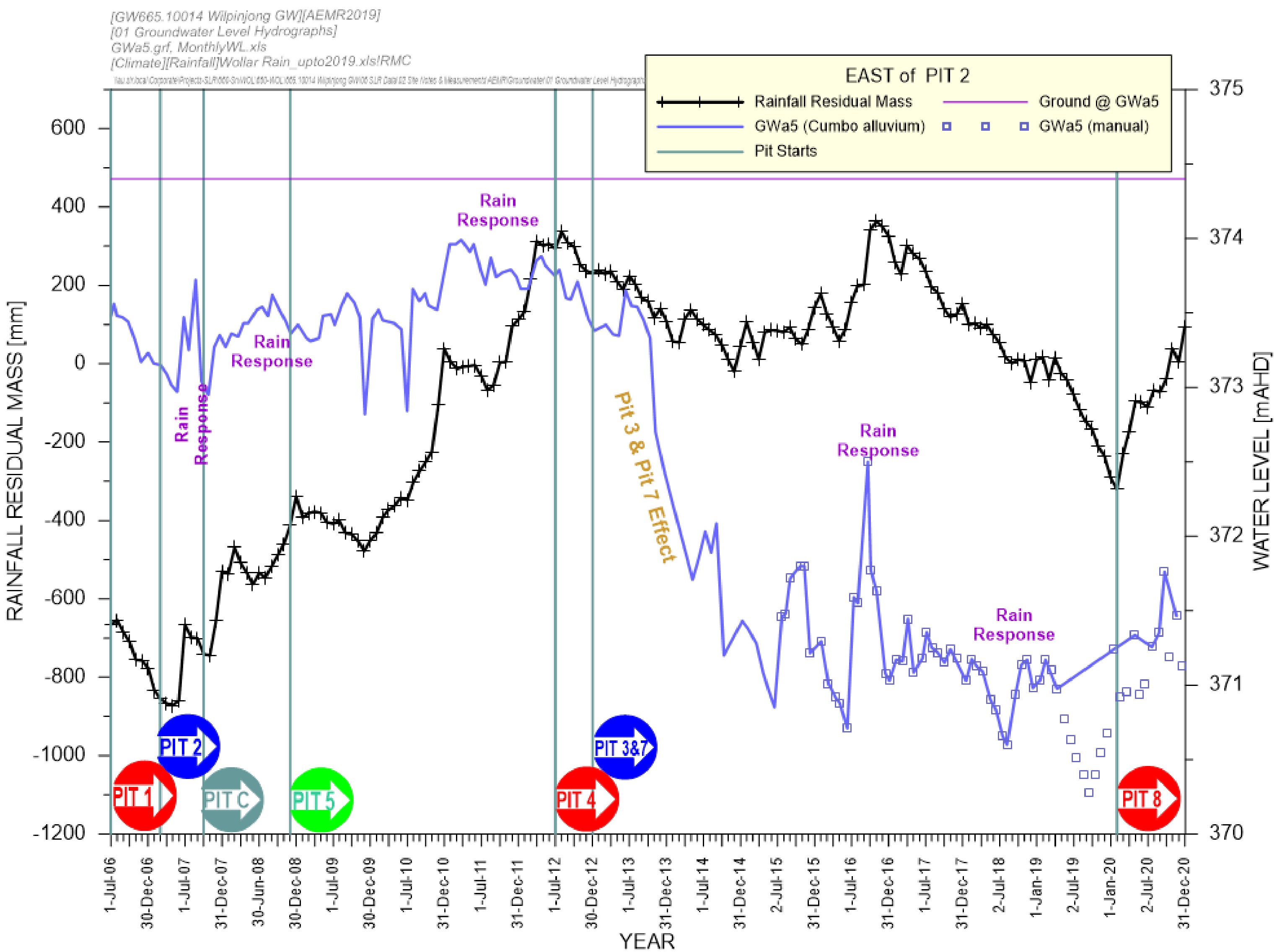


Figure 11 Groundwater Hydrographs at GWa2 and GWc1 at 0.3 km North-West of Pit 1

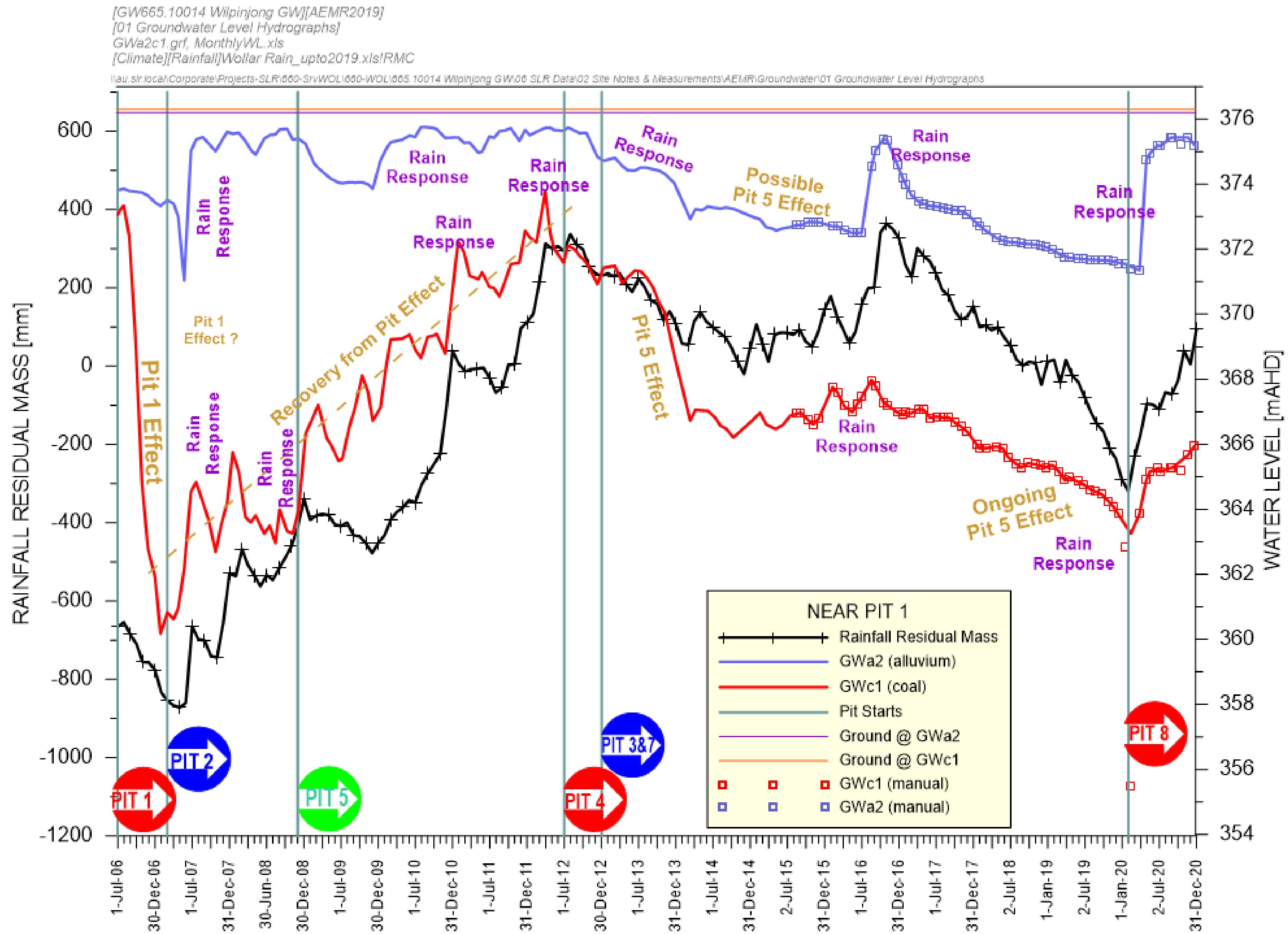


Figure 12 Groundwater Hydrographs at GWa10 and GWc10 at 0.3 km North-East of Pit 1

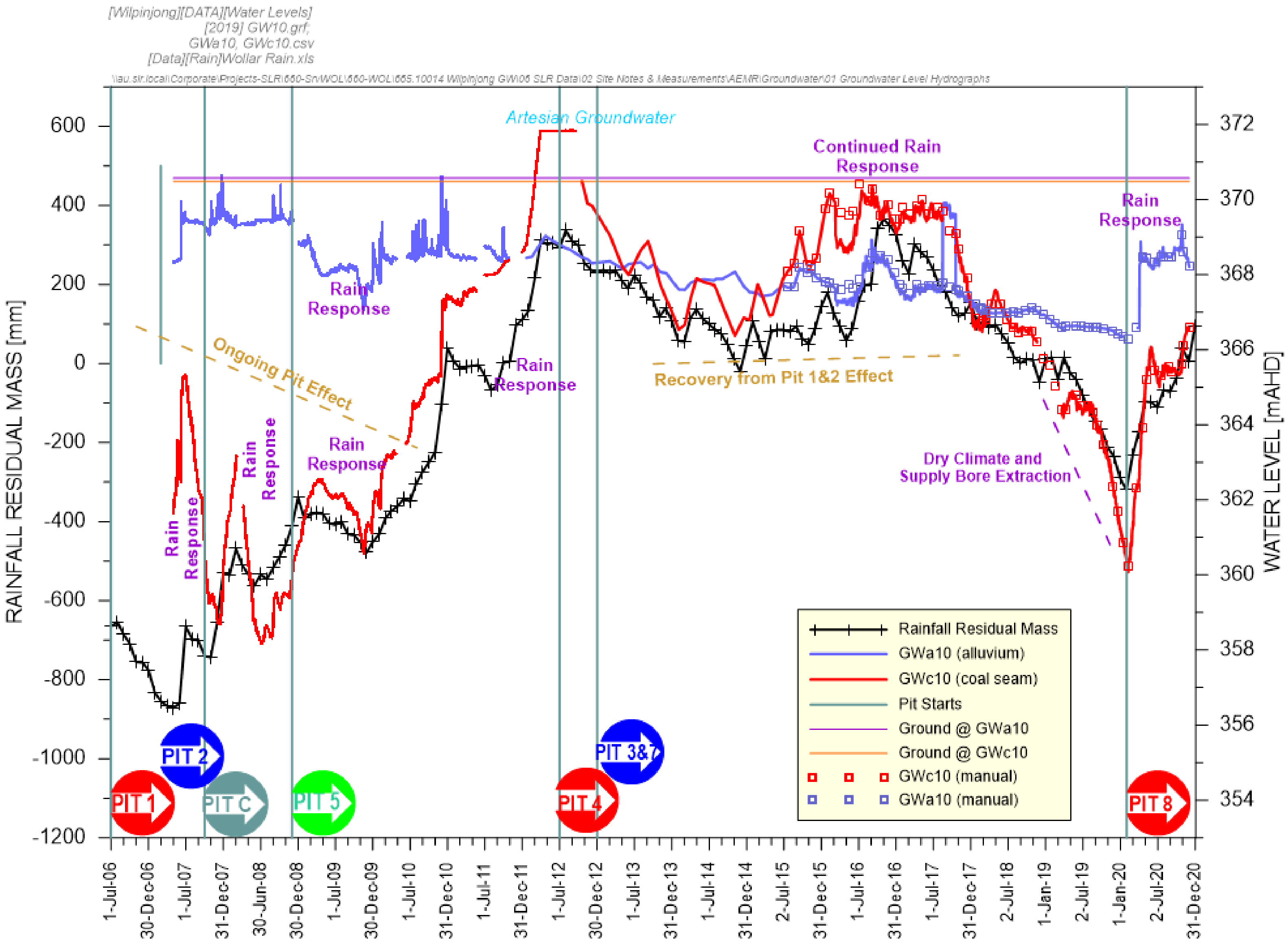


Figure 13 Groundwater Hydrographs at GWa11 and GWc11 at 0.3 km North of Pit 2

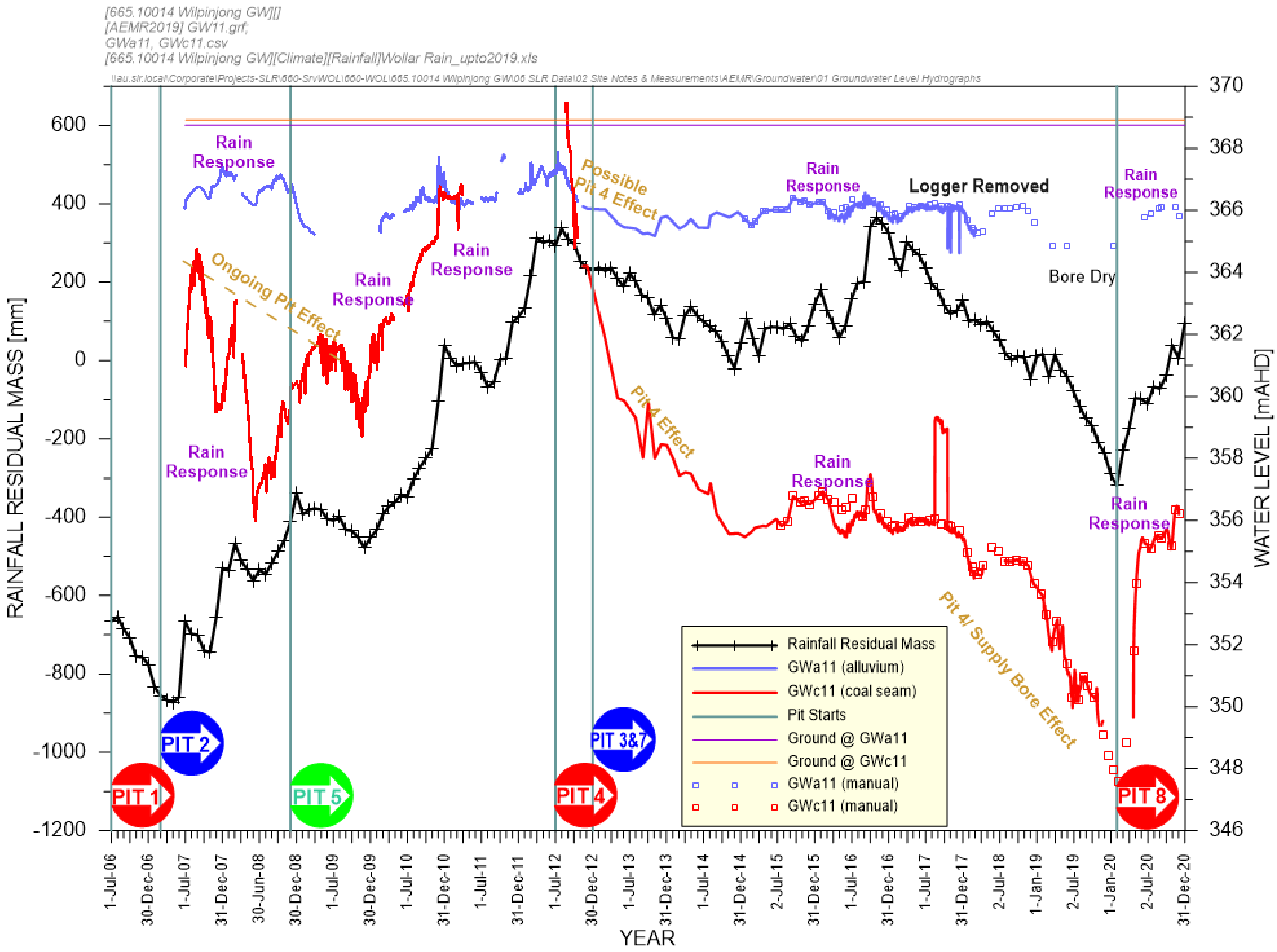


Figure 14 Groundwater Hydrographs at GWa12 and GWc12 at 0.5 km North of Pit 4

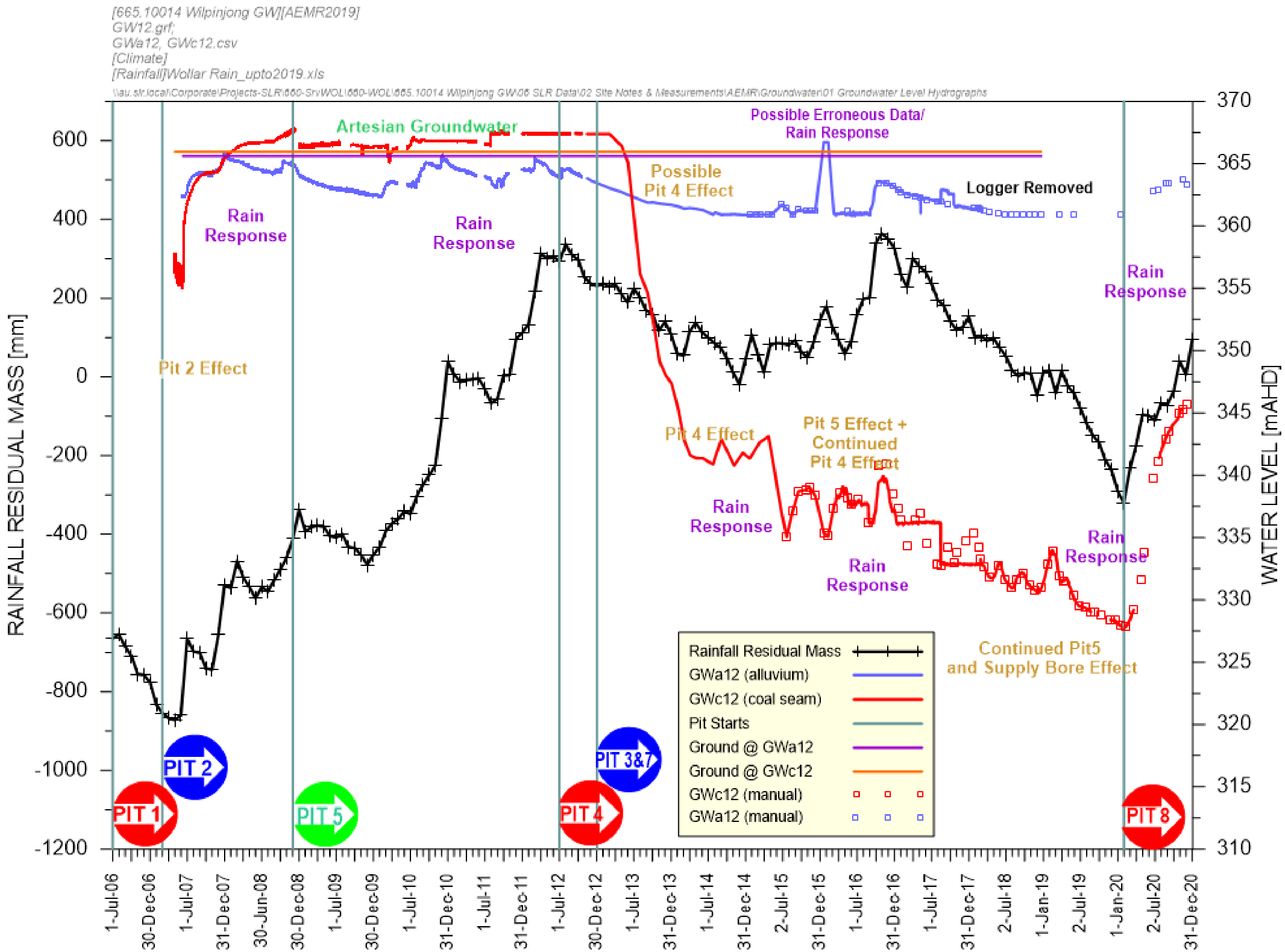


Figure 15 Groundwater Hydrographs at GWa3 and GWc2 at 0.45 km North of Pit 4

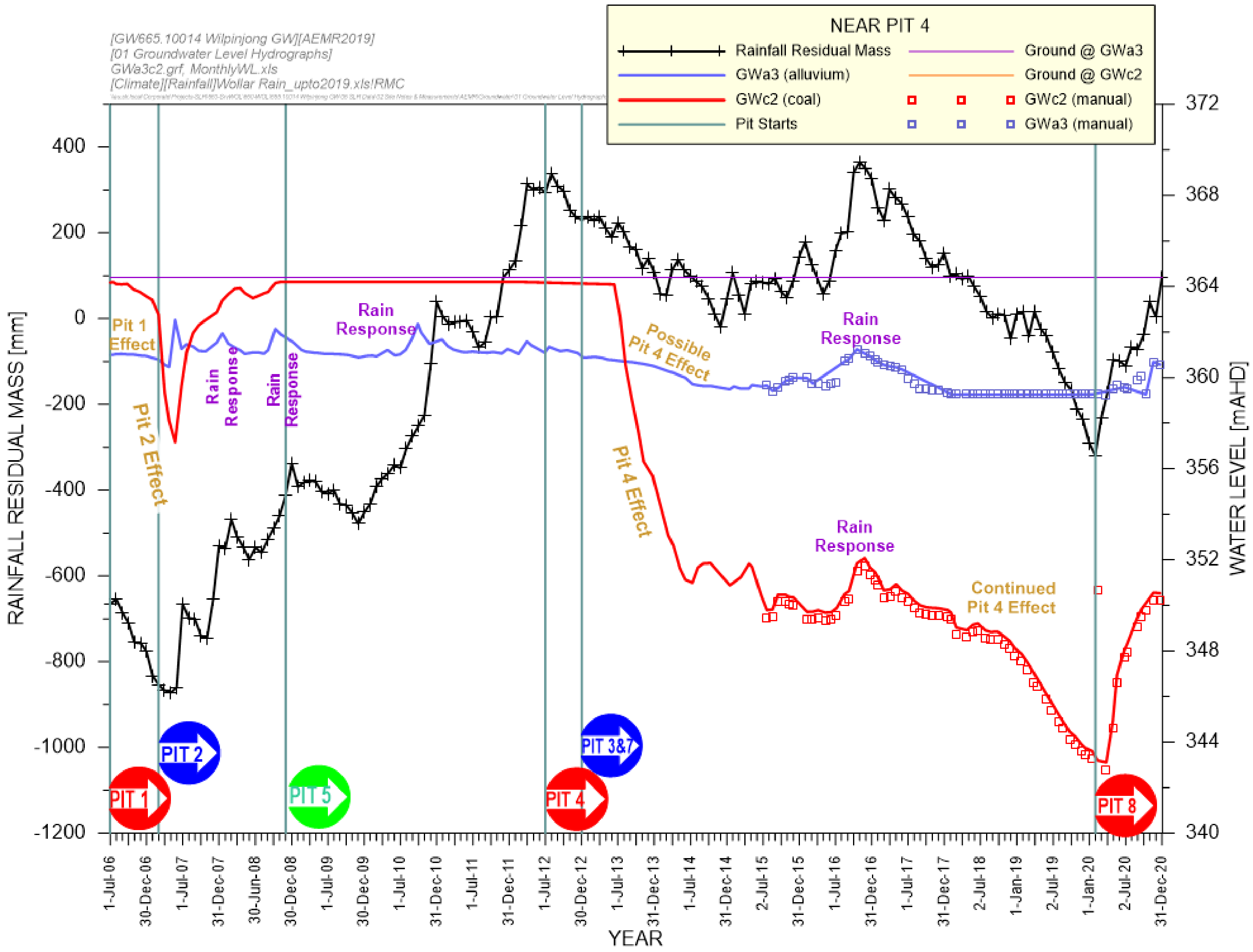


Figure 16 Groundwater Hydrographs at GWa14 and GWc14 at 0.3 km North of Pit 4

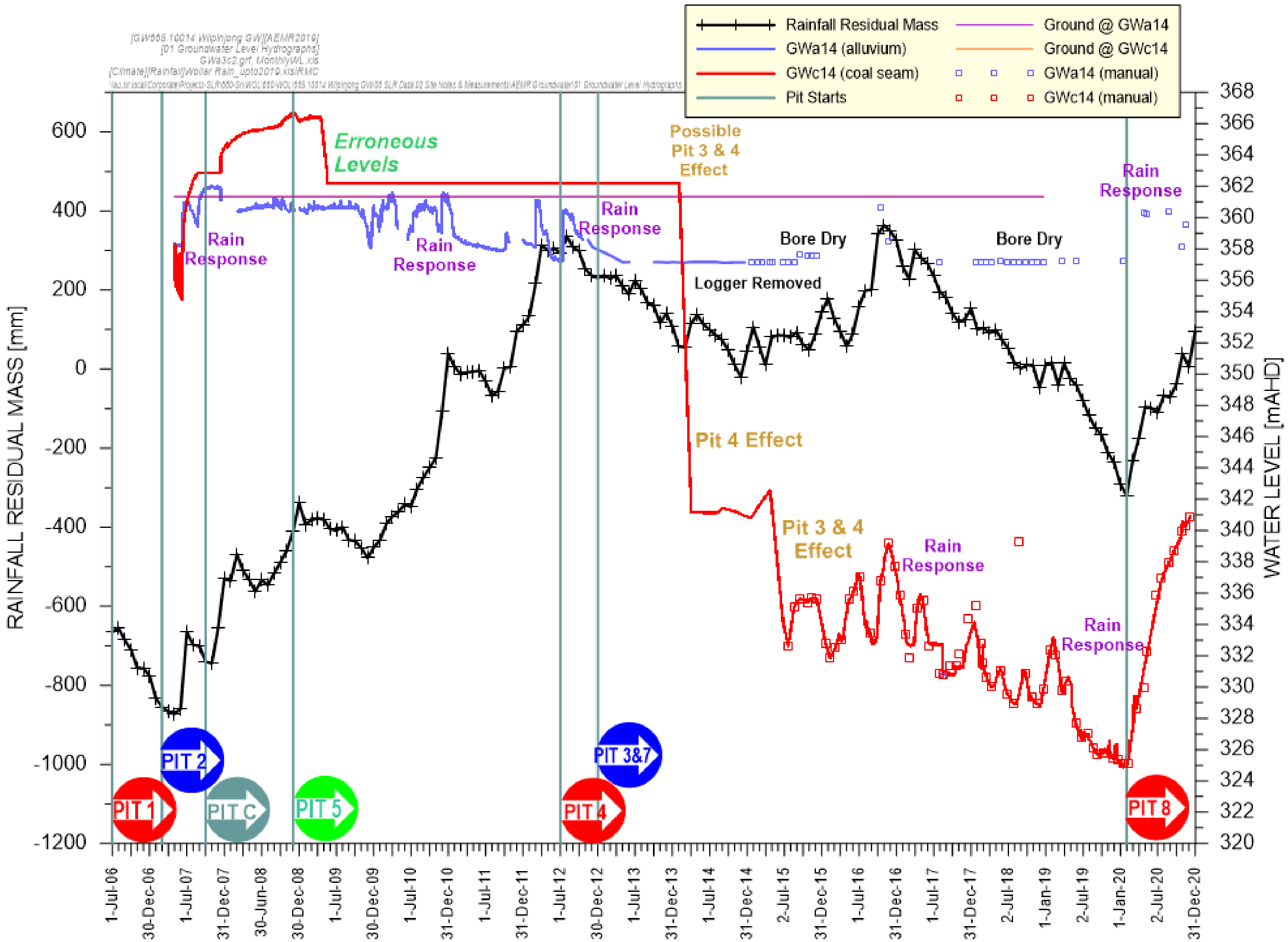


Figure 17 Groundwater Hydrographs at GWa6 and GWc3 at Northern Junction of Pits 3 and 4, adjacent to Cumbo Creek

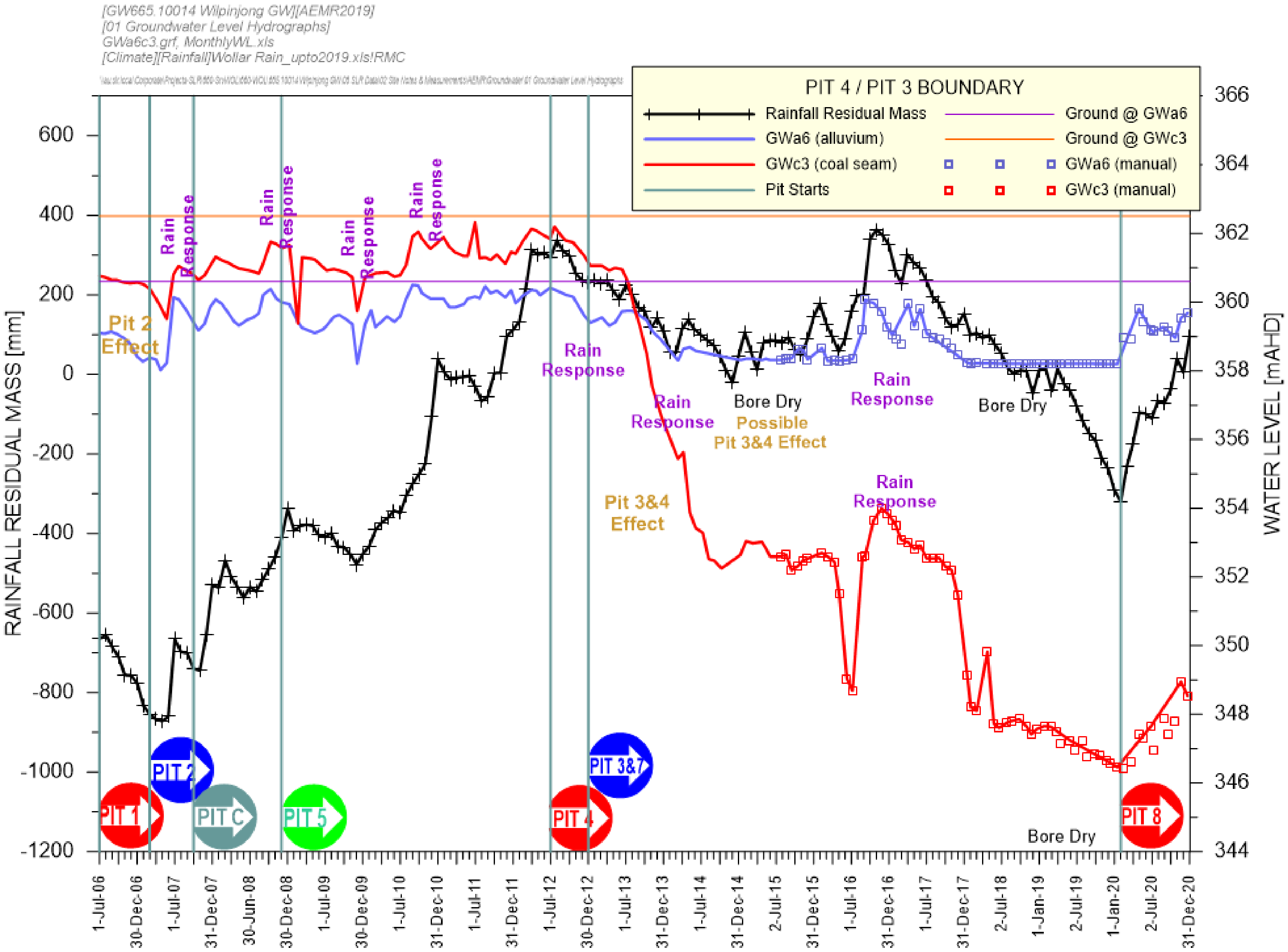


Figure 18 Groundwater Hydrographs at GWa15 and GWc15 at 0.2 km North of Pit 3

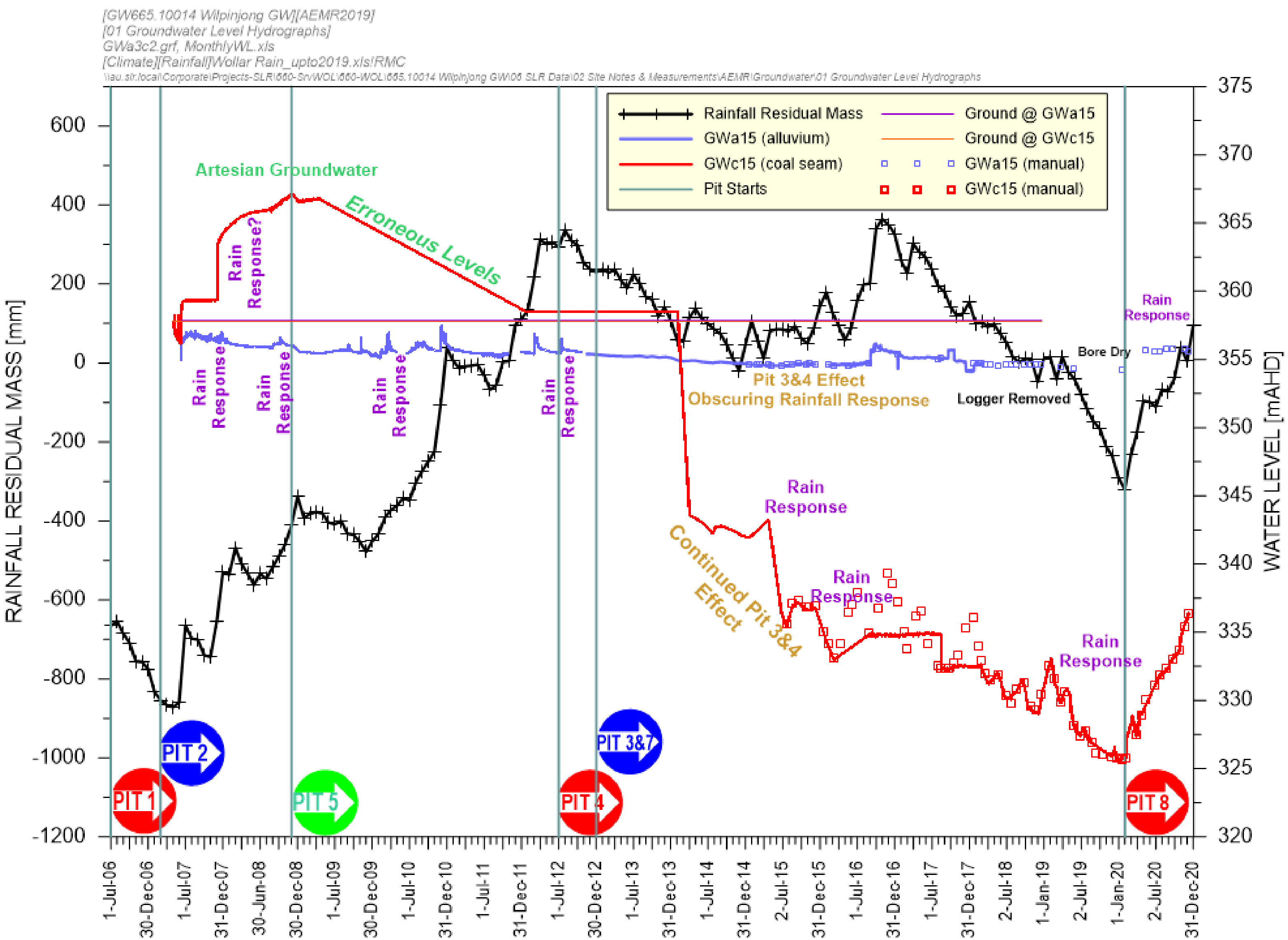


Figure 19 Groundwater Hydrographs at GWa7 and GWc4 near the Confluence of Wilpinjong Creek and Wollar Creek

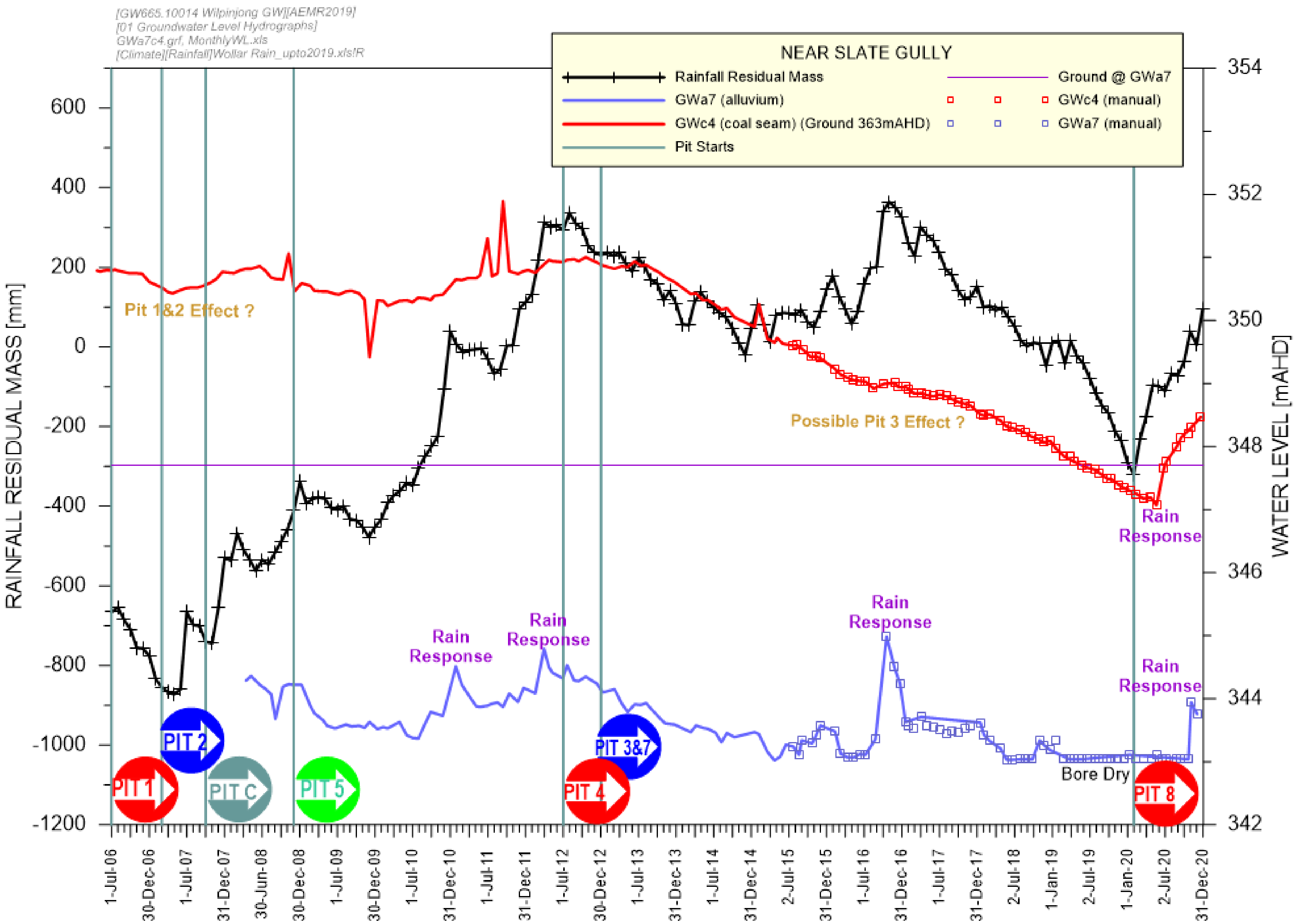


Figure 20 Groundwater Hydrographs at GWa8 and GWc5 near Wollar

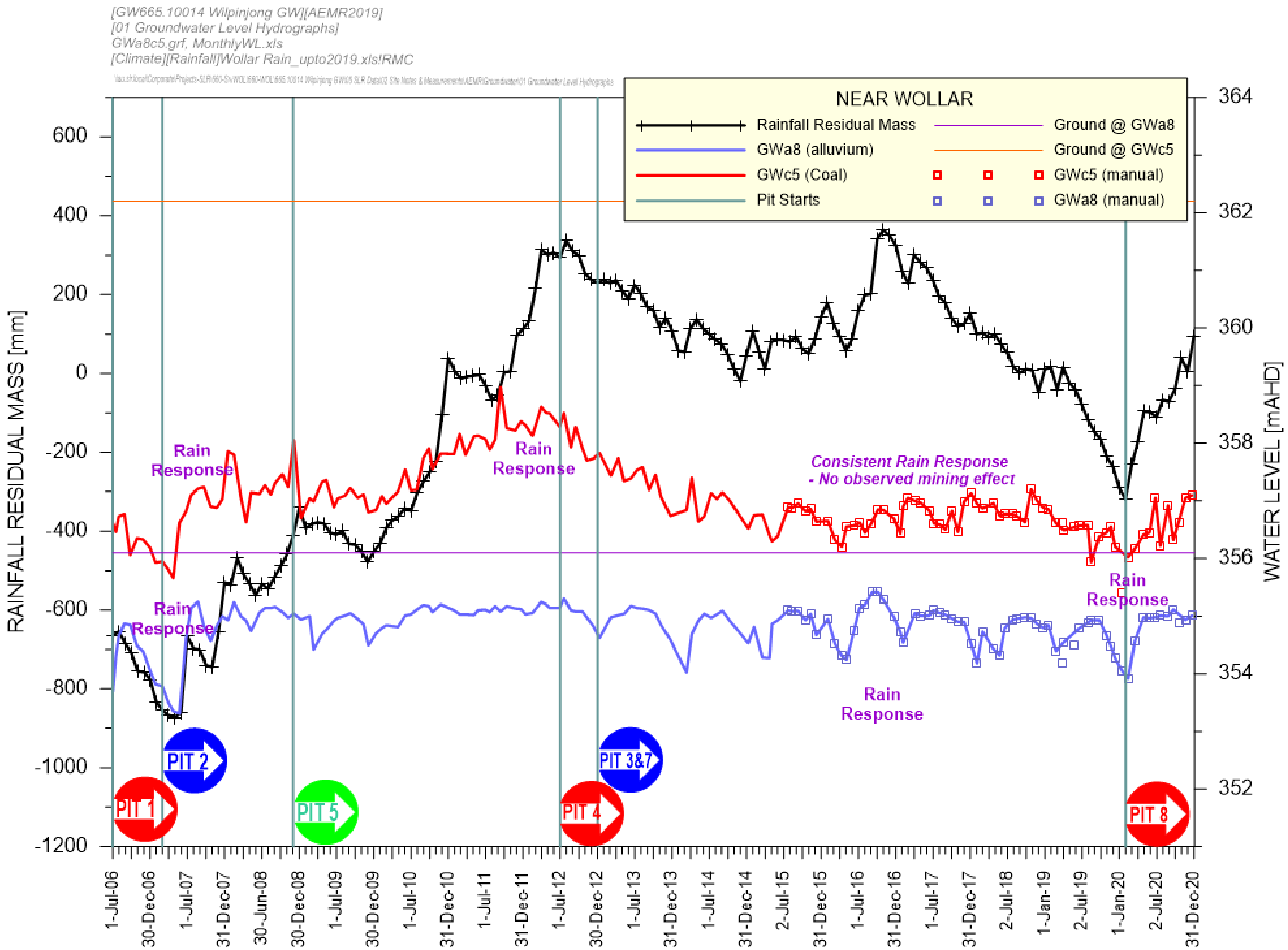


Figure 21 Groundwater Hydrographs at GWa32 and GWc32 adjacent to Wollar Creek

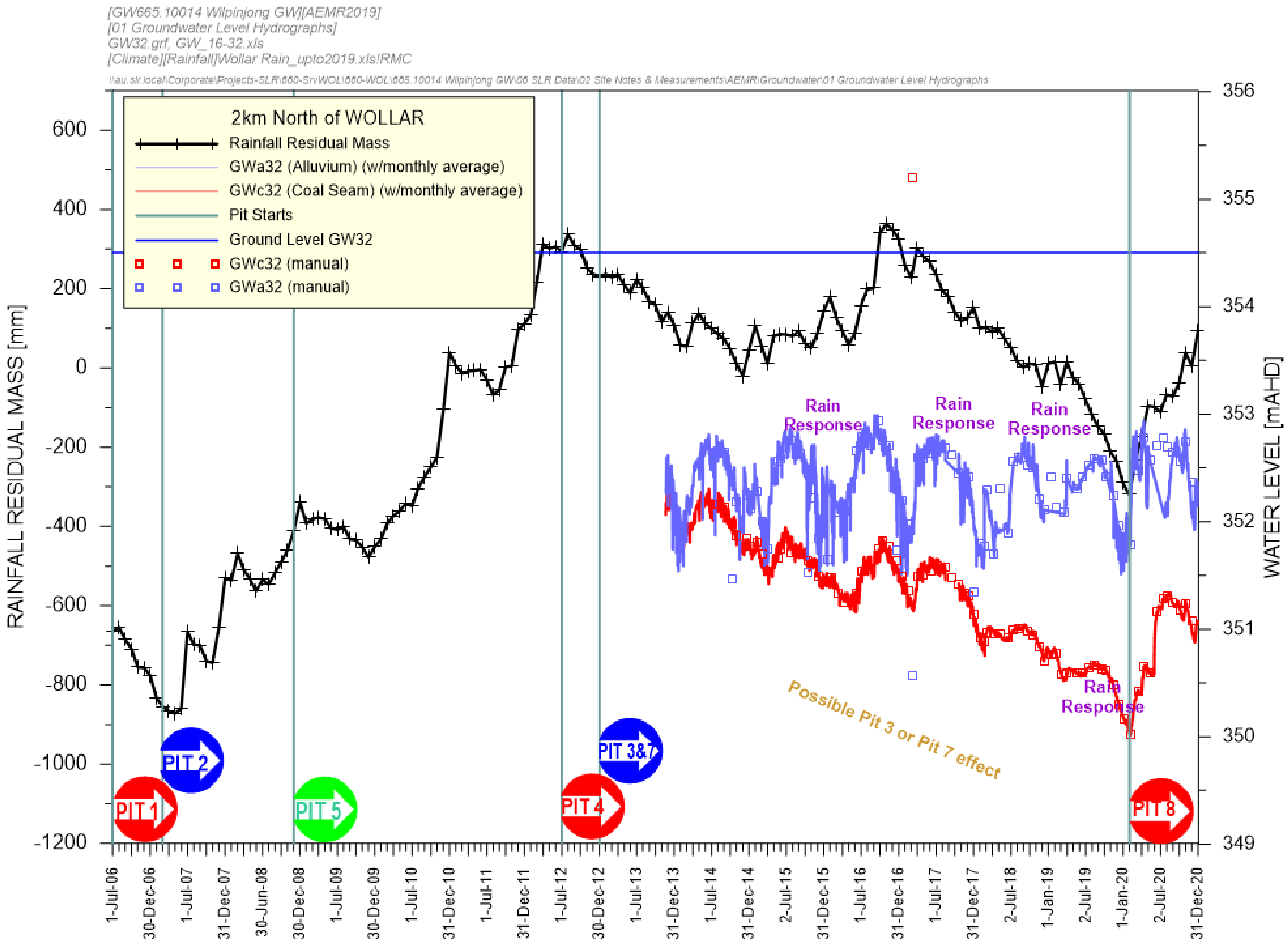


Figure 22 Groundwater Hydrographs at GWa22 and GWc22 adjacent to Cumbo Creek

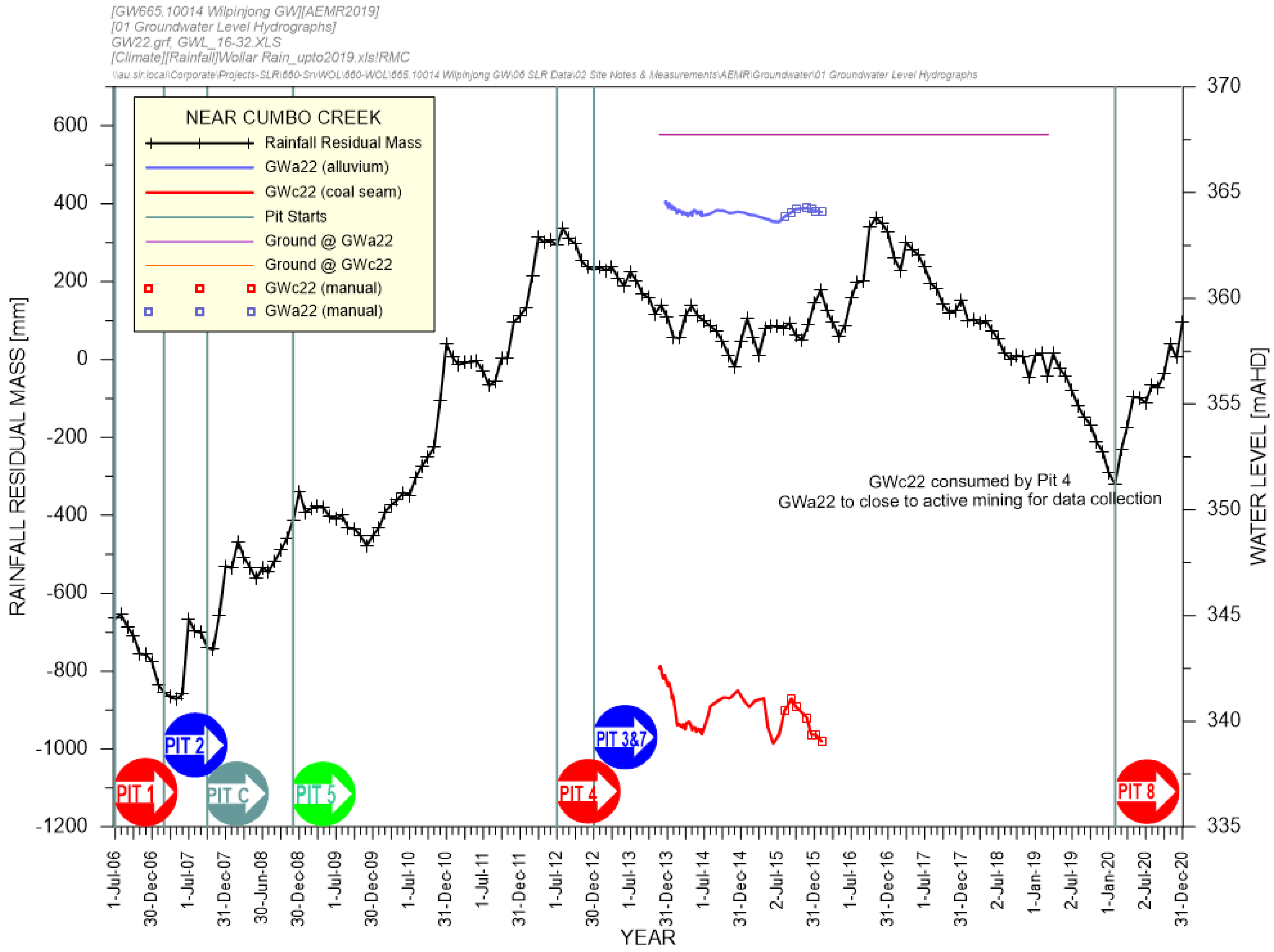


Figure 23 Groundwater Hydrographs at GWc28 and GWc29 in Slate Gully

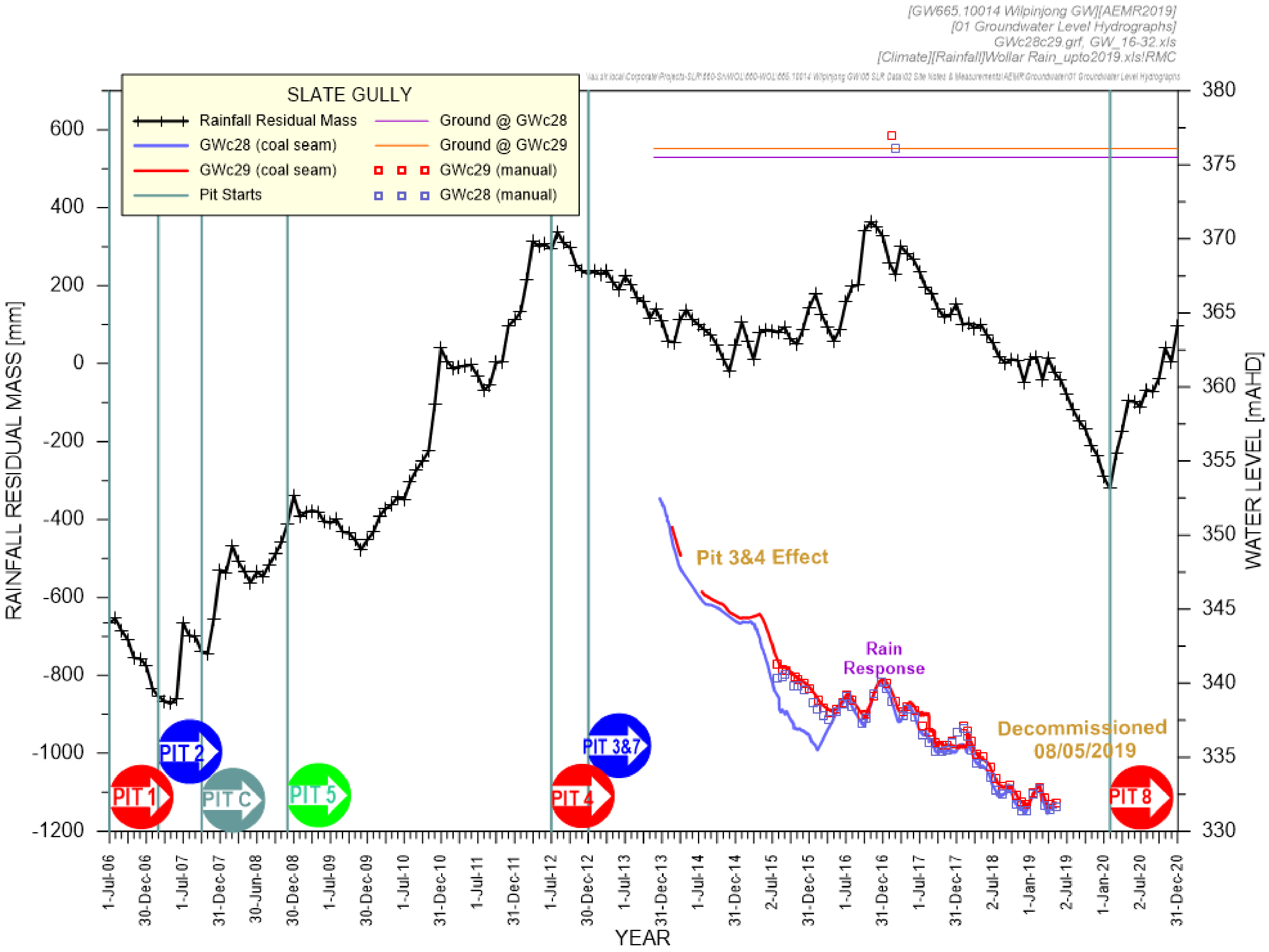


Figure 24 Groundwater Hydrographs at GWc16, GWc17 and GWc26 at Pit 6 and North of Pit 5

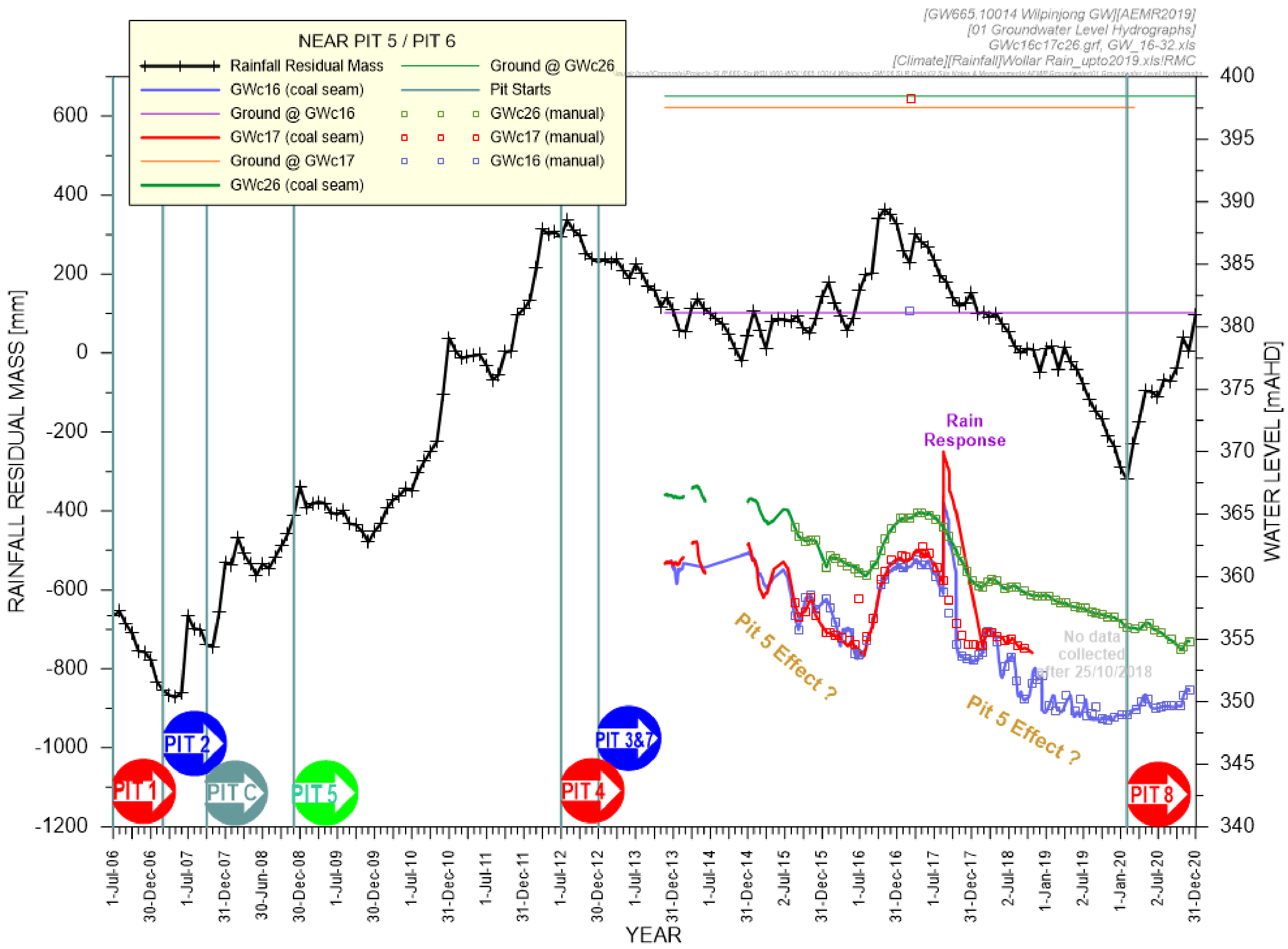


Figure 25 Groundwater Hydrographs at GWc24, GWc25 and GWc27 at the Southern Lease Boundary

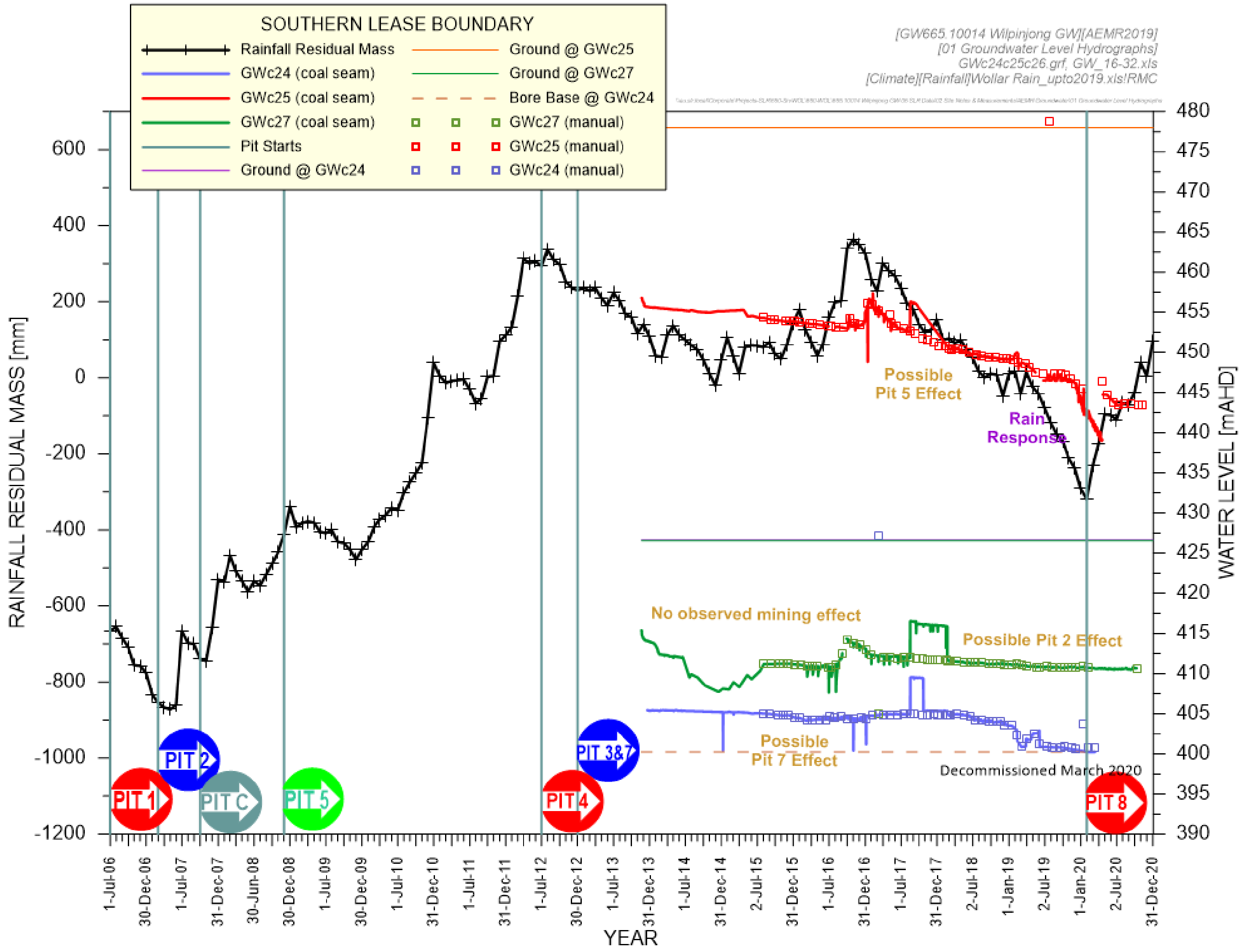


Figure 26 Groundwater Hydrographs at GWc26 and GWc33 near Pit 6 and North of Pit 5

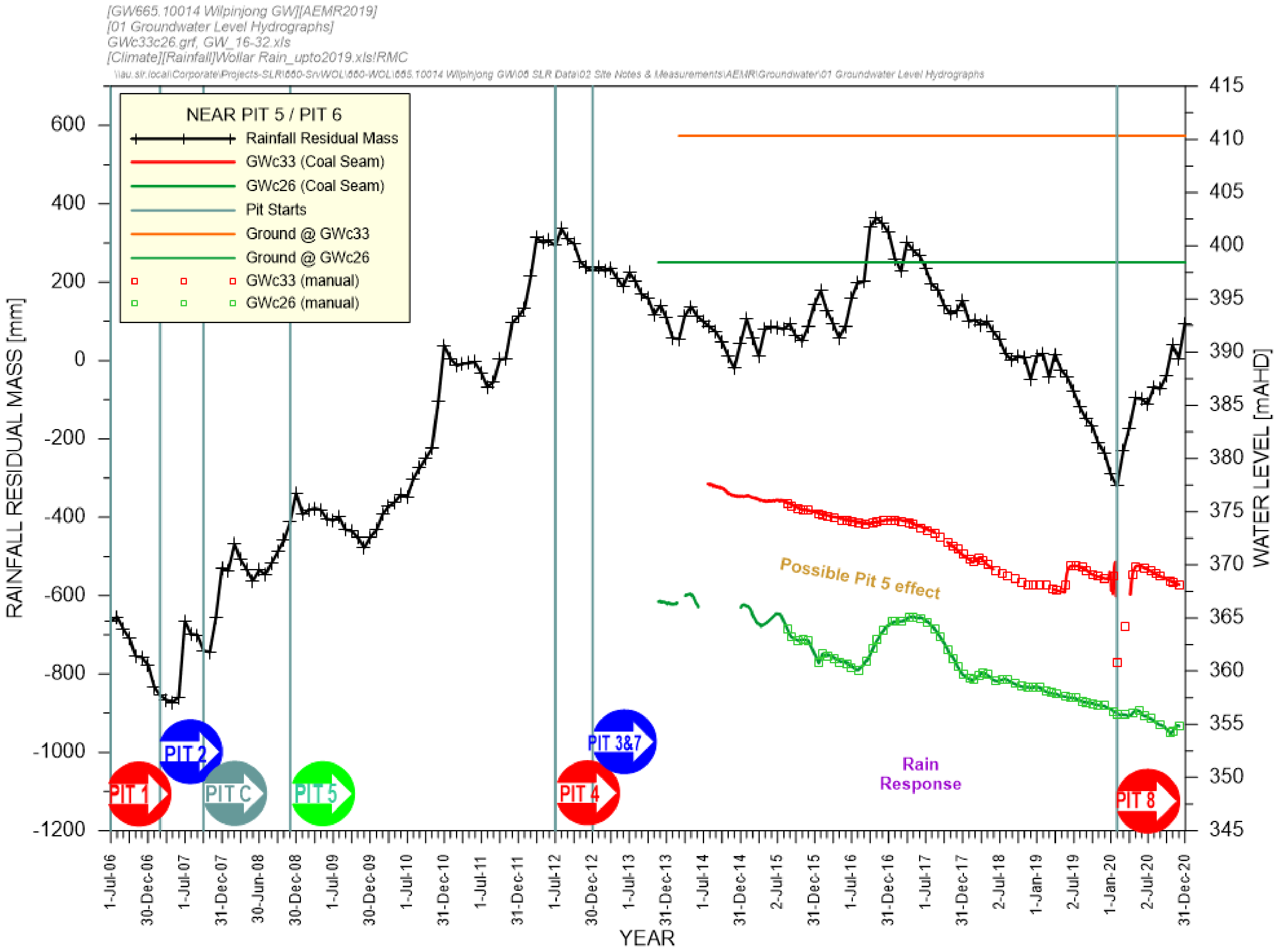


Figure 27 Groundwater Hydrographs at GWa34 and GWc34 adjacent to Wollar Ck ~3km south of Wollar

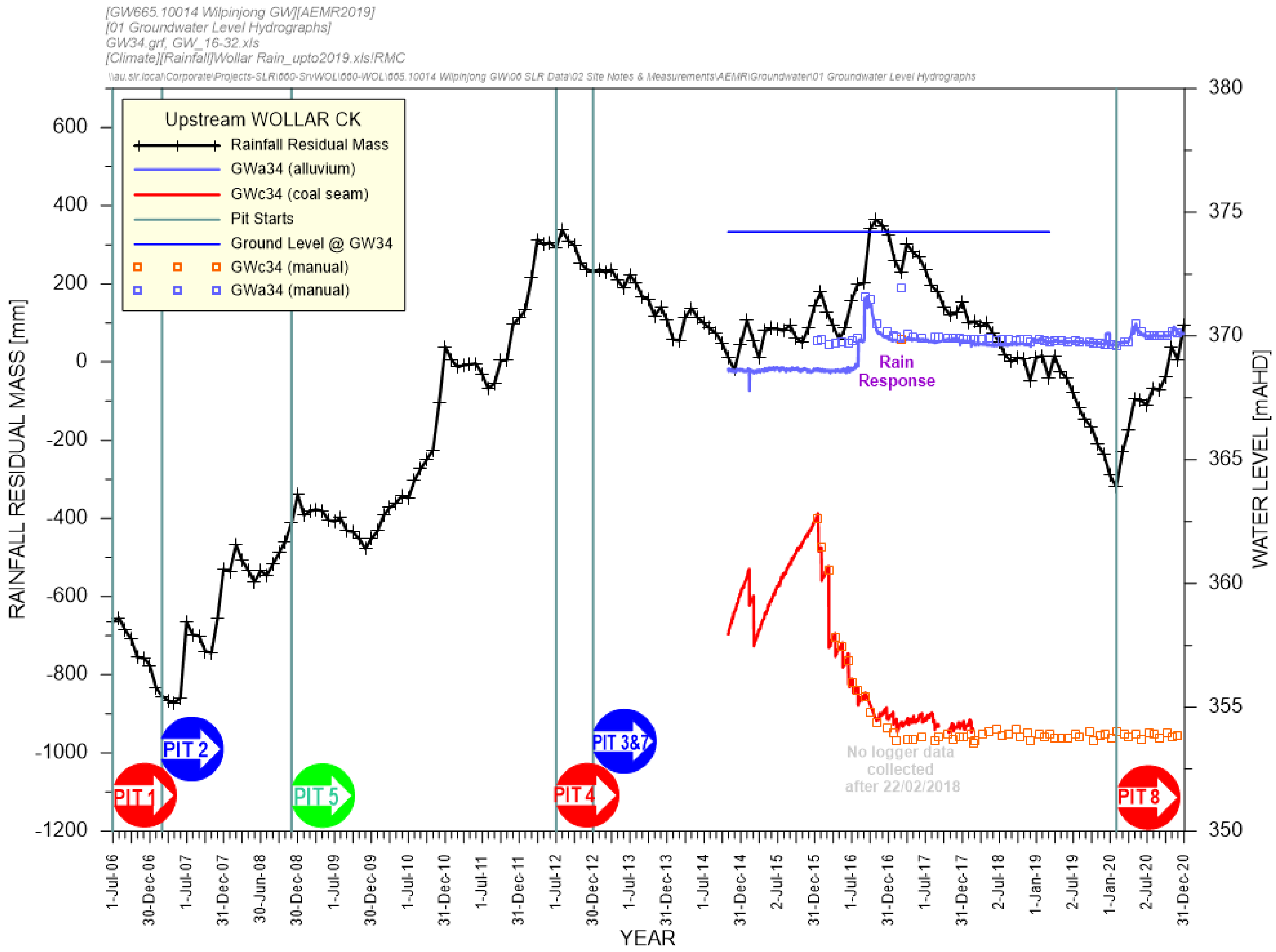


Figure 28 Groundwater Hydrographs at GWc30 and GWc31 within proposed Pit 8 boundary

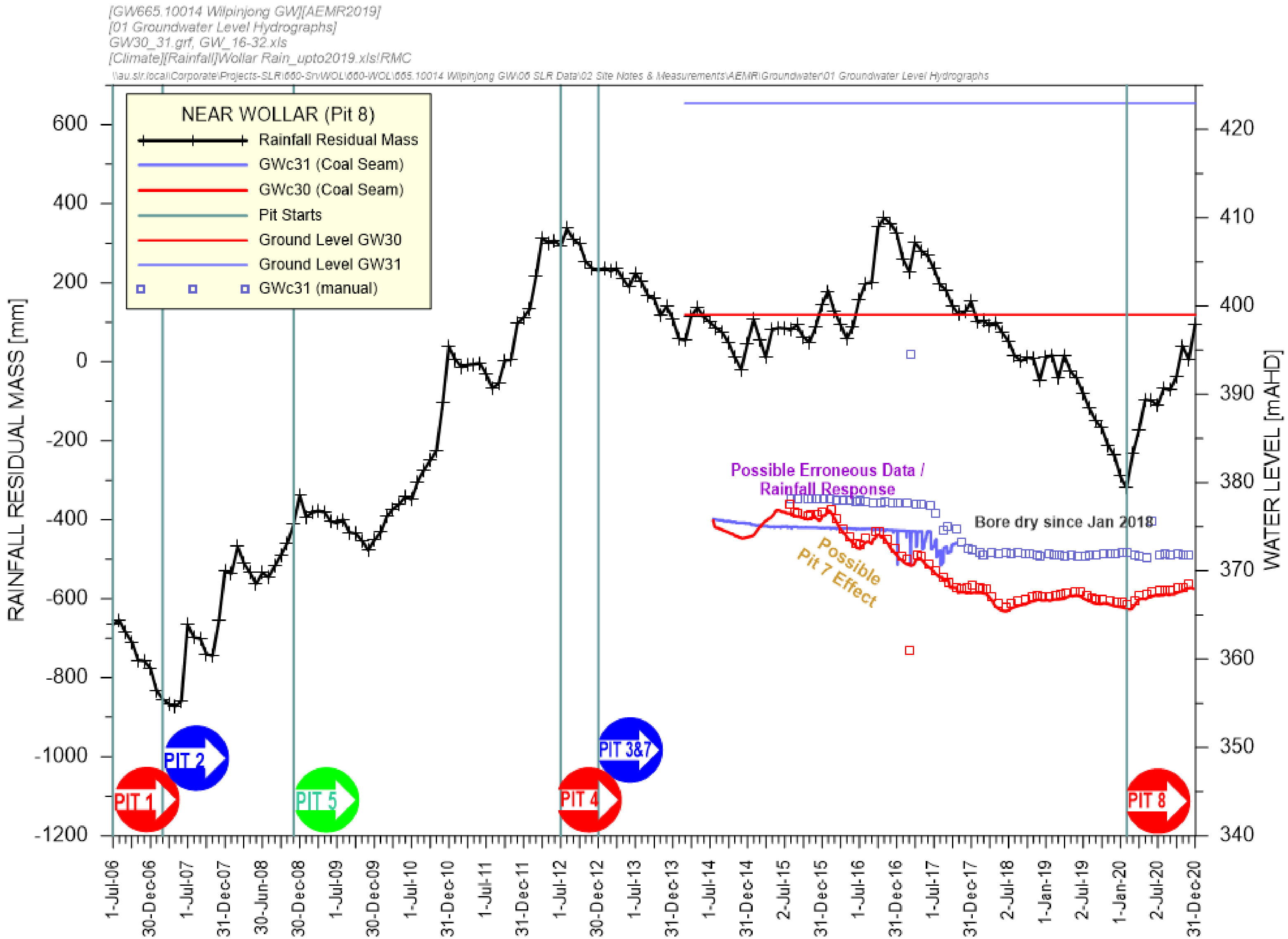


Figure 29 Alluvial Groundwater EC trends

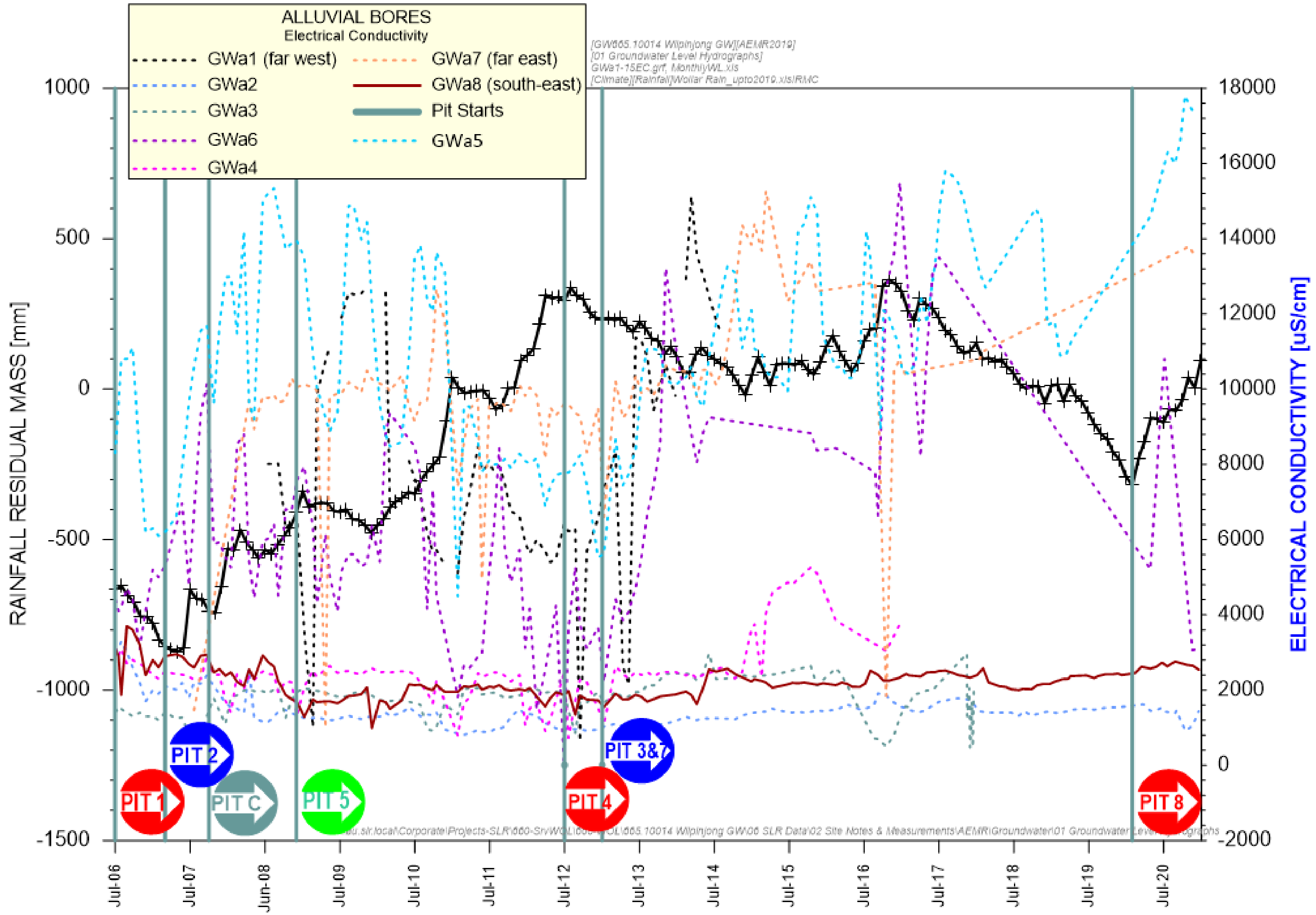
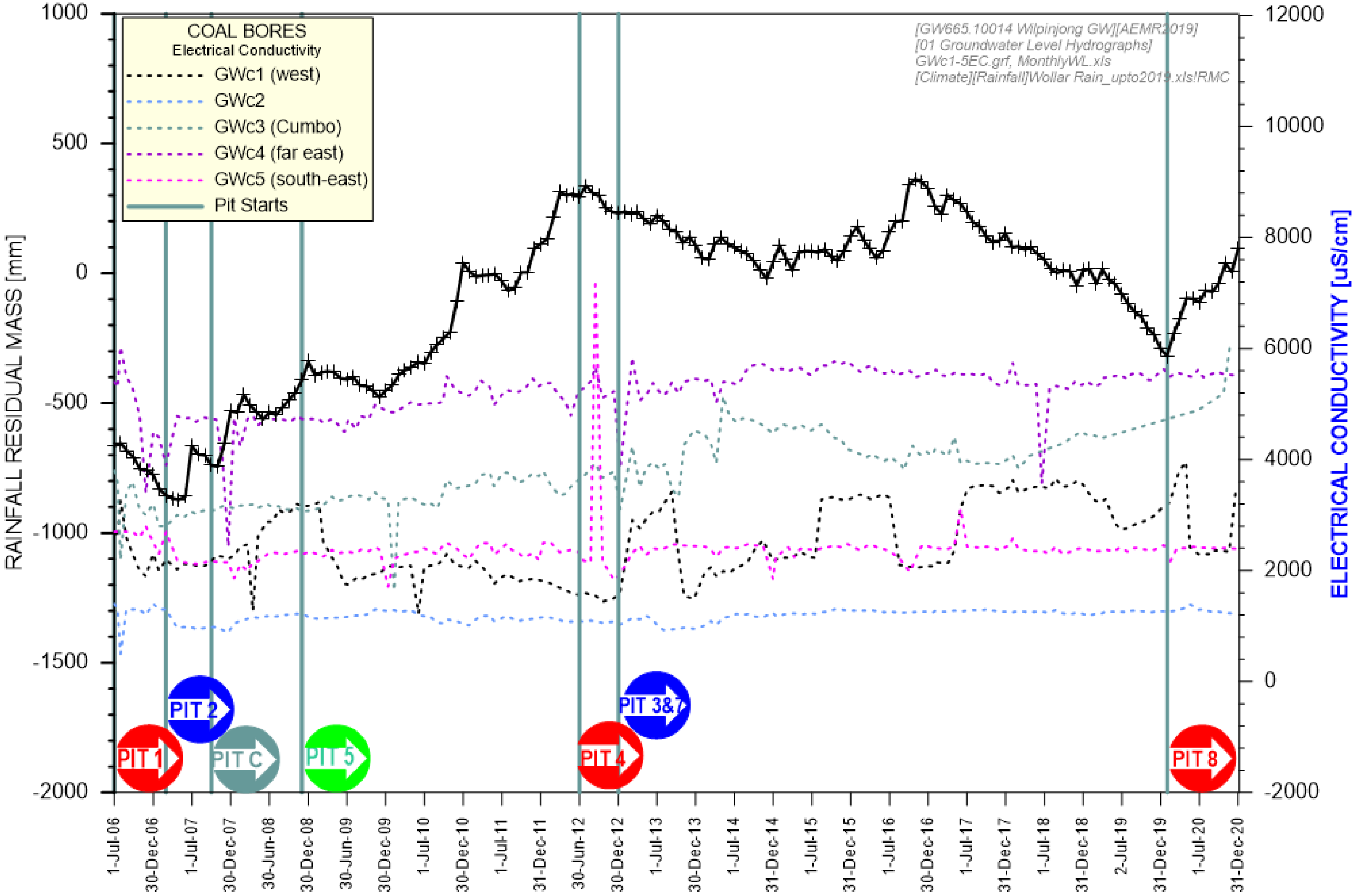
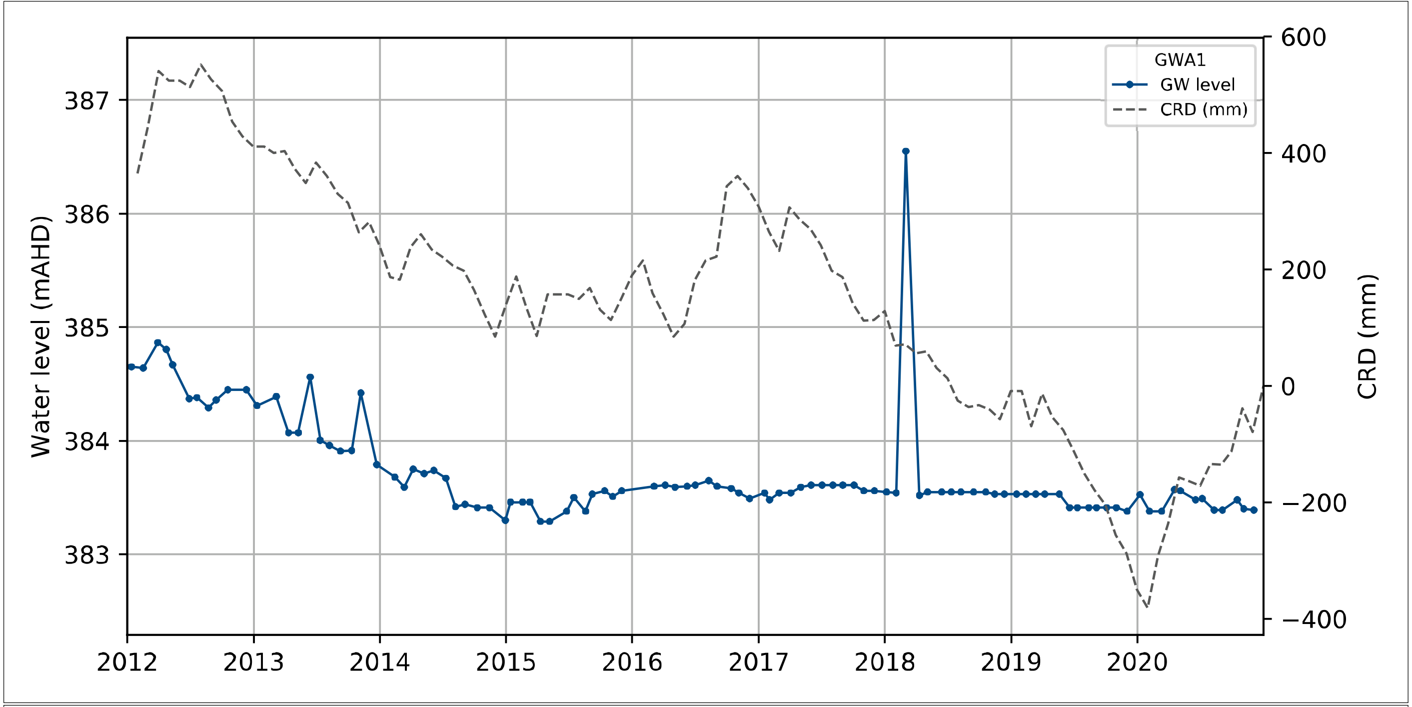


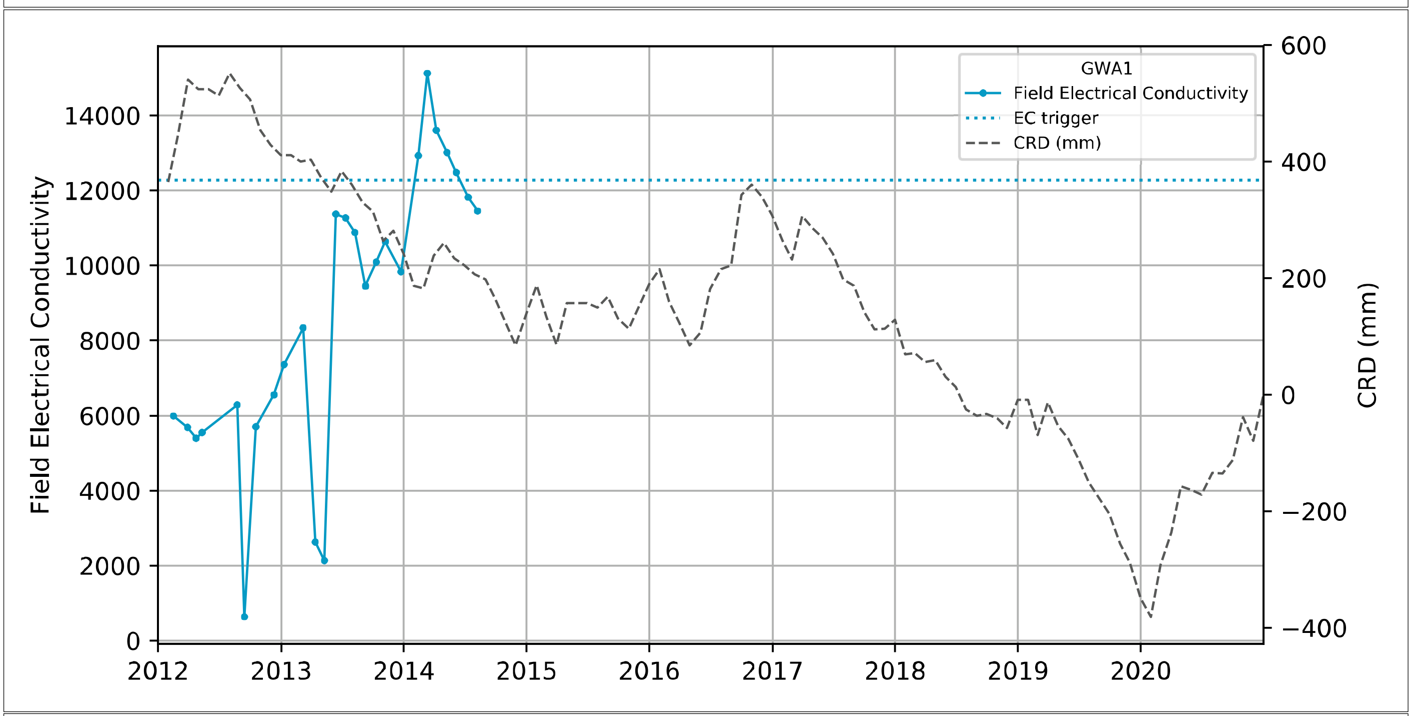
Figure 30 Coal Groundwater EC trends

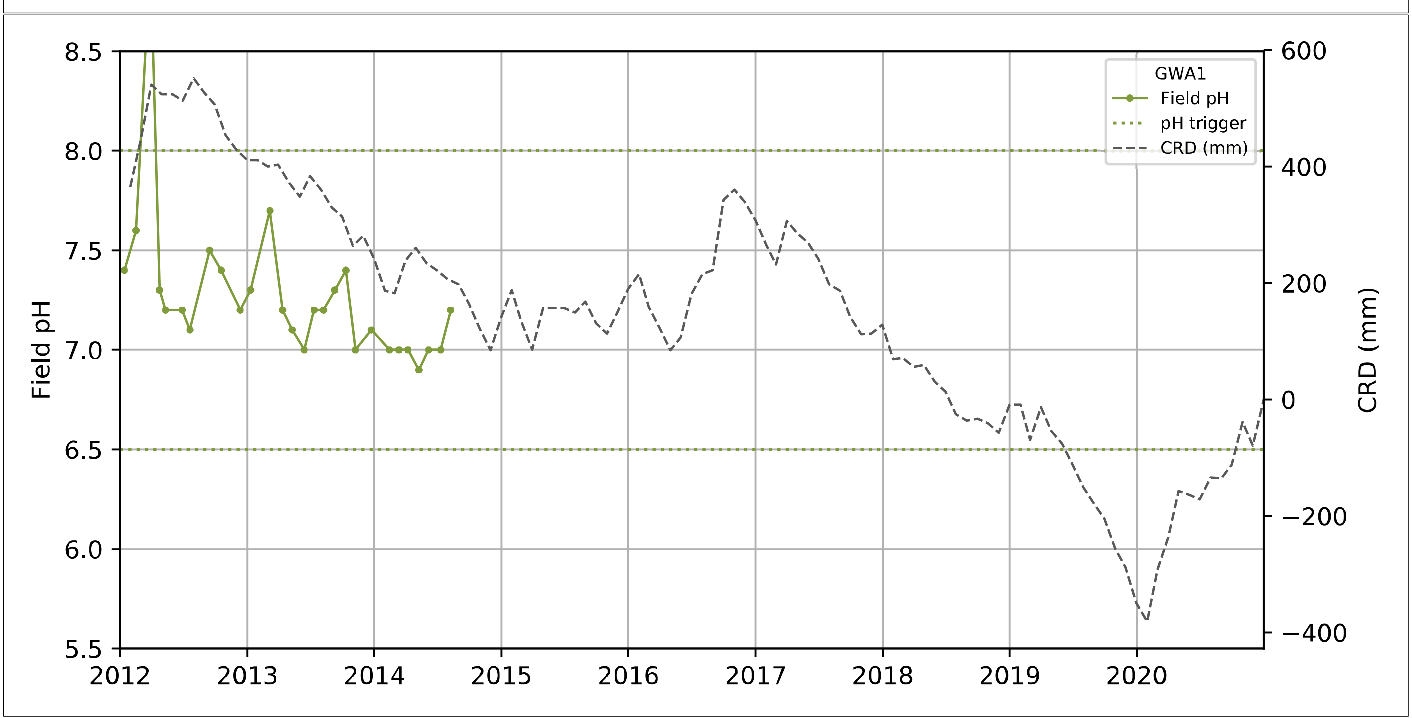


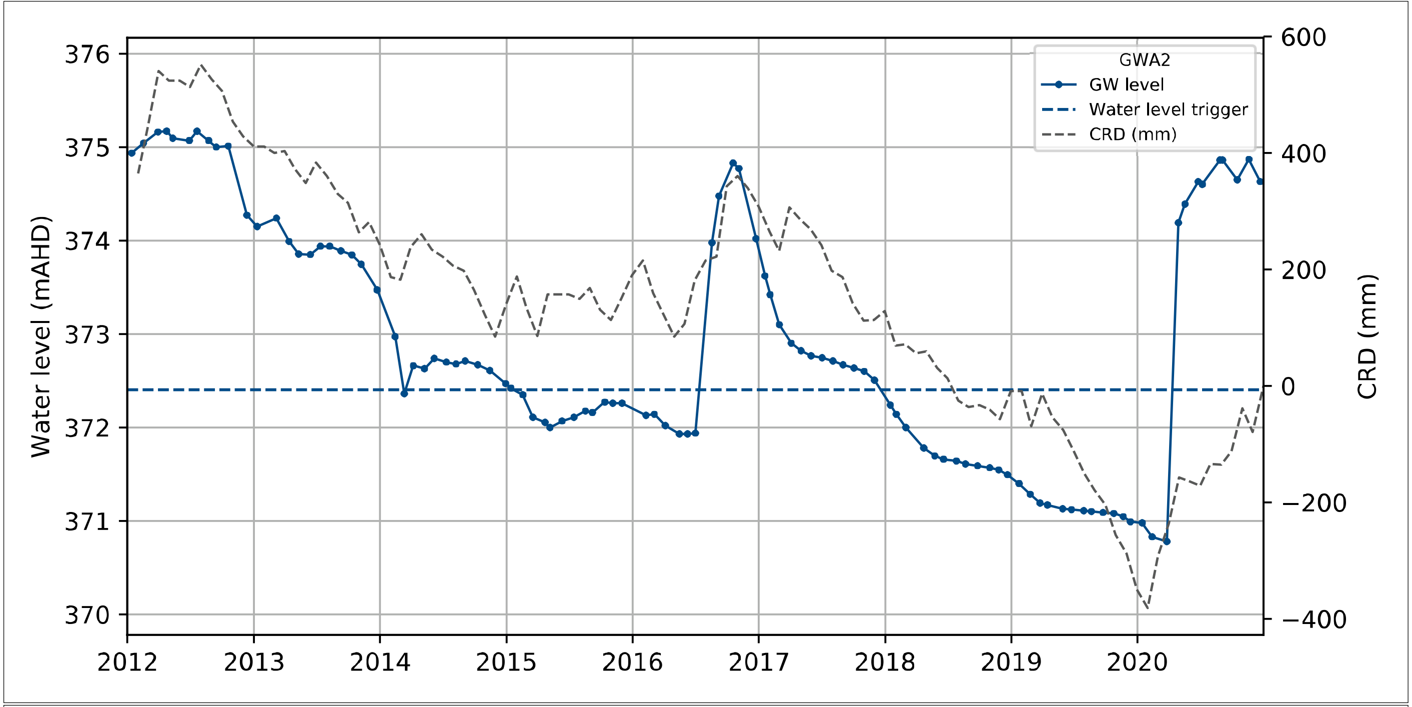
APPENDIX B

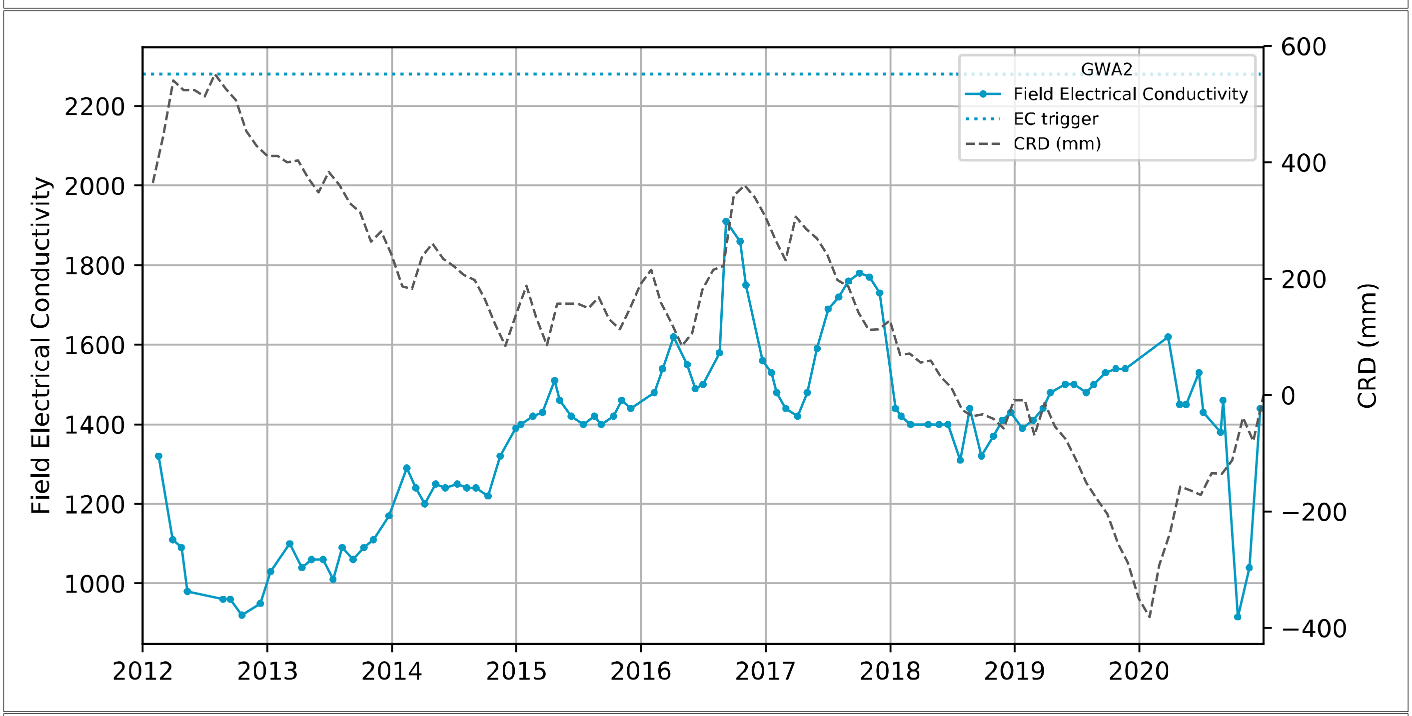
Trigger Assessment Charts

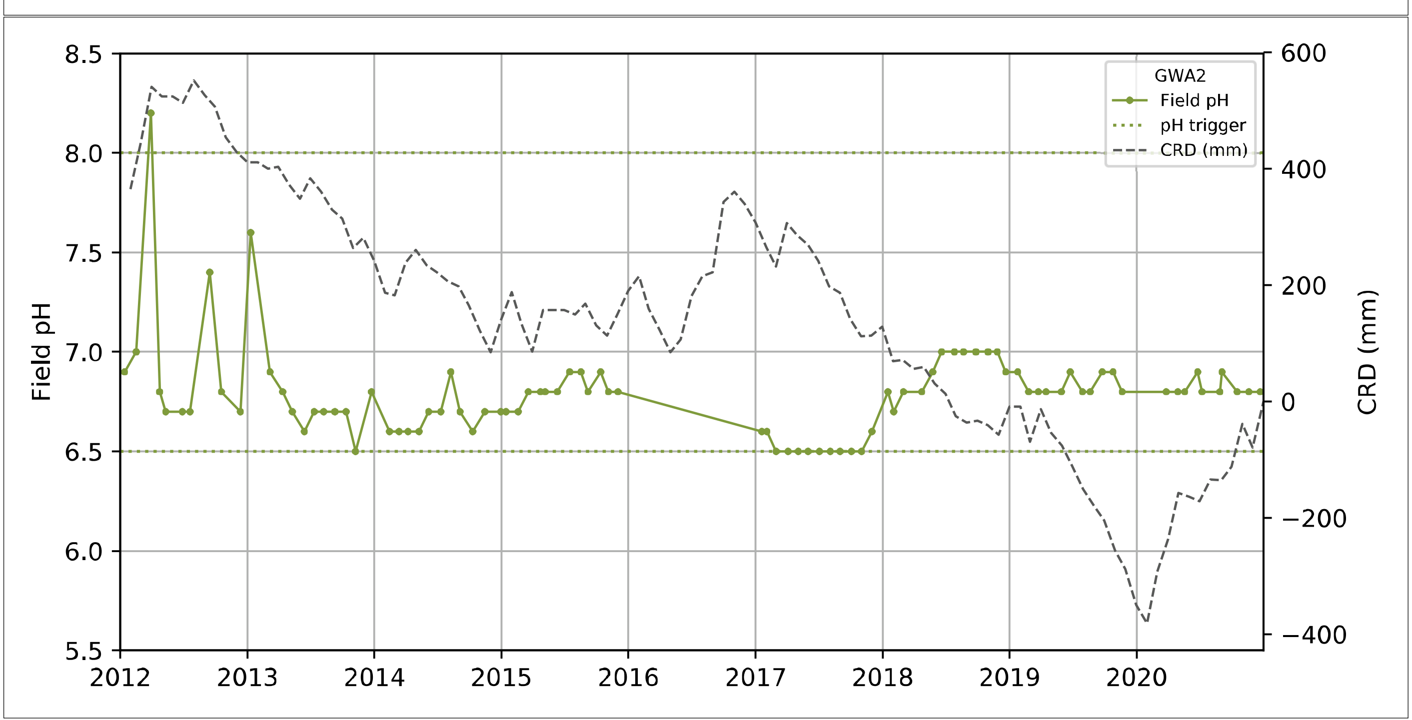

GWA1
GW level
CRD (mm)
Water level (mAHD)
CRD (mm)
387
386
385
384
383
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

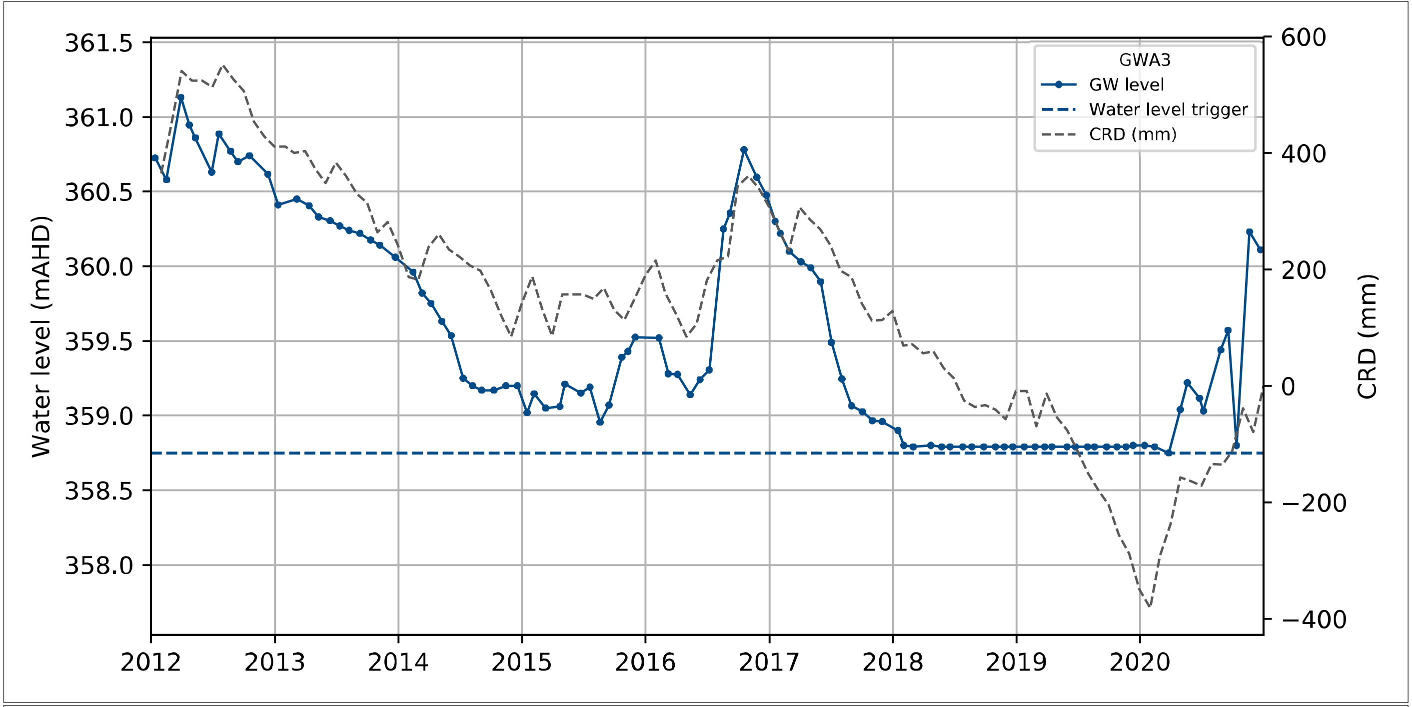

GWA1
Field Electrical Conductivity
EC trigger
CRD (mm)
Field Electrical Conductivity
CRD (mm)
14000
12000
10000
8000
6000
4000
2000
0
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020


GWA1
Field pH
pH trigger
CRD (mm)
Field pH
CRD (mm)
8.5
8.0
7.5
7.0
6.5
6.0
5.5
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

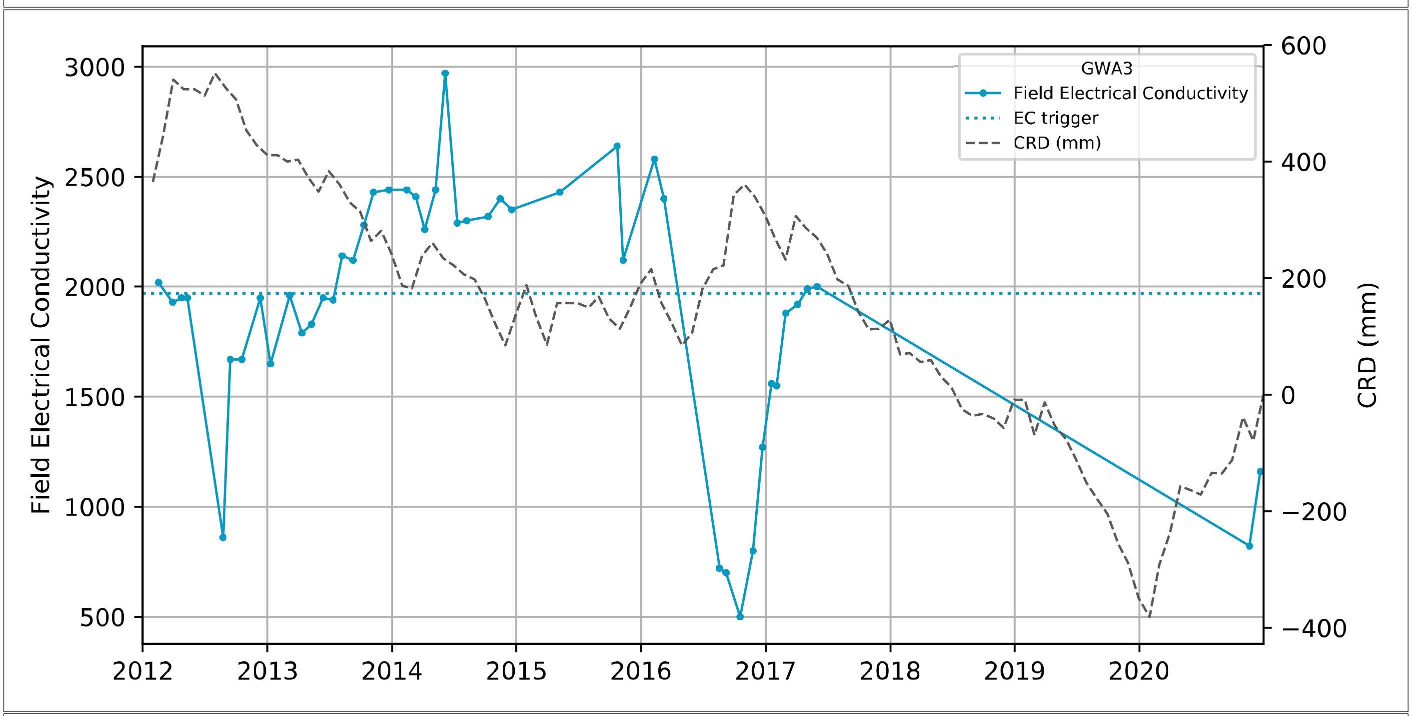

GWA2
GW level
Water level trigger
CRD (mm)
Water level (mAHD)
CRD (mm)


GWA2
Field Electrical Conductivity
EC trigger
CRD (mm)
Field Electrical Conductivity
CRD (mm)

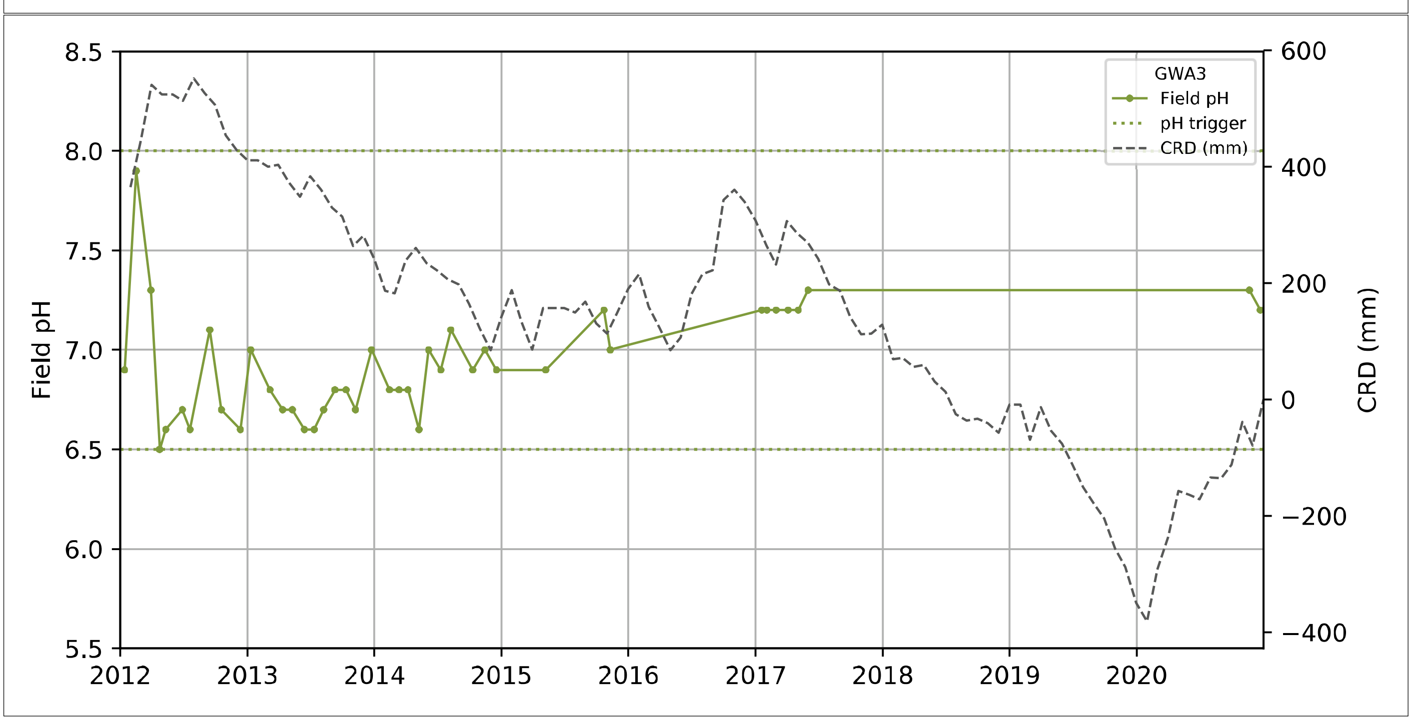

GWA2
Field pH
pH trigger
CRD (mm)
Field pH
CRD (mm)



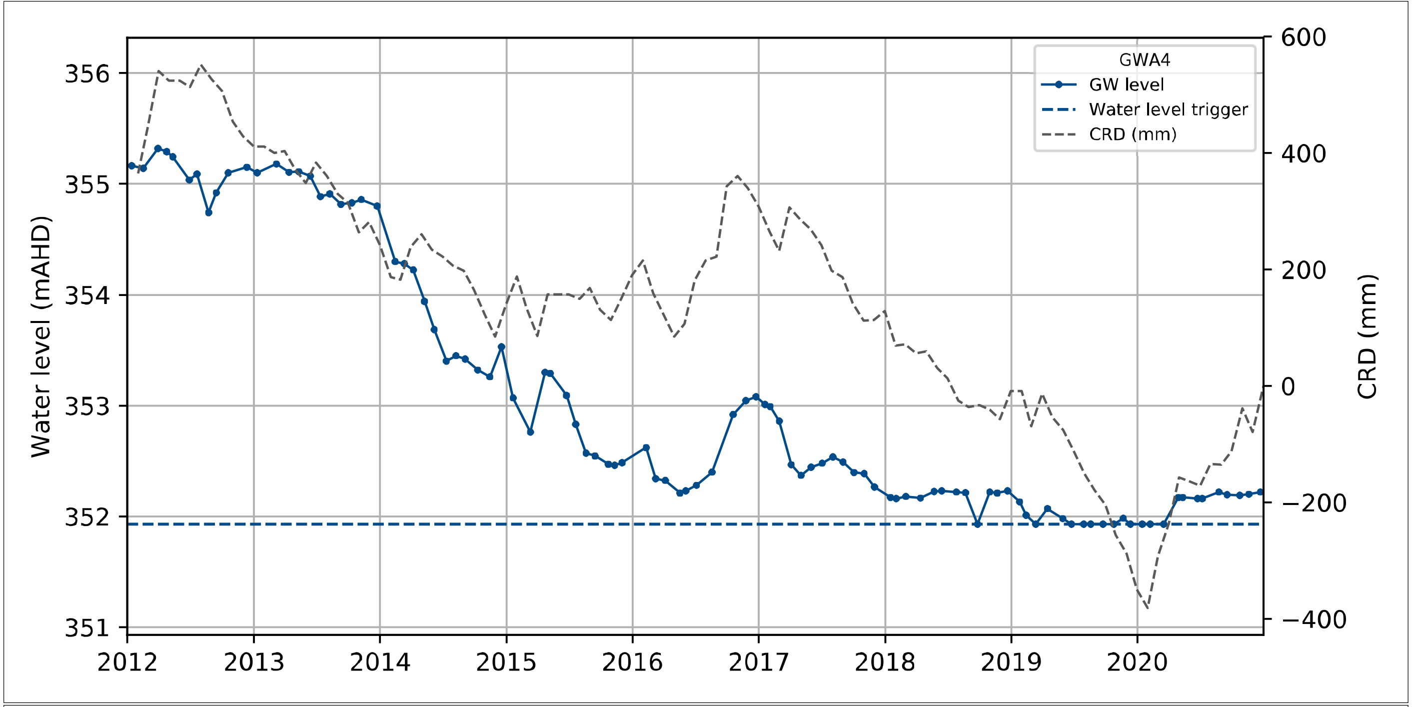
GWA3
GW level
Water level trigger
CRD (mm)
Water level (mAHD)
CRD (mm)

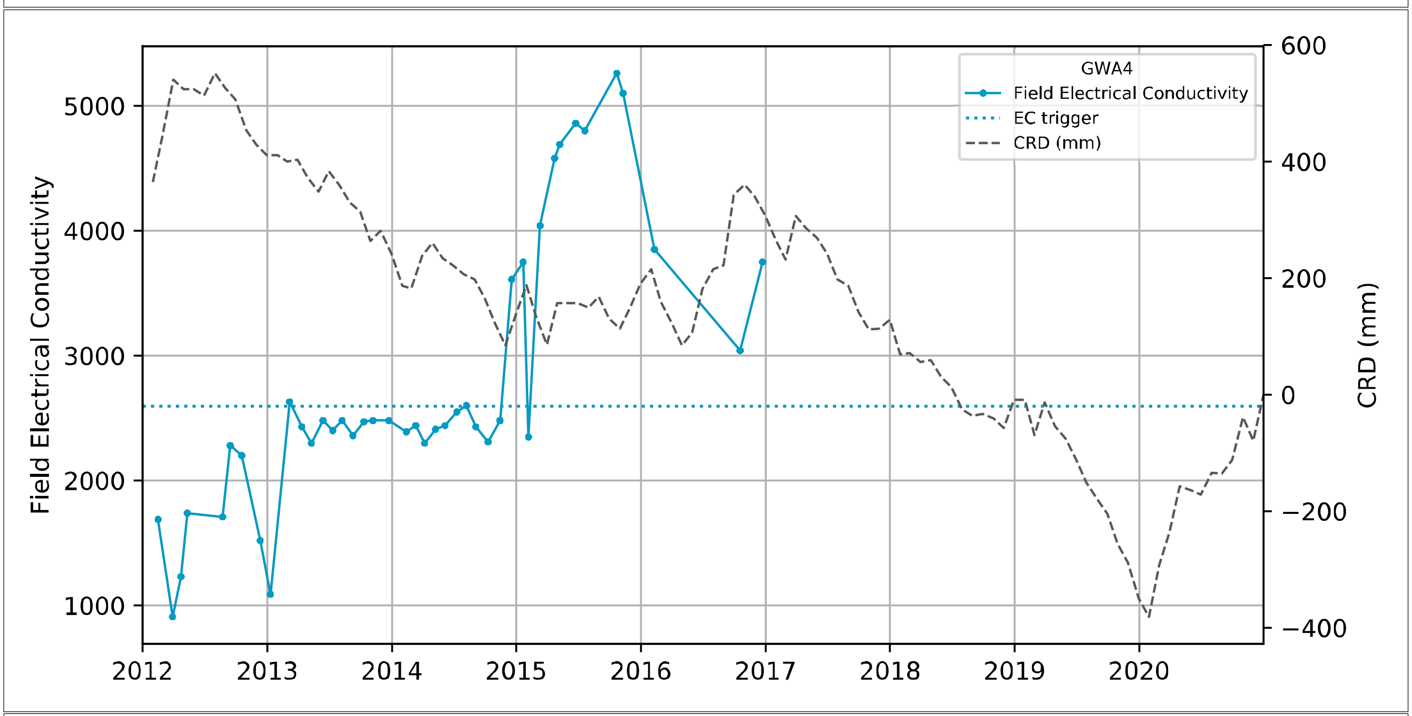


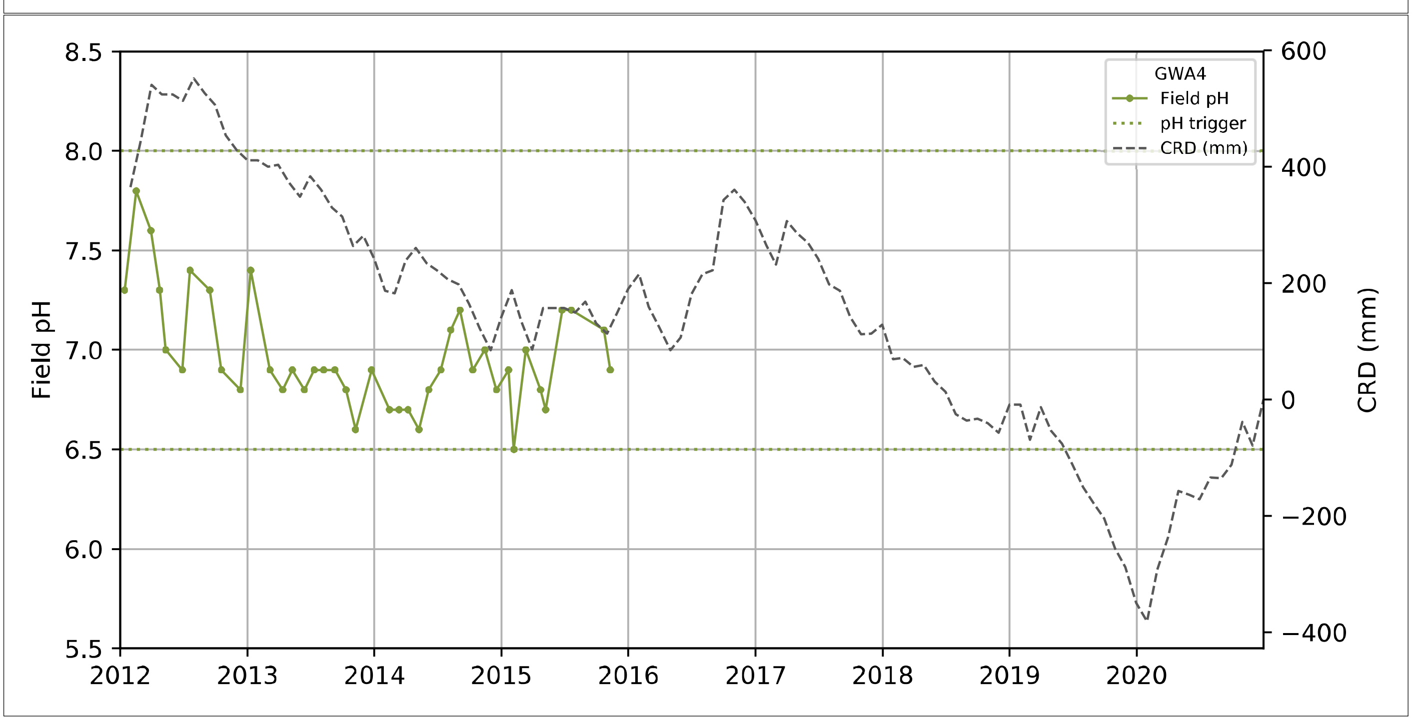
GWA3
Field Electrical Conductivity
EC trigger
CRD (mm)
Field Electrical Conductivity
CRD (mm)

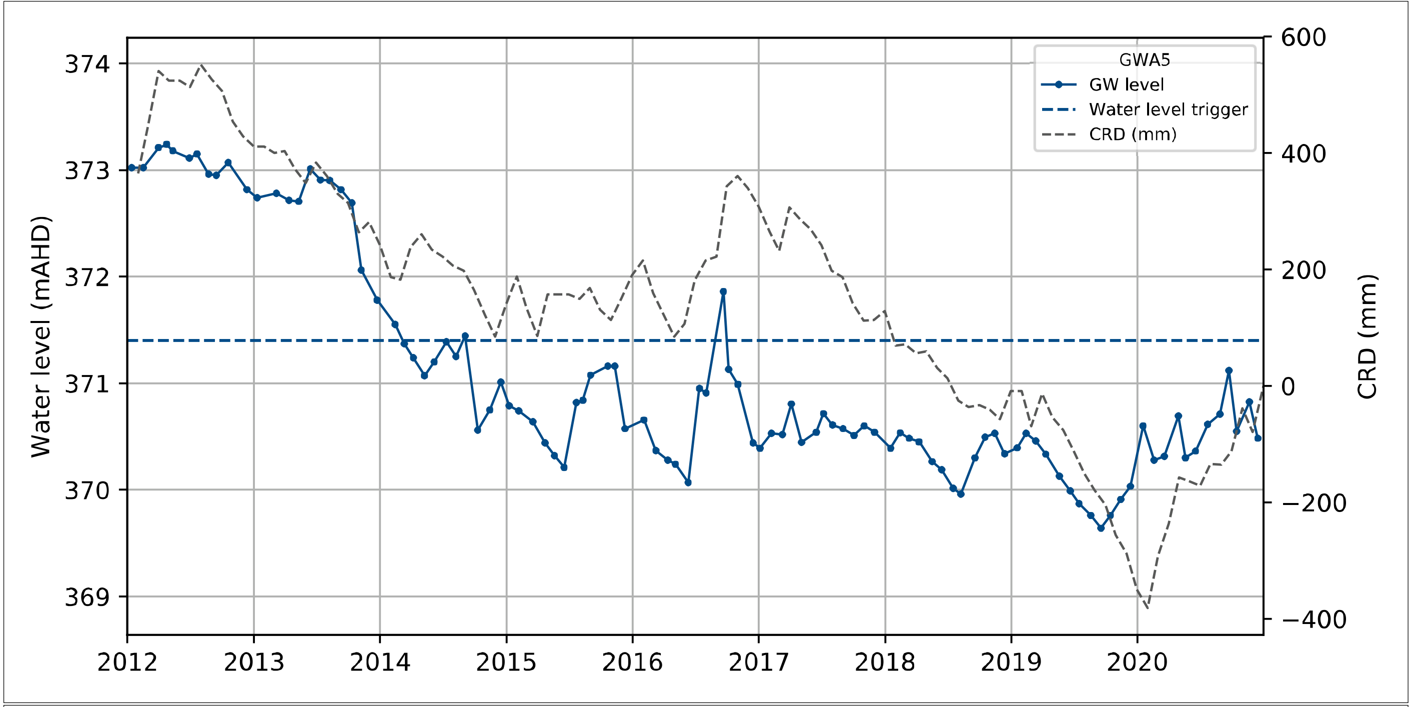


GWA3
Field pH
pH trigger
CRD (mm)
Field pH
CRD (mm)

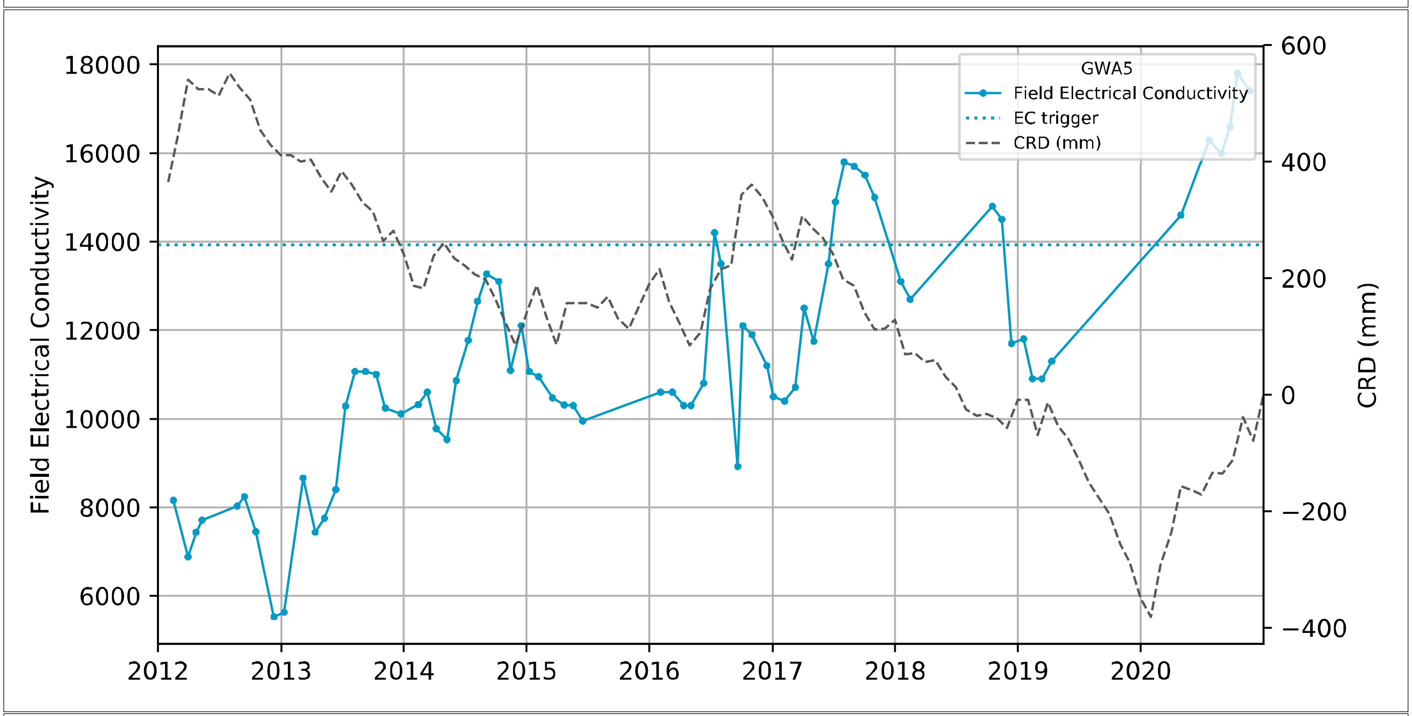

GWA4
GW level
Water level trigger
CRD (mm)
Water level (mAHD)
CRD (mm)
356
355
354
353
352
351
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020


GWA4
Field Electrical Conductivity
EC trigger
CRD (mm)
Field Electrical Conductivity
CRD (mm)
5000
4000
3000
2000
1000
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

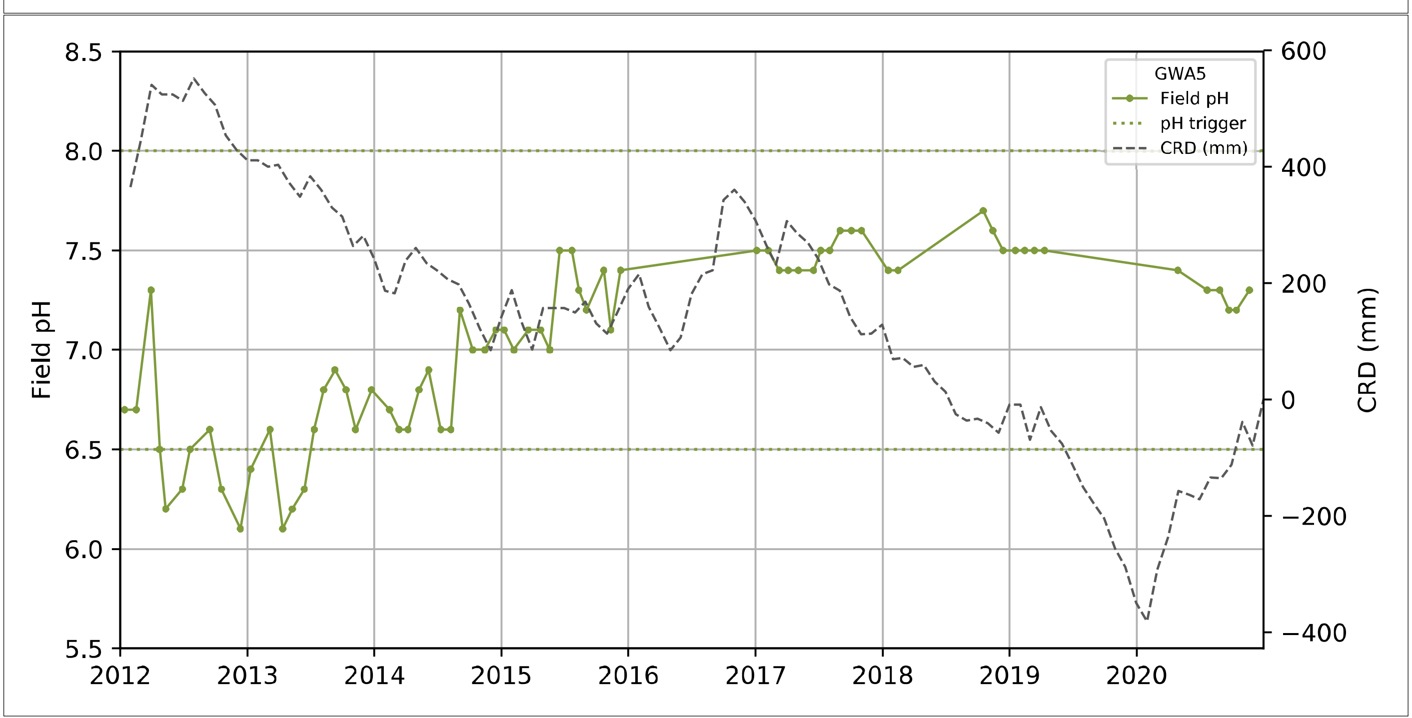

GWA4
Field pH
pH trigger
CRD (mm)
Field pH
CRD (mm)
8.5
8.0
7.5
7.0
6.5
6.0
5.5
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020



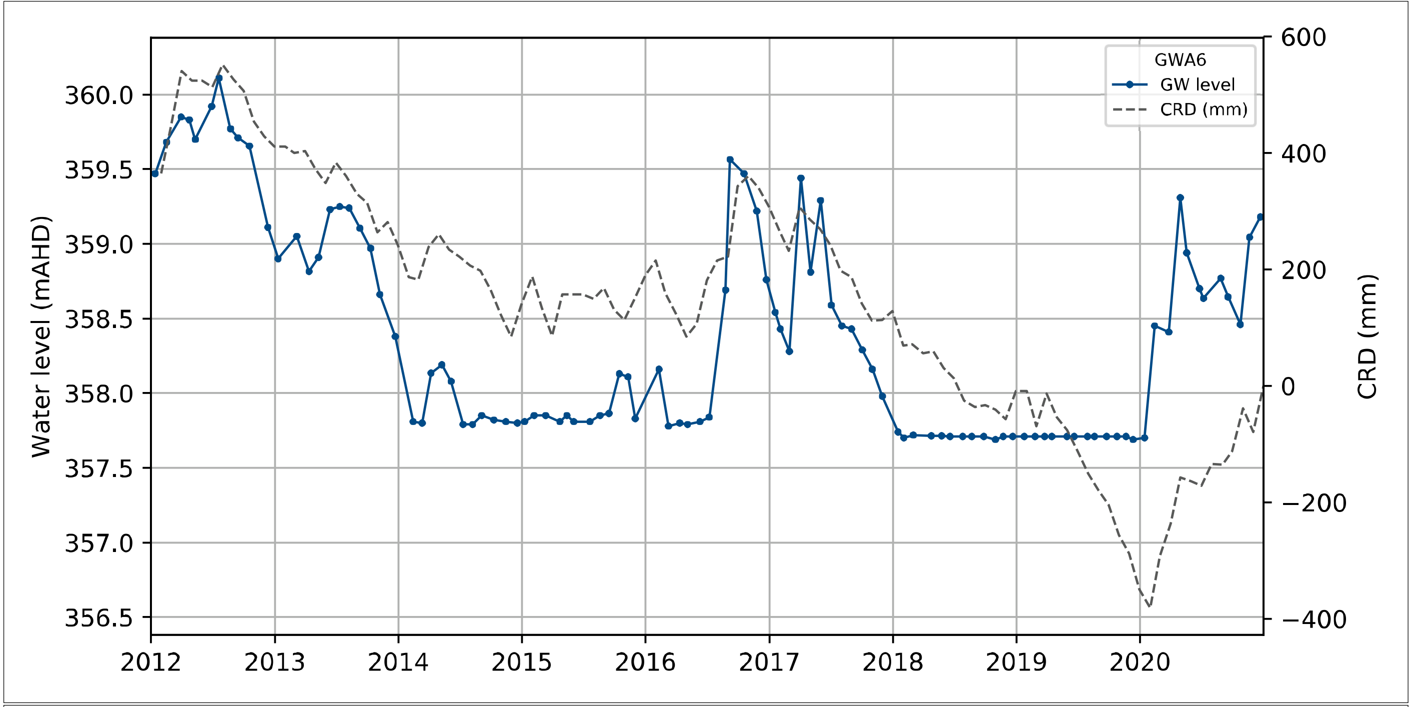
GWA5
GW level
Water level trigger
CRD (mm)
Water level (mAHD)
CRD (mm)
374
373
372
371
370
369
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

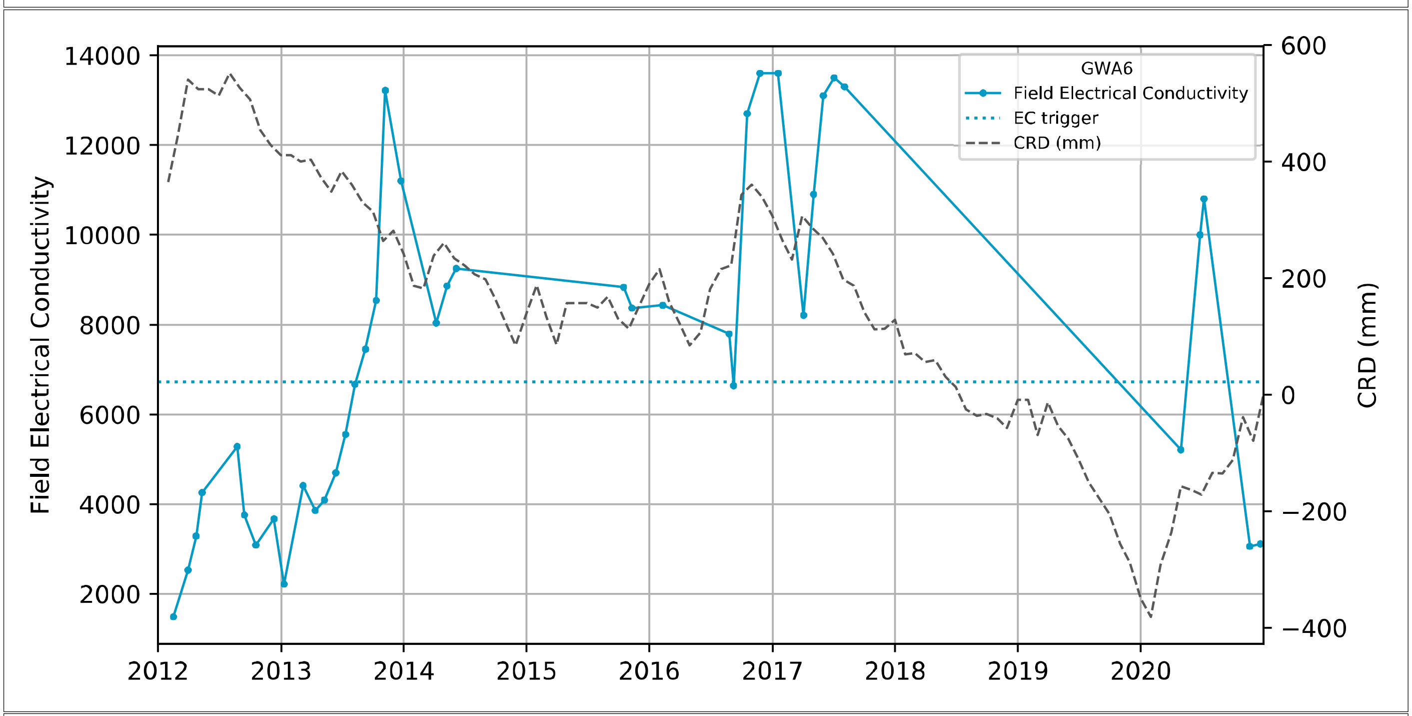


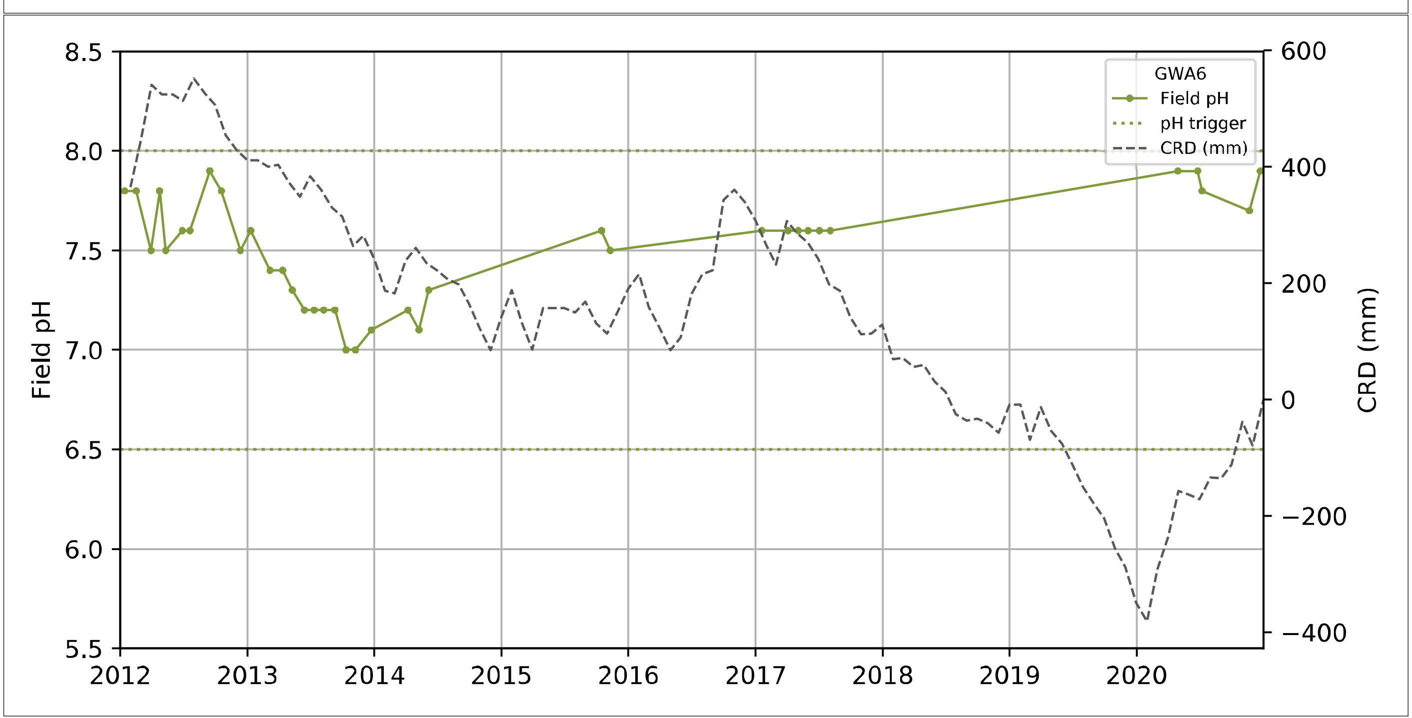
GWA5
Field Electrical Conductivity
EC trigger
CRD (mm)
Field Electrical Conductivity
CRD (mm)
18000
16000
14000
12000
10000
8000
6000
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

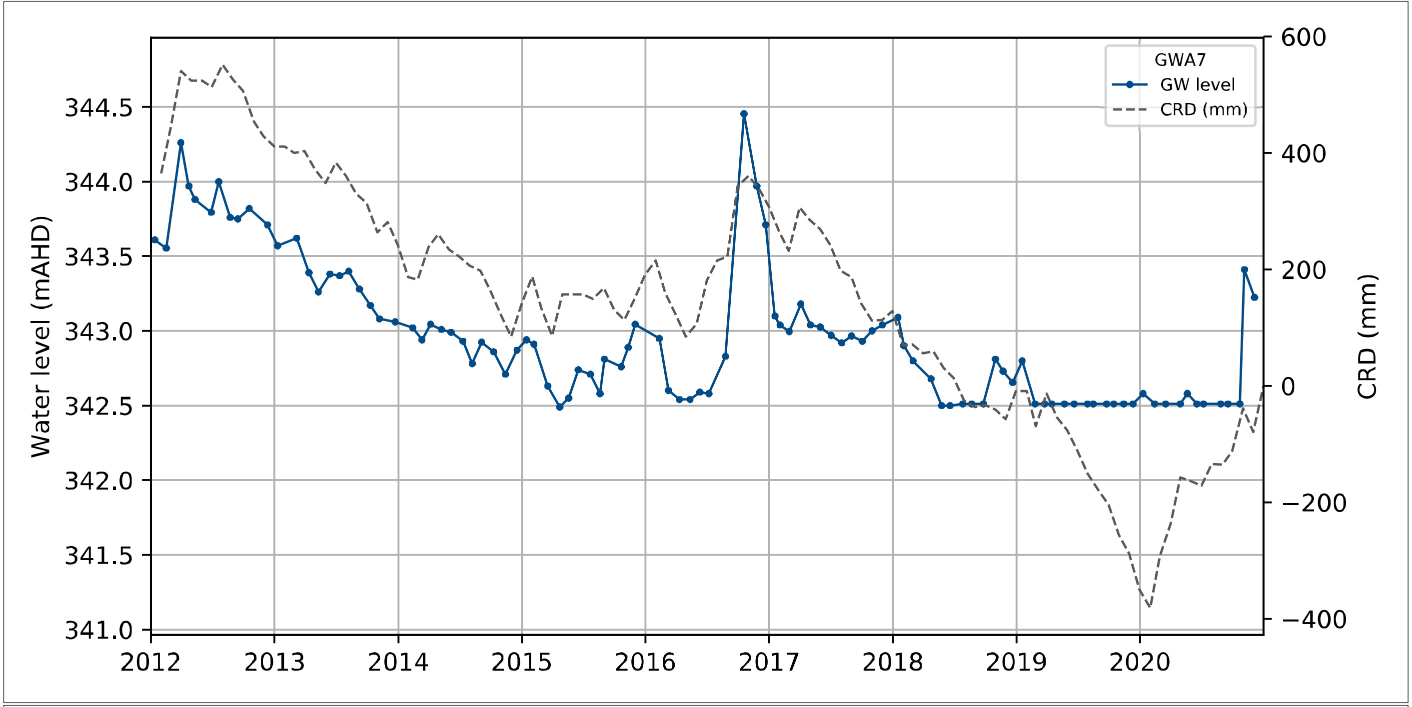


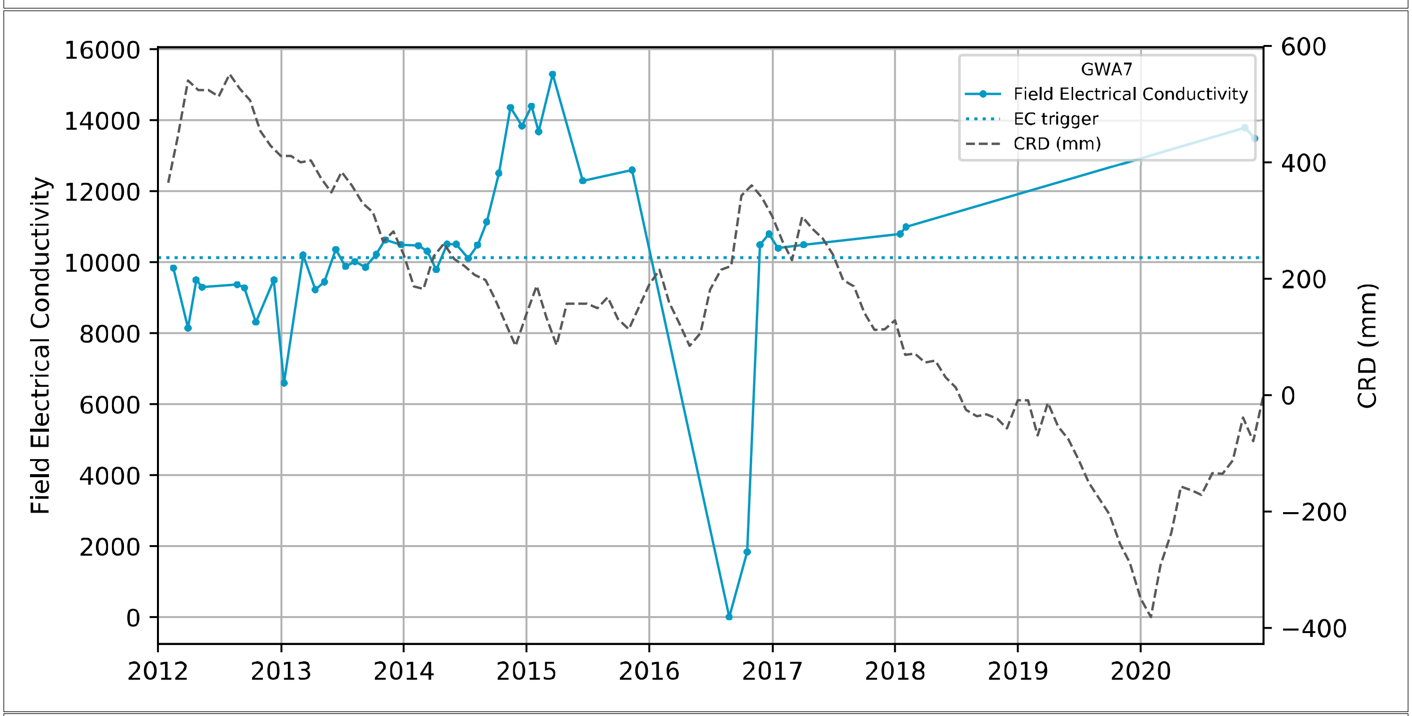
GWA5
Field pH
pH trigger
CRD (mm)
Field pH
CRD (mm)
8.5
8.0
7.5
7.0
6.5
6.0
5.5
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

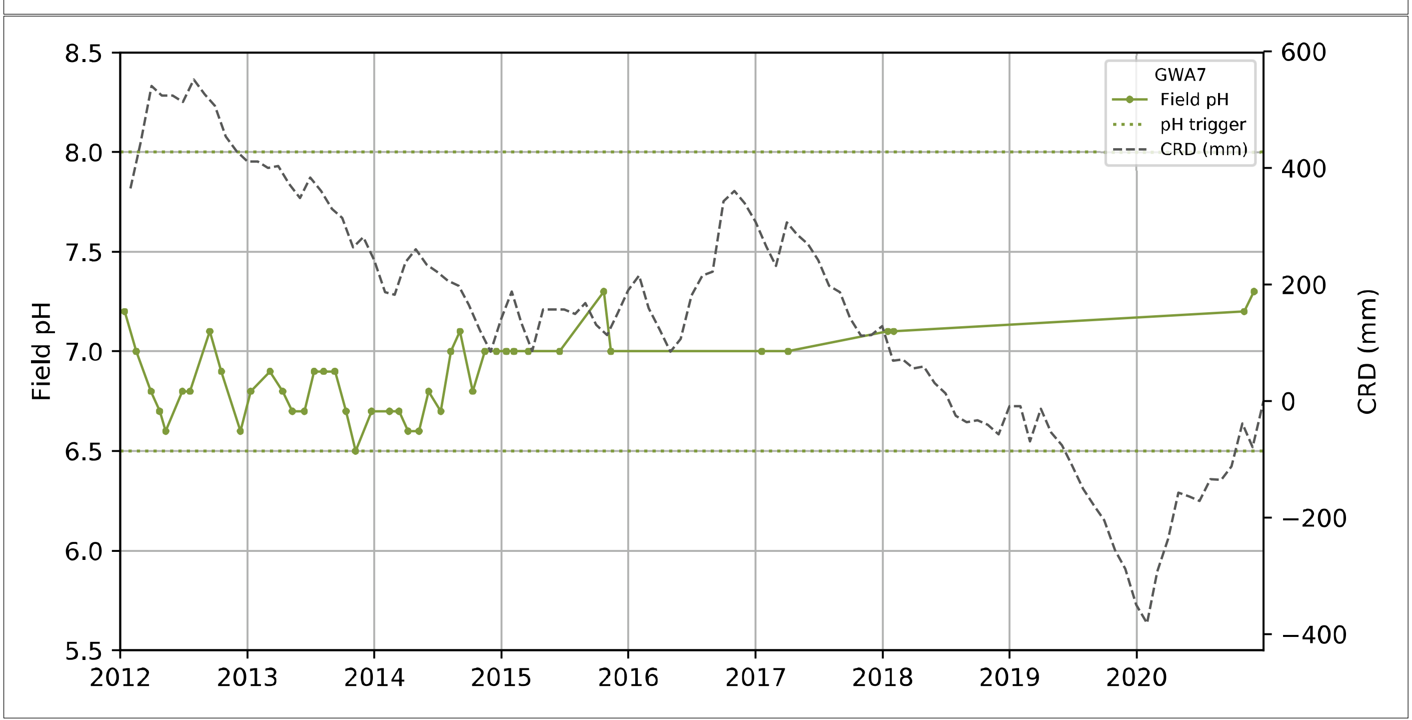

GWA6
GW level
CRD (mm)
Water level (mAHD)
CRD (mm)
360.0
359.5
359.0
358.5
358.0
357.5
357.0
356.5
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

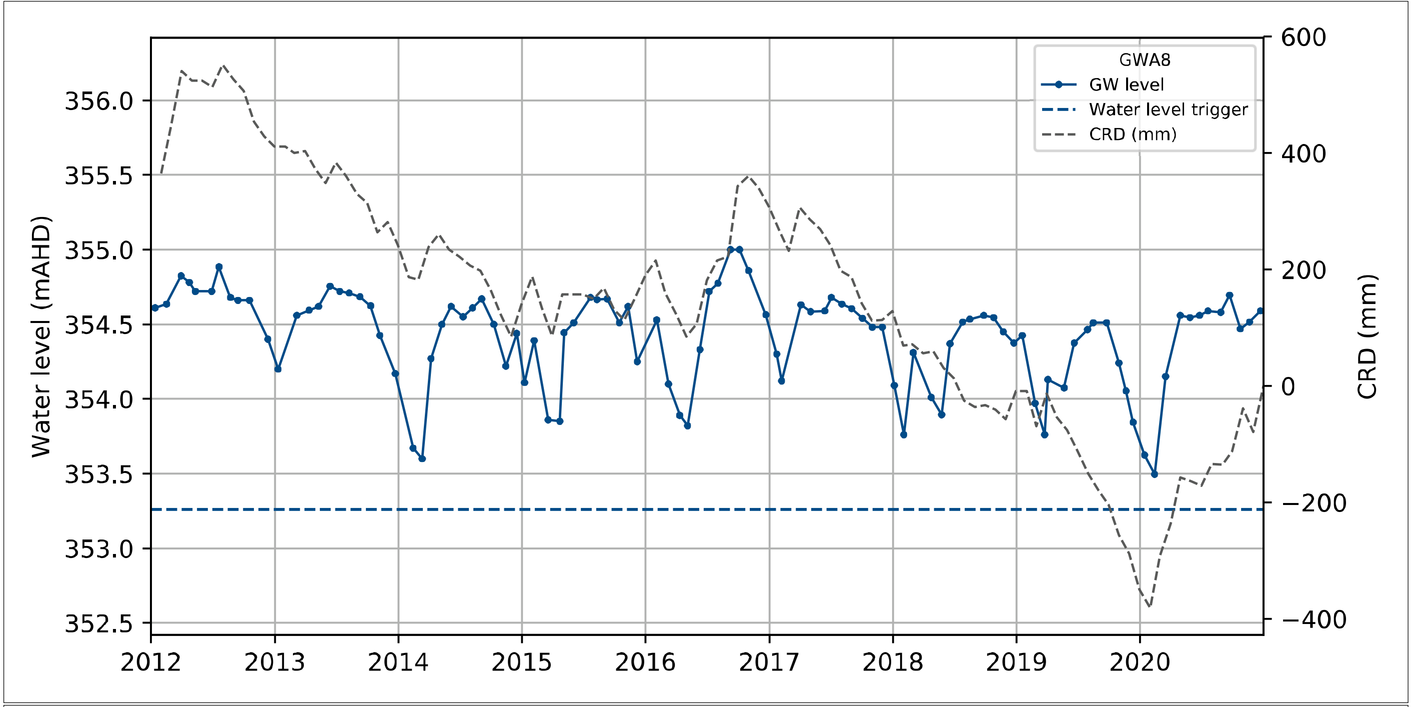

GWA6
Field Electrical Conductivity
EC trigger
CRD (mm)
Field Electrical Conductivity
CRD (mm)
14000
12000
10000
8000
6000
4000
2000
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

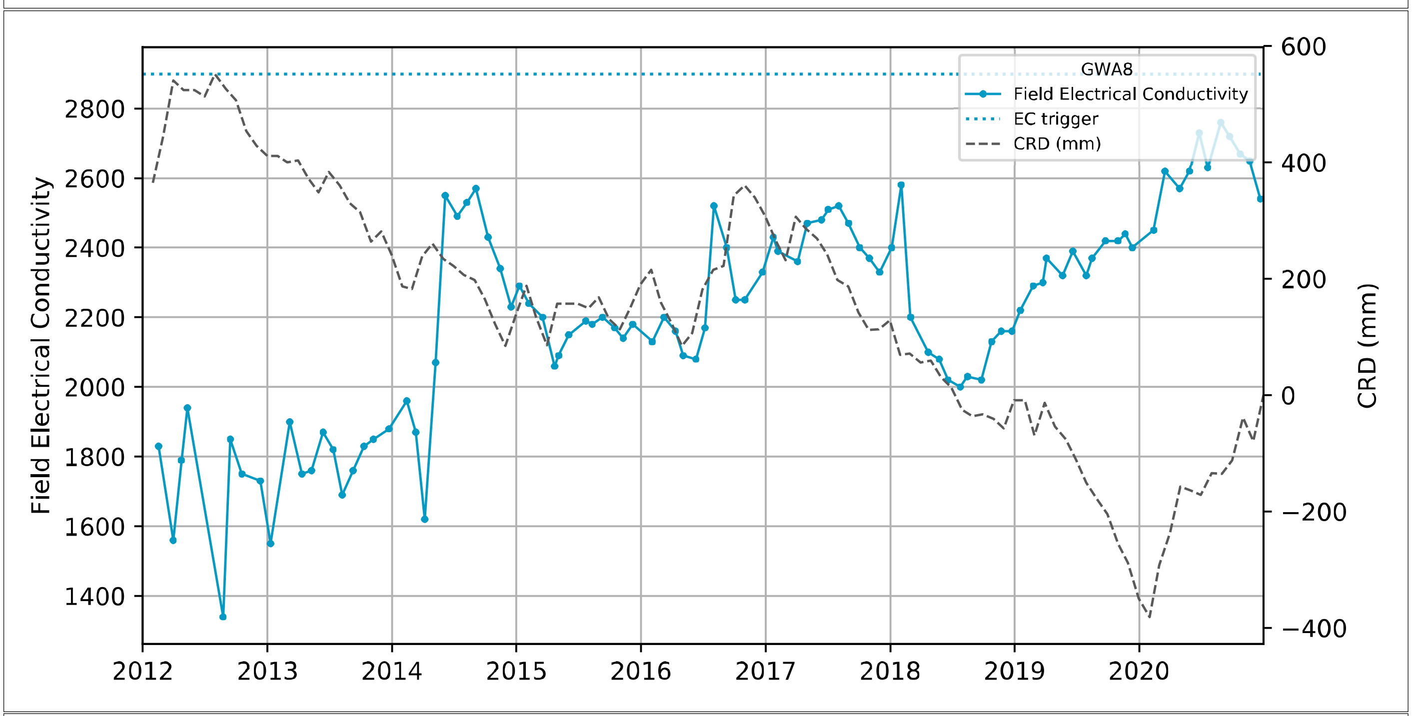

GWA6
Field pH
pH trigger
CRD (mm)
Field pH
CRD (mm)
8.5
8.0
7.5
7.0
6.5
6.0
5.5
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

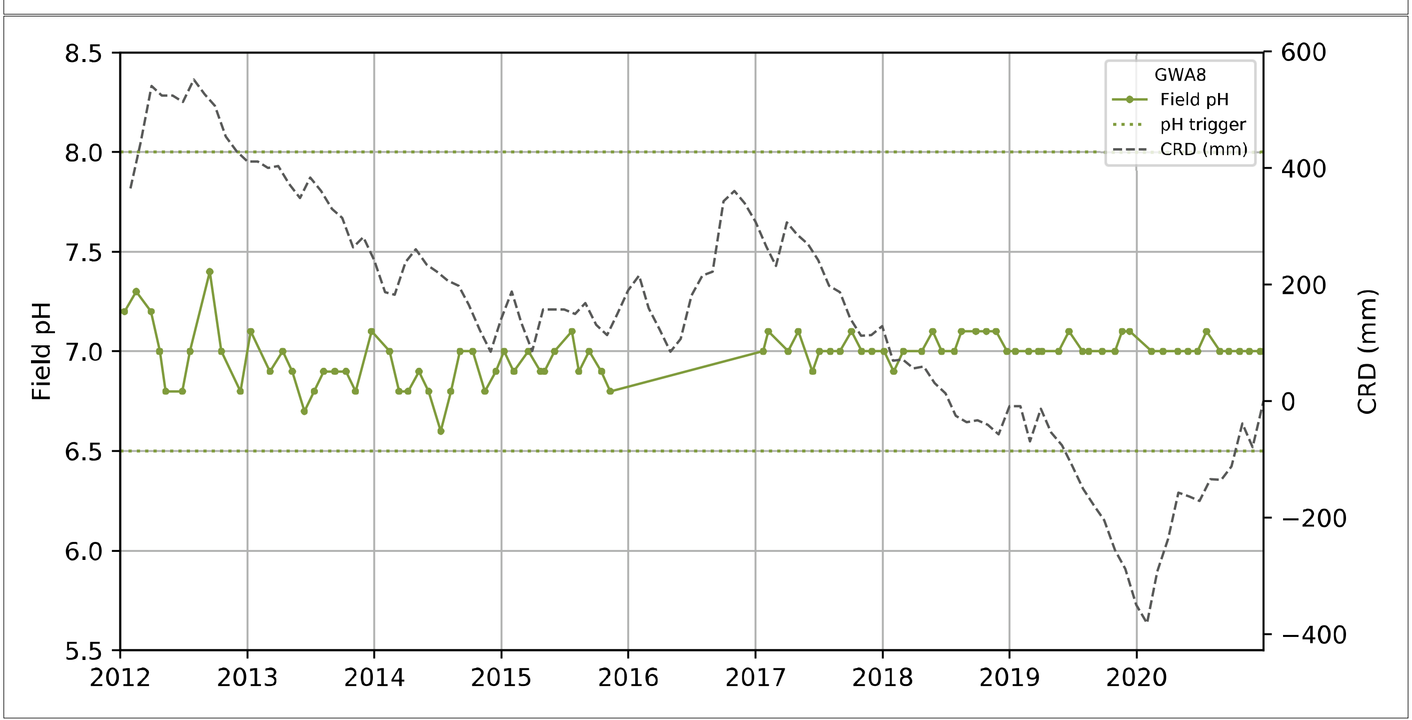

GWA7
GW level
CRD (mm)
Water level (mAHD)
CRD (mm)
344.5
344.0
343.5
343.0
342.5
342.0
341.5
341.0
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

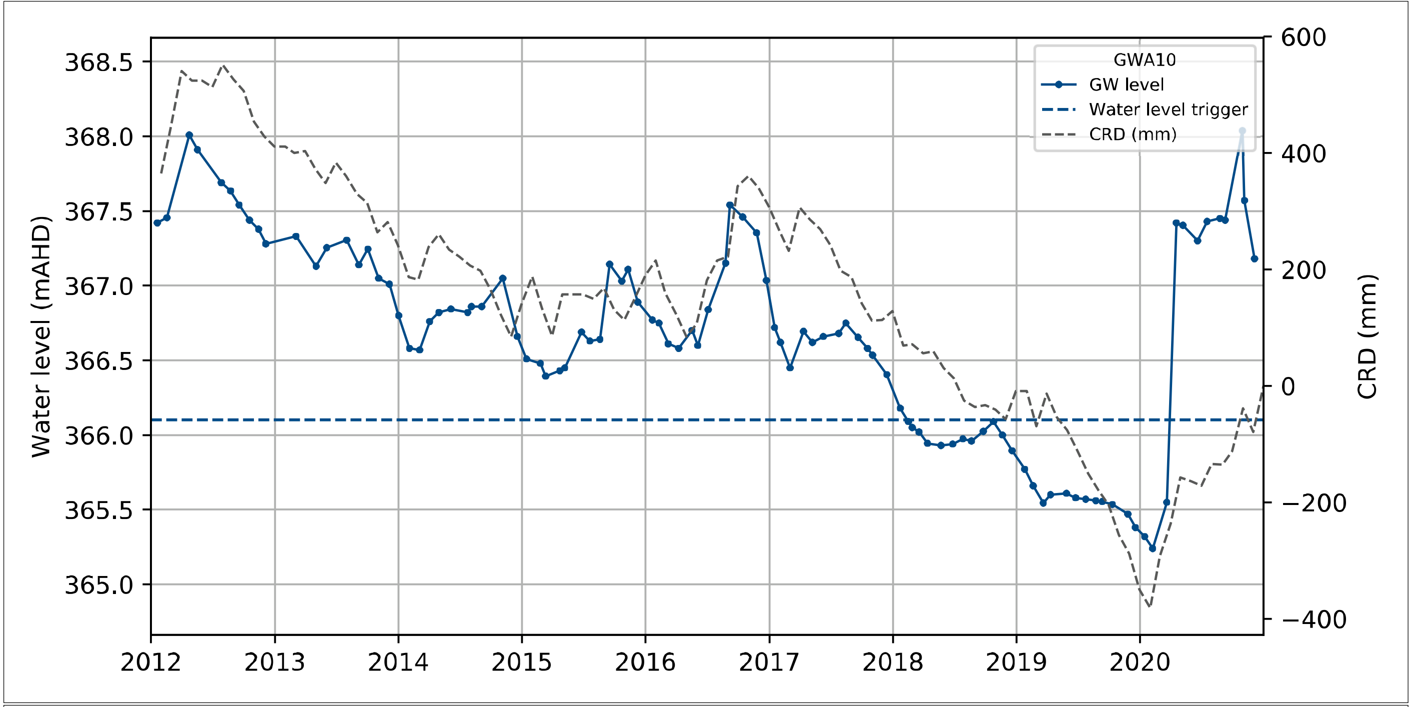

GWA7
Field Electrical Conductivity
EC trigger
CRD (mm)
Field Electrical Conductivity
CRD (mm)
16000
14000
12000
10000
8000
6000
4000
2000
0
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

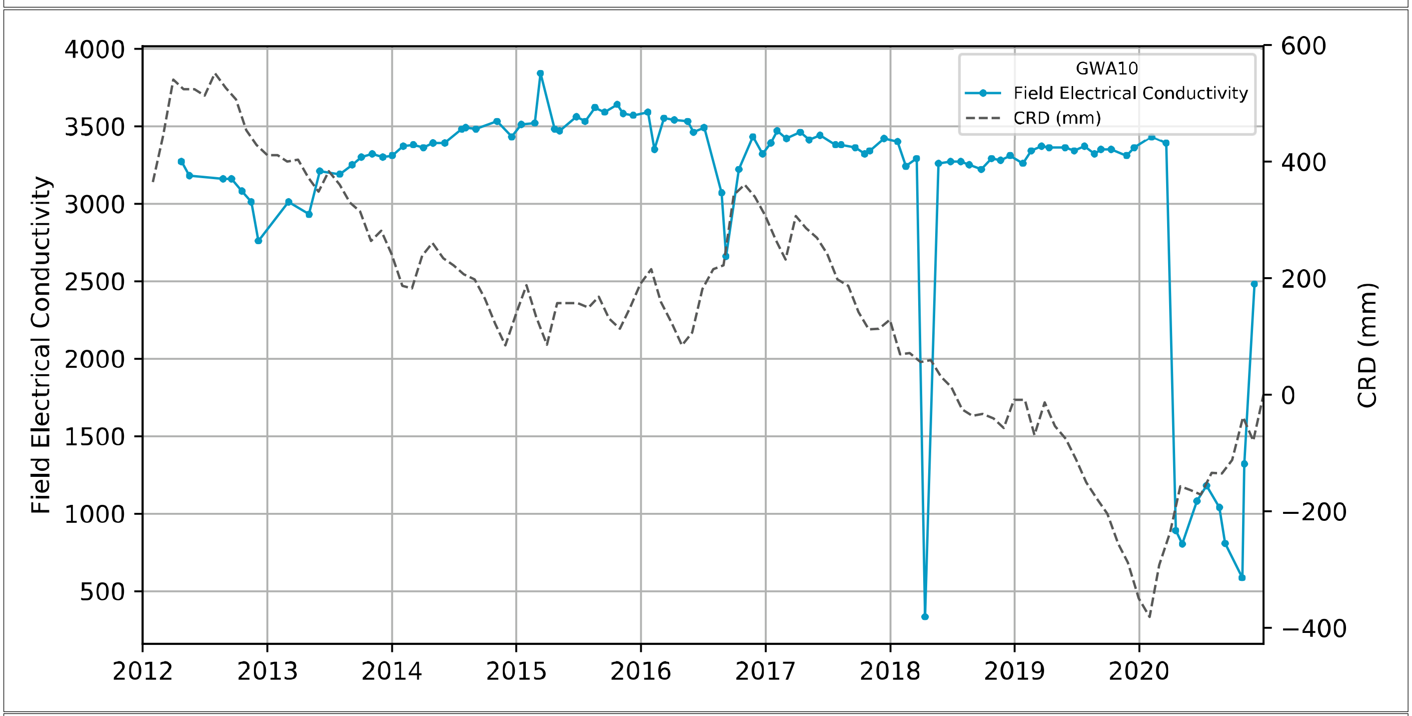

GWA7
Field pH
pH trigger
CRD (mm)
Field pH
CRD (mm)
8.5
8.0
7.5
7.0
6.5
6.0
5.5
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

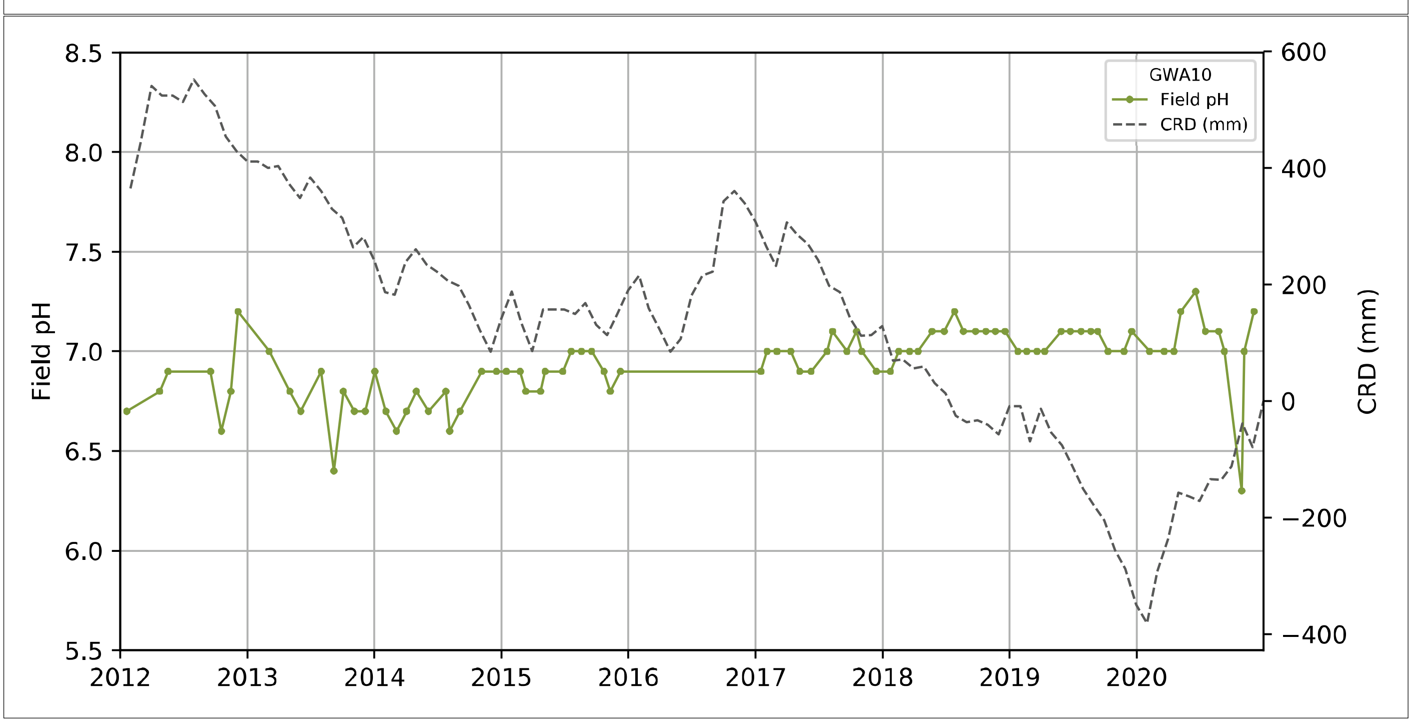

GWA8
GW level
Water level trigger
CRD (mm)
Water level (mAHD)
CRD (mm)
356.0
355.5
355.0
354.5
354.0
353.5
353.0
352.5
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

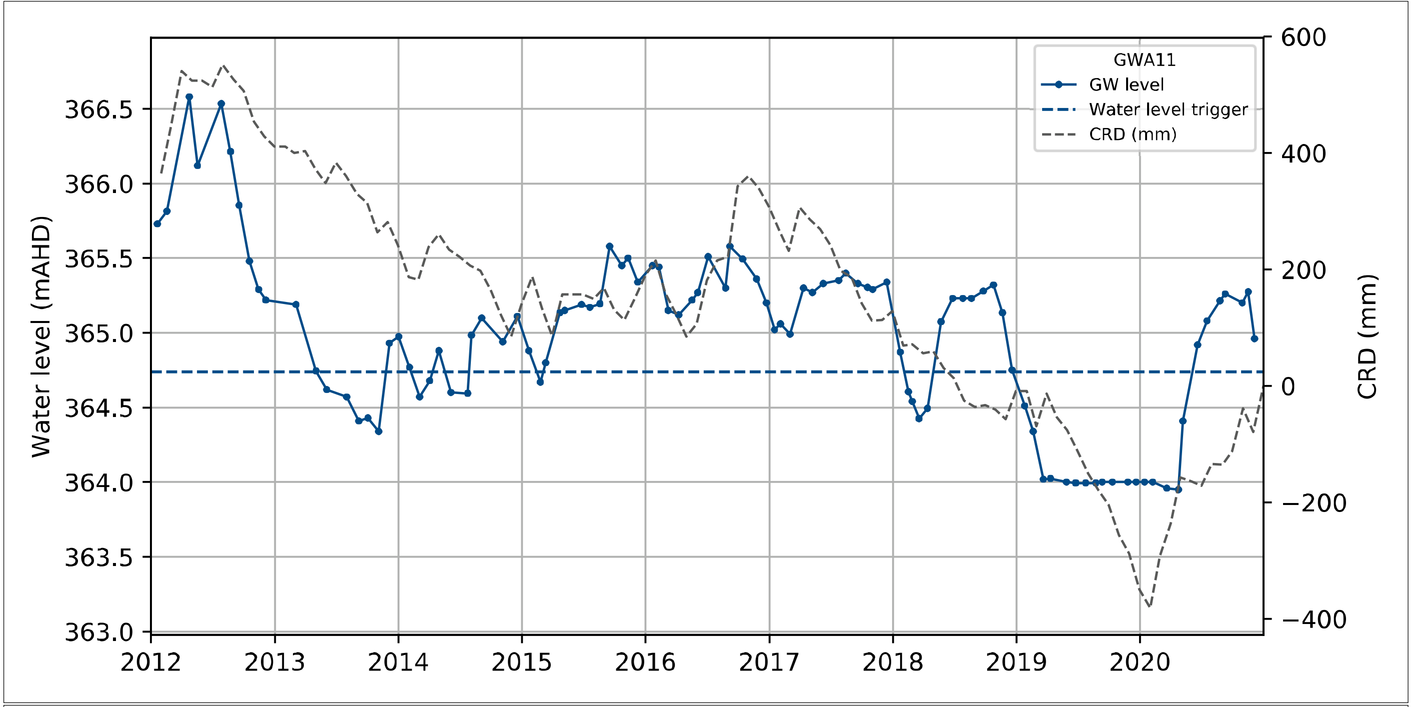

GWA8
Field Electrical Conductivity
EC trigger
CRD (mm)
Field Electrical Conductivity
CRD (mm)
2800
2600
2400
2200
2000
1800
1600
1400
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020


GWA8
Field pH
pH trigger
CRD (mm)
Field pH
CRD (mm)
8.5
8.0
7.5
7.0
6.5
6.0
5.5
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

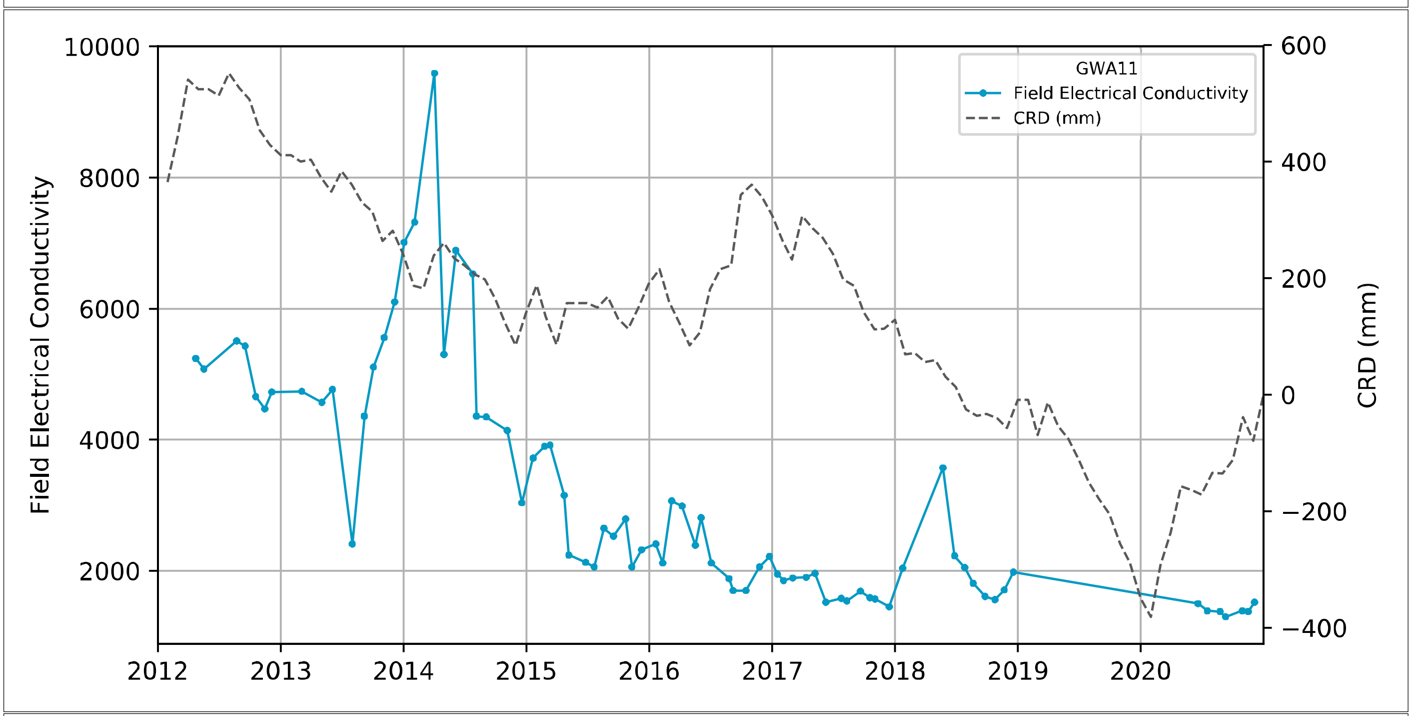

GWA10
GW level
Water level trigger
CRD (mm)
Water level (mAHD)
CRD (mm)
368.5
368.0
367.5
367.0
366.5
366.0
365.5
365.0
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020


GWA10
Field Electrical Conductivity
CRD (mm)
Field Electrical Conductivity
CRD (mm)
4000
3500
3000
2500
2000
1500
1000
500
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

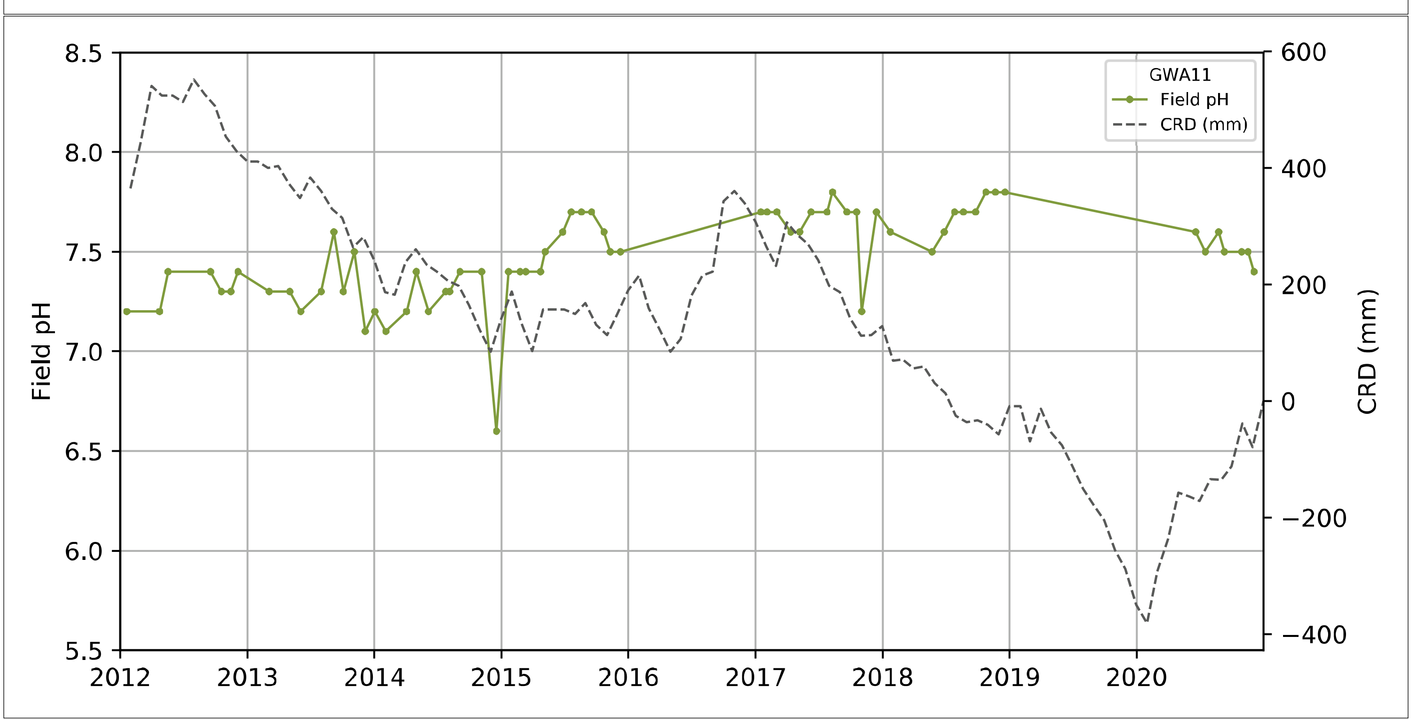

GWA10
Field pH
CRD (mm)
Field pH
CRD (mm)
8.5
8.0
7.5
7.0
6.5
6.0
5.5
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020



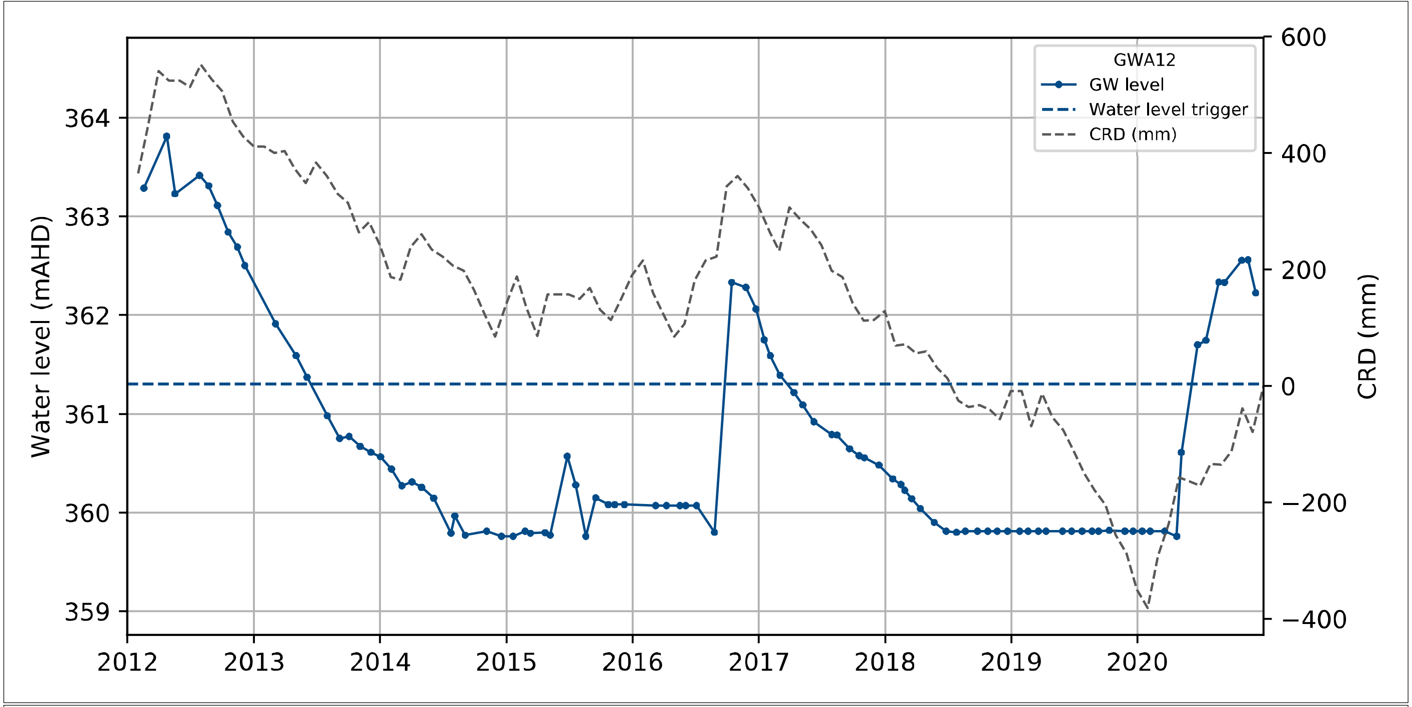
Water level (mAHD)
CRD (mm)
GWA11
GW level
Water level trigger
CRD (mm)

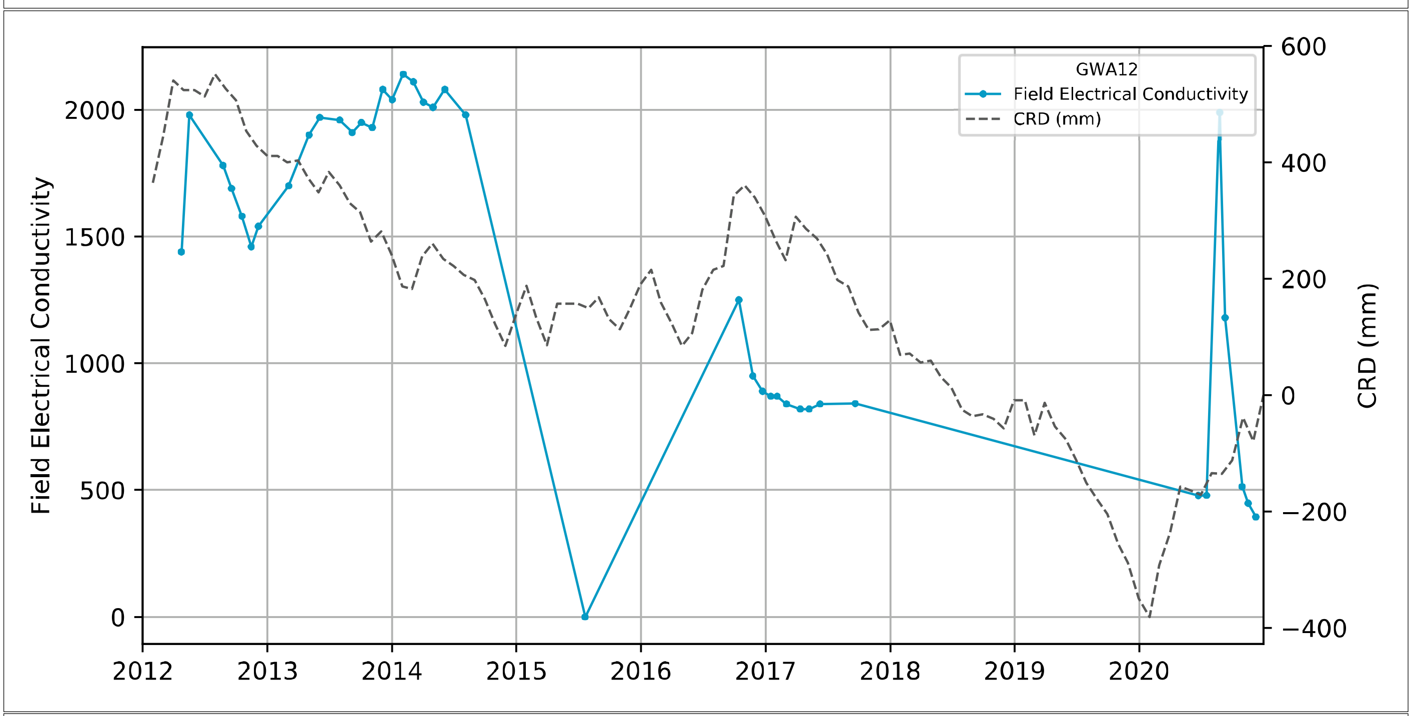


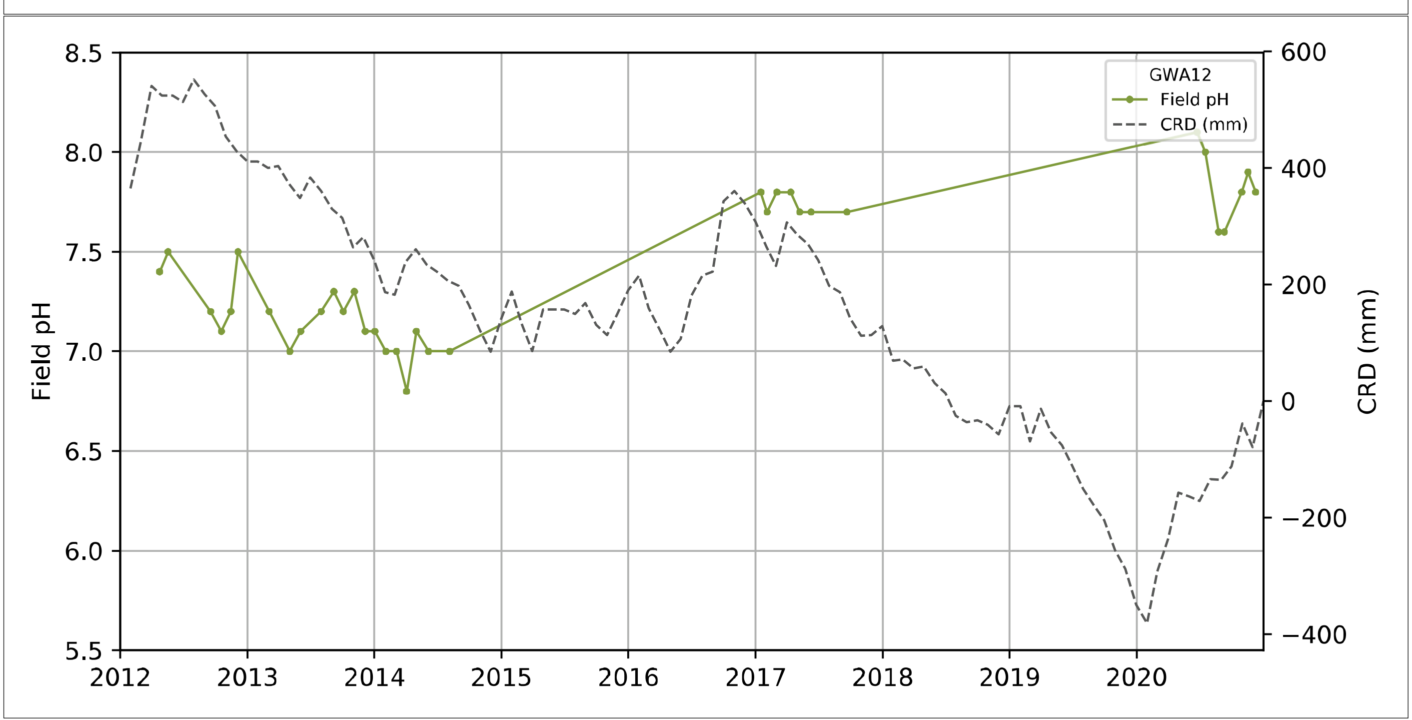
Field Electrical Conductivity
CRD (mm)
GWA11
Field Electrical Conductivity
CRD (mm)

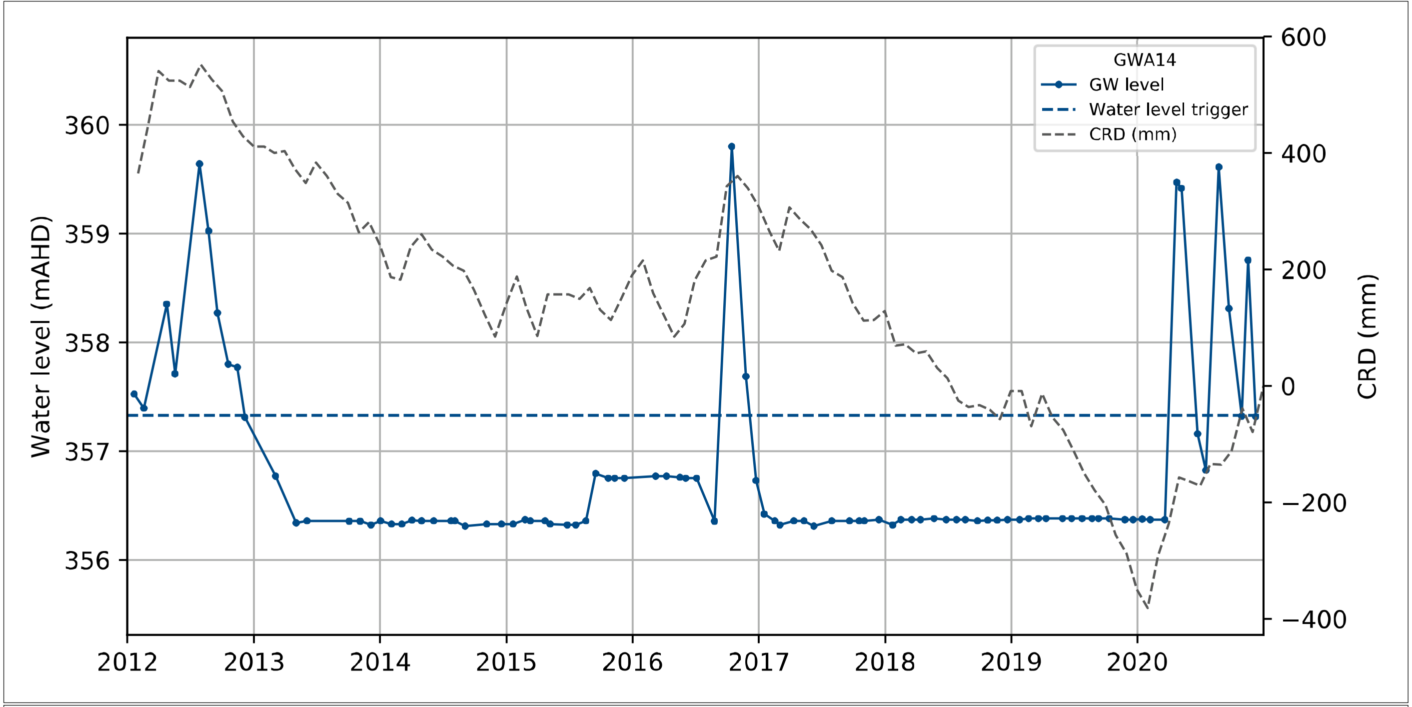


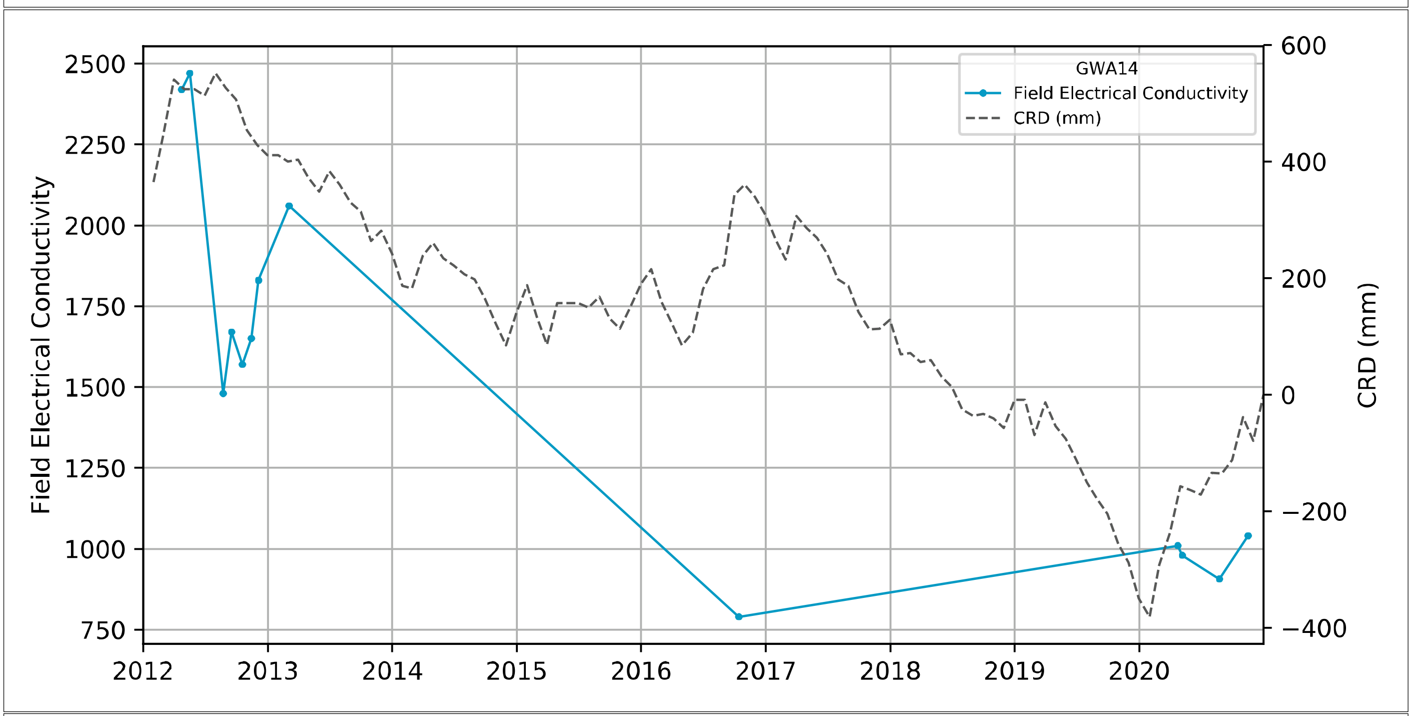
Field pH
CRD (mm)
GWA11
Field pH
CRD (mm)

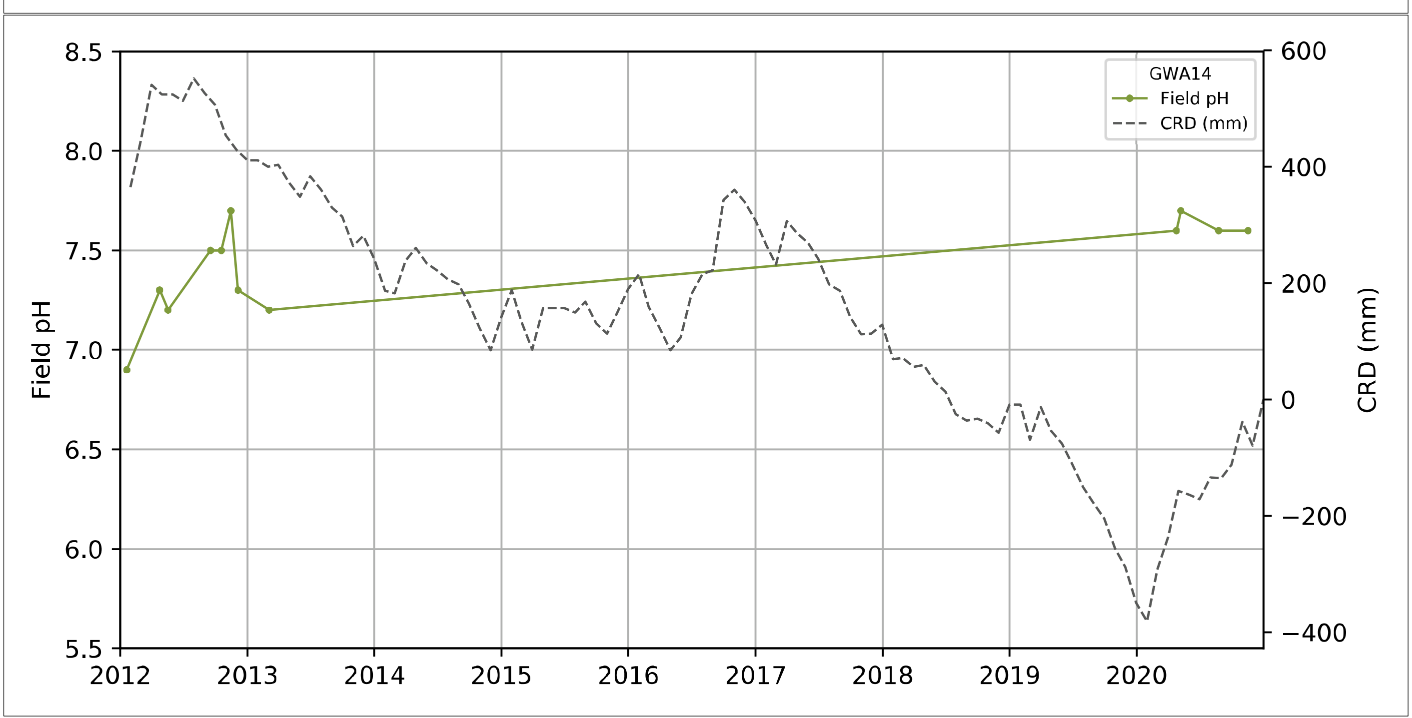

GWA12
GW level
Water level trigger
CRD (mm)
Water level (mAHD)
CRD (mm)
364
363
362
361
360
359
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

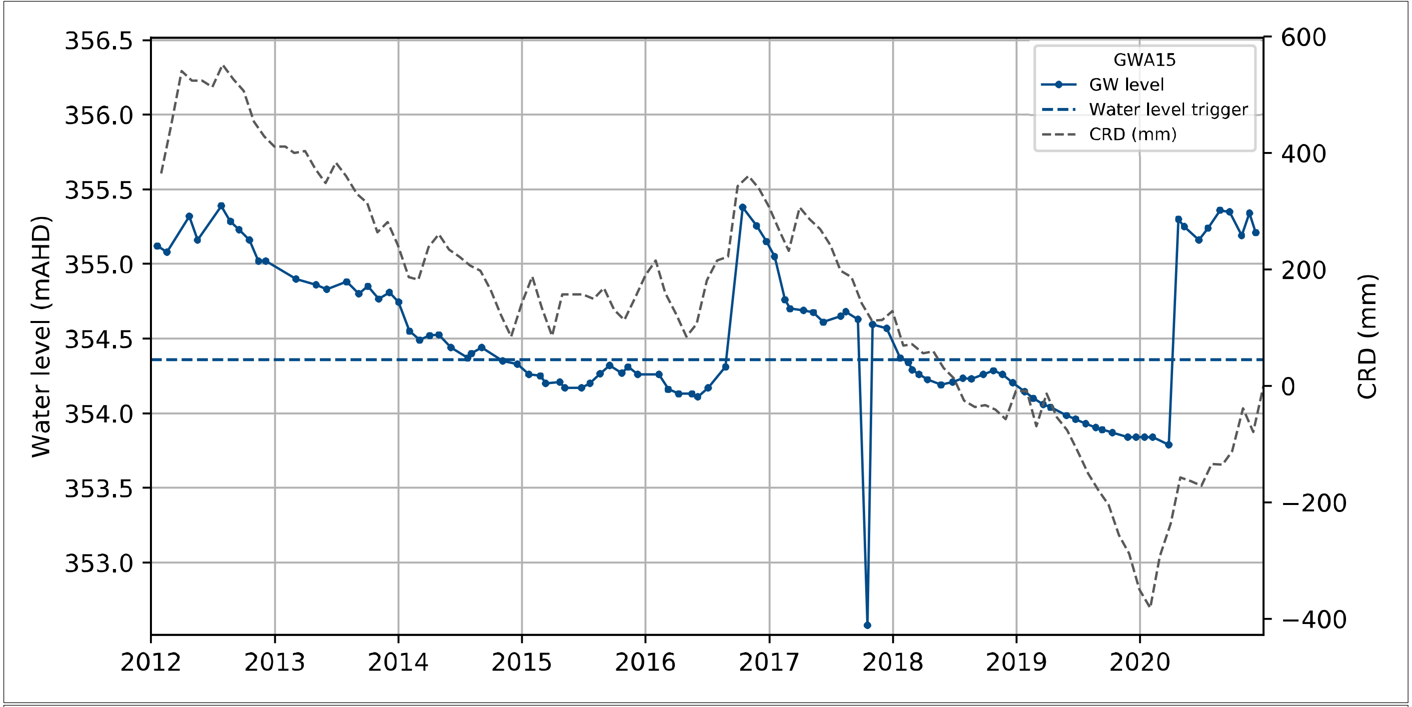

GWA12
Field Electrical Conductivity
CRD (mm)
Field Electrical Conductivity
CRD (mm)
2000
1500
1000
500
0
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

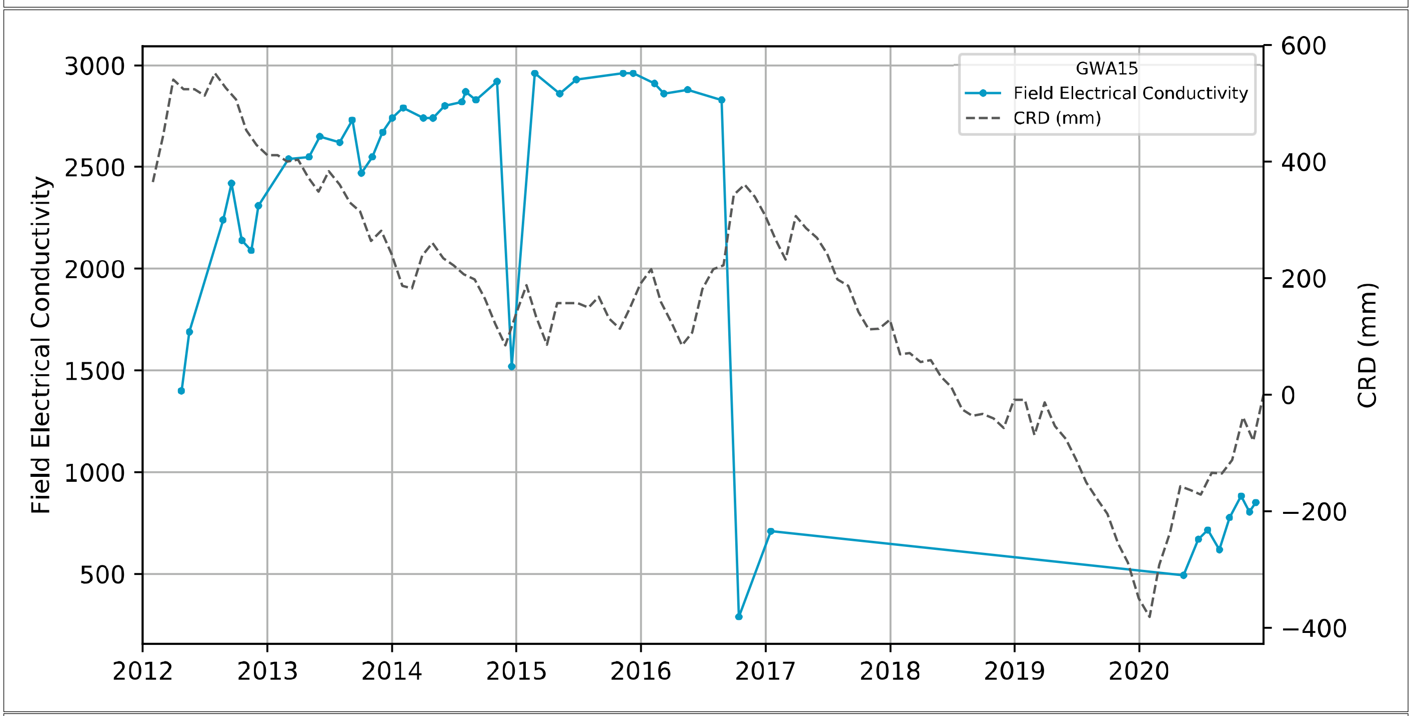

GWA12
Field pH
CRD (mm)
Field pH
CRD (mm)
8.5
8.0
7.5
7.0
6.5
6.0
5.5
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

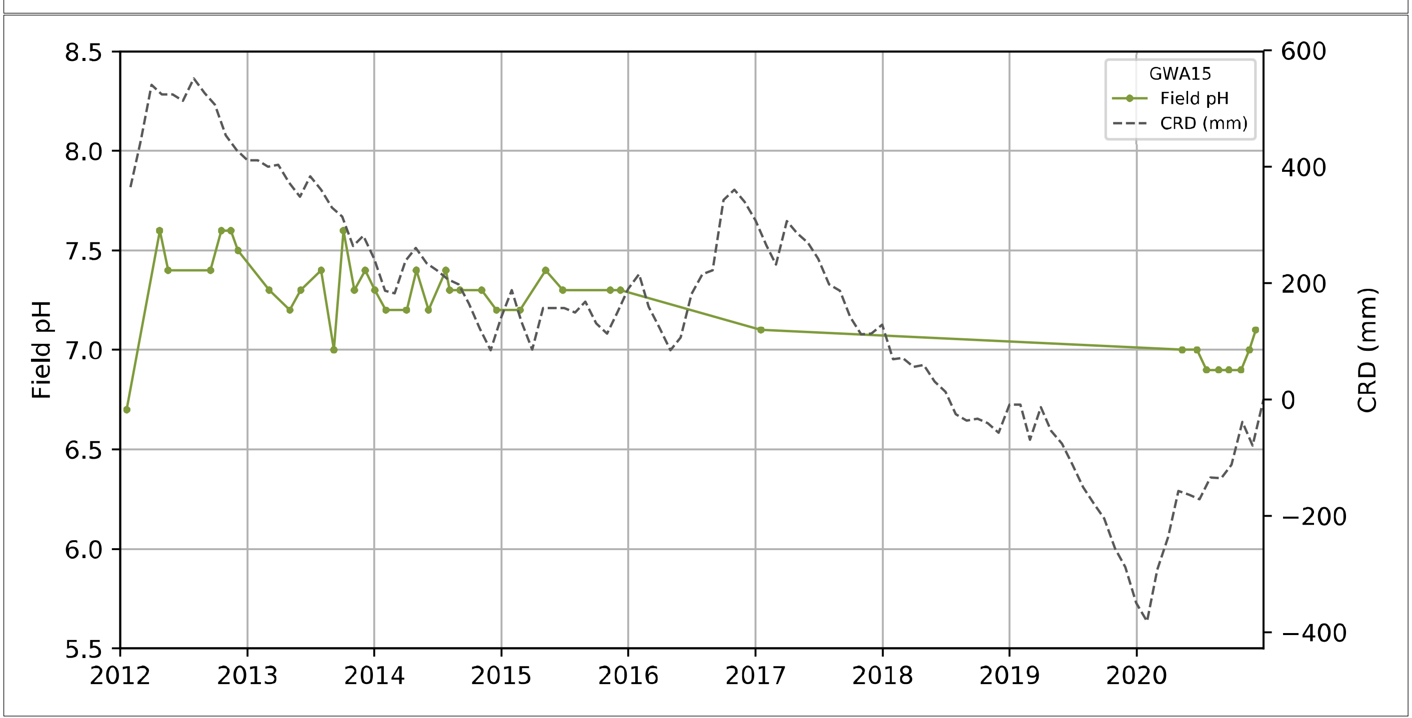

GWA14
GW level
Water level trigger
CRD (mm)
Water level (mAHD)
CRD (mm)

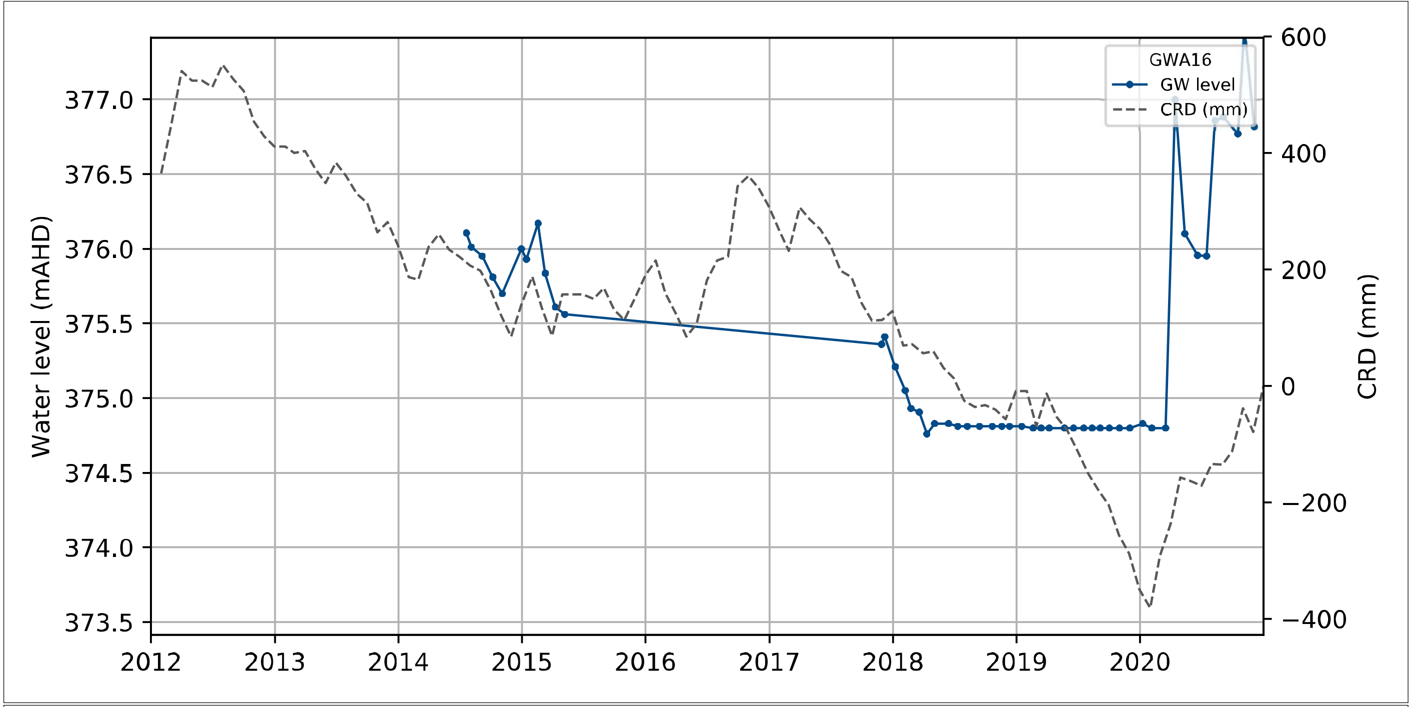

GWA14
Field Electrical Conductivity
CRD (mm)
Field Electrical Conductivity
CRD (mm)

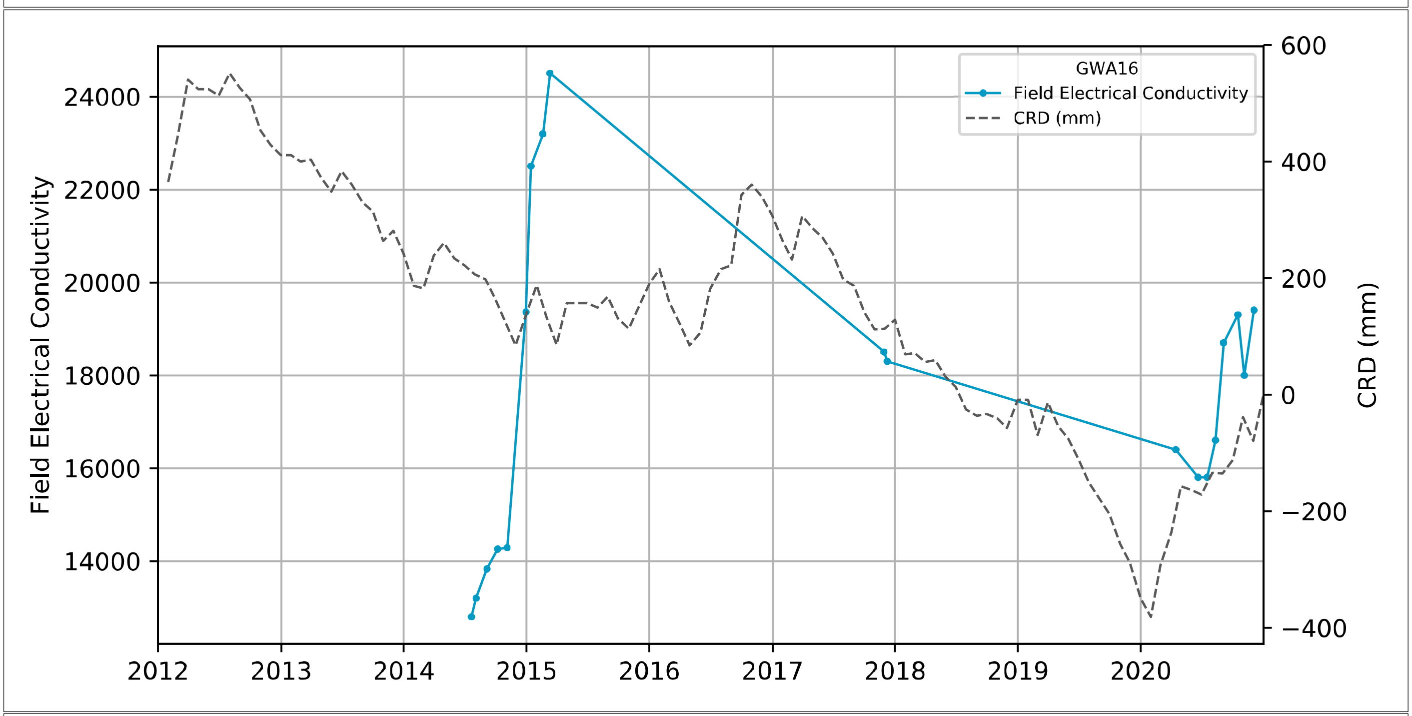

GWA14
Field pH
CRD (mm)
Field pH
CRD (mm)

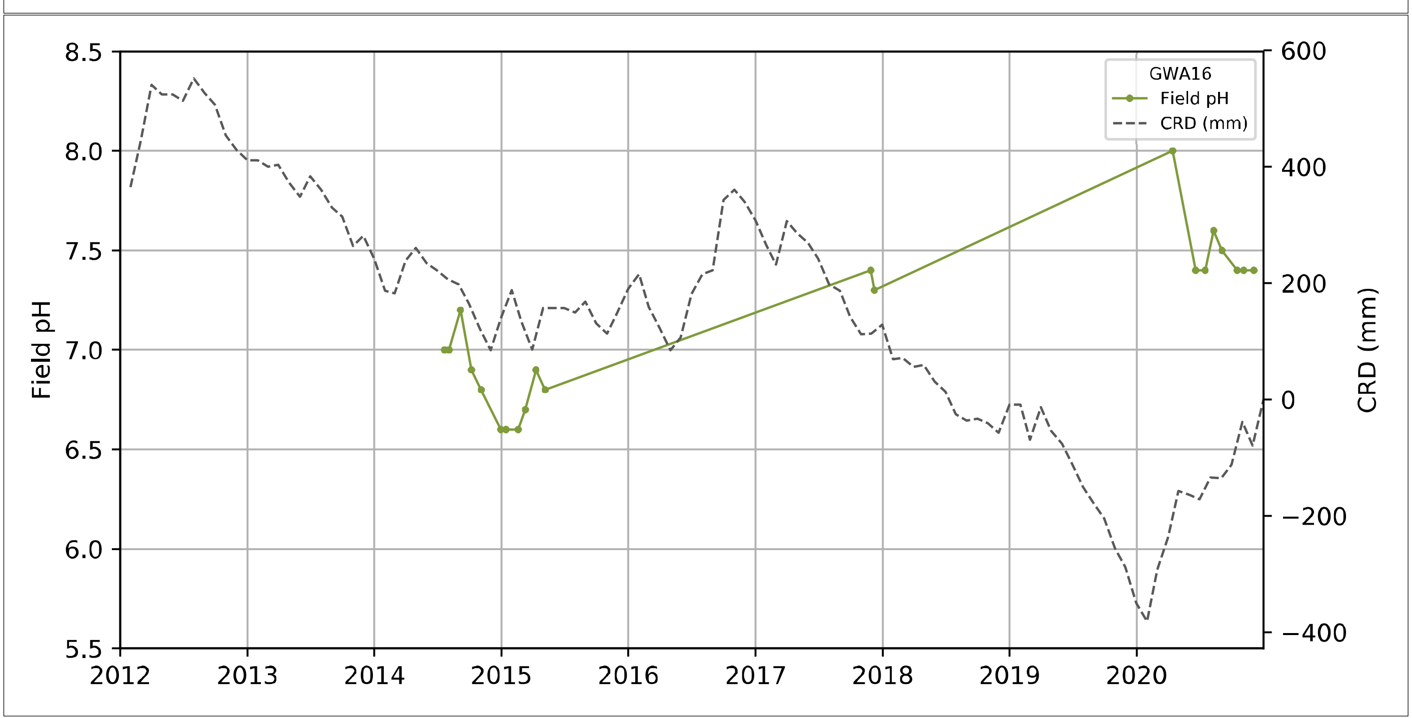

GWA15
GW level
Water level trigger
CRD (mm)
Water level (mAHD)
CRD (mm)
356.5
356.0
355.5
355.0
354.5
354.0
353.5
353.0
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

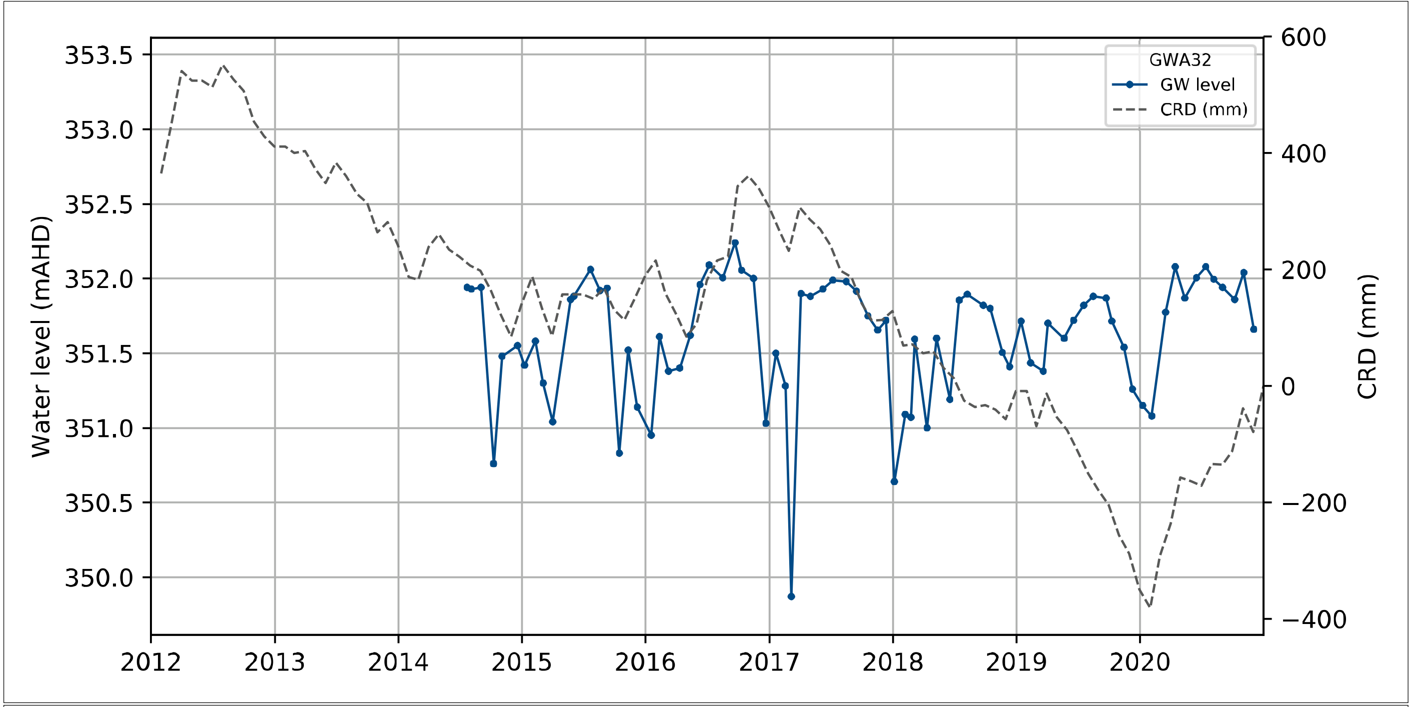

GWA15
Field Electrical Conductivity
CRD (mm)
Field Electrical Conductivity
CRD (mm)
3000
2500
2000
1500
1000
500
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

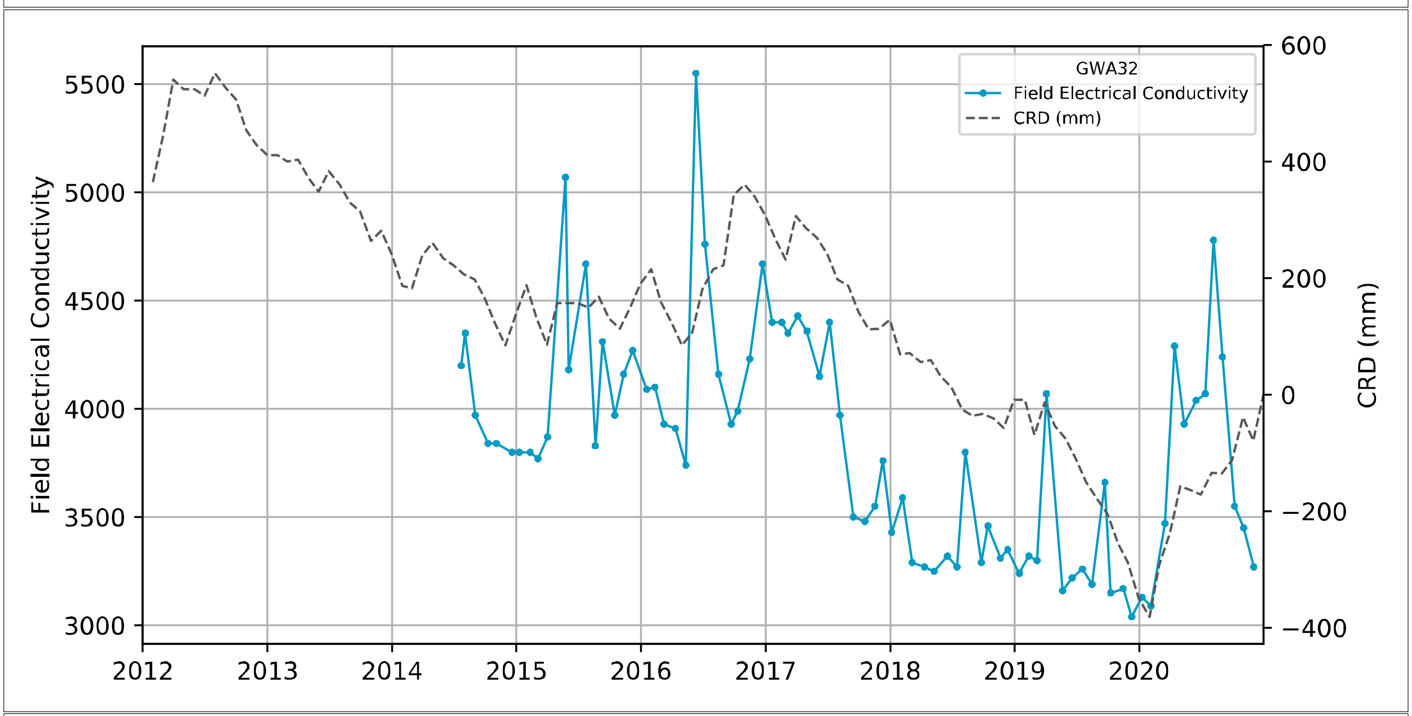

GWA15
Field pH
CRD (mm)
Field pH
CRD (mm)
8.5
8.0
7.5
7.0
6.5
6.0
5.5
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

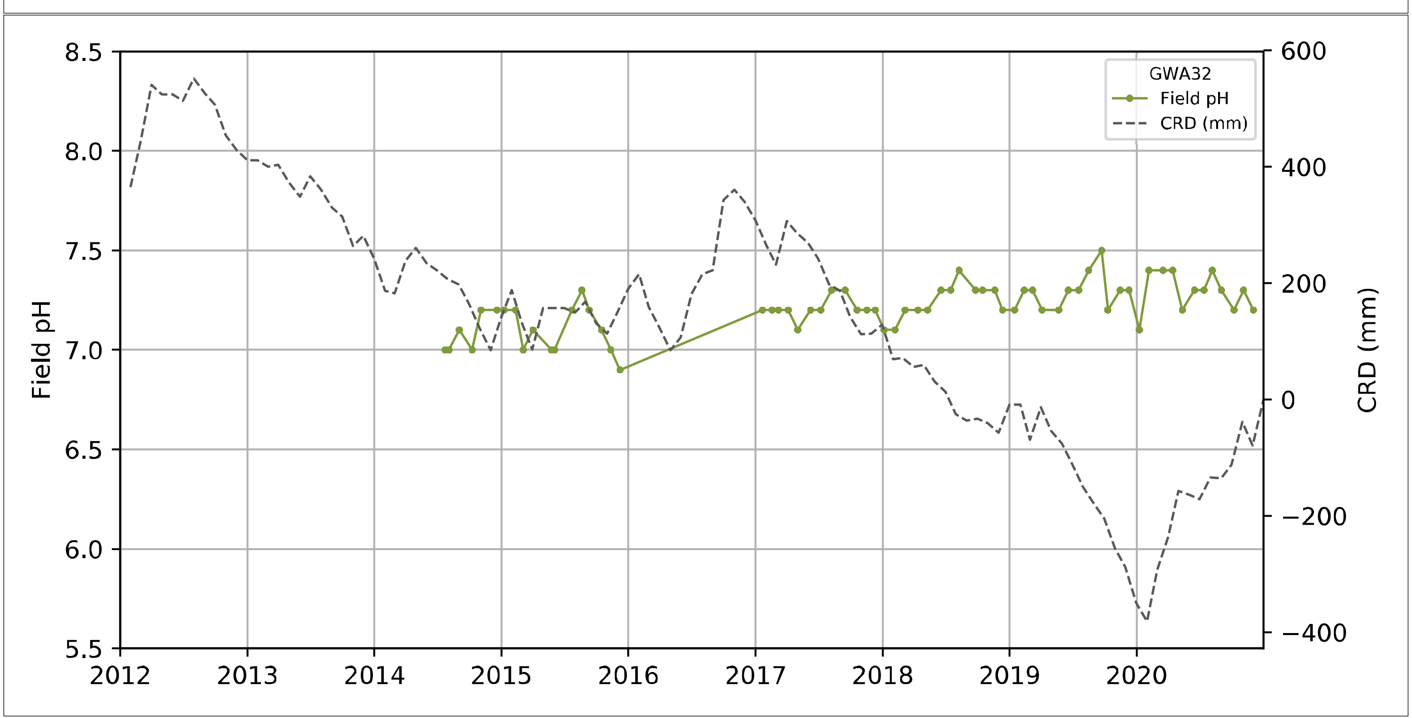

GWA16
GW level
CRD (mm)
Water level (mAHD)
CRD (mm)
377.0
376.5
376.0
375.5
375.0
374.5
374.0
373.5
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020


GWA16
Field Electrical Conductivity
CRD (mm)
Field Electrical Conductivity
CRD (mm)
24000
22000
20000
18000
16000
14000
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

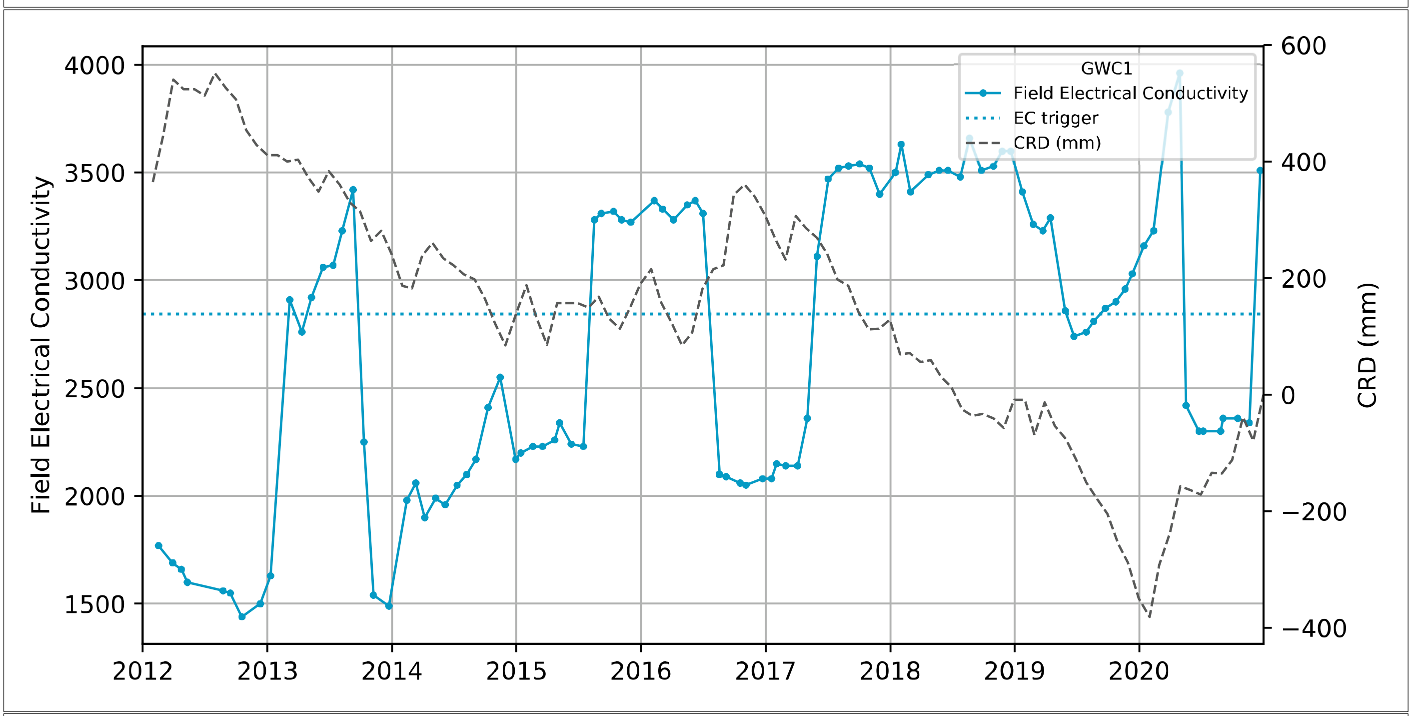

GWA16
Field pH
CRD (mm)
Field pH
CRD (mm)
8.5
8.0
7.5
7.0
6.5
6.0
5.5
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

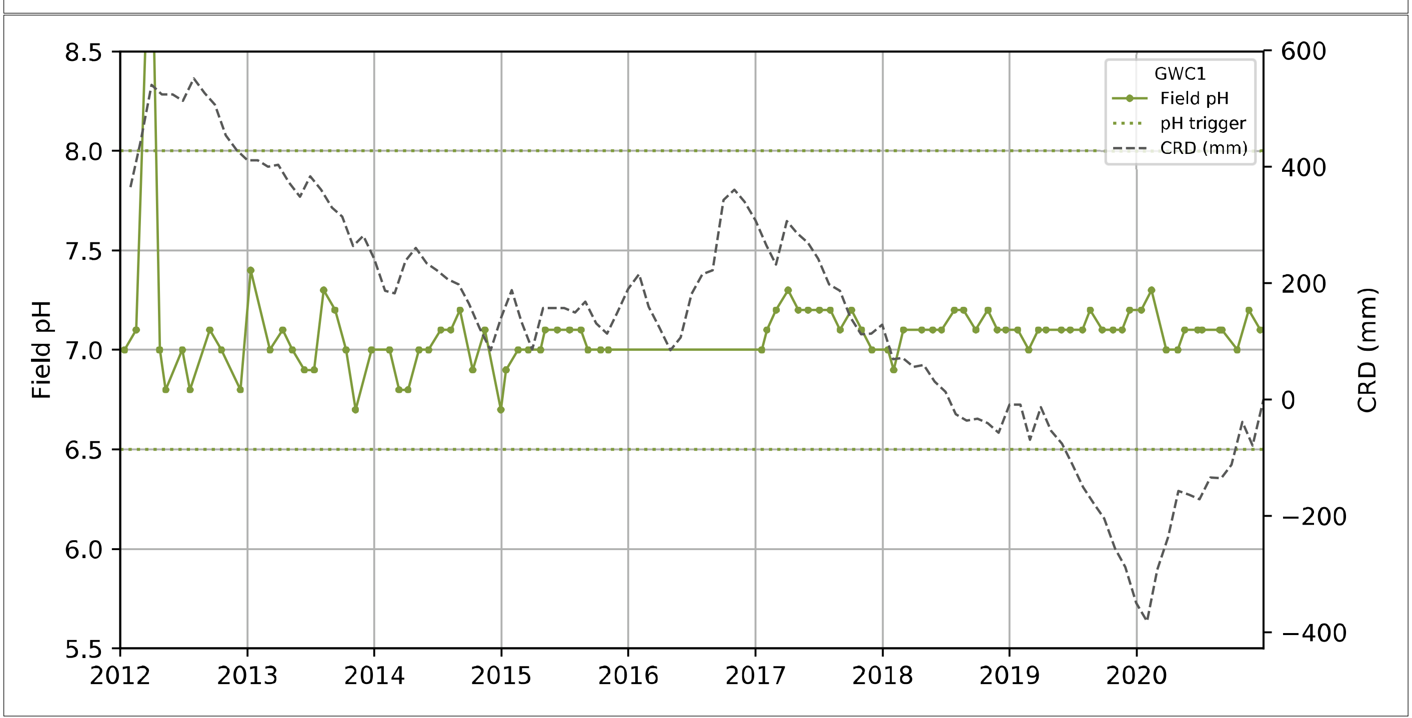

GWA32
GW level
CRD (mm)
Water level (mAHD)
CRD (mm)

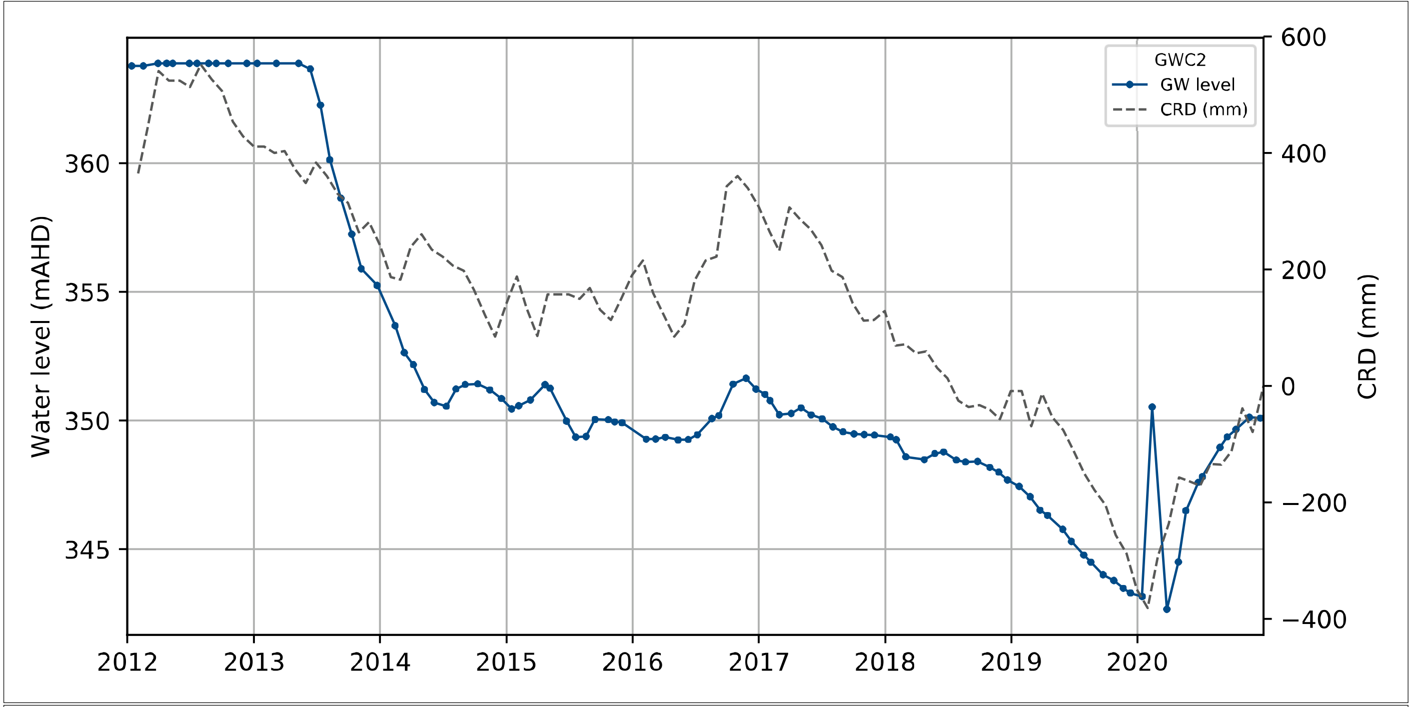

GWA32
Field Electrical Conductivity
CRD (mm)
Field Electrical Conductivity
CRD (mm)

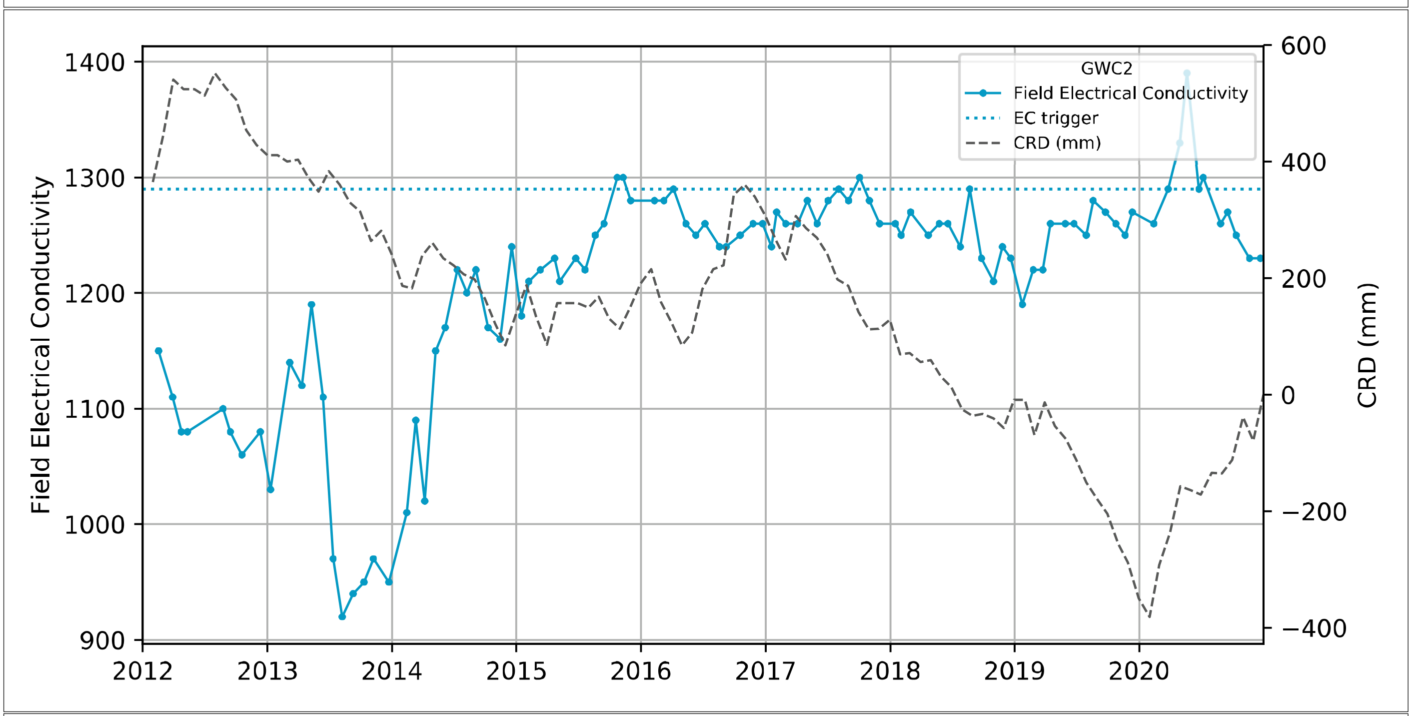

GWA32
Field pH
CRD (mm)
Field pH
CRD (mm)

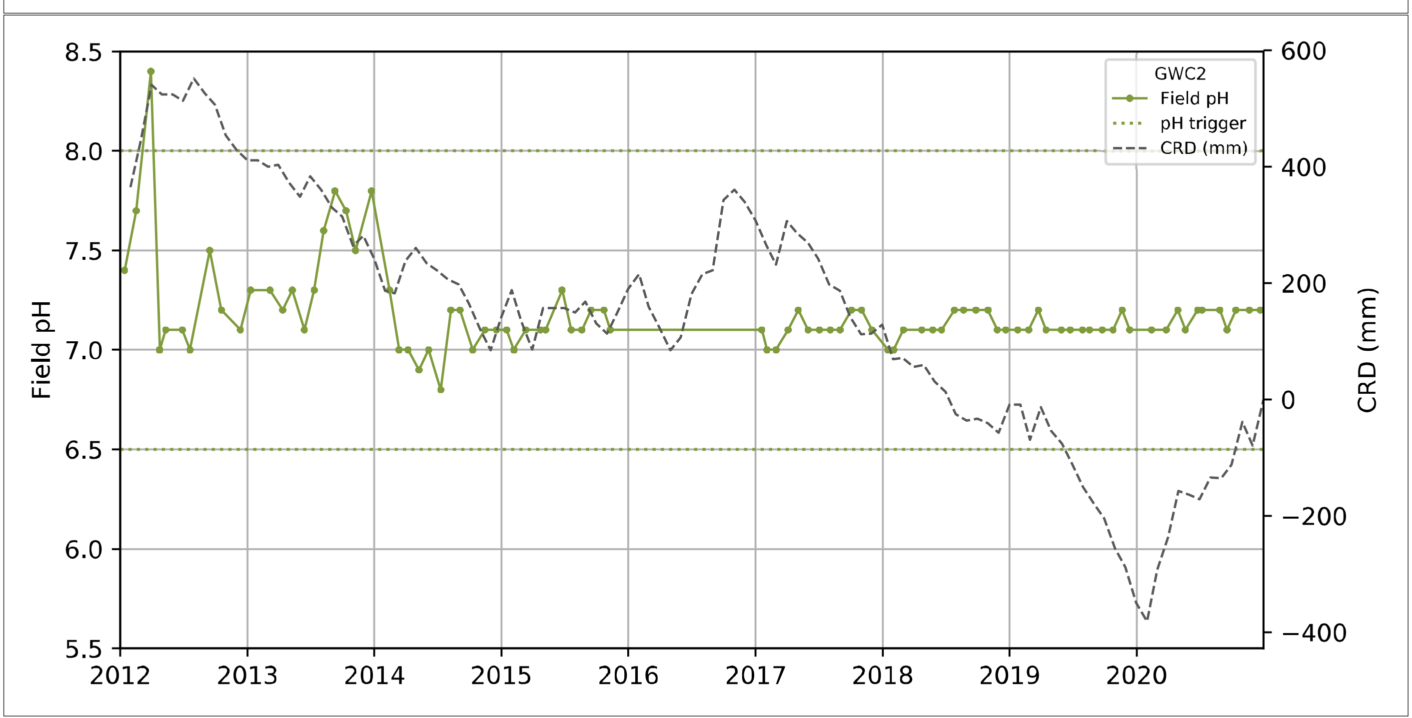

GWC1
GW level
CRD (mm)
Water level (mAHD)
CRD (mm)

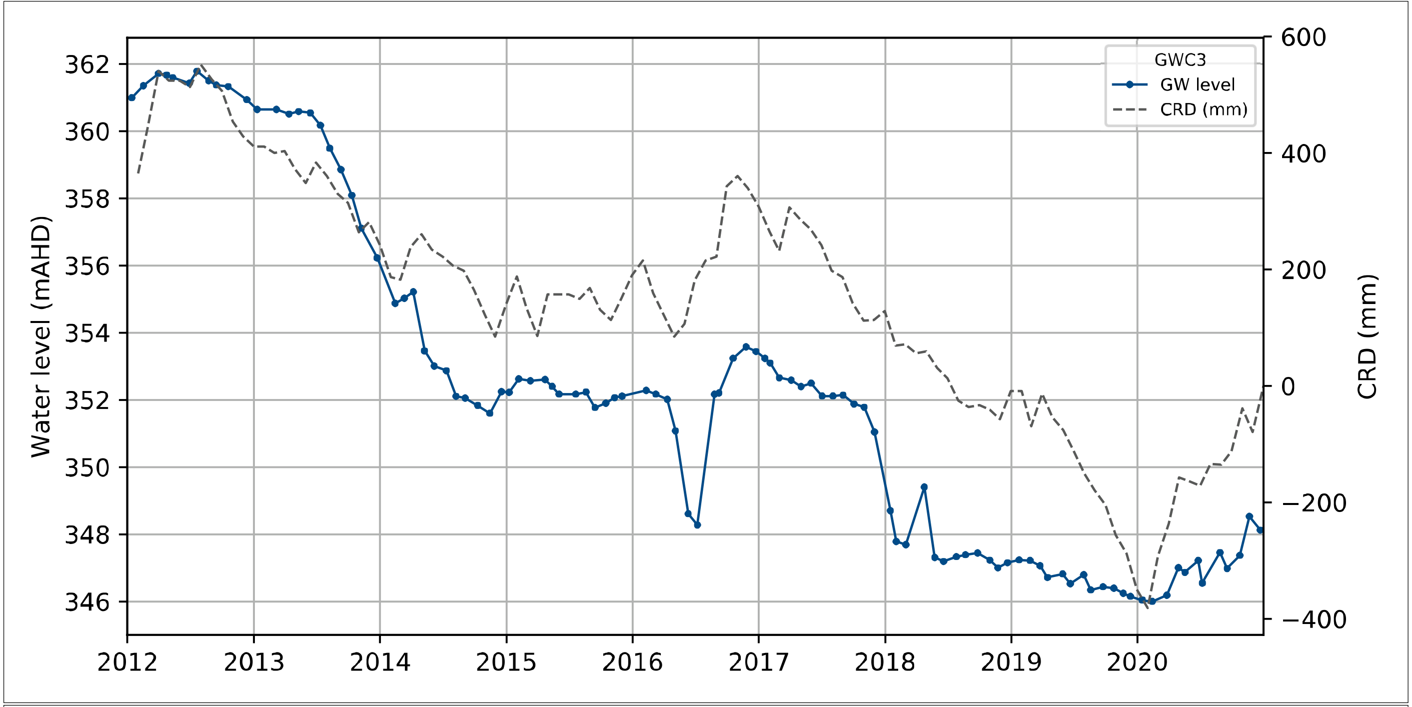

GWC1
Field Electrical Conductivity
EC trigger
CRD (mm)
Field Electrical Conductivity
CRD (mm)

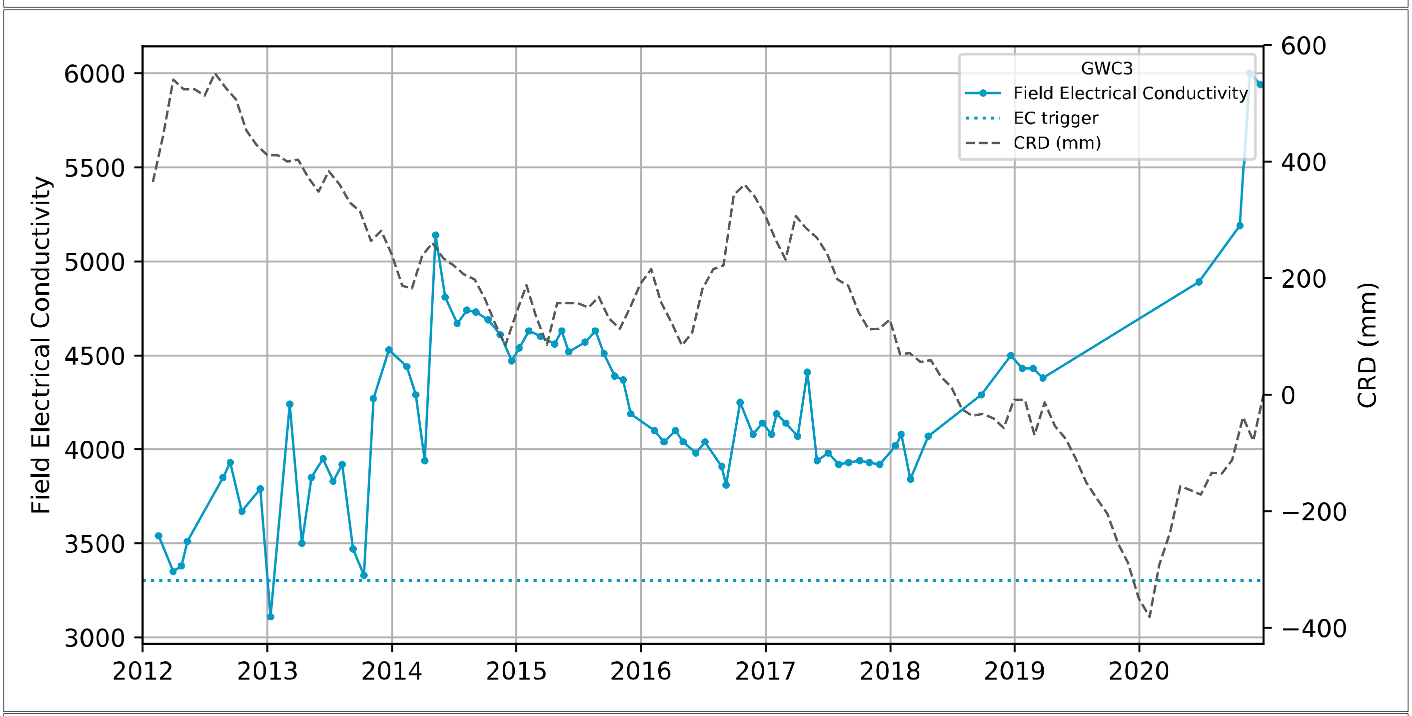

GWC1
Field pH
pH trigger
CRD (mm)
Field pH
CRD (mm)

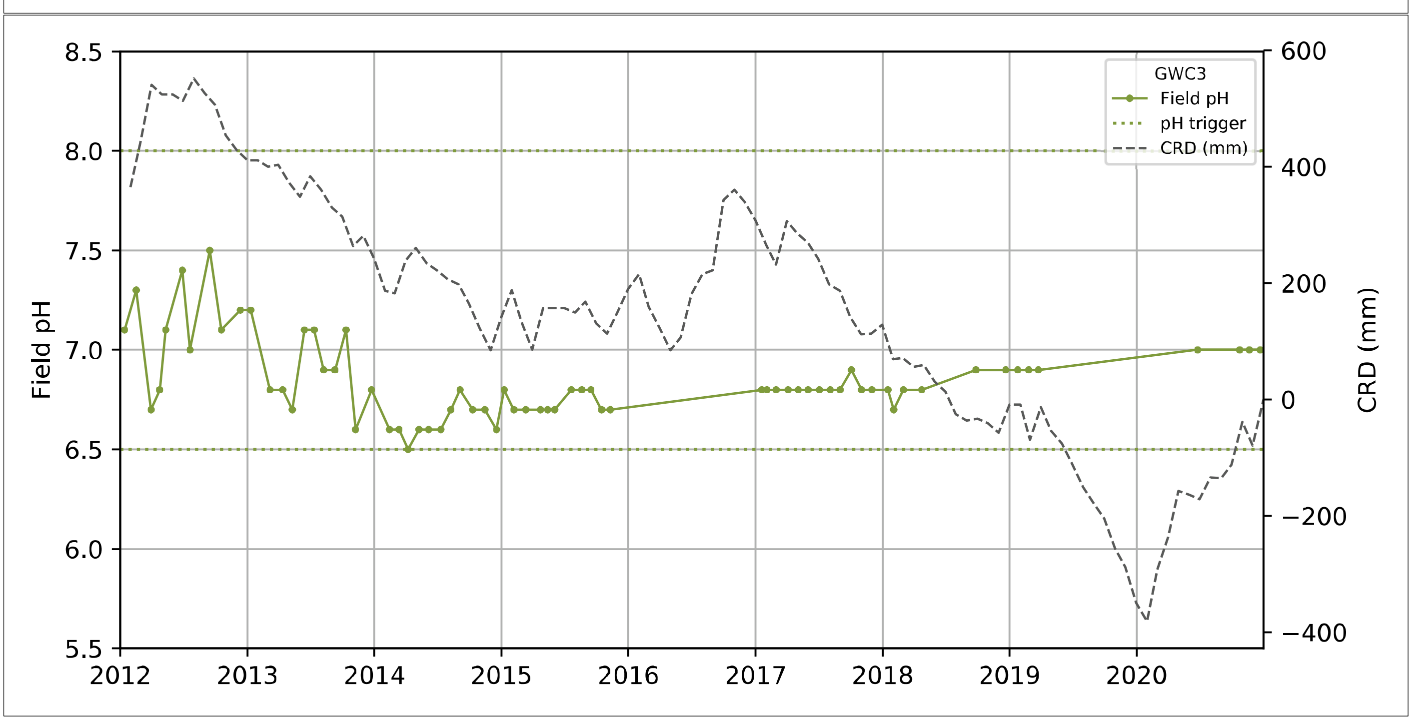

GWC2
GW level
CRD (mm)
Water level (mAHD)
CRD (mm)
360
355
350
345
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

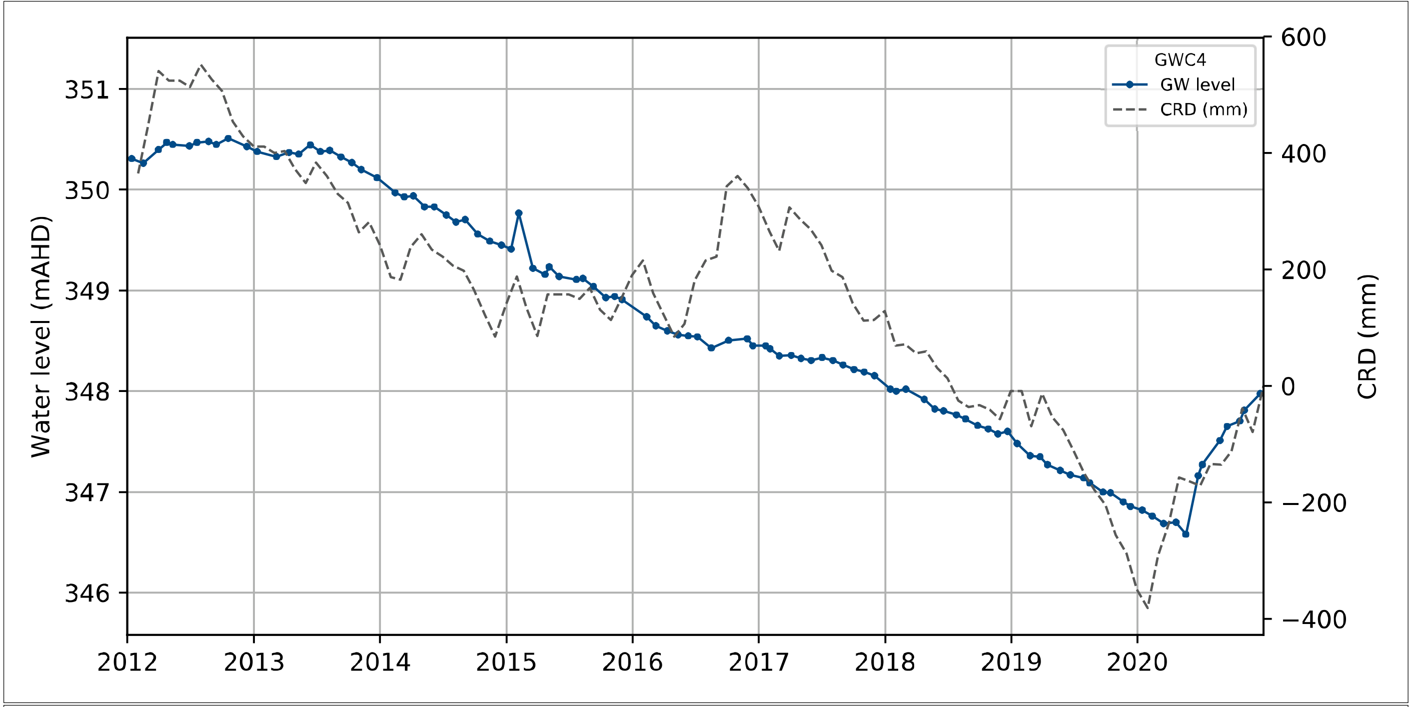

GWC2
Field Electrical Conductivity
EC trigger
CRD (mm)
Field Electrical Conductivity
CRD (mm)
1400
1300
1200
1100
1000
900
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020


GWC2
Field pH
pH trigger
CRD (mm)
Field pH
CRD (mm)
8.5
8.0
7.5
7.0
6.5
6.0
5.5
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

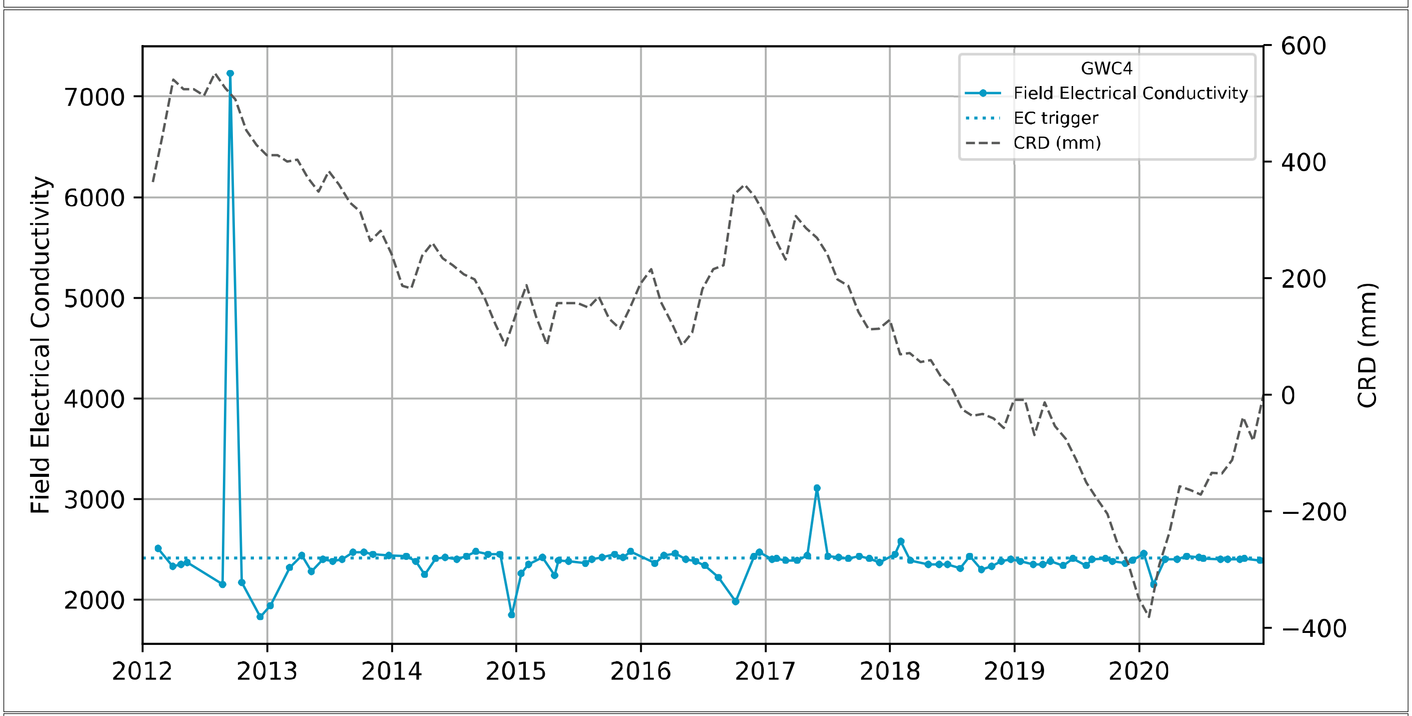

GWC3
GW level
CRD (mm)
Water level (mAHD)
CRD (mm)


GWC3
Field Electrical Conductivity
EC trigger
CRD (mm)
Field Electrical Conductivity
CRD (mm)

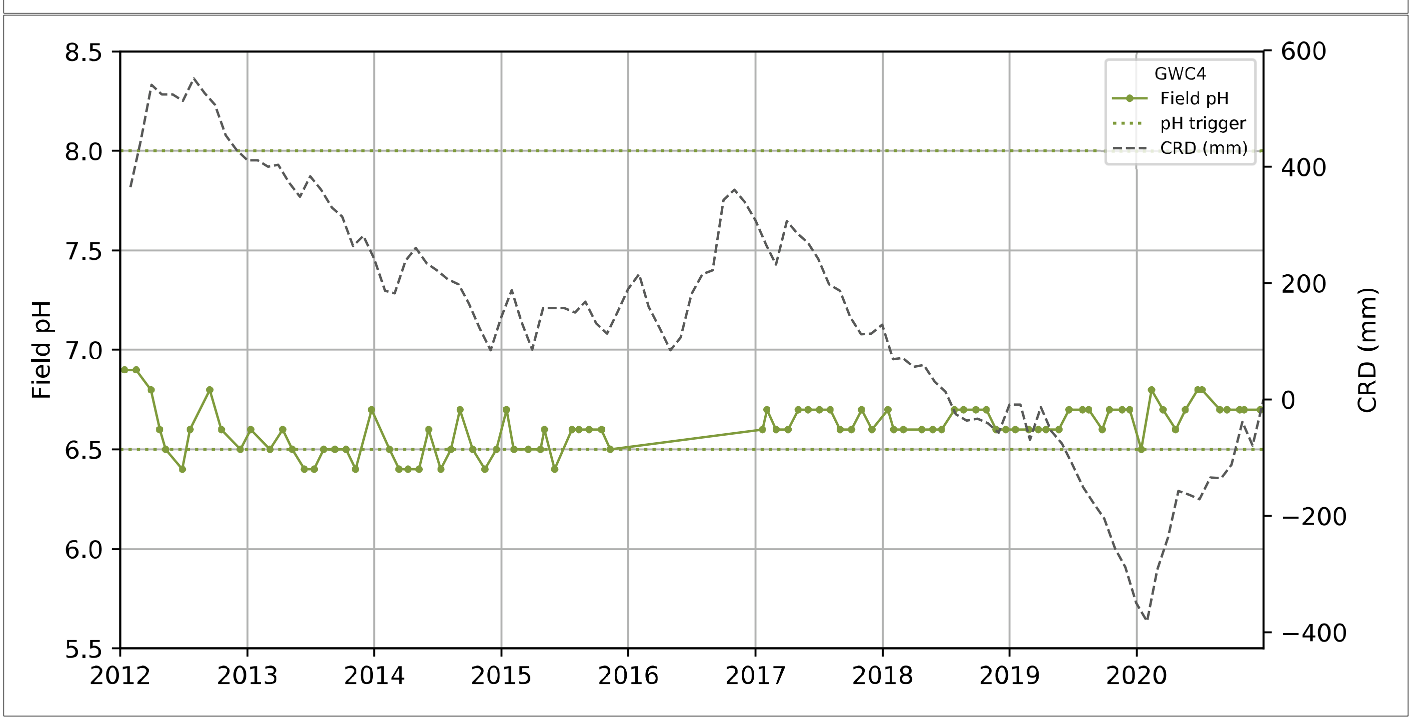

GWC3
Field pH
pH trigger
CRD (mm)
Field pH
CRD (mm)



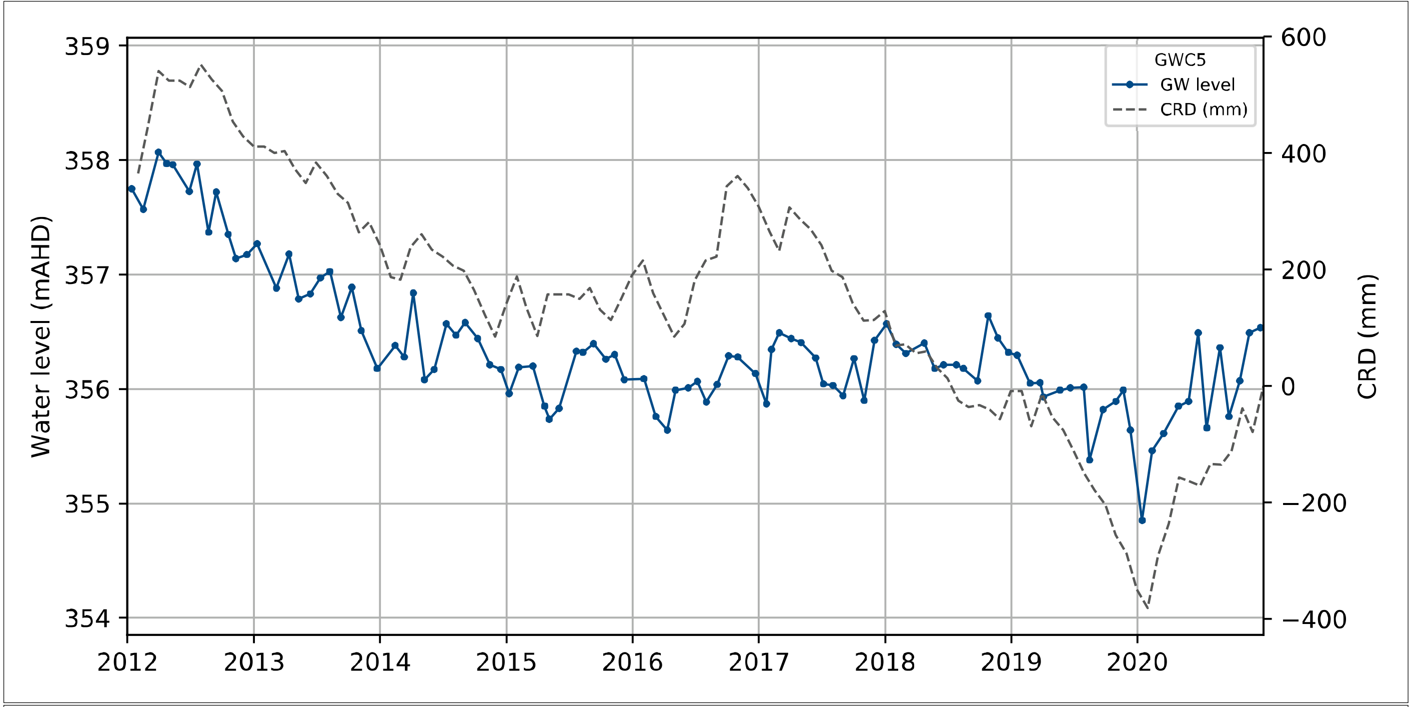
GWC4
GW level
CRD (mm)
Water level (mAHD)
CRD (mm)
2012
2013
2014
2015
2016
2017
2018
2019
2020

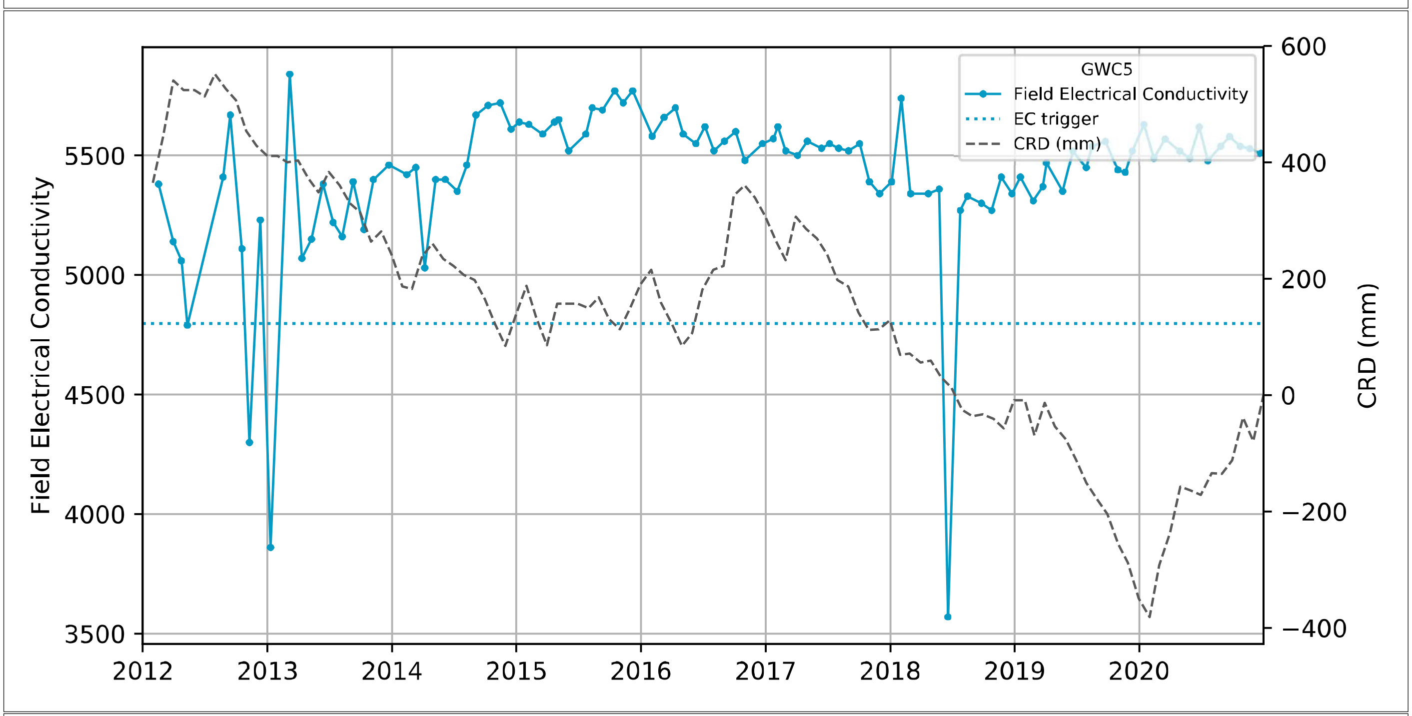


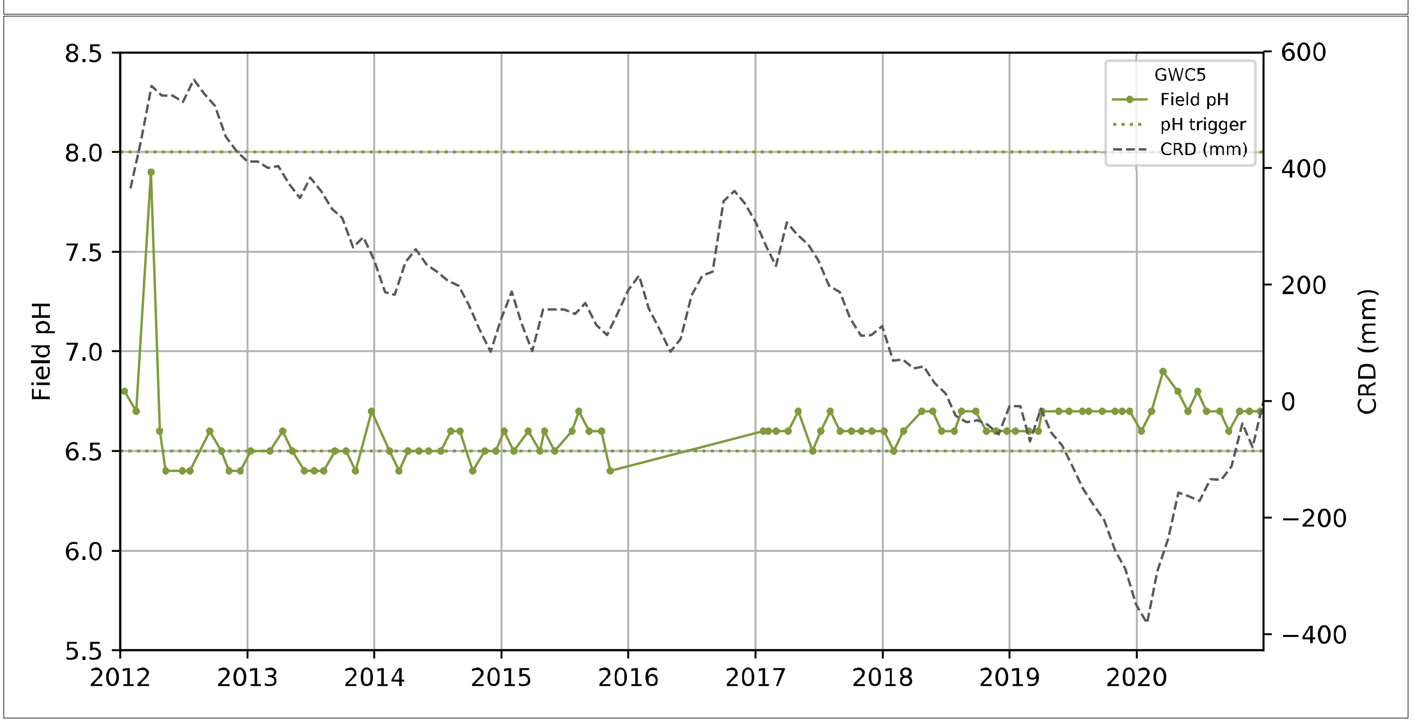
GWC4
Field Electrical Conductivity
EC trigger
CRD (mm)
Field Electrical Conductivity
CRD (mm)

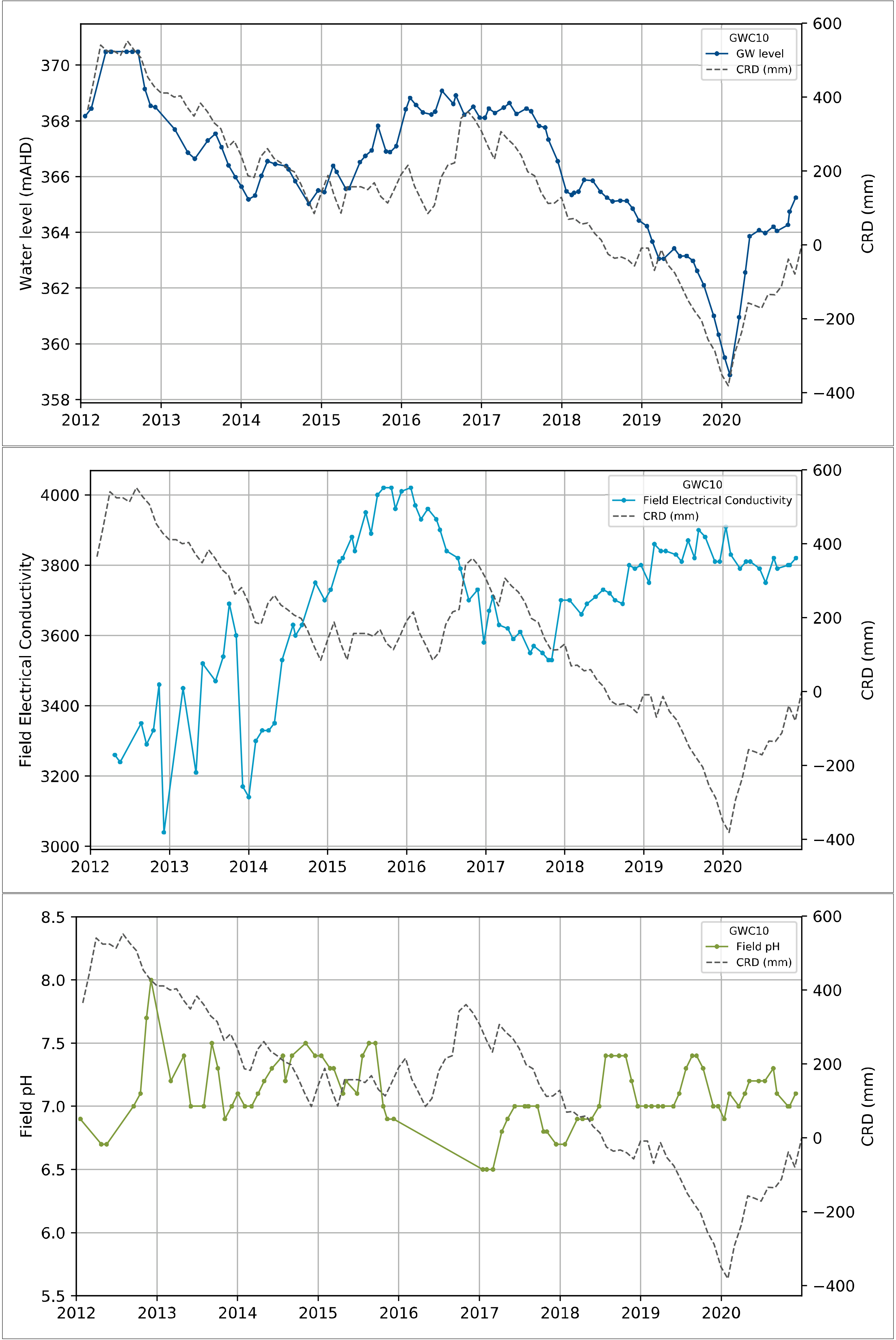


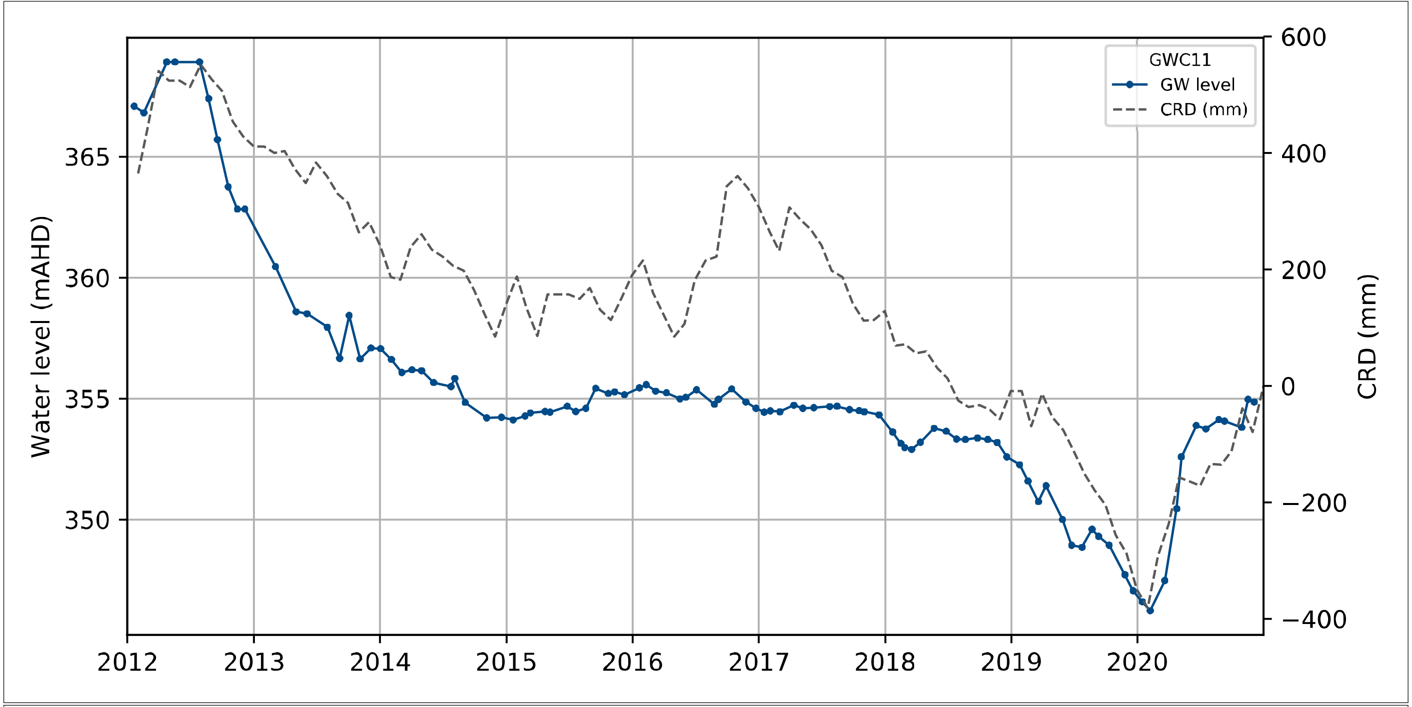
GWC4
Field pH
pH trigger
CRD (mm)
Field pH
CRD (mm)

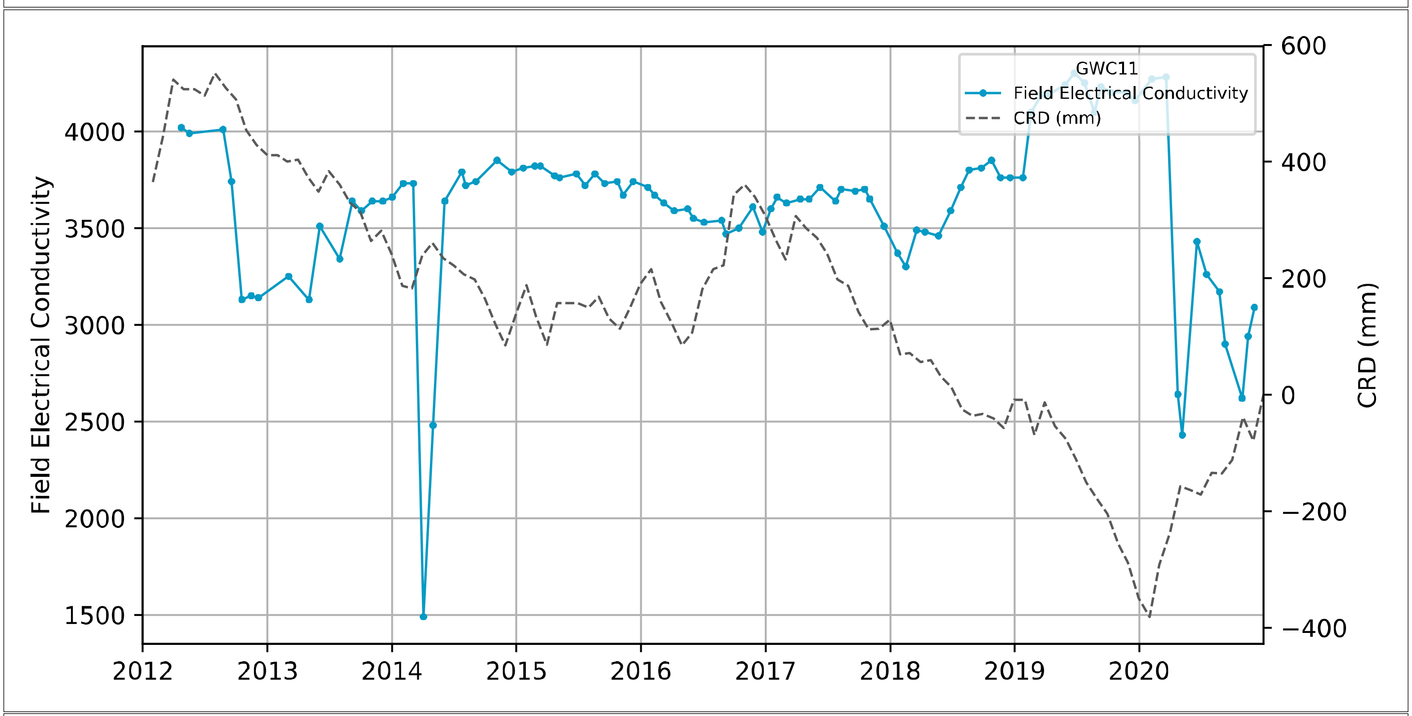

GWC5
GW level
CRD (mm)
Water level (mAHD)
CRD (mm)
359
358
357
356
355
354
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

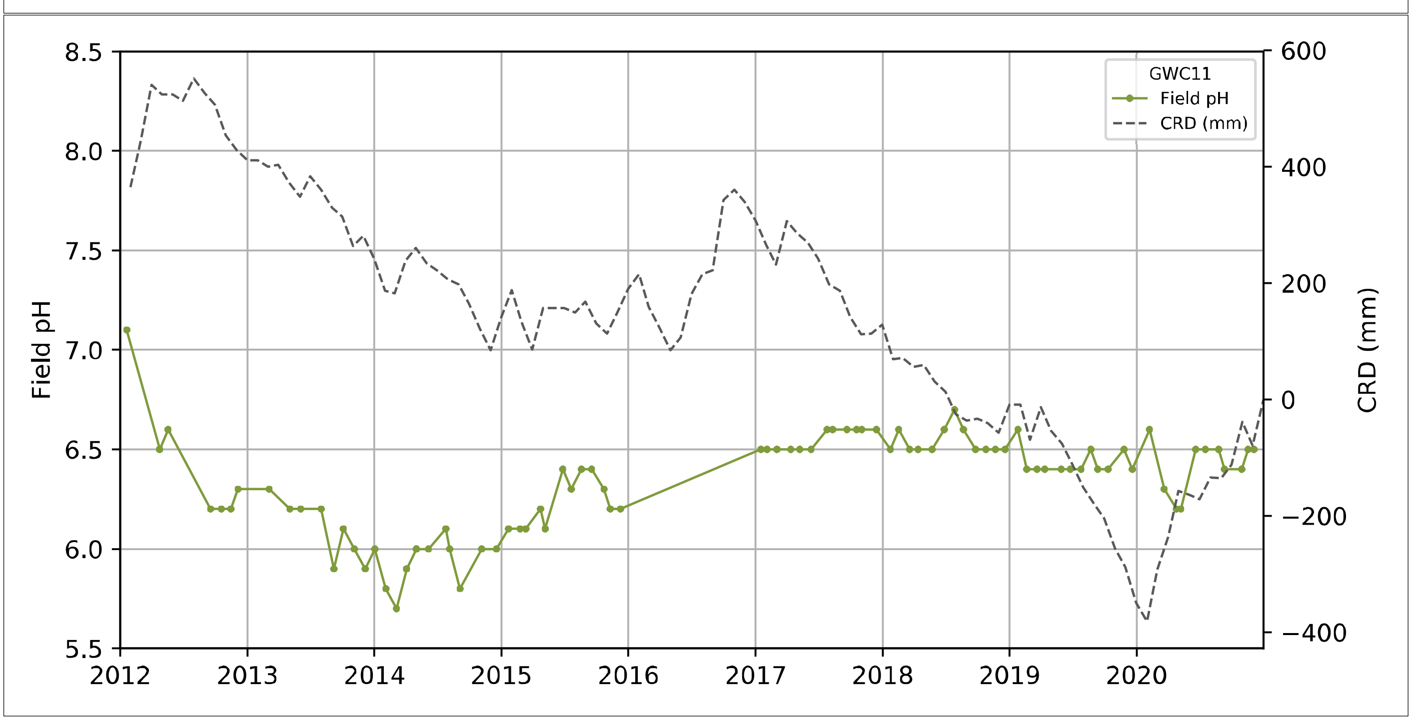

GWC5
Field Electrical Conductivity
EC trigger
CRD (mm)
Field Electrical Conductivity
CRD (mm)
5500
5000
4500
4000
3500
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

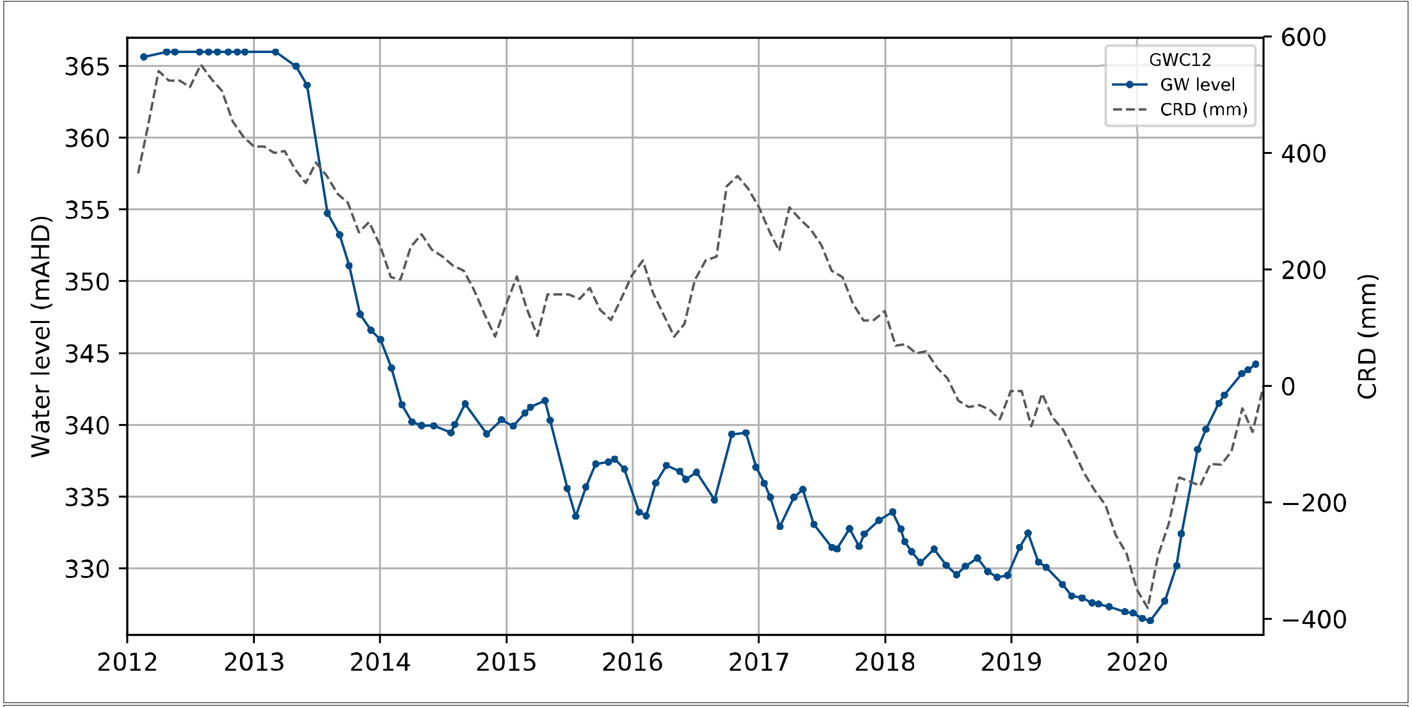

GWC5
Field pH
pH trigger
CRD (mm)
Field pH
CRD (mm)
8.5
8.0
7.5
7.0
6.5
6.0
5.5
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020


GWC10
GW level
CRD (mm)
Water level (mAHD)
CRD (mm)
Field Electrical Conductivity
Field pH
2012
2013
2014
2015
2016
2017
2018
2019
2020

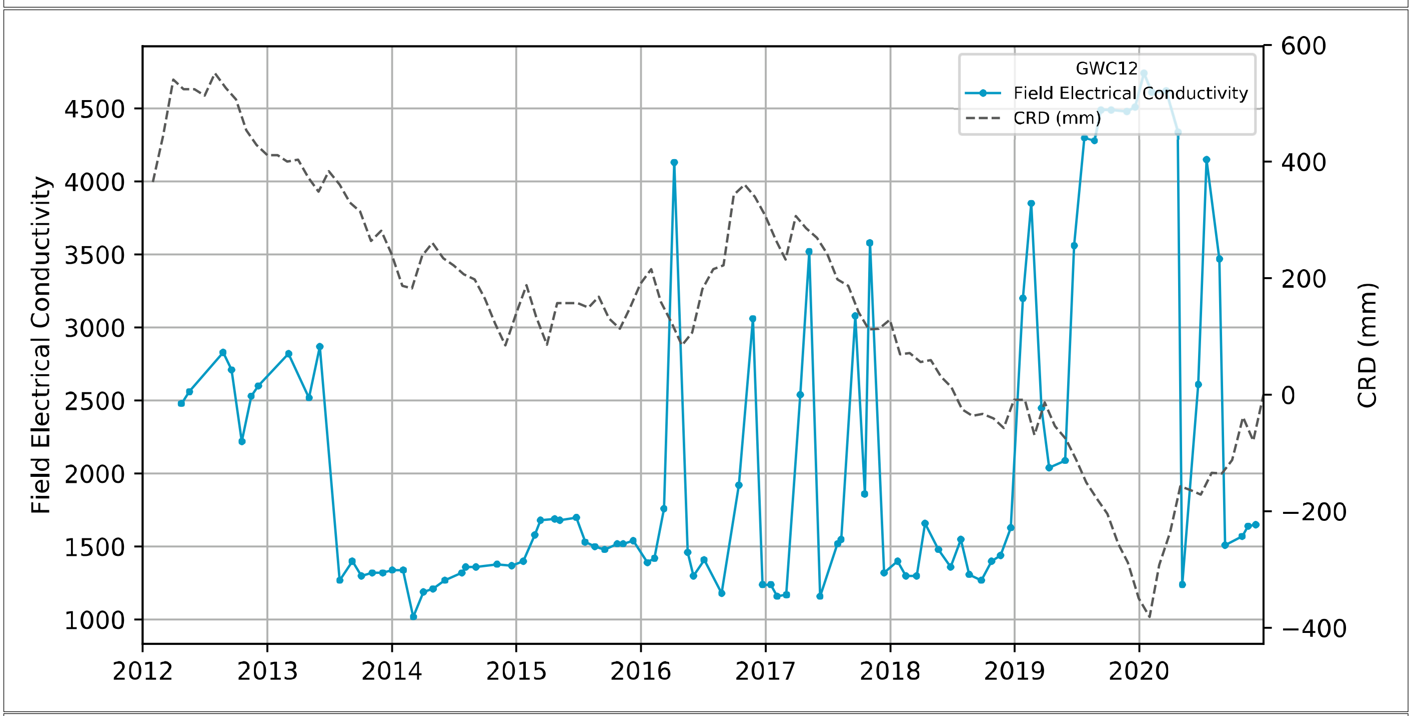

GWC11
GW level
CRD (mm)
Water level (mAHD)
CRD (mm)
365
360
355
350
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020


GWC11
Field Electrical Conductivity
CRD (mm)
Field Electrical Conductivity
CRD (mm)
4000
3500
3000
2500
2000
1500
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

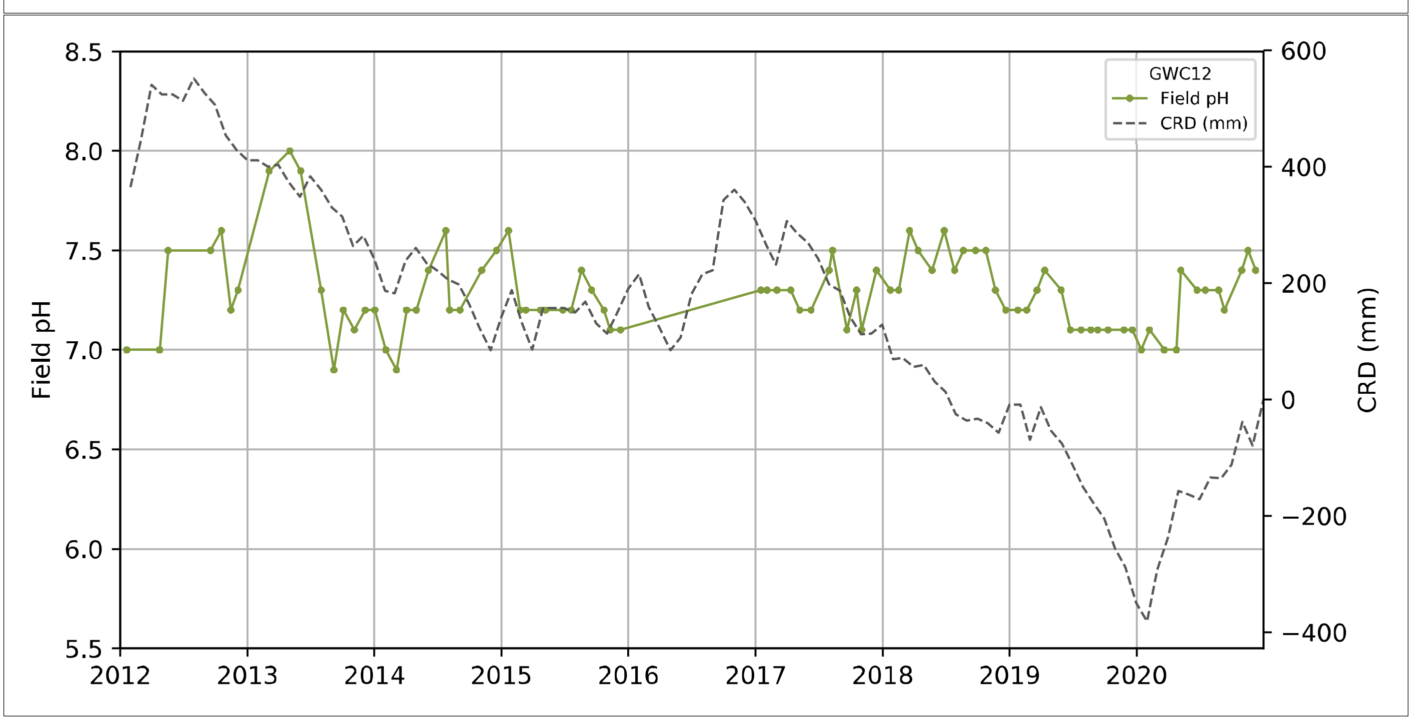

GWC11
Field pH
CRD (mm)
Field pH
CRD (mm)
8.5
8.0
7.5
7.0
6.5
6.0
5.5
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020



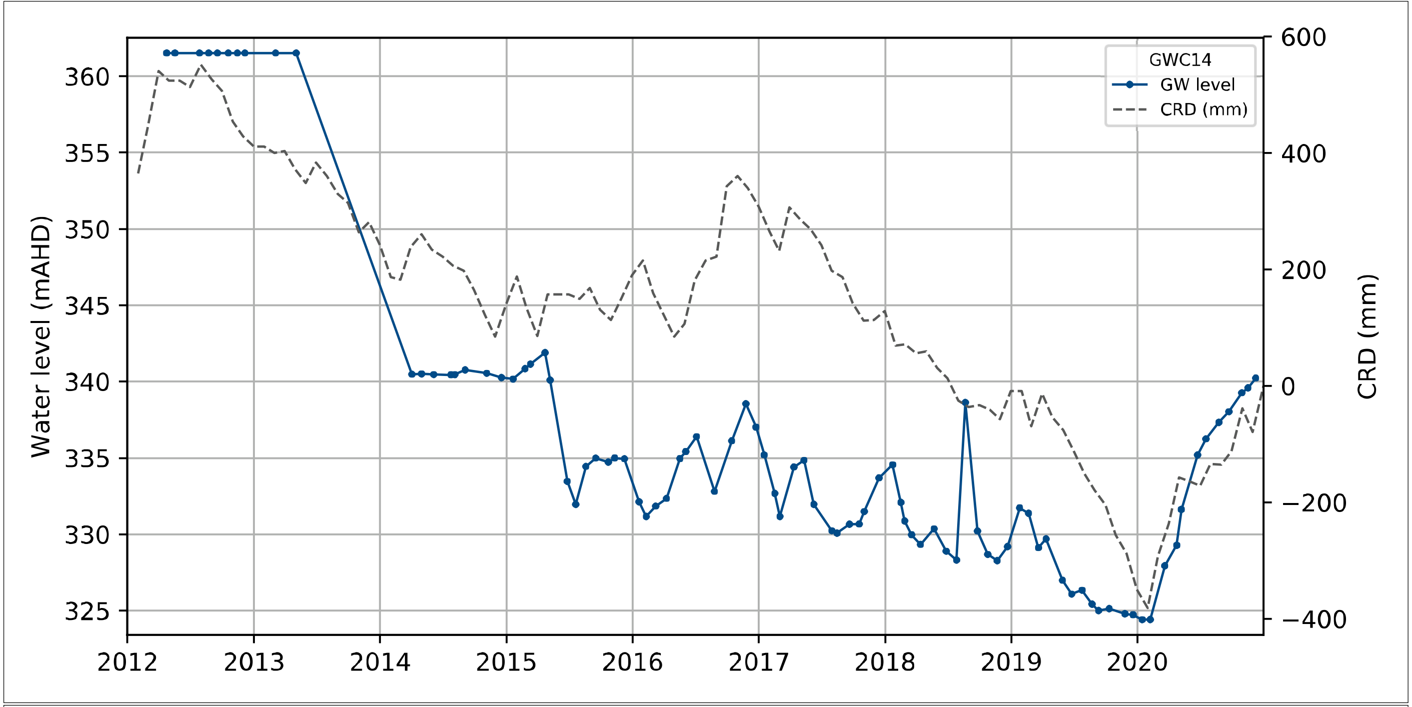
GWC12
GW level
CRD (mm)
Water level (mAHD)
CRD (mm)
365
360
355
350
345
340
335
330
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

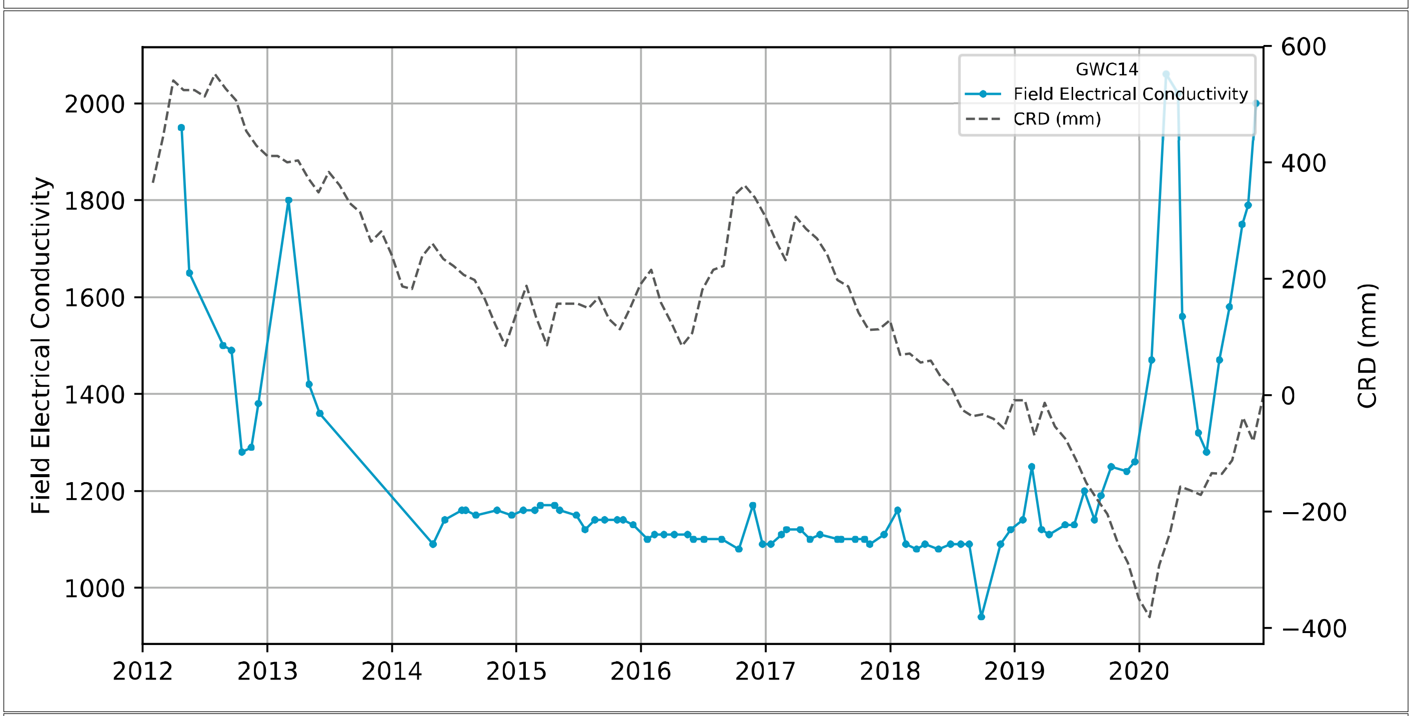


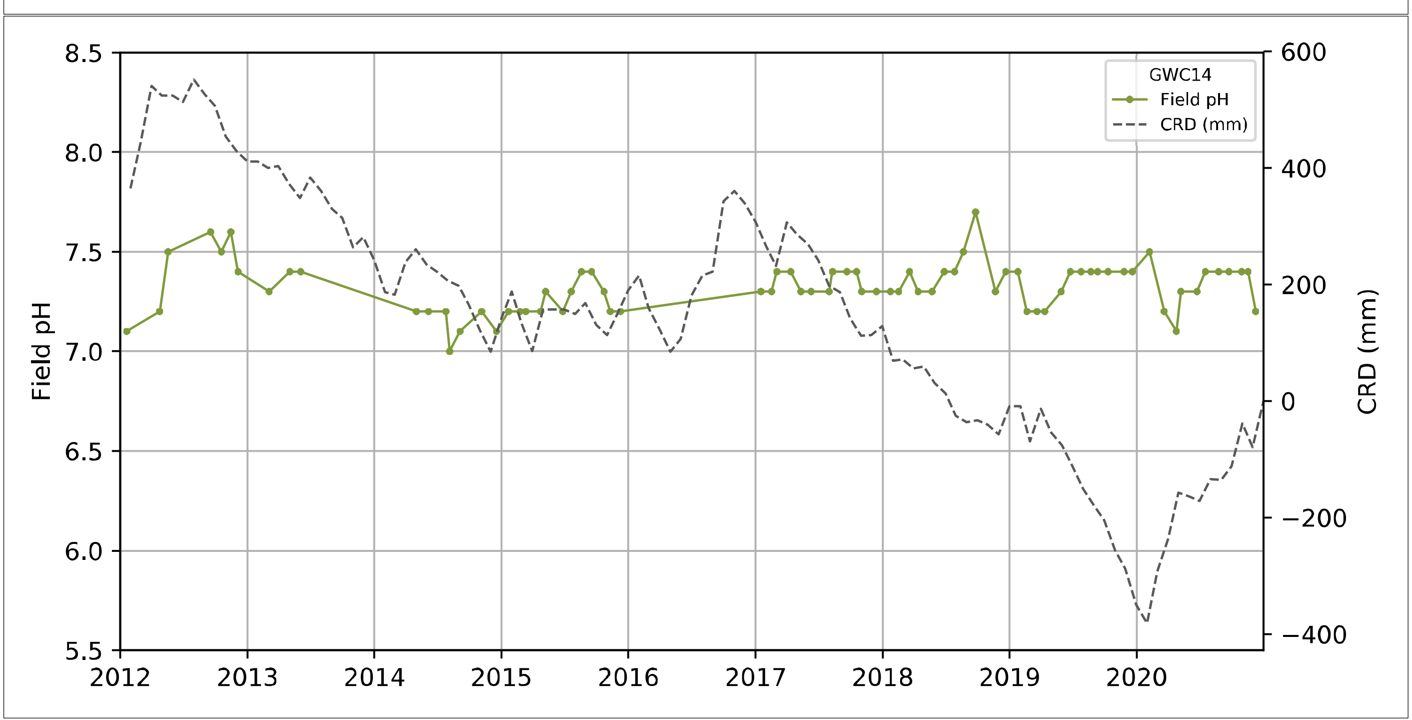
GWC12
Field Electrical Conductivity
CRD (mm)
Field Electrical Conductivity
CRD (mm)
4500
4000
3500
3000
2500
2000
1500
1000
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

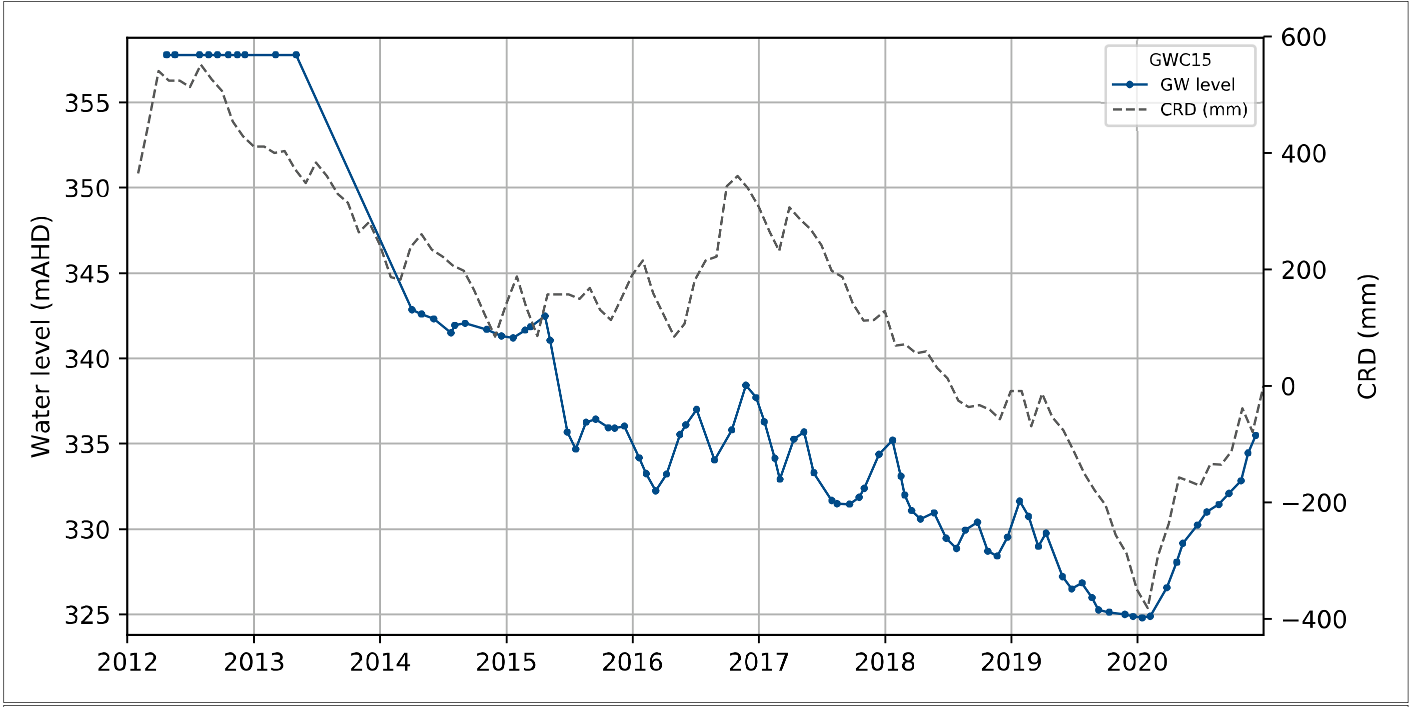


GWC12
Field pH
CRD (mm)
Field pH
CRD (mm)
8.5
8.0
7.5
7.0
6.5
6.0
5.5
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

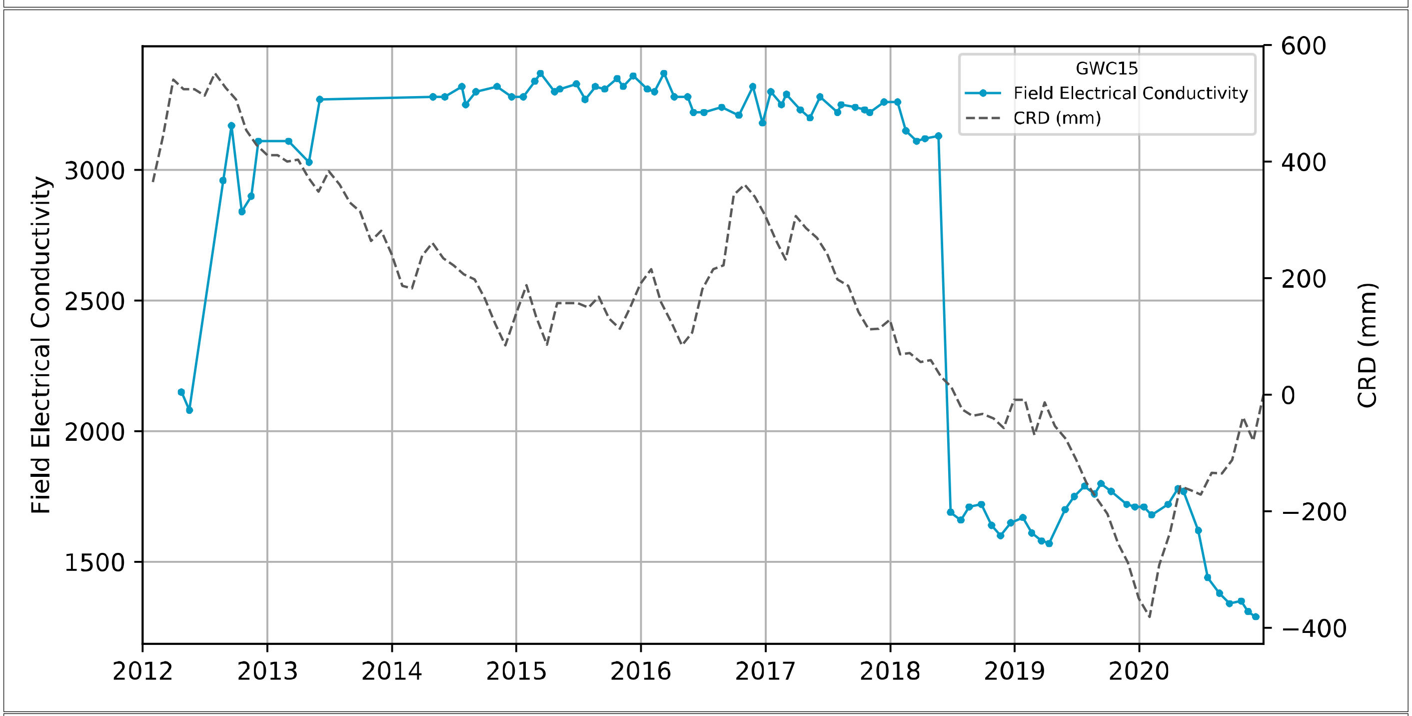

GWC14
GW level
CRD (mm)
Water level (mAHD)
CRD (mm)
360
355
350
345
340
335
330
325
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020


GWC14
Field Electrical Conductivity
CRD (mm)
Field Electrical Conductivity
CRD (mm)
2000
1800
1600
1400
1200
1000
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

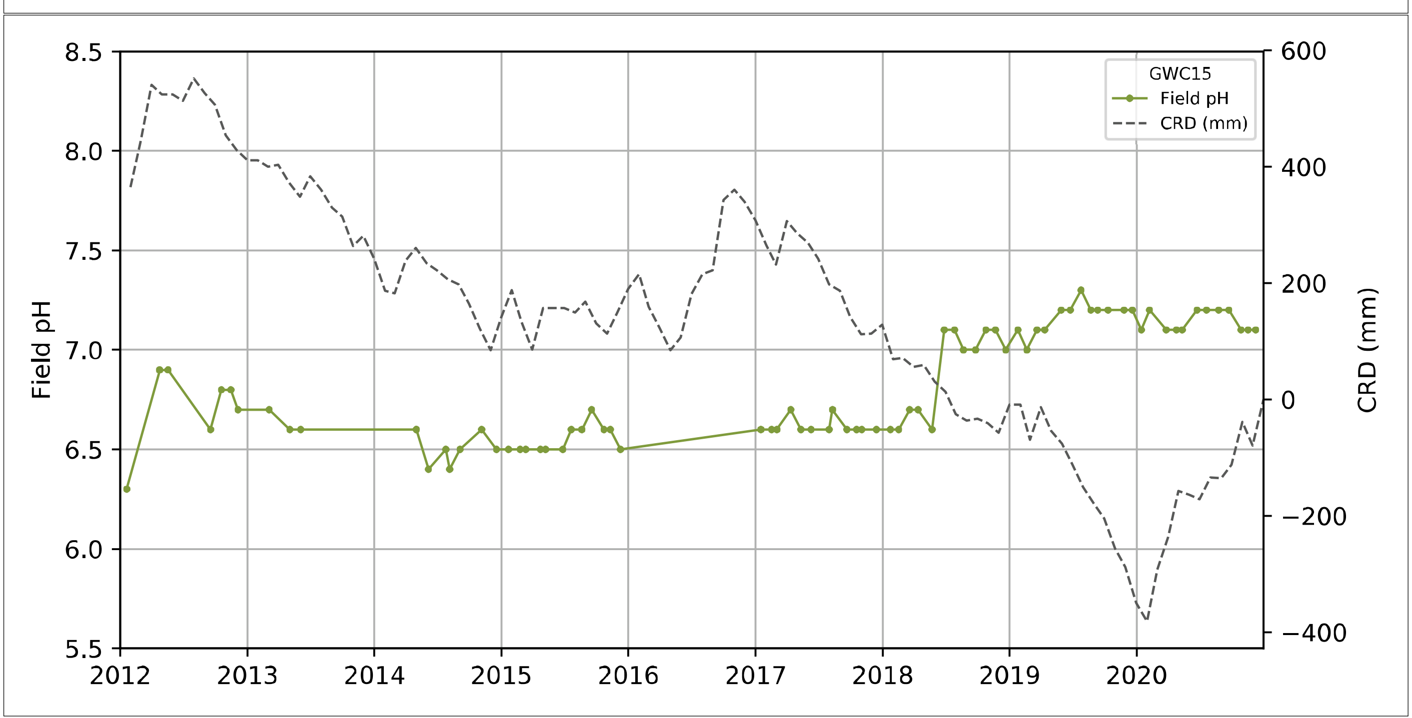

GWC14
Field pH
CRD (mm)
Field pH
CRD (mm)
8.5
8.0
7.5
7.0
6.5
6.0
5.5
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020



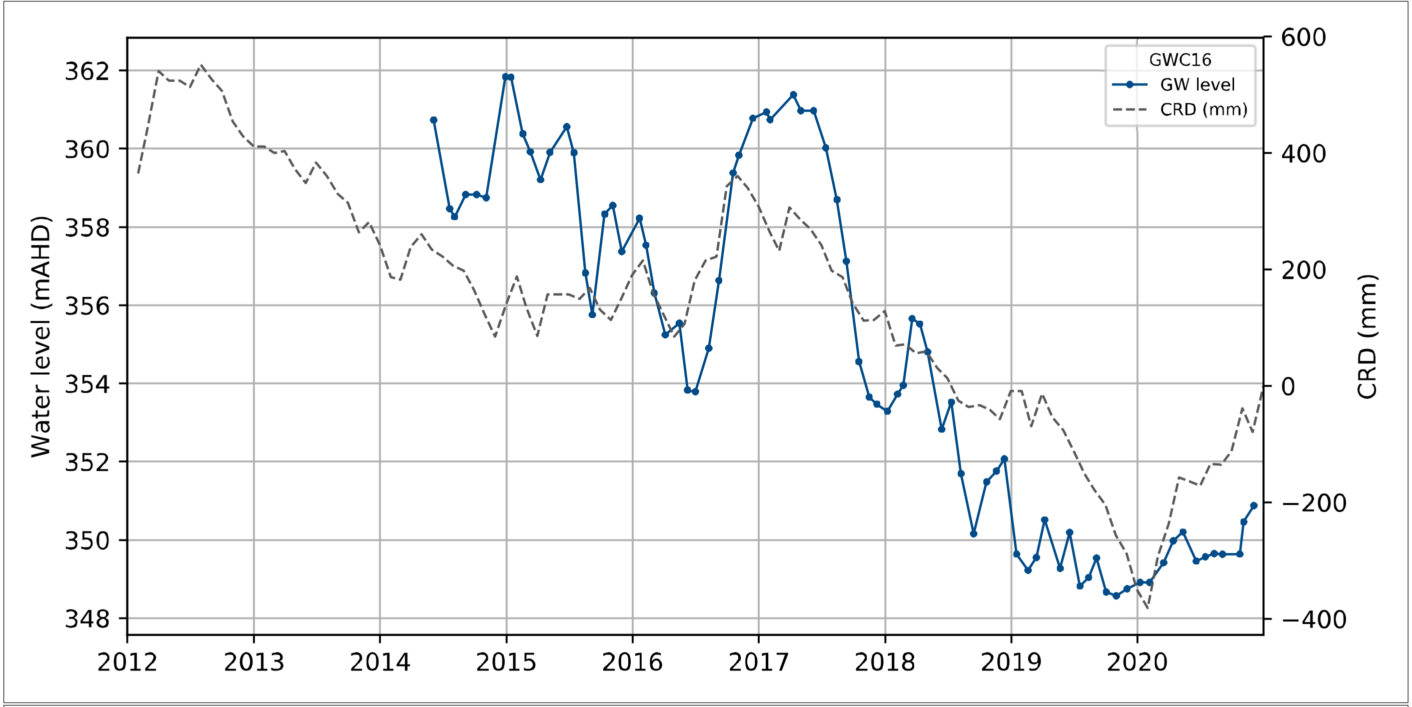
GWC15
GW level
CRD (mm)
Water level (mAHD)
CRD (mm)
325
330
335
340
345
350
355
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

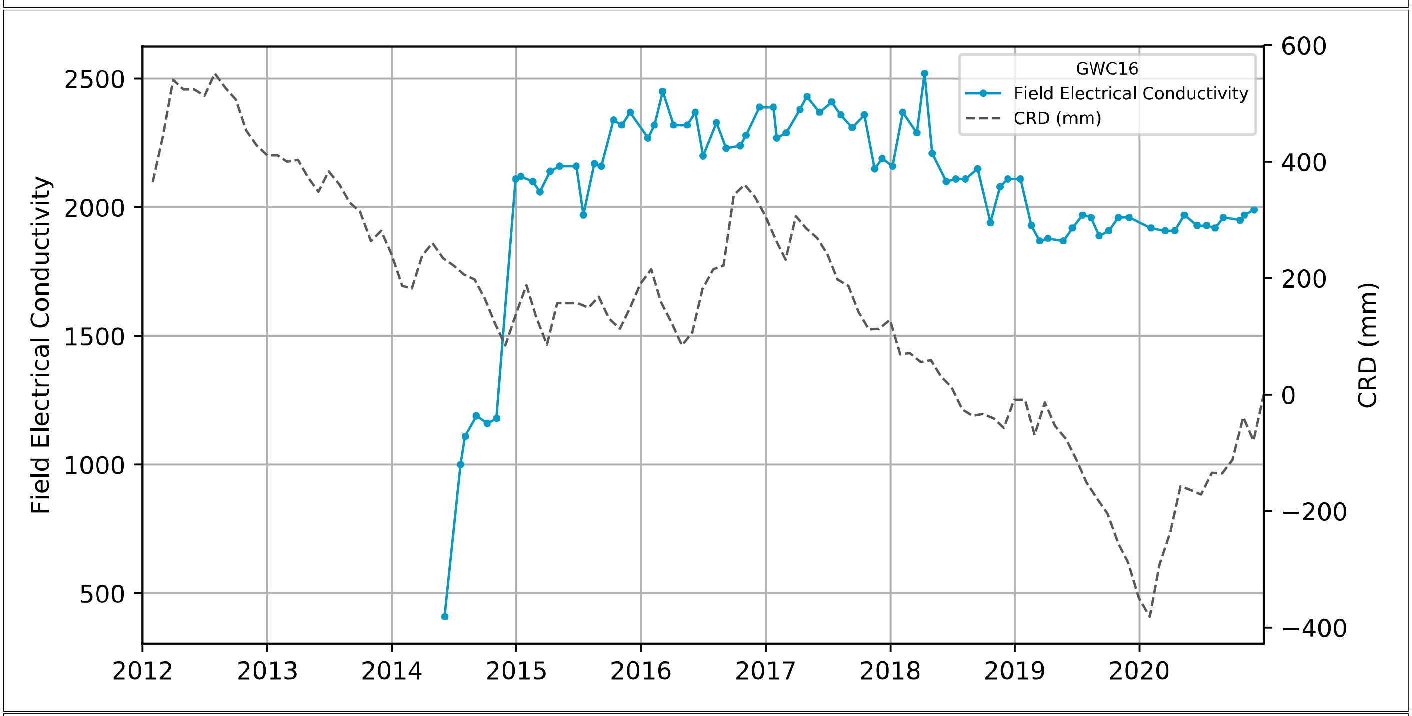


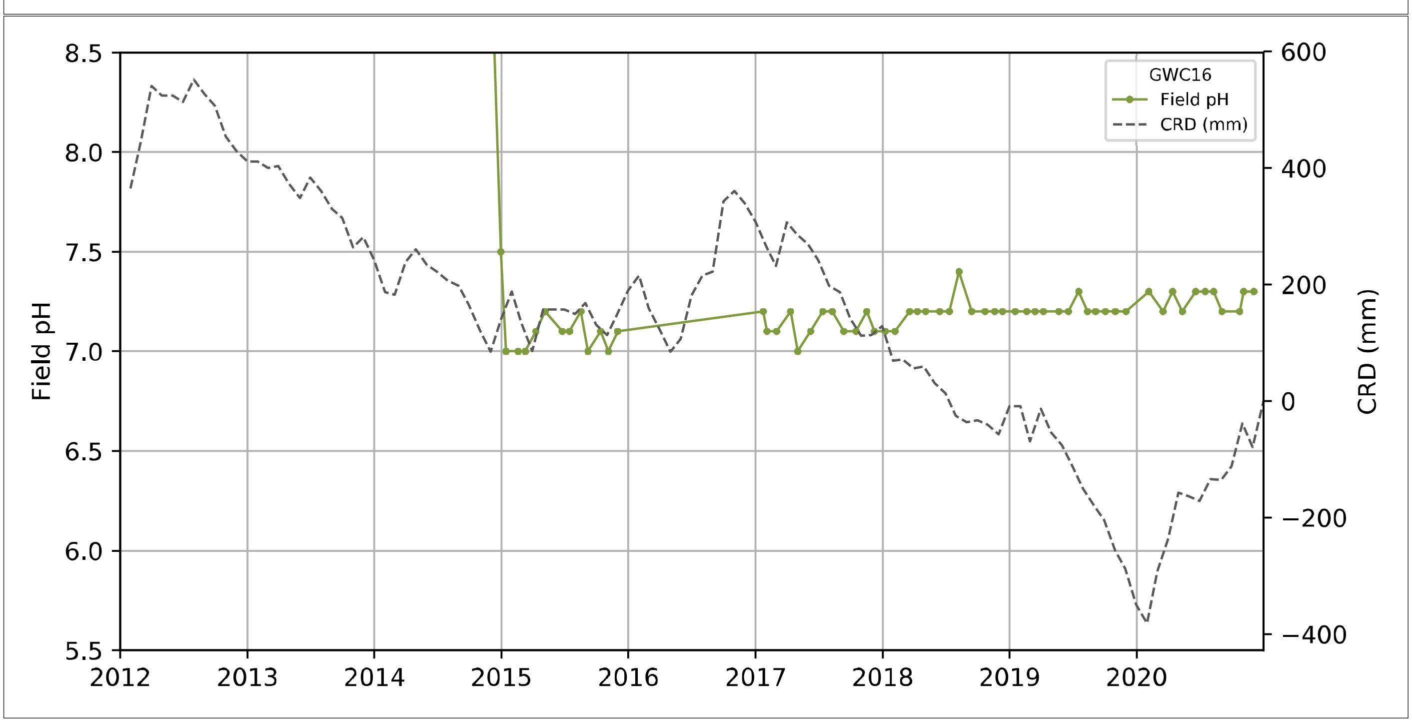
GWC15
Field Electrical Conductivity
CRD (mm)
Field Electrical Conductivity
CRD (mm)
1500
2000
2500
3000
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

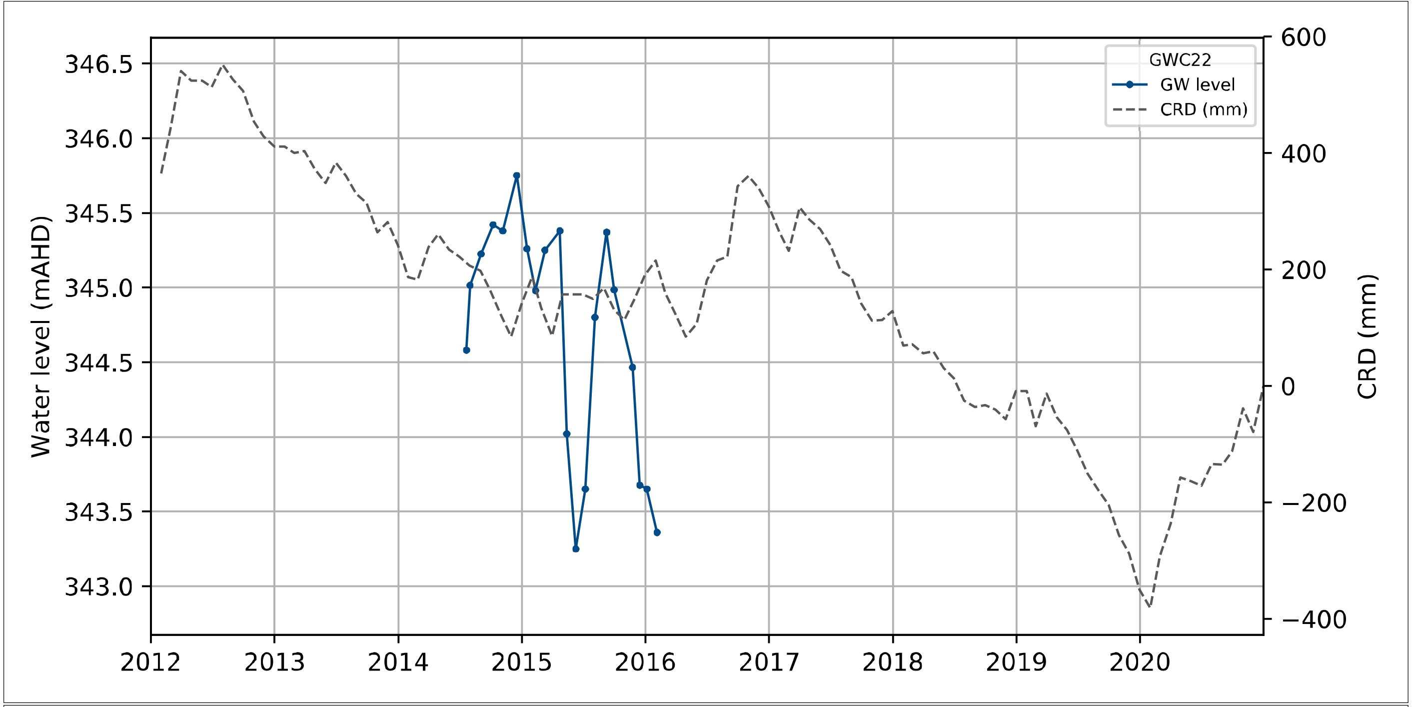


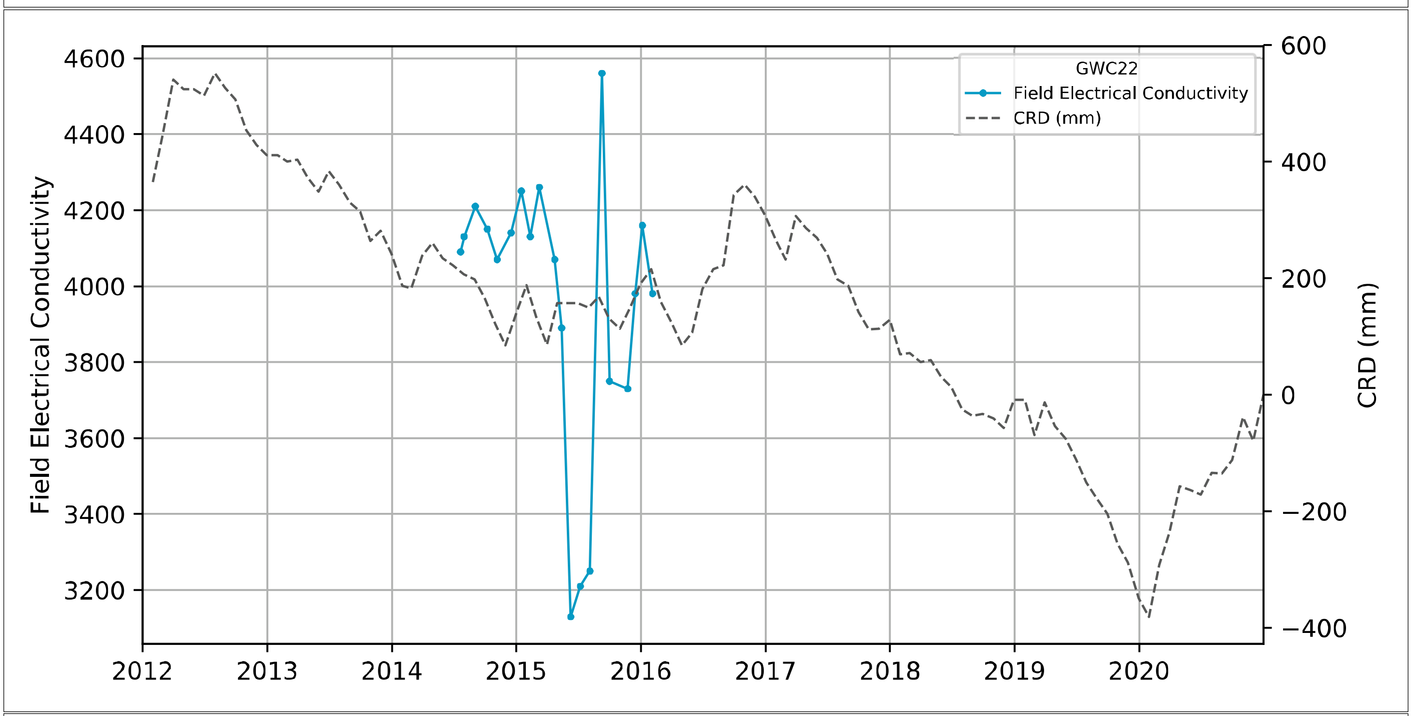
GWC15
Field pH
CRD (mm)
Field pH
CRD (mm)
5.5
6.0
6.5
7.0
7.5
8.0
8.5
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

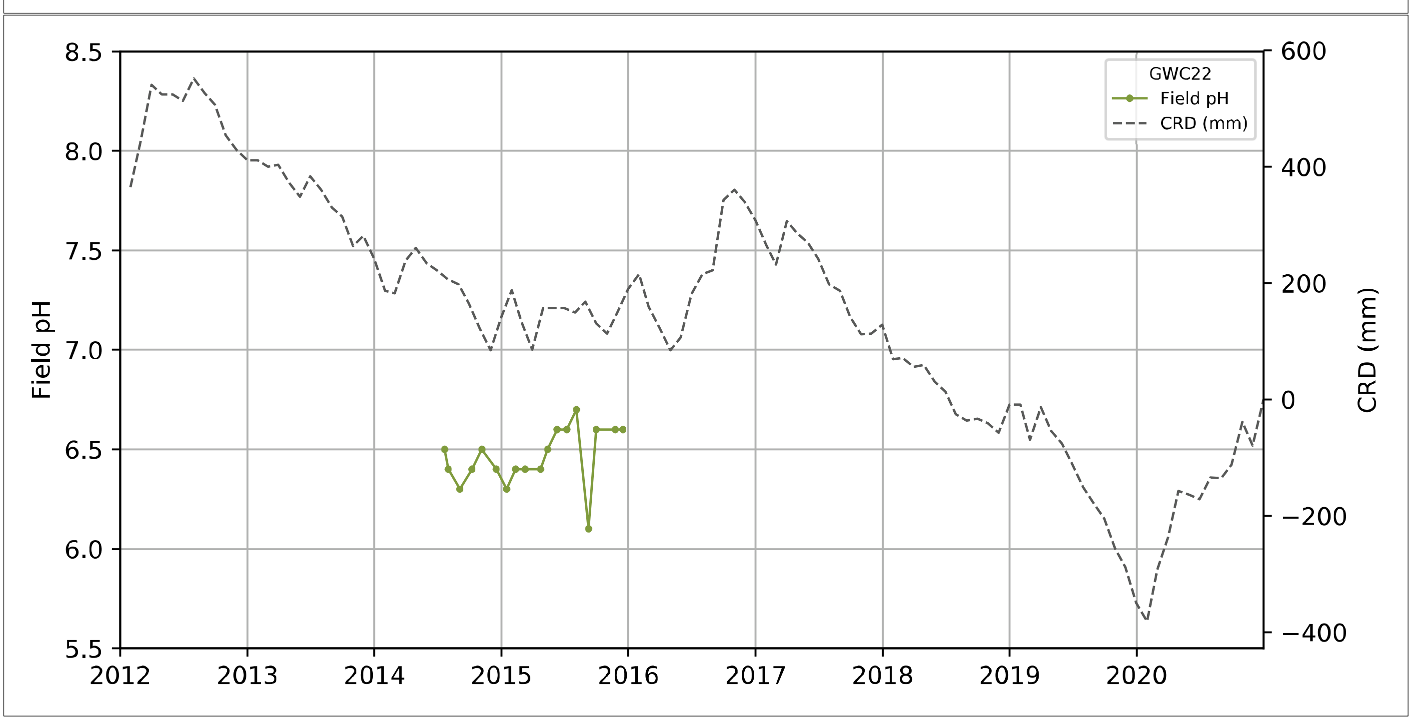

GWC16
GW level
CRD (mm)
Water level (mAHD)
CRD (mm)
362
360
358
356
354
352
350
348
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

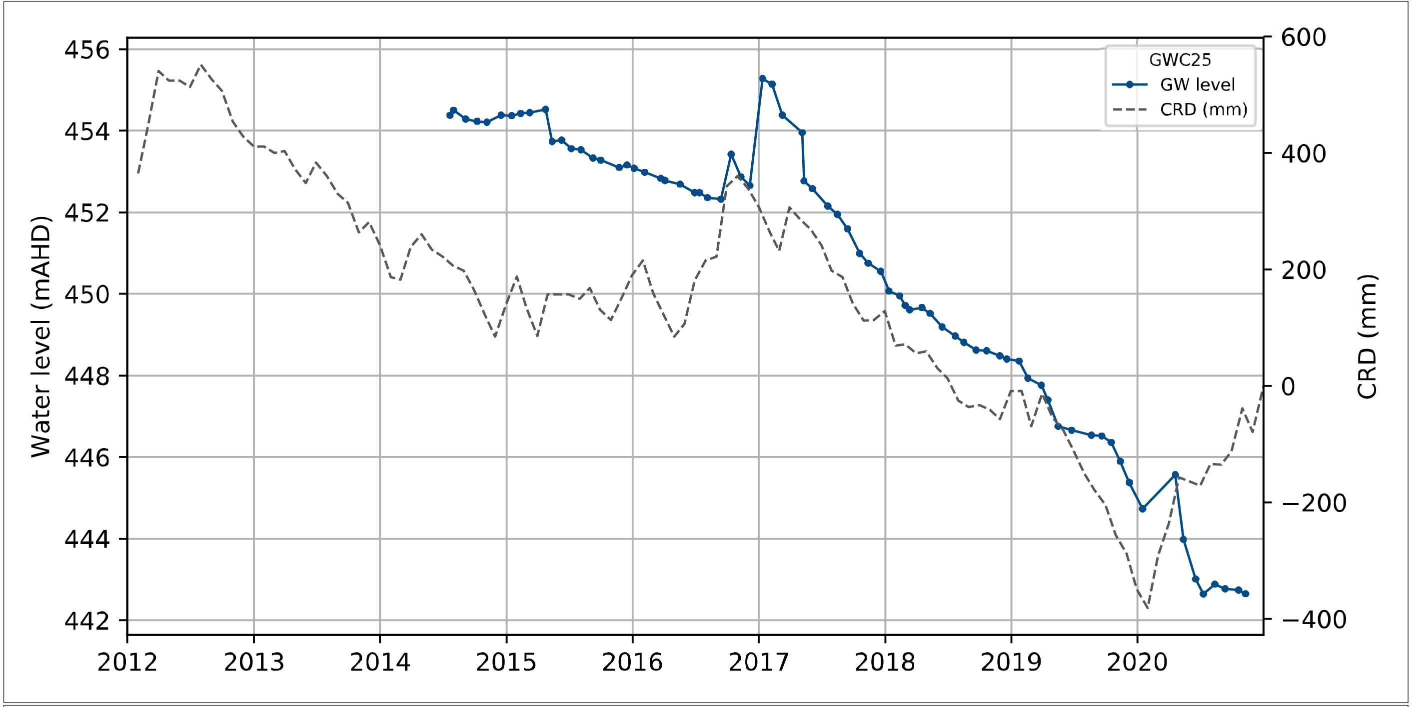

GWC16
Field Electrical Conductivity
CRD (mm)
Field Electrical Conductivity
CRD (mm)
2500
2000
1500
1000
500
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020


GWC16
Field pH
CRD (mm)
Field pH
CRD (mm)
8.5
8.0
7.5
7.0
6.5
6.0
5.5
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

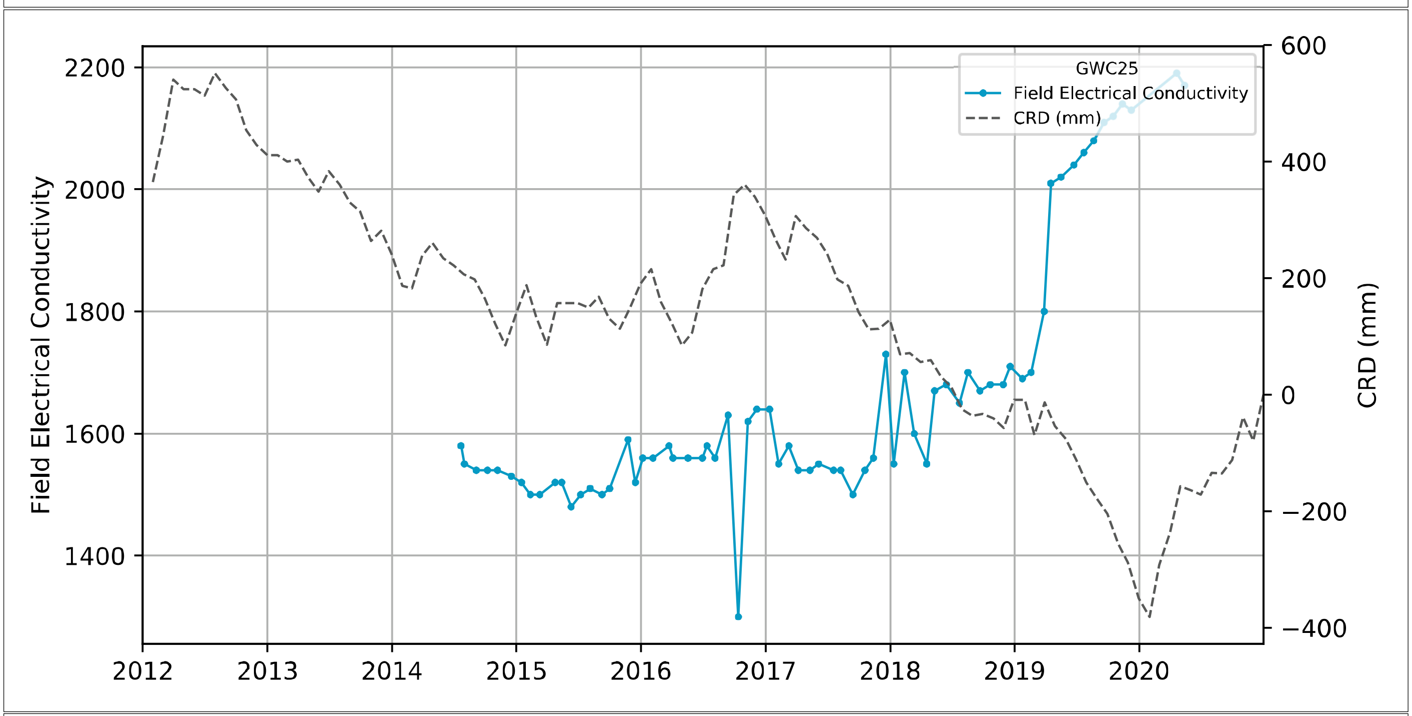

GWC22
GW level
CRD (mm)
Water level (mAHD)
CRD (mm)


GWC22
Field Electrical Conductivity
CRD (mm)
Field Electrical Conductivity
CRD (mm)

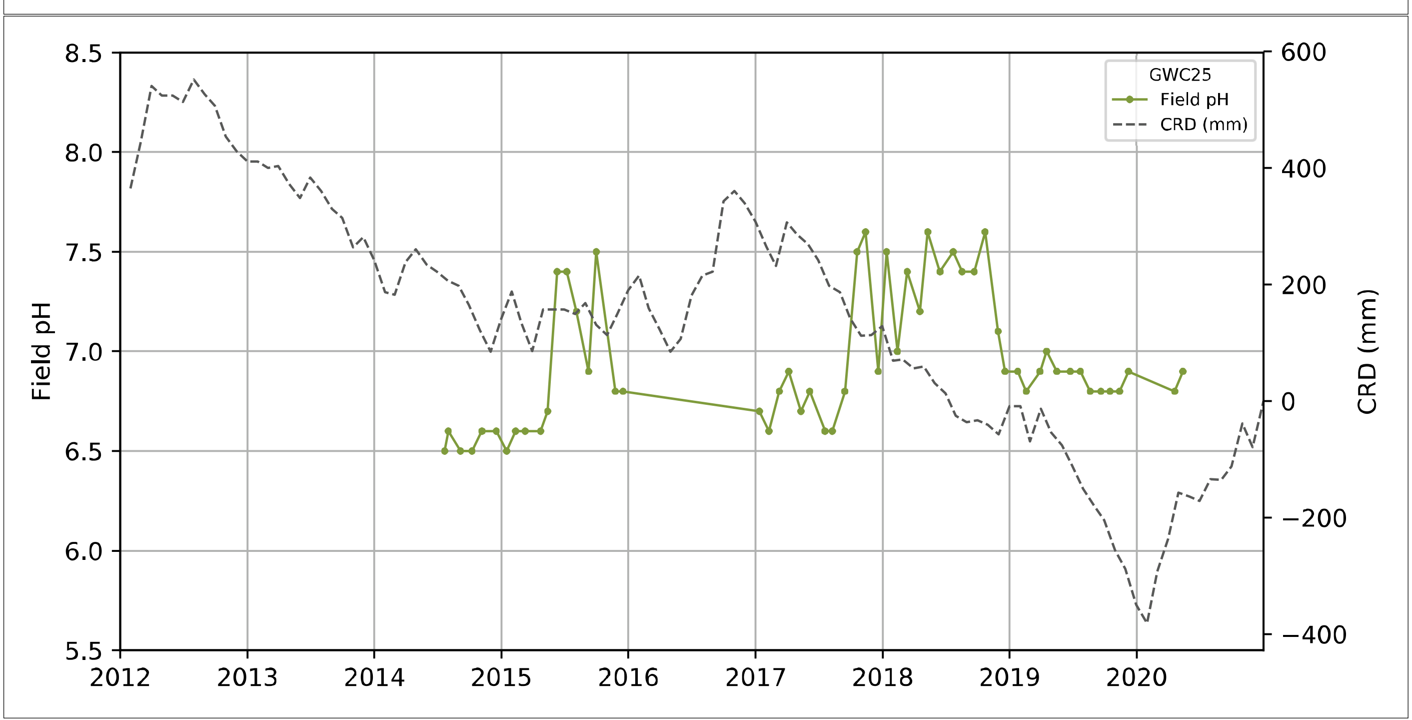

GWC22
Field pH
CRD (mm)
Field pH
CRD (mm)



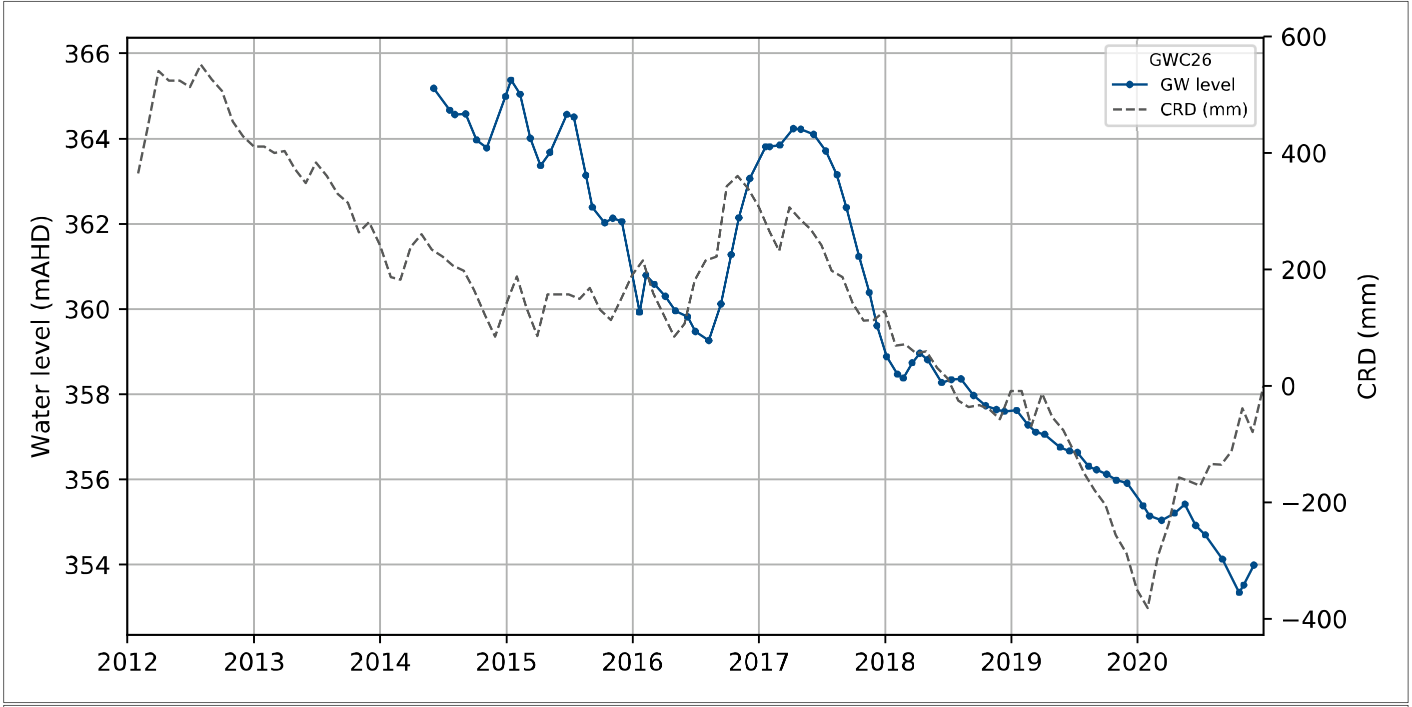
Water level (mAHD)
CRD (mm)
GWC25
GW level
CRD (mm)
456
454
452
450
448
446
444
442
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

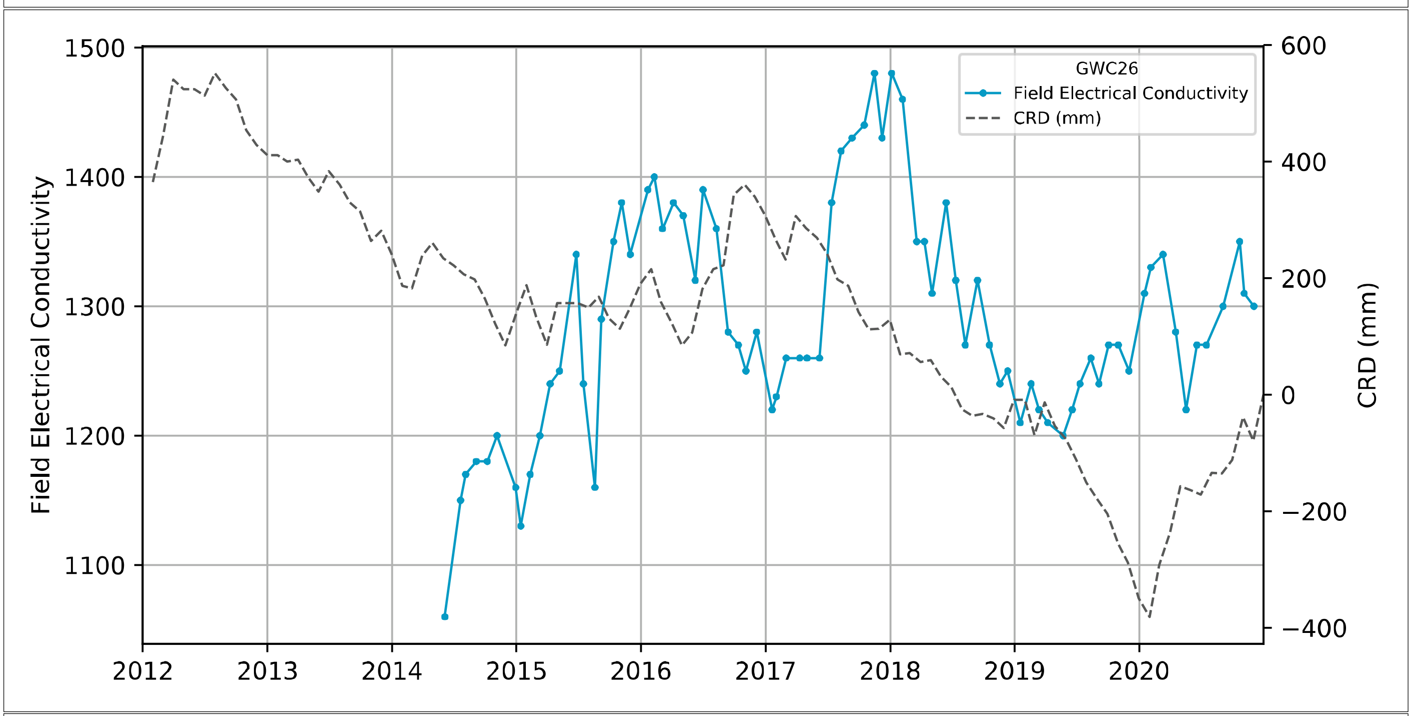


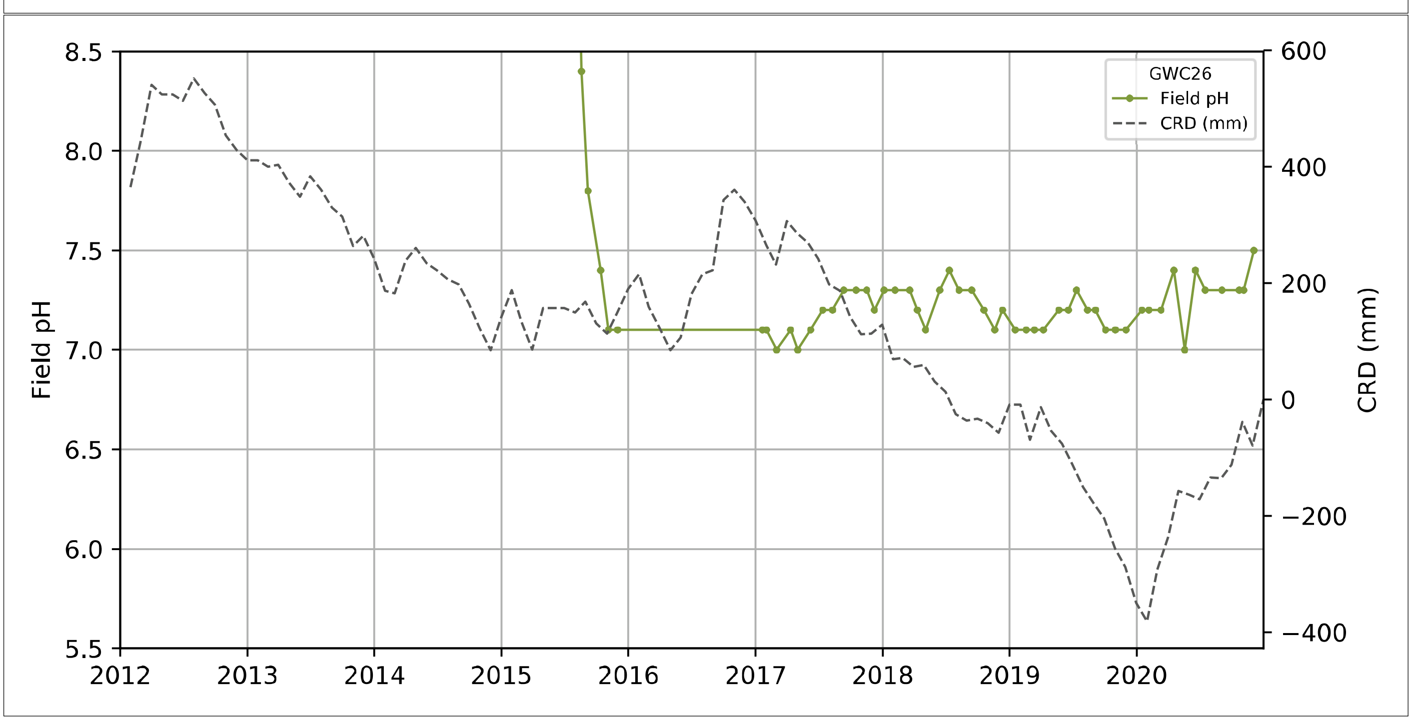
Field Electrical Conductivity
CRD (mm)
GWC25
Field Electrical Conductivity
CRD (mm)
2200
2000
1800
1600
1400
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

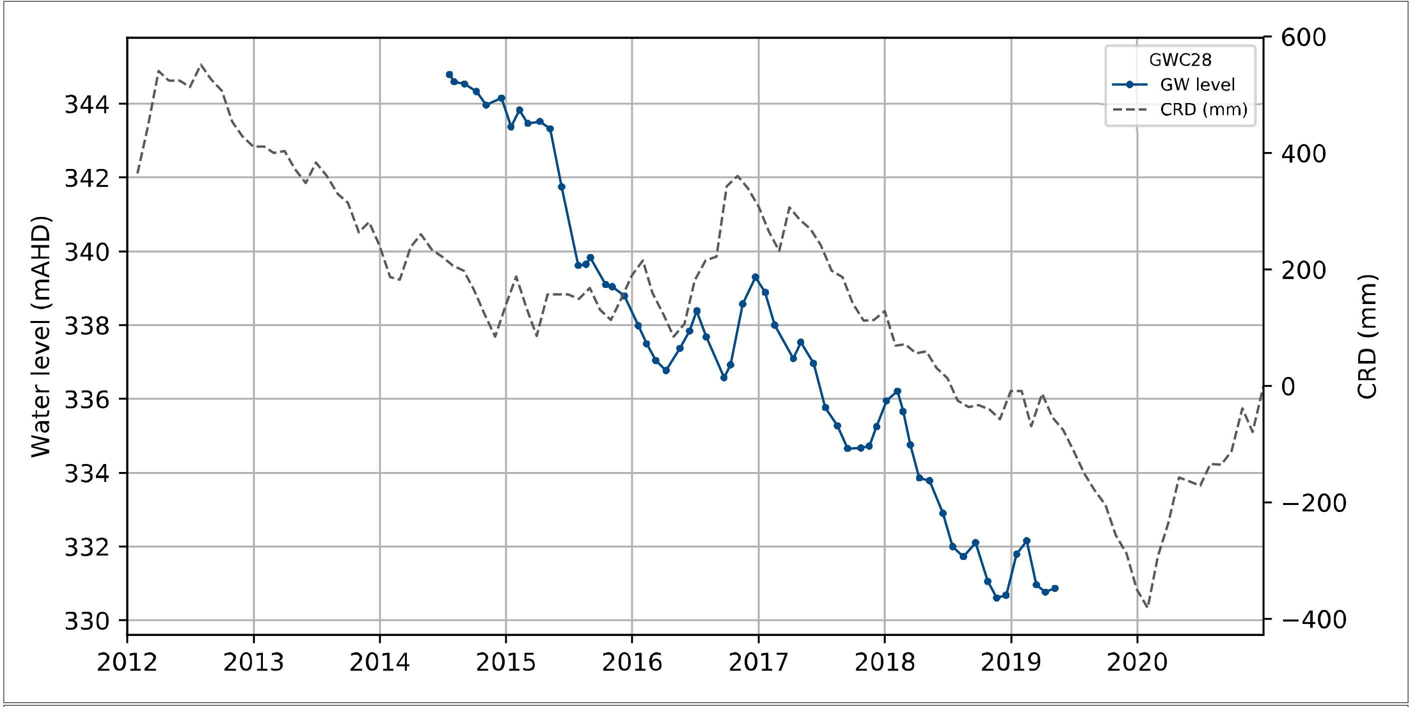


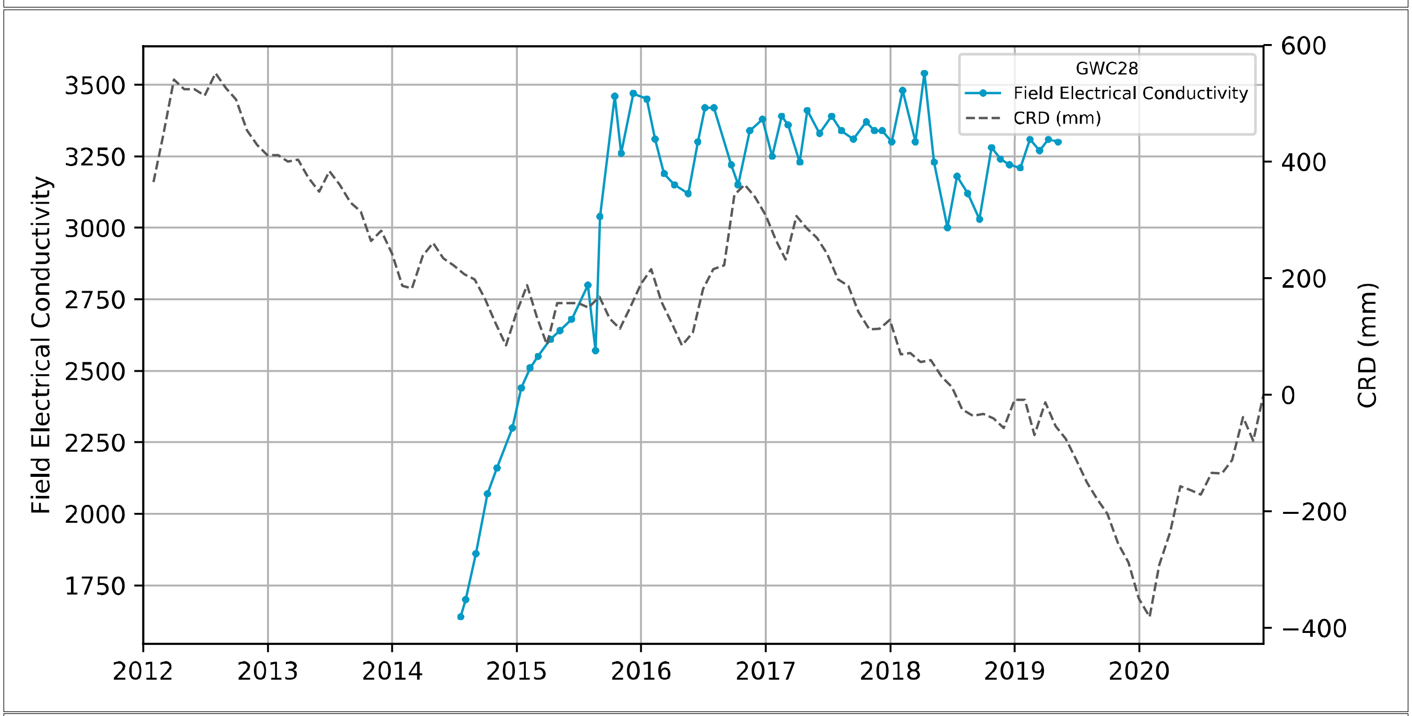
Field pH
CRD (mm)
GWC25
Field pH
CRD (mm)
8.5
8.0
7.5
7.0
6.5
6.0
5.5
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

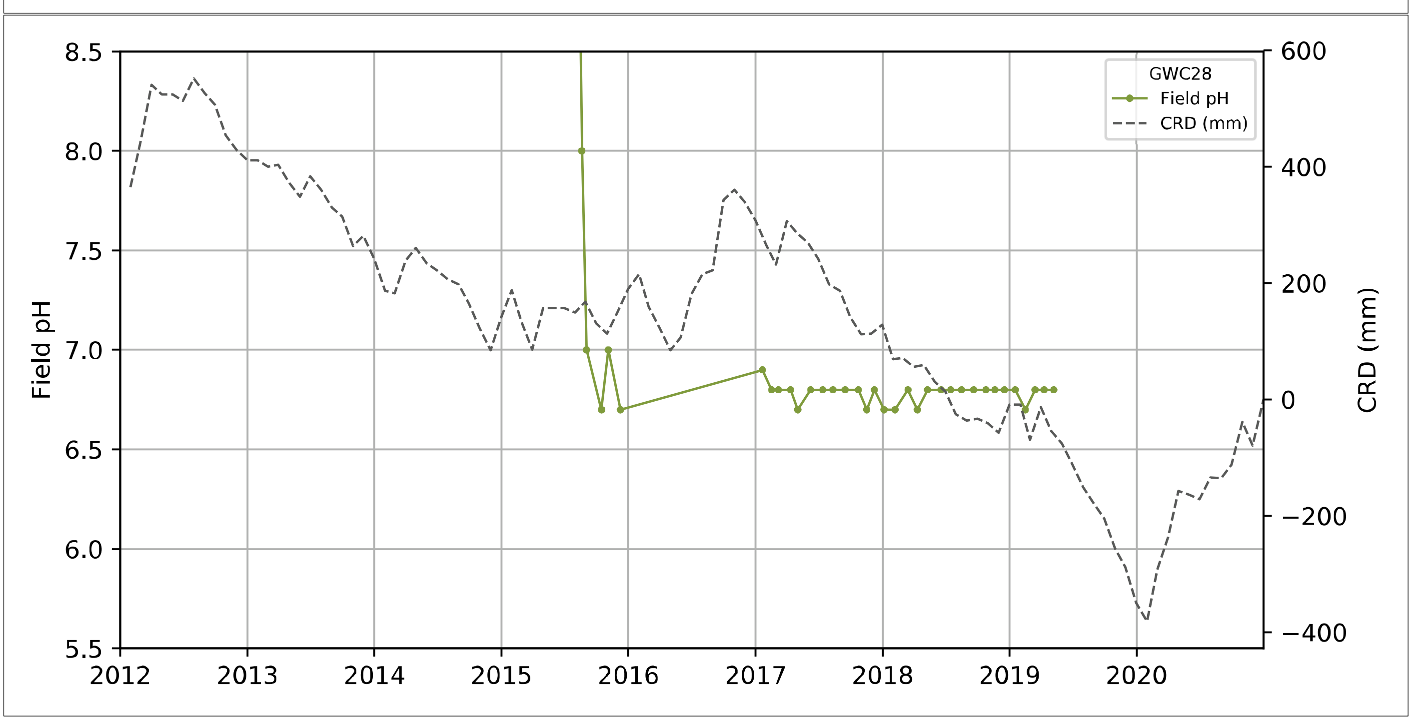

GWC26
GW level
CRD (mm)
Water level (mAHD)
CRD (mm)
366
364
362
360
358
356
354
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

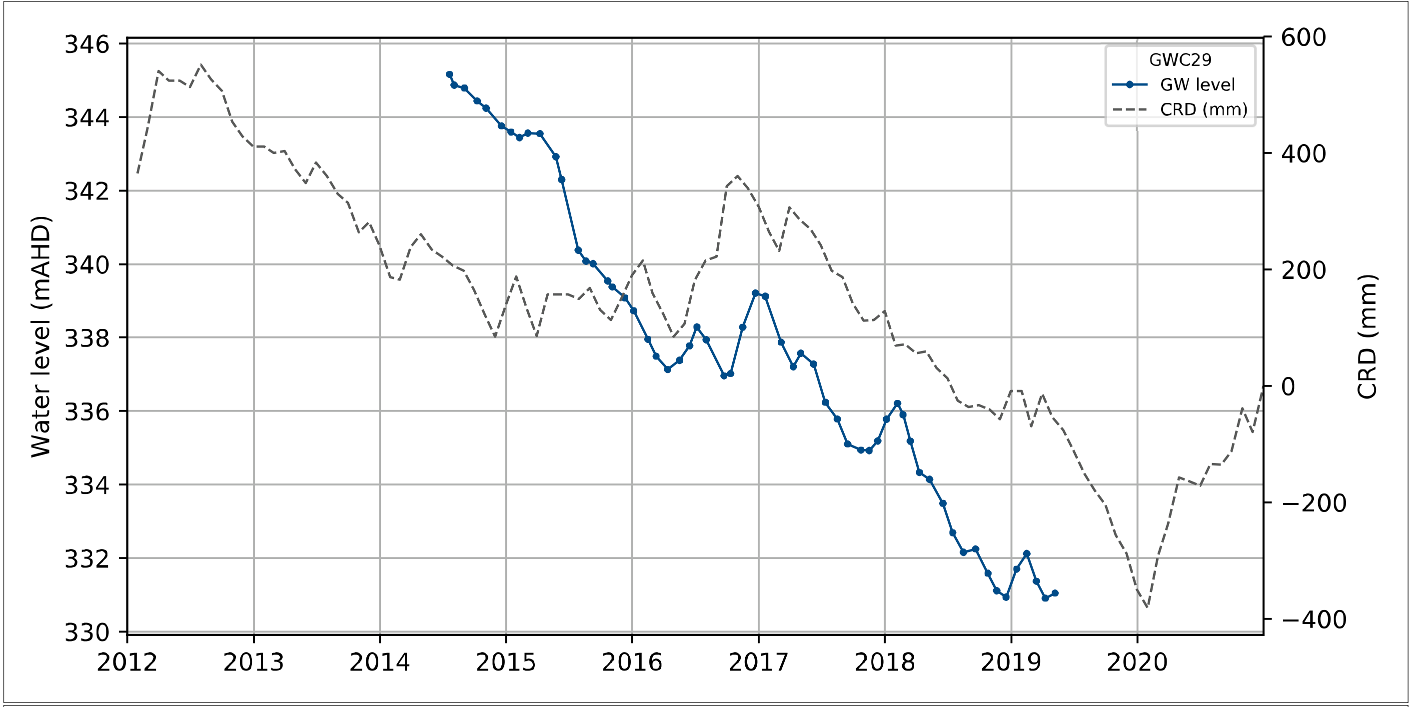

GWC26
Field Electrical Conductivity
CRD (mm)
Field Electrical Conductivity
CRD (mm)
1500
1400
1300
1200
1100
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

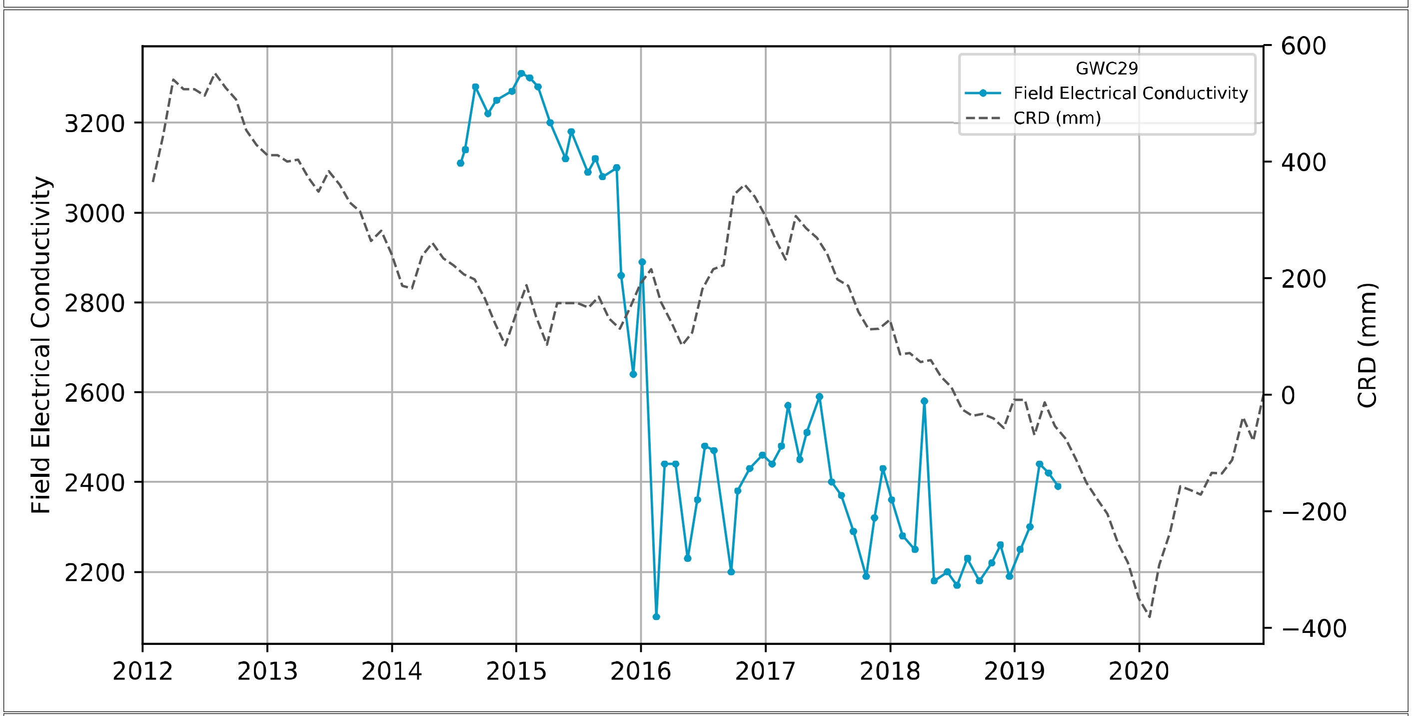

GWC26
Field pH
CRD (mm)
Field pH
CRD (mm)
8.5
8.0
7.5
7.0
6.5
6.0
5.5
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

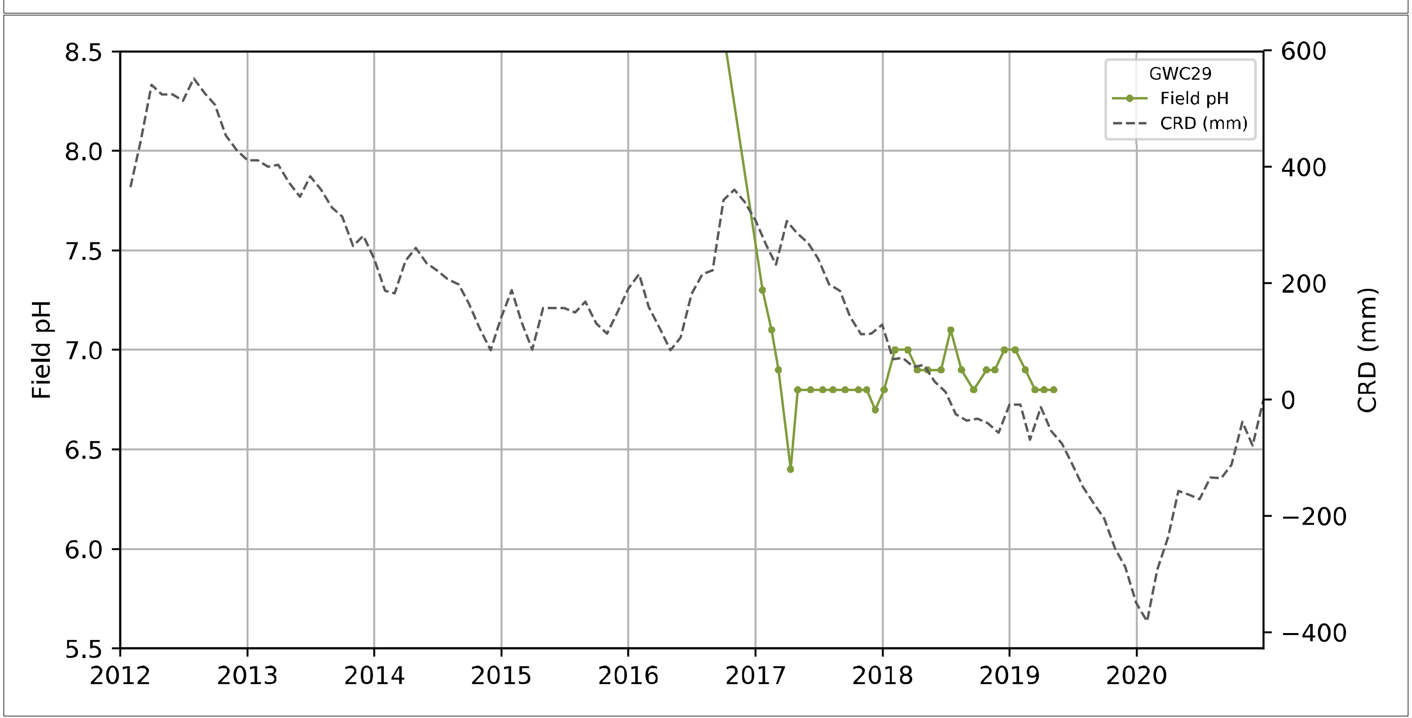

GWC28
GW level
CRD (mm)
Water level (mAHD)
CRD (mm)
344
342
340
338
336
334
332
330
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020


GWC28
Field Electrical Conductivity
CRD (mm)
Field Electrical Conductivity
CRD (mm)
3500
3250
3000
2750
2500
2250
2000
1750
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

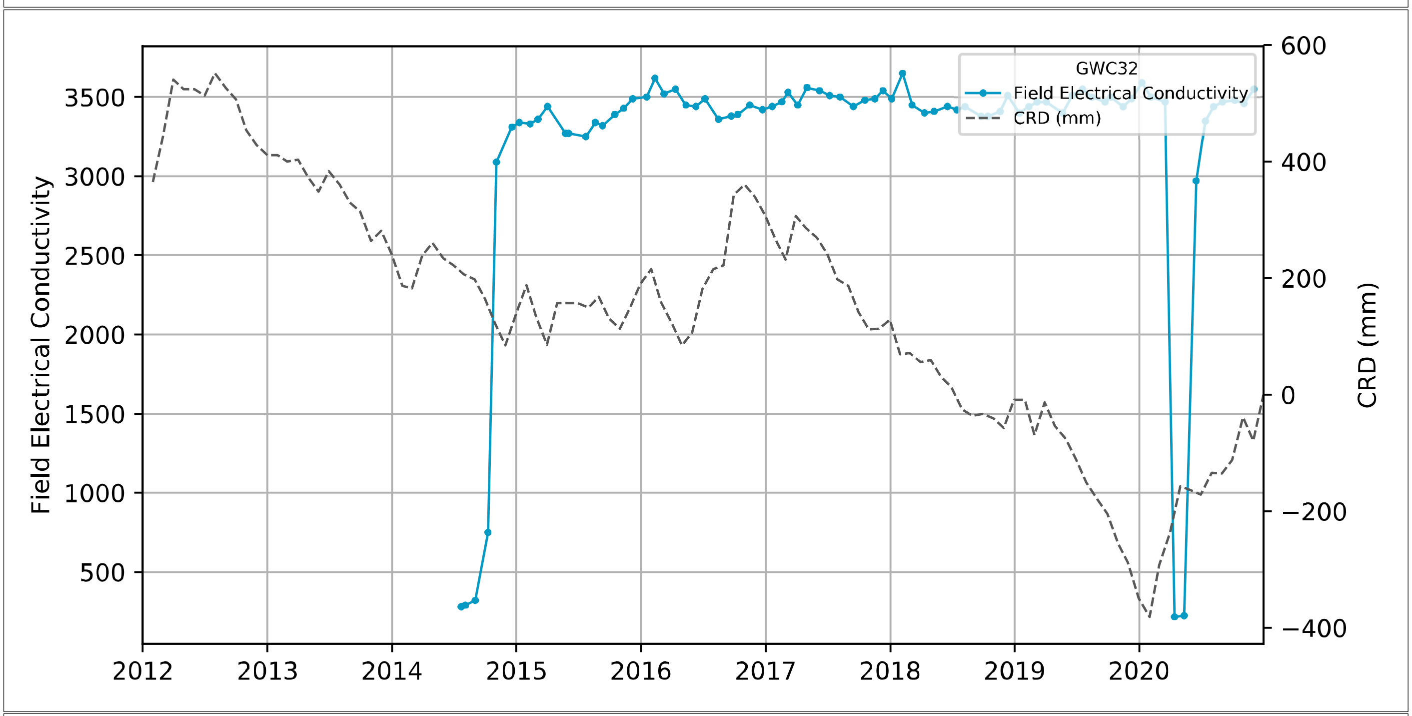

GWC28
Field pH
CRD (mm)
Field pH
CRD (mm)
8.5
8.0
7.5
7.0
6.5
6.0
5.5
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

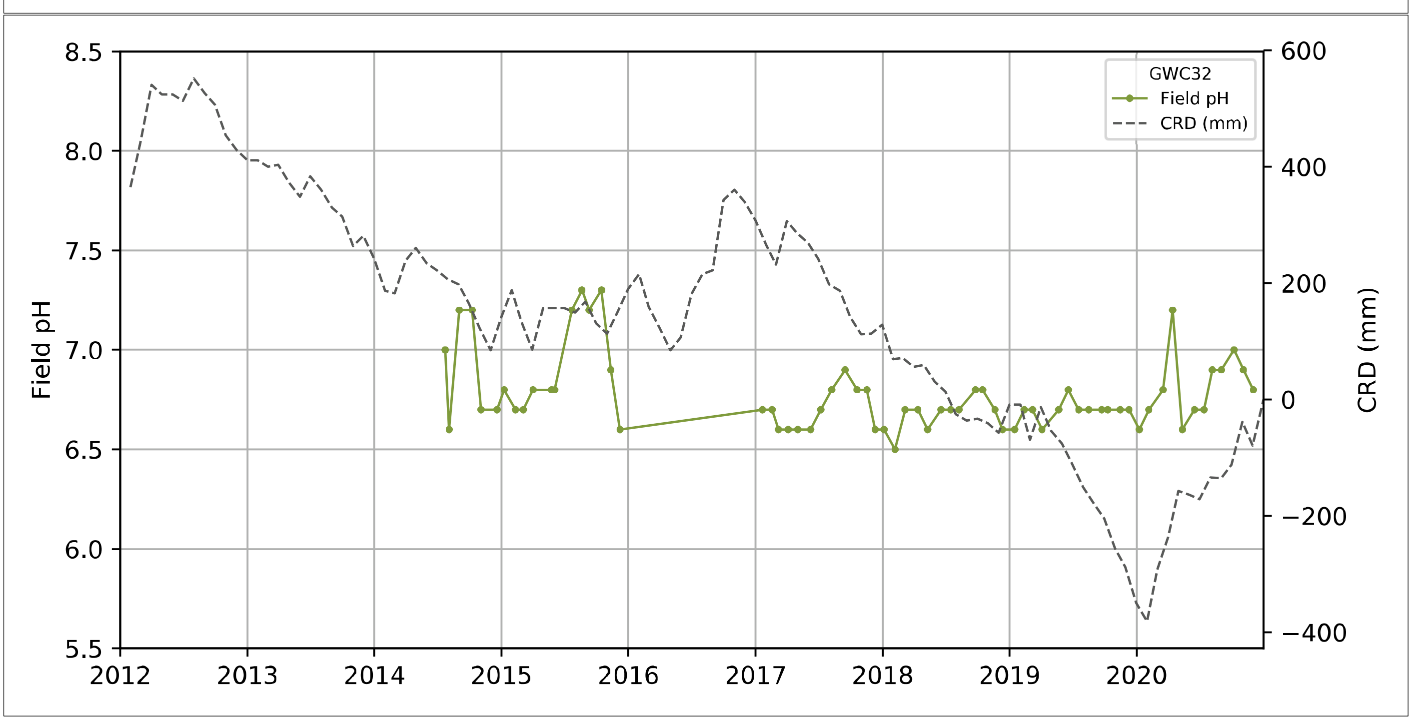

GWC29
GW level
CRD (mm)
Water level (mAHD)
CRD (mm)
346
344
342
340
338
336
334
332
330
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020


GWC29
Field Electrical Conductivity
CRD (mm)
Field Electrical Conductivity
CRD (mm)
3200
3000
2800
2600
2400
2200
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020


GWC29
Field pH
CRD (mm)
Field pH
CRD (mm)
8.5
8.0
7.5
7.0
6.5
6.0
5.5
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

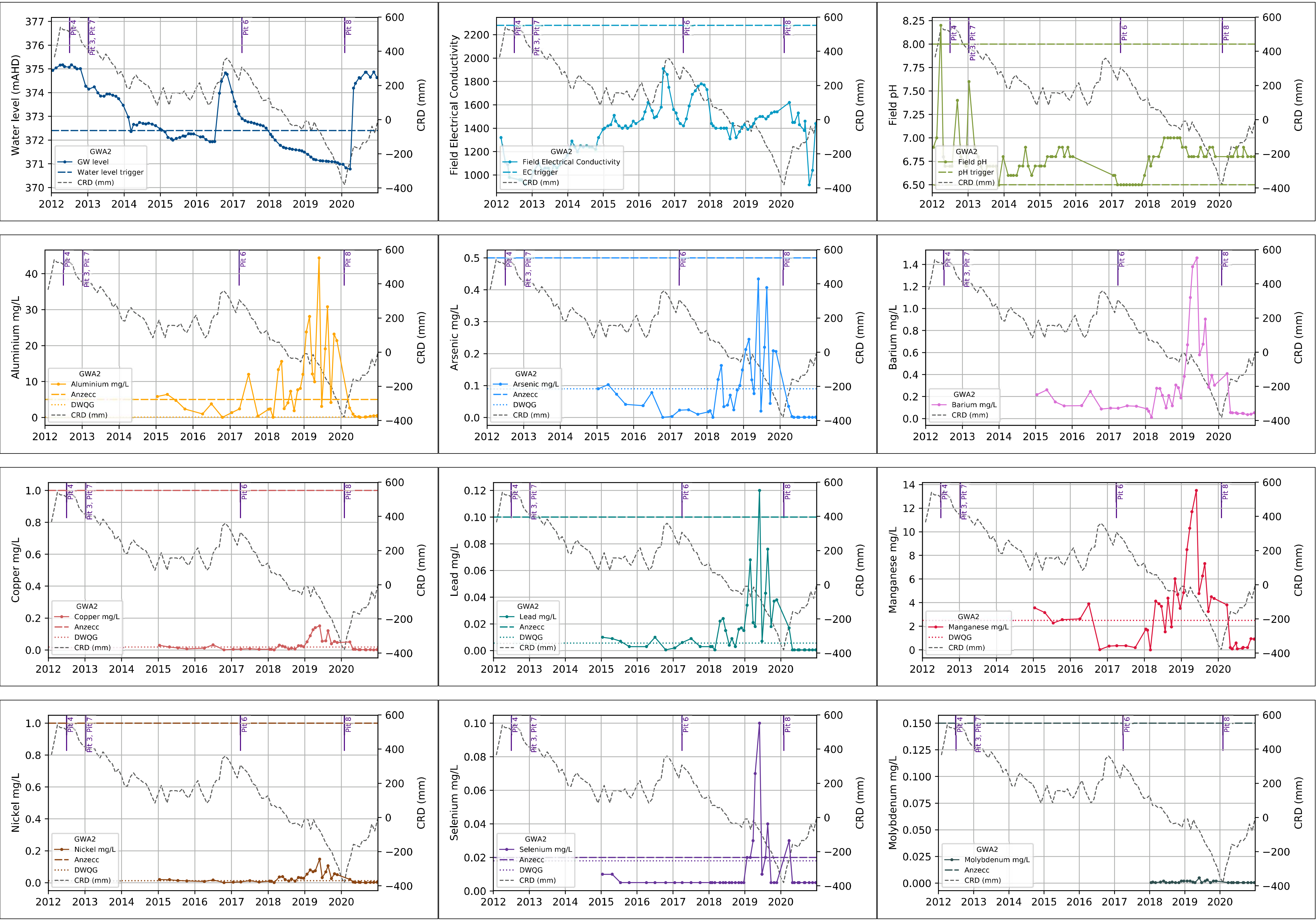

GWC32
GW level
CRD (mm)
Water level (mAHD)
CRD (mm)
352.5
352.0
351.5
351.0
350.5
350.0
349.5
349.0
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020


GWC32
Field Electrical Conductivity
CRD (mm)
Field Electrical Conductivity
CRD (mm)
3500
3000
2500
2000
1500
1000
500
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

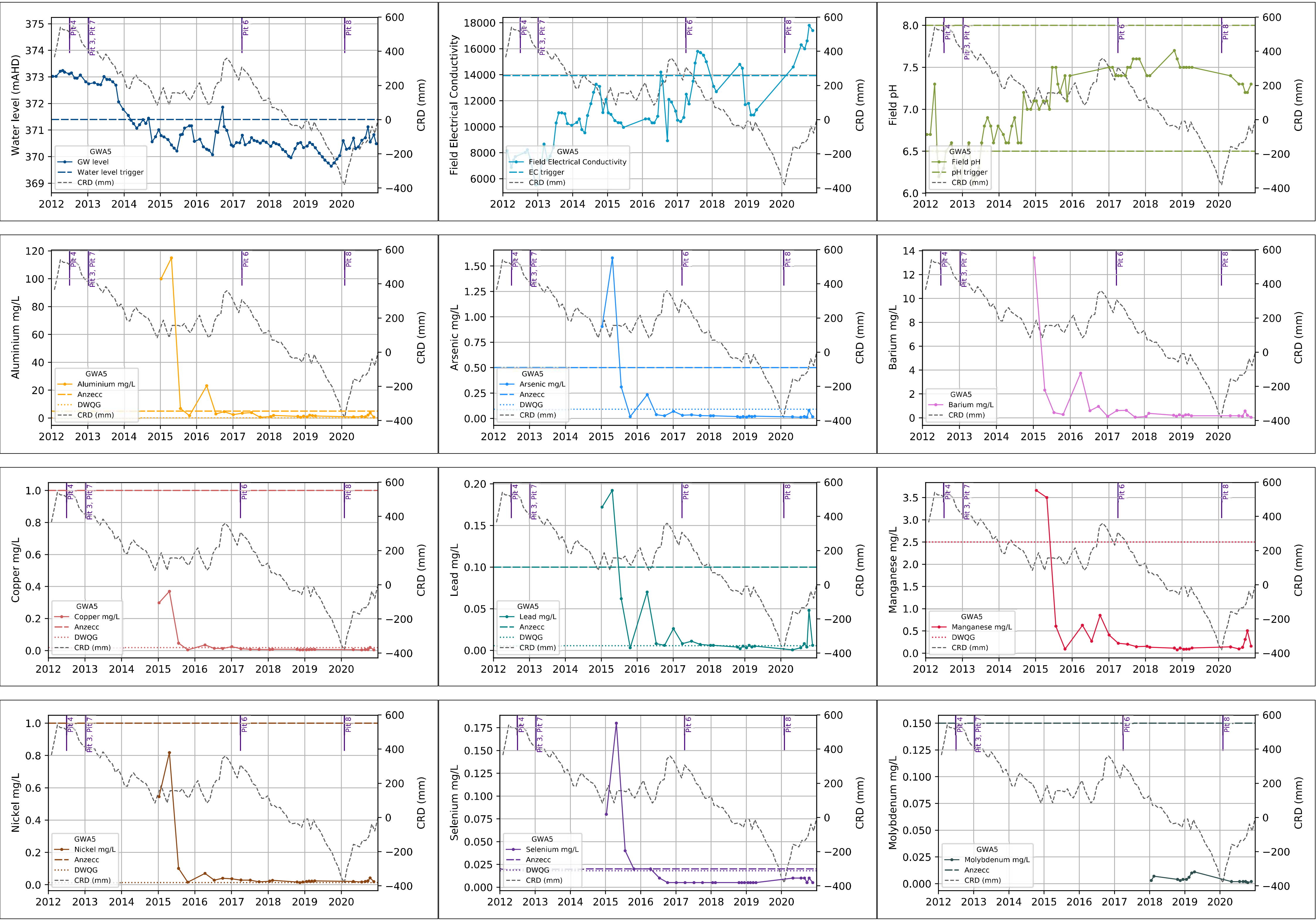

GWC32
Field pH
CRD (mm)
Field pH
CRD (mm)
8.5
8.0
7.5
7.0
6.5
6.0
5.5
600
400
200
0
−200
−400
2012
2013
2014
2015
2016
2017
2018
2019
2020

APPENDIX C

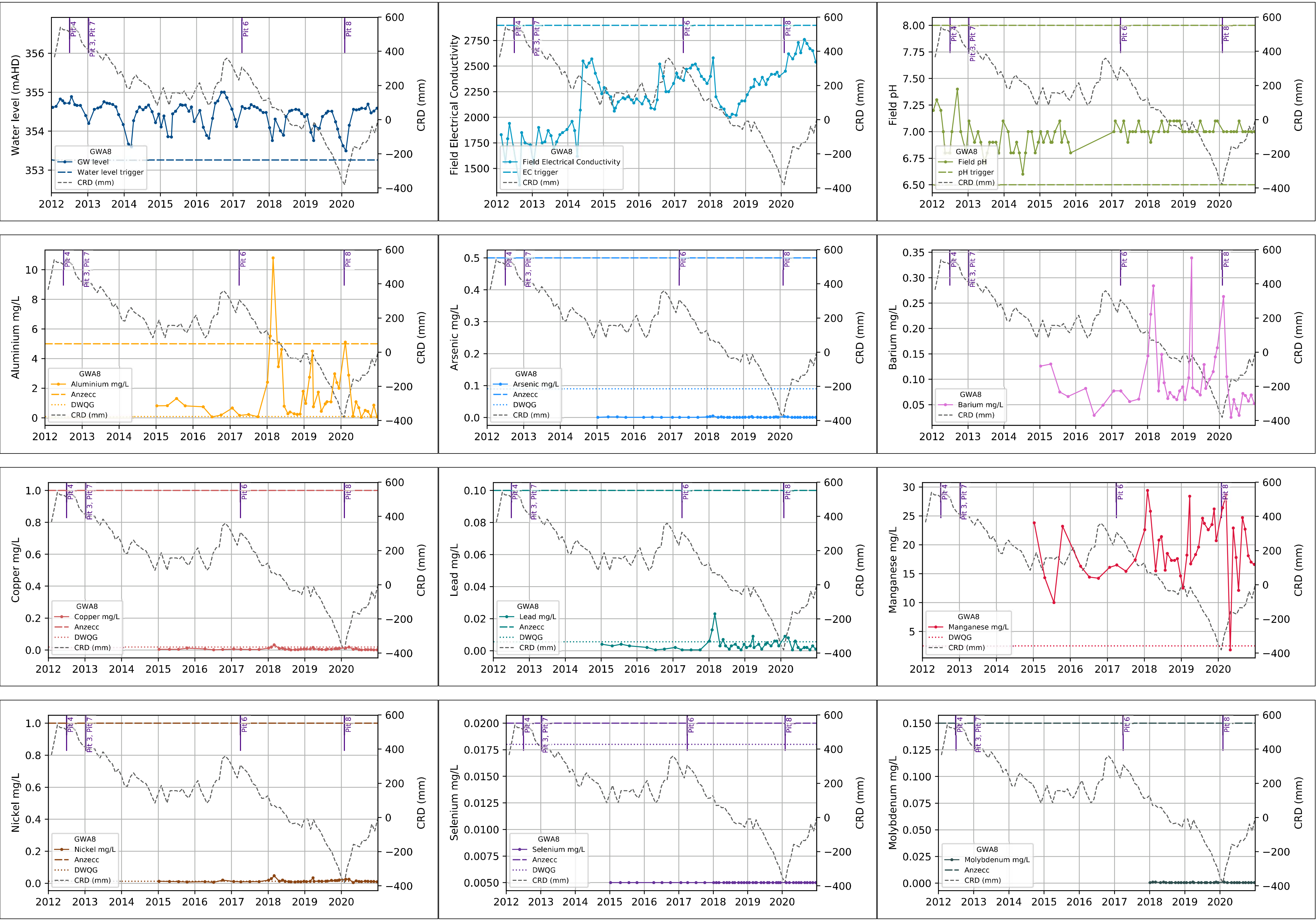
Metal Species Concentration Charts



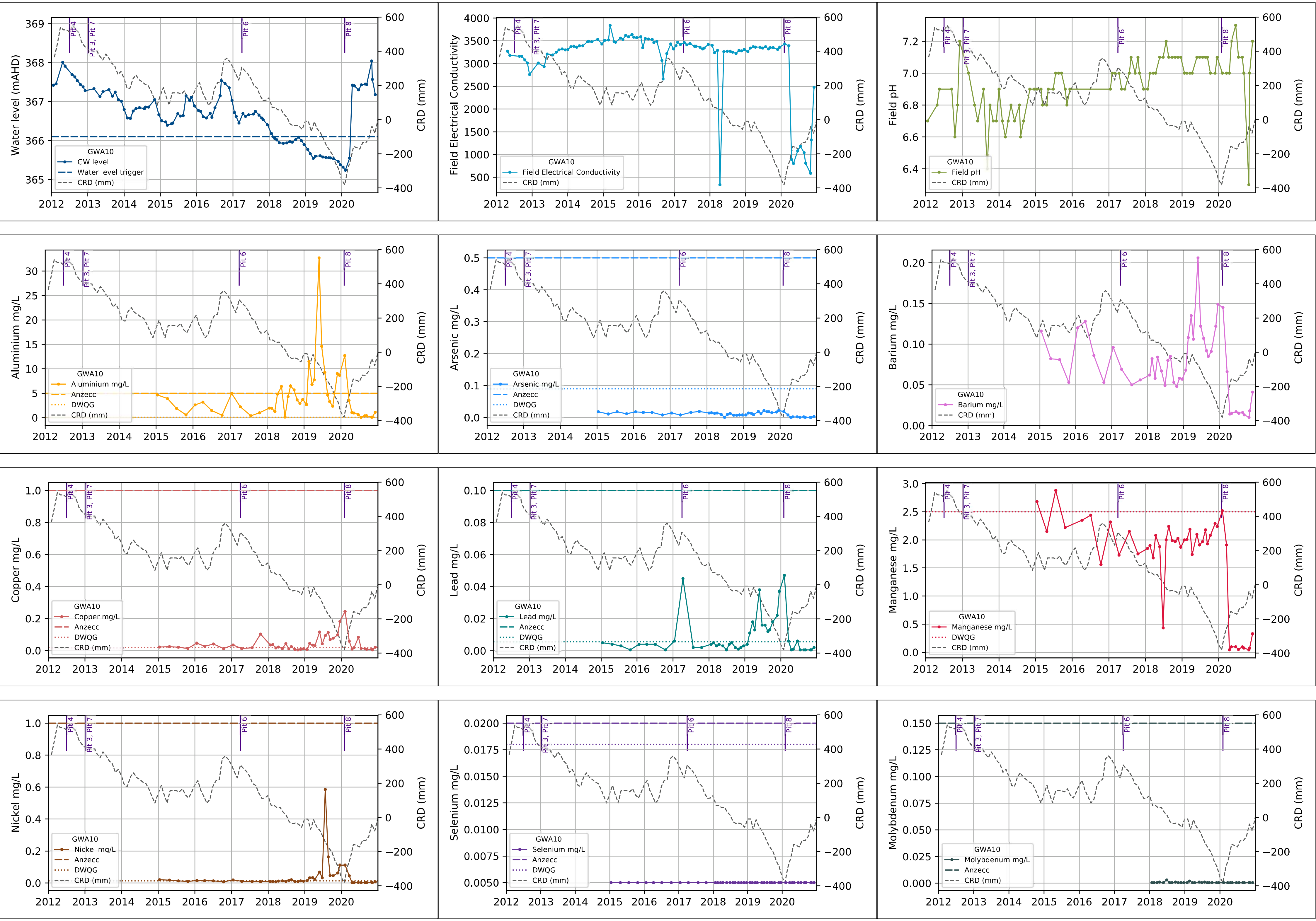
Water level (mAHD)
CRD (mm)
GWA2
GW level
Water level trigger
CRD (mm)
Field Electrical Conductivity
GWA2
Field Electrical Conductivity
EC trigger
CRD (mm)
Field pH
GWA2
Field pH
pH trigger
CRD (mm)
Aluminium mg/L
GWA2
Aluminium mg/L
Anzecc
DWQG
CRD (mm)
Arsenic mg/L
GWA2
Arsenic mg/L
Anzecc
DWQG
CRD (mm)
Barium mg/L
GWA2
Barium mg/L
CRD (mm)
Copper mg/L
GWA2
Copper mg/L
Anzecc
DWQG
CRD (mm)
Lead mg/L
GWA2
Lead mg/L
Anzecc
DWQG
CRD (mm)
Manganese mg/L
GWA2
Manganese mg/L
DWQG
CRD (mm)
Nickel mg/L
GWA2
Nickel mg/L
Anzecc
DWQG
CRD (mm)
Selenium mg/L
GWA2
Selenium mg/L
Anzecc
DWQG
CRD (mm)
Molybdenum mg/L
GWA2
Molybdenum mg/L
Anzecc
CRD (mm)
Pit 4
Pit 3, Pit 7
Pit 6
Pit 8
2012 2013 2014 2015 2016 2017 2018 2019 2020

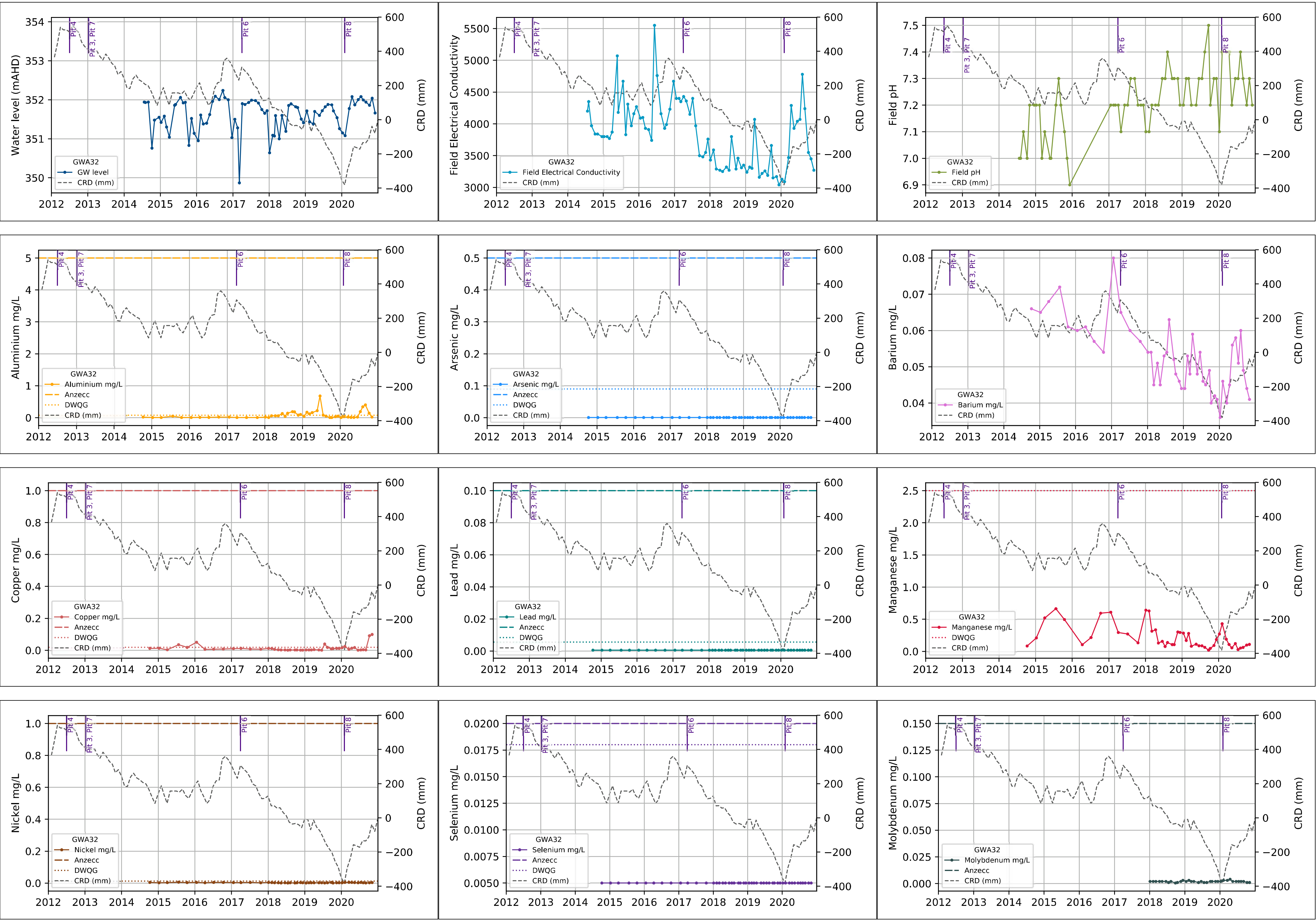


Water level (mAHD)
CRD (mm)
GWA5
GW level
Water level trigger
CRD (mm)
Pit 4
Pit 3, Pit 7
Pit 6
Pit 8
Field Electrical Conductivity
EC trigger
Field pH
pH trigger
Aluminium mg/L
Anzecc
DWQG
Arsenic mg/L
Barium mg/L
Copper mg/L
Lead mg/L
Manganese mg/L
Nickel mg/L
Selenium mg/L
Molybdenum mg/L
2012
2013
2014
2015
2016
2017
2018
2019
2020

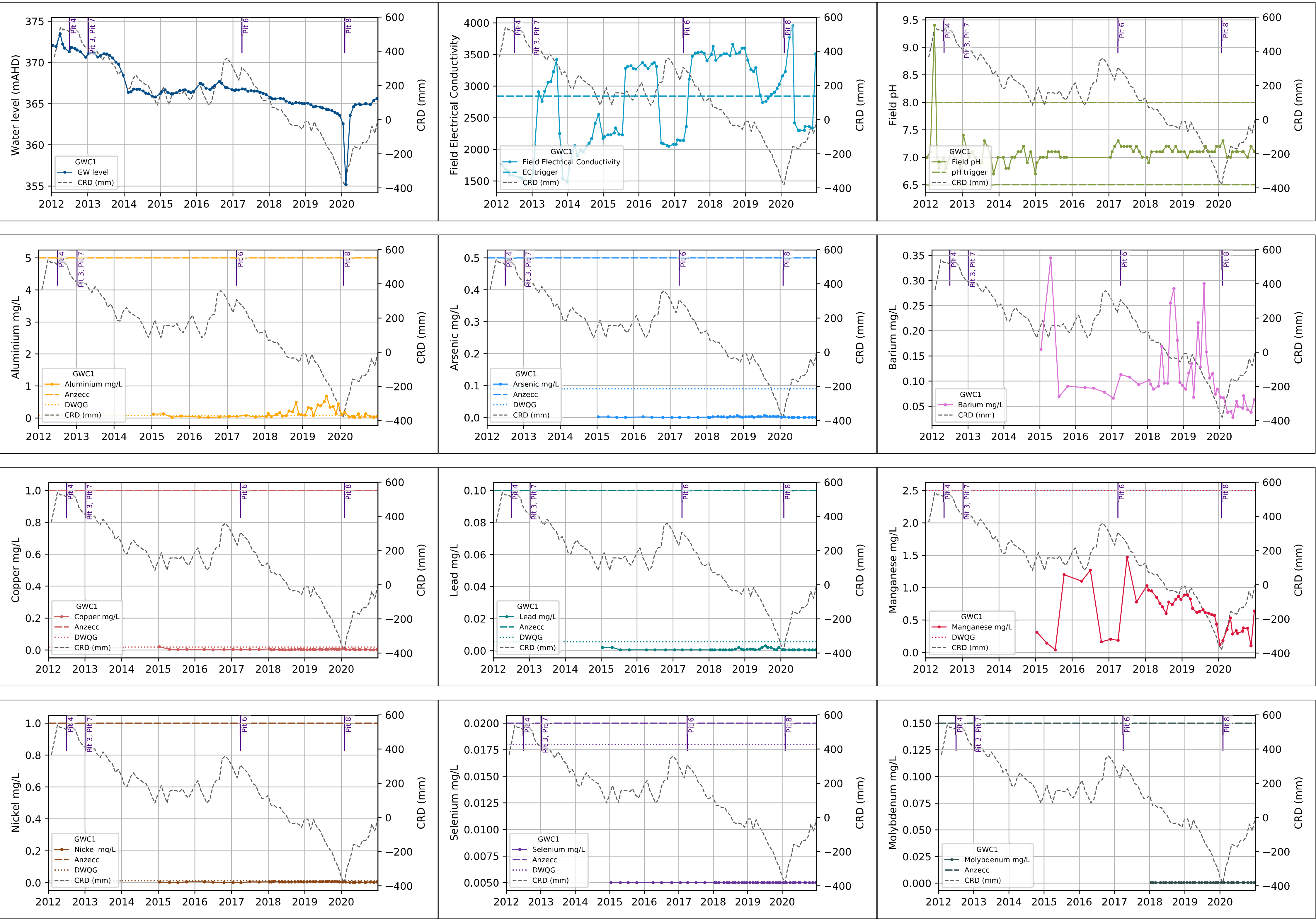


Water level (mAHD)
CRD (mm)
GWA8
GW level
Water level trigger
CRD (mm)
Field Electrical Conductivity
GWA8
Field Electrical Conductivity
EC trigger
CRD (mm)
Field pH
GWA8
Field pH
pH trigger
CRD (mm)
Aluminium mg/L
GWA8
Aluminium mg/L
Anzecc
DWQG
CRD (mm)
Arsenic mg/L
GWA8
Arsenic mg/L
Anzecc
DWQG
CRD (mm)
Barium mg/L
GWA8
Barium mg/L
CRD (mm)
Copper mg/L
GWA8
Copper mg/L
Anzecc
DWQG
CRD (mm)
Lead mg/L
GWA8
Lead mg/L
Anzecc
DWQG
CRD (mm)
Manganese mg/L
GWA8
Manganese mg/L
DWQG
CRD (mm)
Nickel mg/L
GWA8
Nickel mg/L
Anzecc
DWQG
CRD (mm)
Selenium mg/L
GWA8
Selenium mg/L
Anzecc
DWQG
CRD (mm)
Molybdenum mg/L
GWA8
Molybdenum mg/L
Anzecc
CRD (mm)
Pit 4
Pit 3, Pit 7
Pit 6
Pit 8
2012
2013
2014
2015
2016
2017
2018
2019
2020

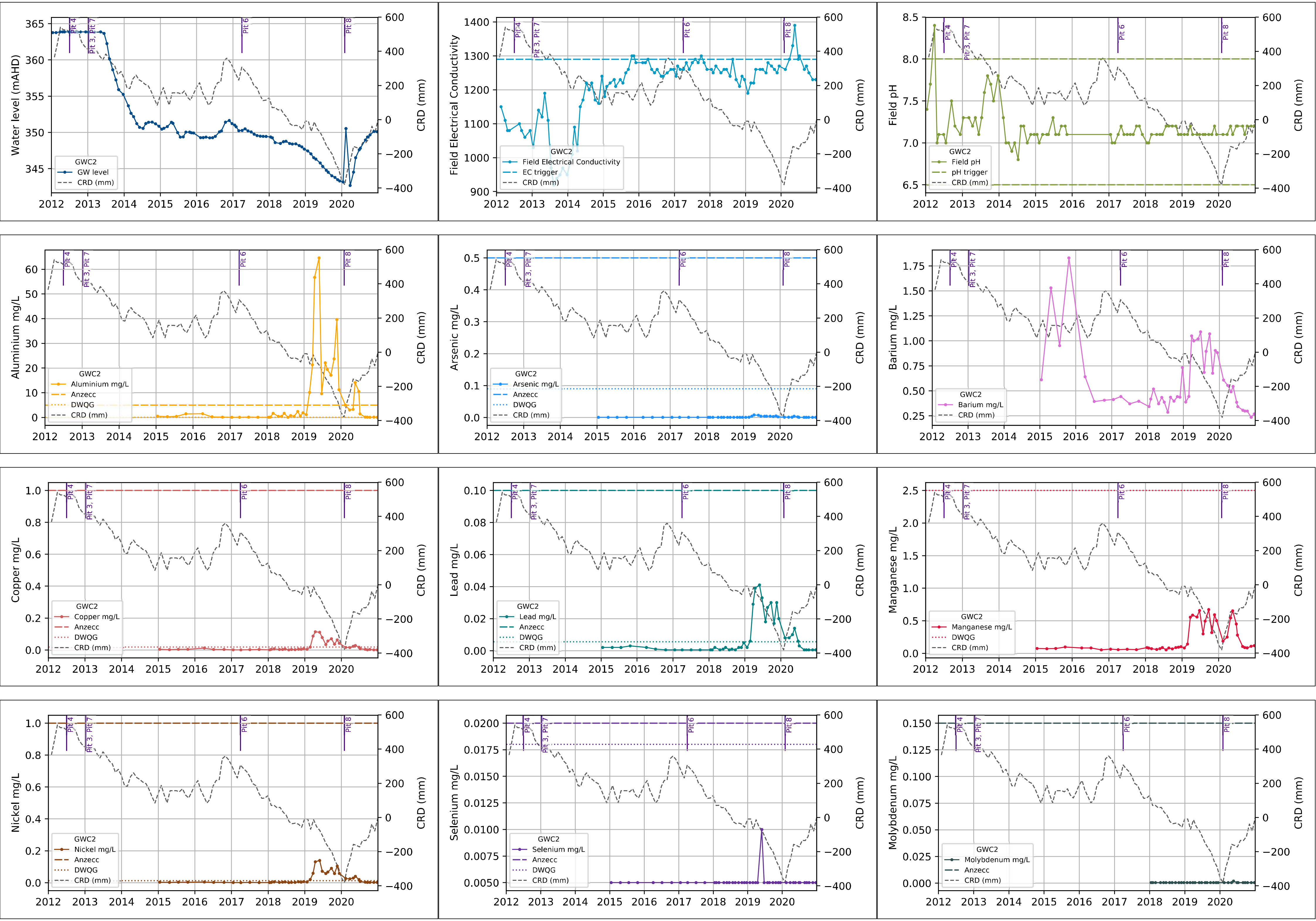

Water level (mAHD)
CRD (mm)
GWA10
GW level
Water level trigger
CRD (mm)
Field Electrical Conductivity
GWA10
Field Electrical Conductivity
CRD (mm)
Field pH
GWA10
Field pH
CRD (mm)
Aluminium mg/L
GWA10
Aluminium mg/L
Anzecc
DWQG
CRD (mm)
Arsenic mg/L
GWA10
Arsenic mg/L
Anzecc
DWQG
CRD (mm)
Barium mg/L
GWA10
Barium mg/L
CRD (mm)
Copper mg/L
GWA10
Copper mg/L
Anzecc
DWQG
CRD (mm)
Lead mg/L
GWA10
Lead mg/L
Anzecc
DWQG
CRD (mm)
Manganese mg/L
GWA10
Manganese mg/L
DWQG
CRD (mm)
Nickel mg/L
GWA10
Nickel mg/L
Anzecc
DWQG
CRD (mm)
Selenium mg/L
GWA10
Selenium mg/L
Anzecc
DWQG
CRD (mm)
Molybdenum mg/L
GWA10
Molybdenum mg/L
Anzecc
CRD (mm)
Pit 4
Pit 3, Pit 7
Pit 6
Pit 8
2012
2013
2014
2015
2016
2017
2018
2019
2020



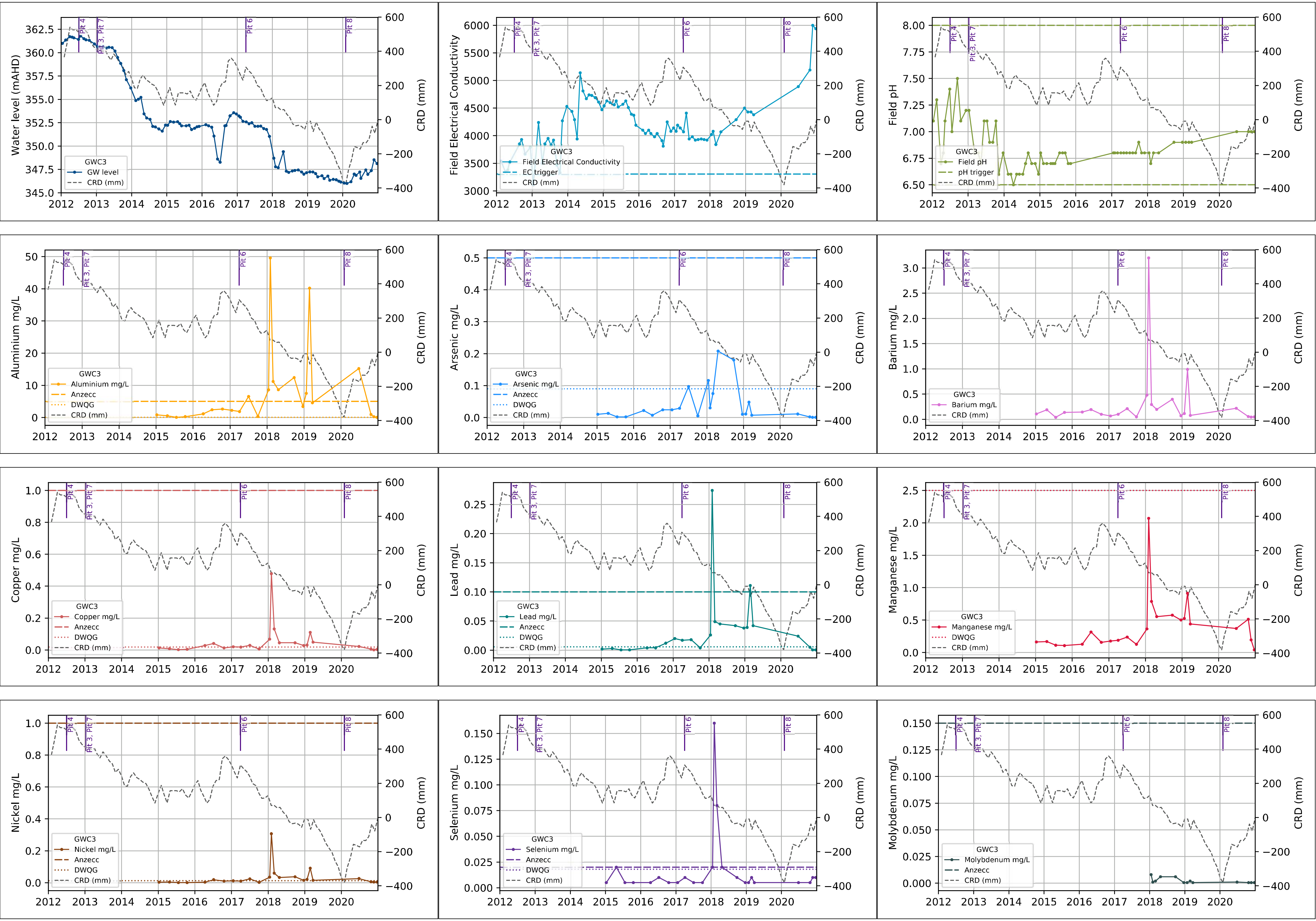
Water level (mAHD)
CRD (mm)
GWA32
GW level
CRD (mm)
Pit 4
Pit 3, Pit 7
Pit 6
Pit 8
Field Electrical Conductivity
Field pH
Aluminium mg/L
Anzecc
DWQG
Arsenic mg/L
Barium mg/L
Copper mg/L
Lead mg/L
Manganese mg/L
Nickel mg/L
Selenium mg/L
Molybdenum mg/L



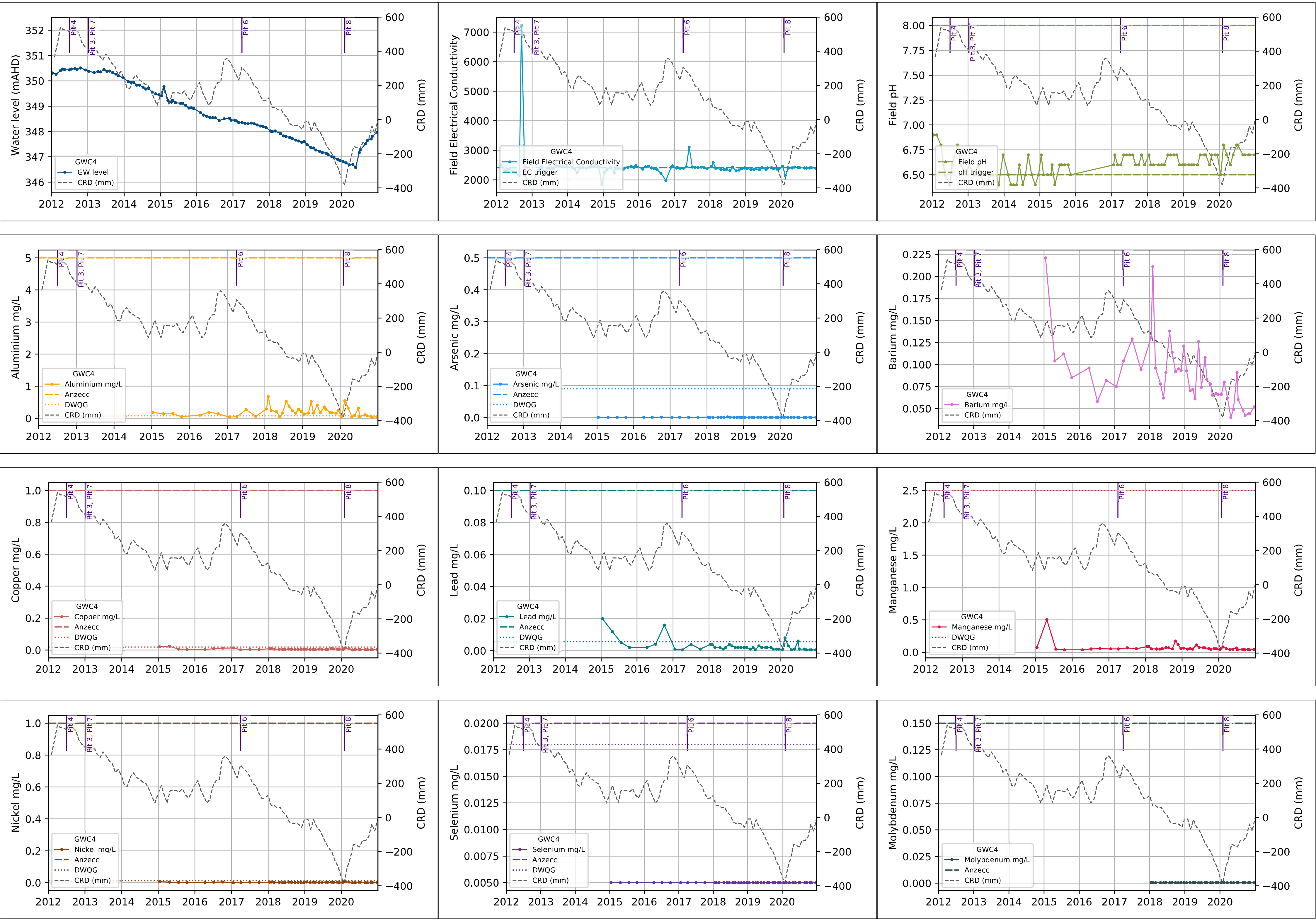
Water level (mAHD)
CRD (mm)
GWC1
GW level
CRD (mm)
Pit 4
Pit 3, Pit 7
Pit 6
Pit 8
Field Electrical Conductivity
GWC1
Field Electrical Conductivity
EC trigger
CRD (mm)
Field pH
GWC1
Field pH
pH trigger
CRD (mm)
Aluminium mg/L
GWC1
Aluminium mg/L
Anzecc
DWQG
CRD (mm)
Arsenic mg/L
GWC1
Arsenic mg/L
Anzecc
DWQG
CRD (mm)
Barium mg/L
GWC1
Barium mg/L
CRD (mm)
Copper mg/L
GWC1
Copper mg/L
Anzecc
DWQG
CRD (mm)
Lead mg/L
GWC1
Lead mg/L
Anzecc
DWQG
CRD (mm)
Manganese mg/L
GWC1
Manganese mg/L
DWQG
CRD (mm)
Nickel mg/L
GWC1
Nickel mg/L
Anzecc
DWQG
CRD (mm)
Selenium mg/L
GWC1
Selenium mg/L
Anzecc
DWQG
CRD (mm)
Molybdenum mg/L
GWC1
Molybdenum mg/L
Anzecc
CRD (mm)
2012 2013 2014 2015 2016 2017 2018 2019 2020



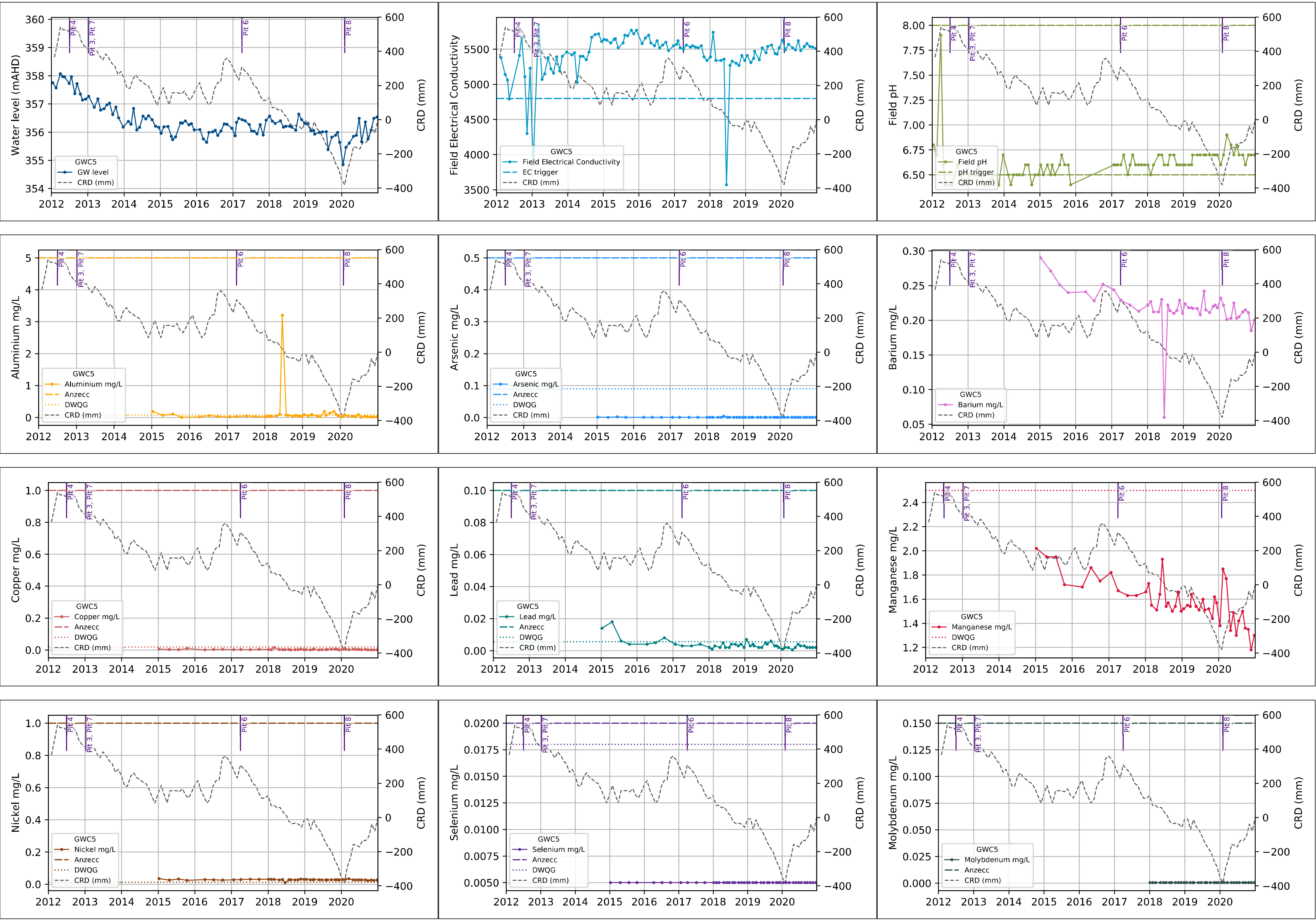
Water level (mAHD)
CRD (mm)
GWC2
GW level
CRD (mm)
Pit 4
Pit 3, Pit 7
Pit 6
Pit 8
Field Electrical Conductivity
Field Electrical Conductivity
EC trigger
Field pH
pH trigger
Aluminium mg/L
Anzecc
DWQG
Arsenic mg/L
Barium mg/L
Copper mg/L
Lead mg/L
Manganese mg/L
Nickel mg/L
Selenium mg/L
Molybdenum mg/L
2012
2013
2014
2015
2016
2017
2018
2019
2020



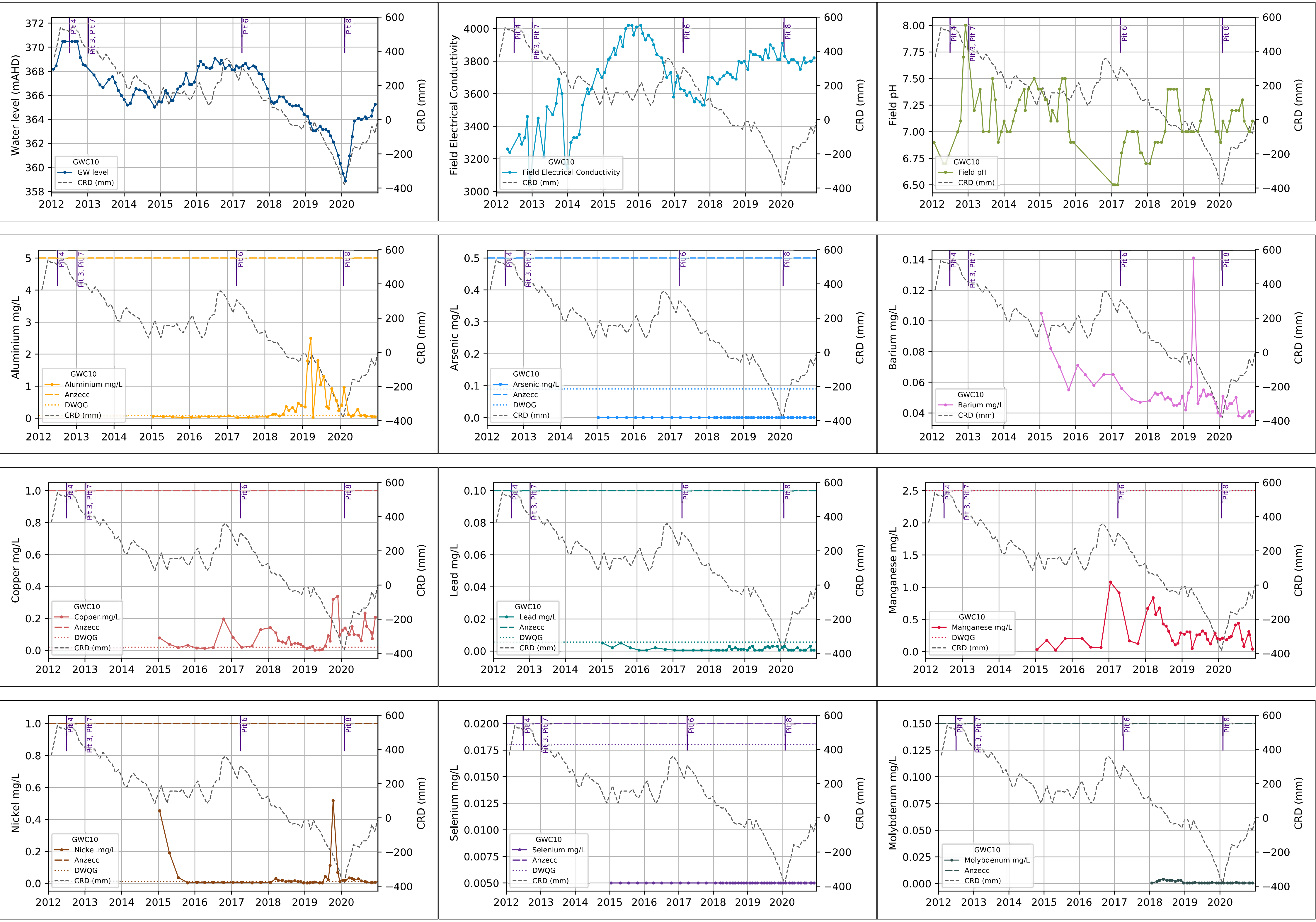
Water level (mAHD)
CRD (mm)
GWC3
GW level
CRD (mm)
Field Electrical Conductivity
Field Electrical Conductivity
EC trigger
Field pH
Field pH
pH trigger
Aluminium mg/L
Anzecc
DWQG
Arsenic mg/L
Barium mg/L
Copper mg/L
Lead mg/L
Manganese mg/L
Nickel mg/L
Selenium mg/L
Molybdenum mg/L
Pit 4
Pit 3, Pit 7
Pit 6
Pit 8
2012
2013
2014
2015
2016
2017
2018
2019
2020



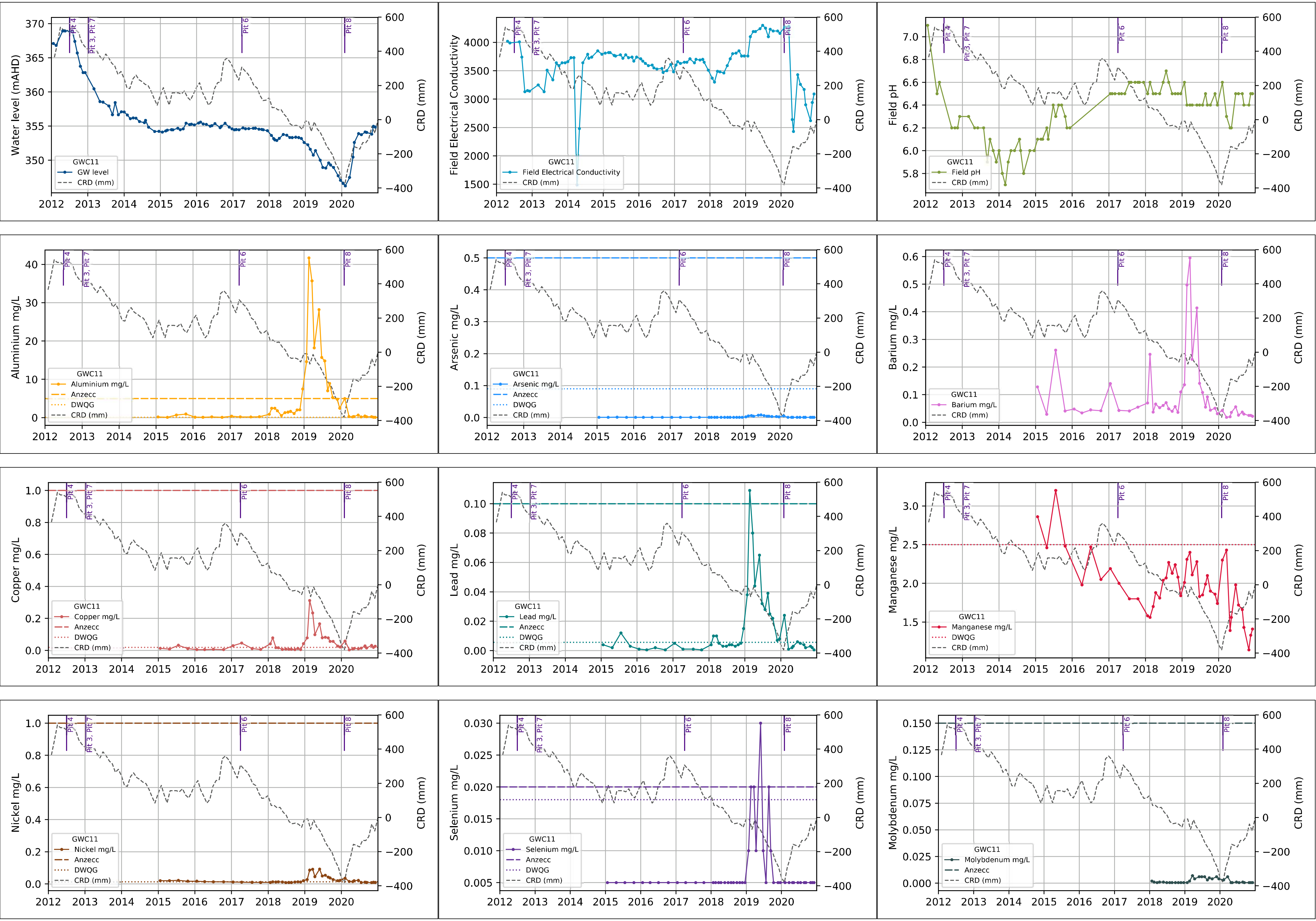
Water level (mAHD)
CRD (mm)
GWC4
GW level
CRD (mm)
Pit 4
Pit 3, Pit 7
Pit 6
Pit 8
Field Electrical Conductivity
GWC4
Field Electrical Conductivity
EC trigger
CRD (mm)
Field pH
GWC4
Field pH
pH trigger
CRD (mm)
Aluminium mg/L
GWC4
Aluminium mg/L
Anzecc
DWQG
CRD (mm)
Arsenic mg/L
GWC4
Arsenic mg/L
Anzecc
DWQG
CRD (mm)
Barium mg/L
GWC4
Barium mg/L
CRD (mm)
Copper mg/L
GWC4
Copper mg/L
Anzecc
DWQG
CRD (mm)
Lead mg/L
GWC4
Lead mg/L
Anzecc
DWQG
CRD (mm)
Manganese mg/L
GWC4
Manganese mg/L
DWQG
CRD (mm)
Nickel mg/L
GWC4
Nickel mg/L
Anzecc
DWQG
CRD (mm)
Selenium mg/L
GWC4
Selenium mg/L
Anzecc
DWQG
CRD (mm)
Molybdenum mg/L
GWC4
Molybdenum mg/L
Anzecc
CRD (mm)
2012
2013
2014
2015
2016
2017
2018
2019
2020

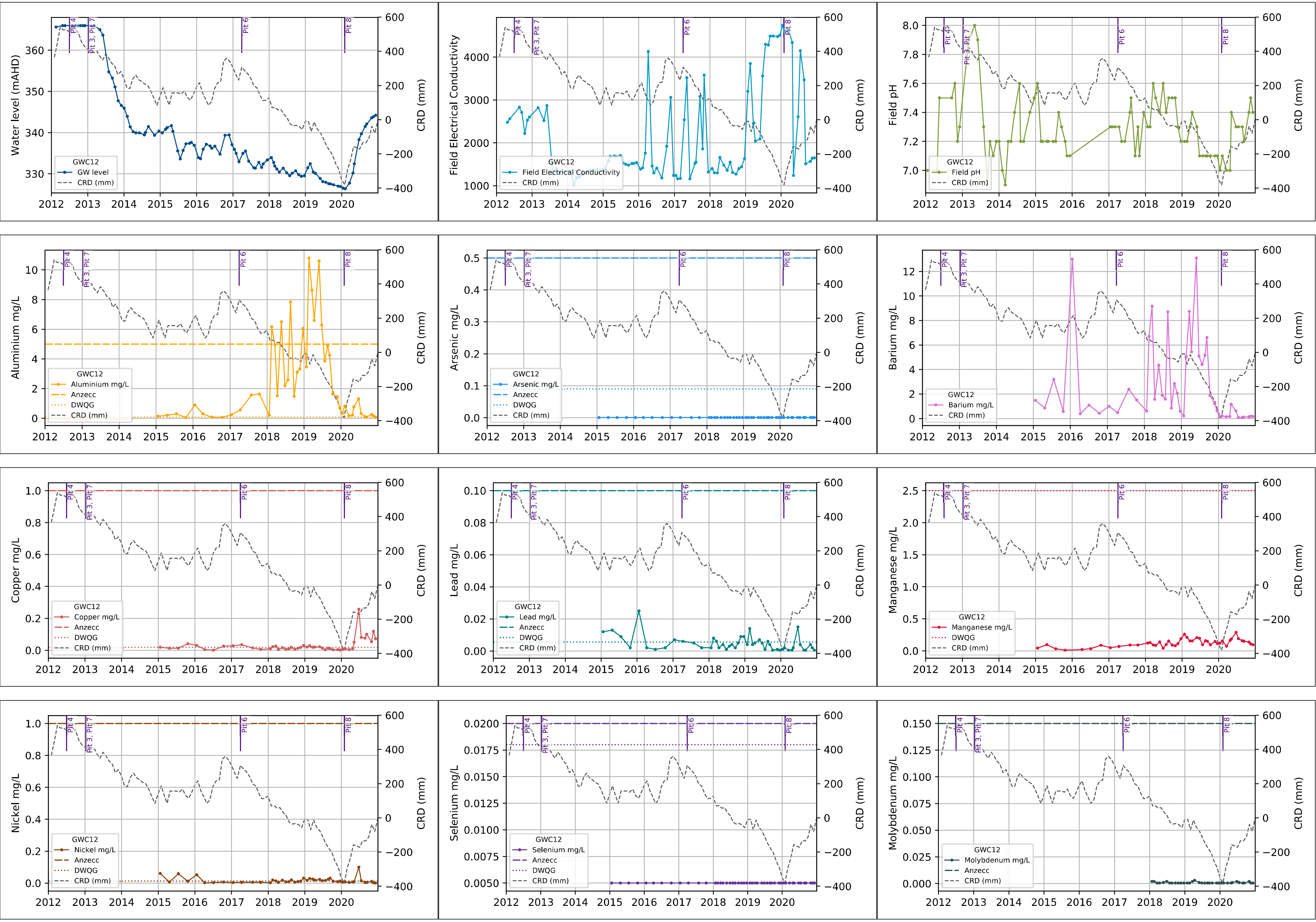


Water level (mAHD)
CRD (mm)
GWC5
GW level
CRD (mm)
Pit 4
Pit 3, Pit 7
Pit 6
Pit 8
Field Electrical Conductivity
CRD (mm)
GWC5
Field Electrical Conductivity
EC trigger
CRD (mm)
Field pH
CRD (mm)
GWC5
Field pH
pH trigger
CRD (mm)
Aluminium mg/L
CRD (mm)
GWC5
Aluminium mg/L
Anzecc
DWQG
CRD (mm)
Arsenic mg/L
CRD (mm)
GWC5
Arsenic mg/L
Anzecc
DWQG
CRD (mm)
Barium mg/L
CRD (mm)
GWC5
Barium mg/L
CRD (mm)
Copper mg/L
CRD (mm)
GWC5
Copper mg/L
Anzecc
DWQG
CRD (mm)
Lead mg/L
CRD (mm)
GWC5
Lead mg/L
Anzecc
DWQG
CRD (mm)
Manganese mg/L
CRD (mm)
GWC5
Manganese mg/L
DWQG
CRD (mm)
Nickel mg/L
CRD (mm)
GWC5
Nickel mg/L
Anzecc
DWQG
CRD (mm)
Selenium mg/L
CRD (mm)
GWC5
Selenium mg/L
Anzecc
DWQG
CRD (mm)
Molybdenum mg/L
CRD (mm)
GWC5
Molybdenum mg/L
Anzecc
CRD (mm)

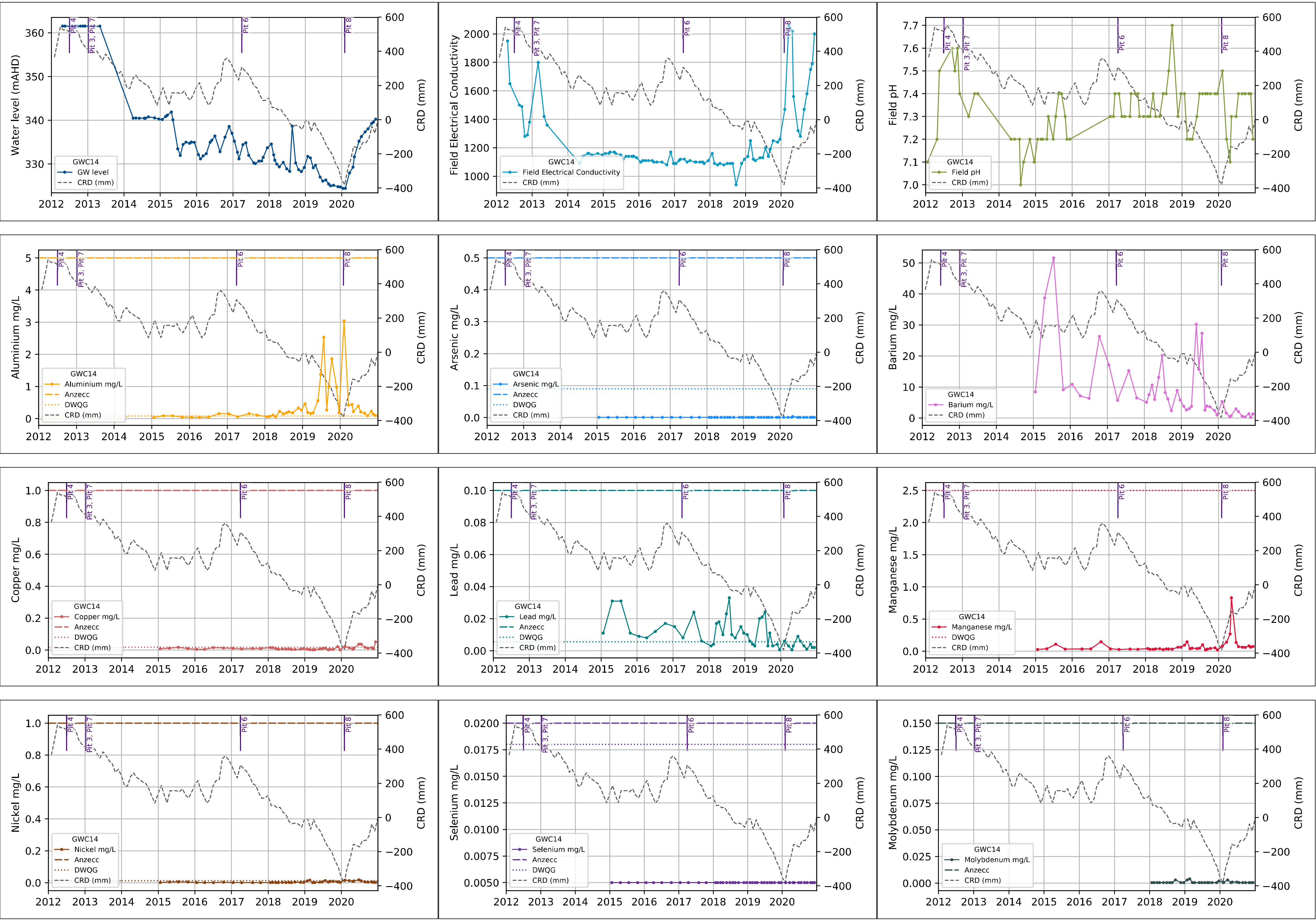


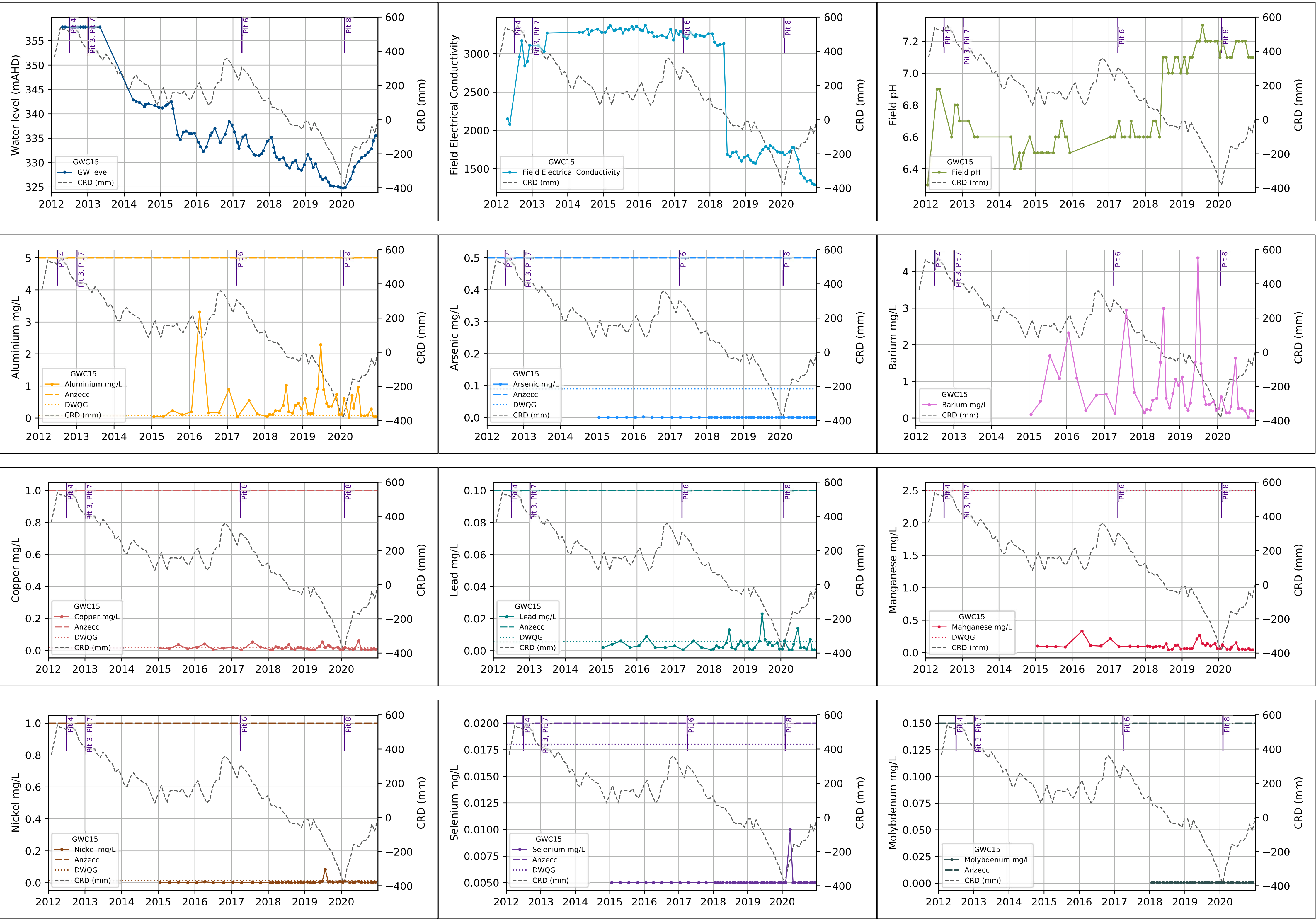
Water level (mAHD)
CRD (mm)
GWC10
GW level
CRD (mm)
Pit 4
Pit 3, Pit 7
Pit 6
Pit 8
Field Electrical Conductivity
Field pH
Aluminium mg/L
Anzecc
DWQG
Arsenic mg/L
Barium mg/L
Copper mg/L
Lead mg/L
Manganese mg/L
Nickel mg/L
Selenium mg/L
Molybdenum mg/L
2012
2013
2014
2015
2016
2017
2018
2019
2020


Water level (mAHD)
CRD (mm)
GWC11
GW level
CRD (mm)
Field Electrical Conductivity
GWC11
Field Electrical Conductivity
CRD (mm)
Field pH
GWC11
Field pH
CRD (mm)
Aluminium mg/L
GWC11
Aluminium mg/L
Anzecc
DWQG
CRD (mm)
Arsenic mg/L
GWC11
Arsenic mg/L
Anzecc
DWQG
CRD (mm)
Barium mg/L
GWC11
Barium mg/L
CRD (mm)
Copper mg/L
GWC11
Copper mg/L
Anzecc
DWQG
CRD (mm)
Lead mg/L
GWC11
Lead mg/L
Anzecc
DWQG
CRD (mm)
Manganese mg/L
GWC11
Manganese mg/L
DWQG
CRD (mm)
Nickel mg/L
GWC11
Nickel mg/L
Anzecc
DWQG
CRD (mm)
Selenium mg/L
GWC11
Selenium mg/L
Anzecc
DWQG
CRD (mm)
Molybdenum mg/L
GWC11
Molybdenum mg/L
Anzecc
CRD (mm)
Pit 4
Pit 3, Pit 7
Pit 6
Pit 8
2012
2013
2014
2015
2016
2017
2018
2019
2020

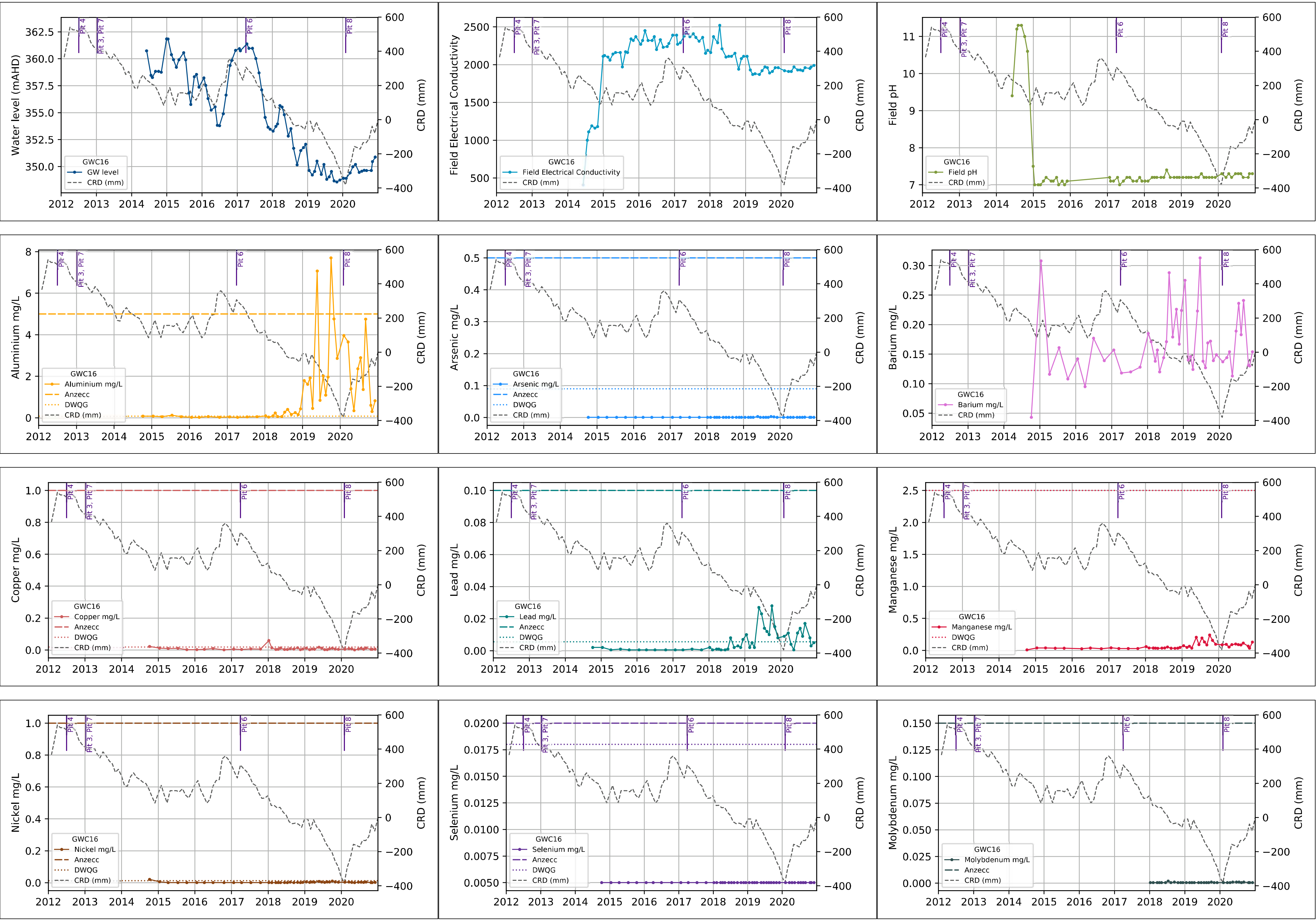


Water level (mAHD)
CRD (mm)
GWC12
GW level
CRD (mm)
Pit 4
Pit 3, Pit 7
Pit 6
Pit 8
Field Electrical Conductivity
GWC12
Field Electrical Conductivity
CRD (mm)
Field pH
GWC12
Field pH
CRD (mm)
Aluminium mg/L
GWC12
Aluminium mg/L
Anzecc
DWQG
CRD (mm)
Arsenic mg/L
GWC12
Arsenic mg/L
Anzecc
DWQG
CRD (mm)
Barium mg/L
GWC12
Barium mg/L
CRD (mm)
Copper mg/L
GWC12
Copper mg/L
Anzecc
DWQG
CRD (mm)
Lead mg/L
GWC12
Lead mg/L
Anzecc
DWQG
CRD (mm)
Manganese mg/L
GWC12
Manganese mg/L
DWQG
CRD (mm)
Nickel mg/L
GWC12
Nickel mg/L
Anzecc
DWQG
CRD (mm)
Selenium mg/L
GWC12
Selenium mg/L
Anzecc
DWQG
CRD (mm)
Molybdenum mg/L
GWC12
Molybdenum mg/L
Anzecc
CRD (mm)
2012
2013
2014
2015
2016
2017
2018
2019
2020

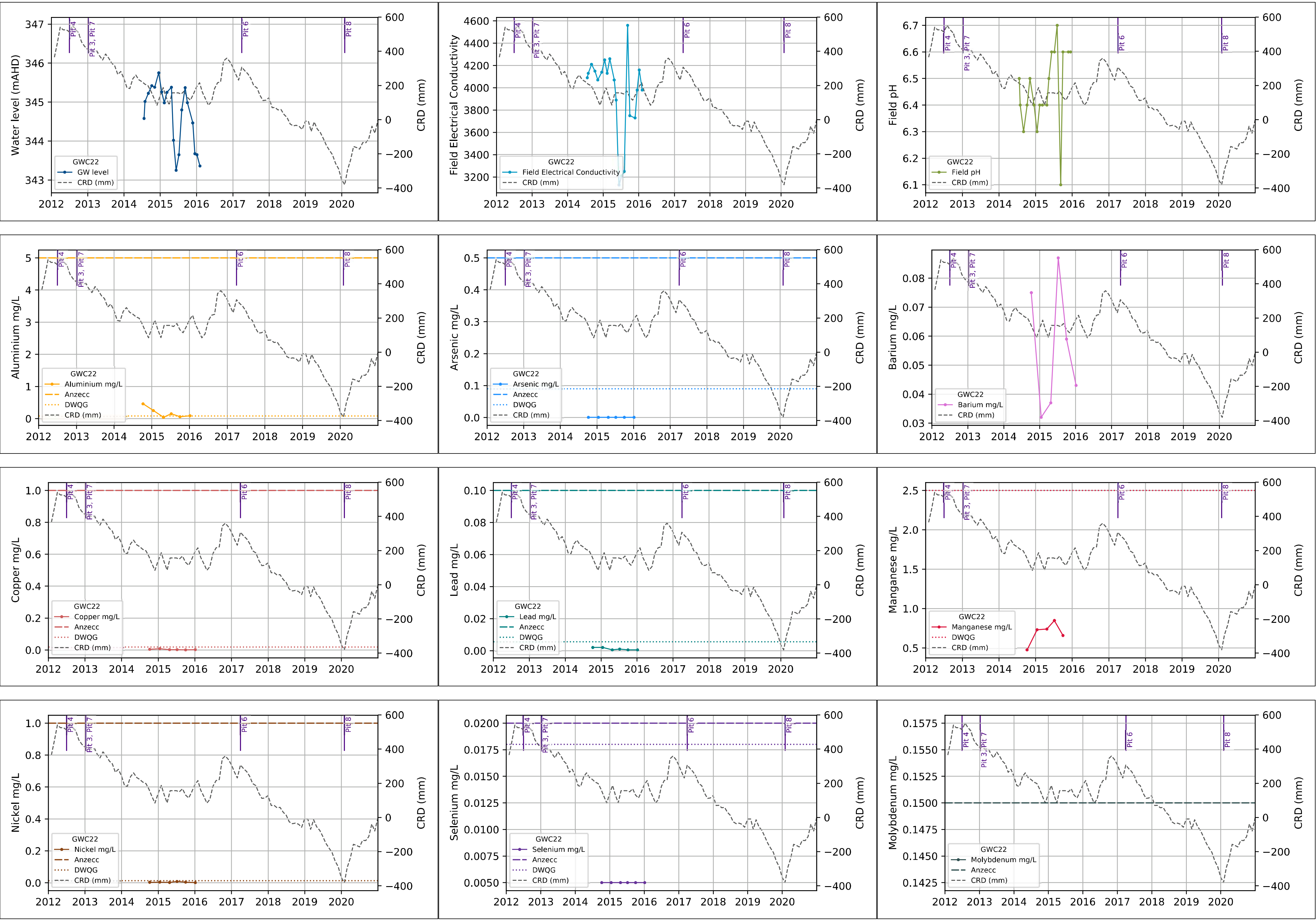

GWC14
GW level
CRD (mm)
Water level (mAHD)
Field Electrical Conductivity
Field pH
Aluminium mg/L
Arsenic mg/L
Barium mg/L
Copper mg/L
Lead mg/L
Manganese mg/L
Nickel mg/L
Selenium mg/L
Molybdenum mg/L
Anzecc
DWQG
Pit 4
Pit 3, Pit 7
Pit 6
Pit 8



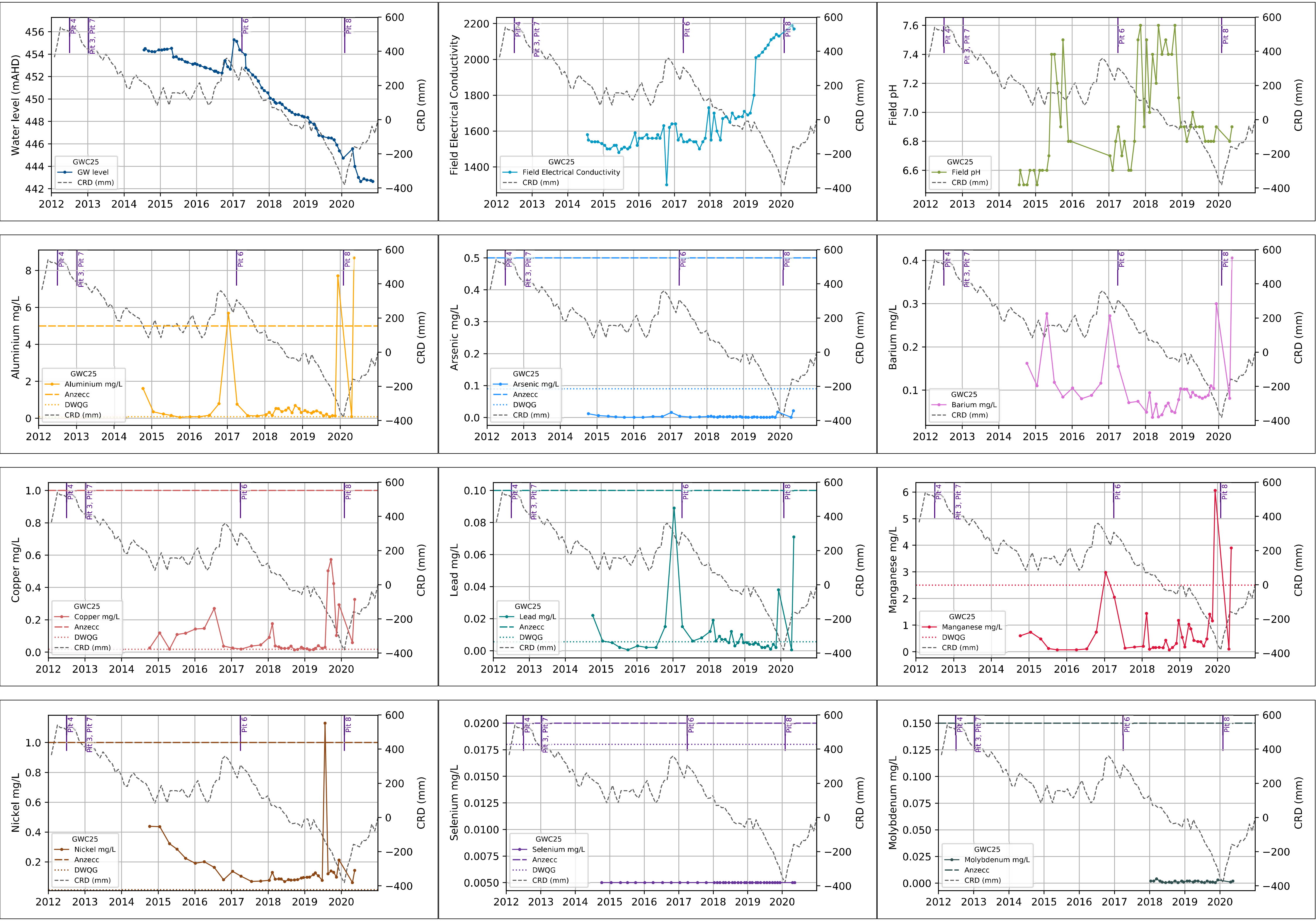
GWC15
Water level (mAHD)
CRD (mm)
GW level
CRD (mm)
Field Electrical Conductivity
Field pH
Aluminium mg/L
Anzecc
DWQG
Arsenic mg/L
Barium mg/L
Copper mg/L
Lead mg/L
Manganese mg/L
Nickel mg/L
Selenium mg/L
Molybdenum mg/L
Pit 4
Pit 3, Pit 7
Pit 6
Pit 8
2012
2013
2014
2015
2016
2017
2018
2019
2020



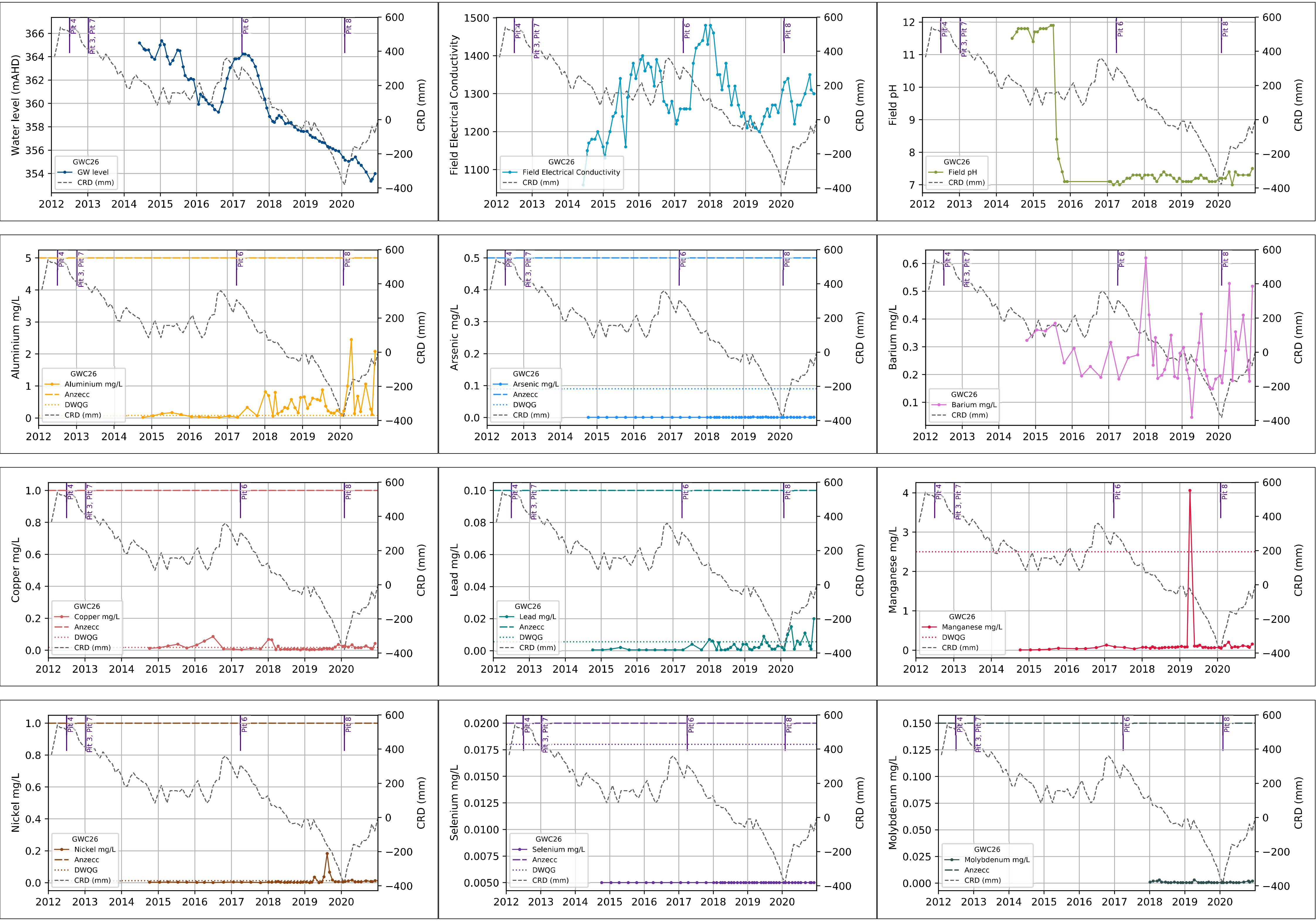
Water level (mAHD)
CRD (mm)
GWC16
GW level
CRD (mm)
Field Electrical Conductivity
GWC16
Field Electrical Conductivity
CRD (mm)
Field pH
GWC16
Field pH
CRD (mm)
Aluminium mg/L
GWC16
Aluminium mg/L
Anzecc
DWQG
CRD (mm)
Arsenic mg/L
GWC16
Arsenic mg/L
Anzecc
DWQG
CRD (mm)
Barium mg/L
GWC16
Barium mg/L
CRD (mm)
Copper mg/L
GWC16
Copper mg/L
Anzecc
DWQG
CRD (mm)
Lead mg/L
GWC16
Lead mg/L
Anzecc
DWQG
CRD (mm)
Manganese mg/L
GWC16
Manganese mg/L
DWQG
CRD (mm)
Nickel mg/L
GWC16
Nickel mg/L
Anzecc
DWQG
CRD (mm)
Selenium mg/L
GWC16
Selenium mg/L
Anzecc
DWQG
CRD (mm)
Molybdenum mg/L
GWC16
Molybdenum mg/L
Anzecc
CRD (mm)
Pit 4
Pit 3, Pit 7
Pit 6
Pit 8
2012
2013
2014
2015
2016
2017
2018
2019
2020

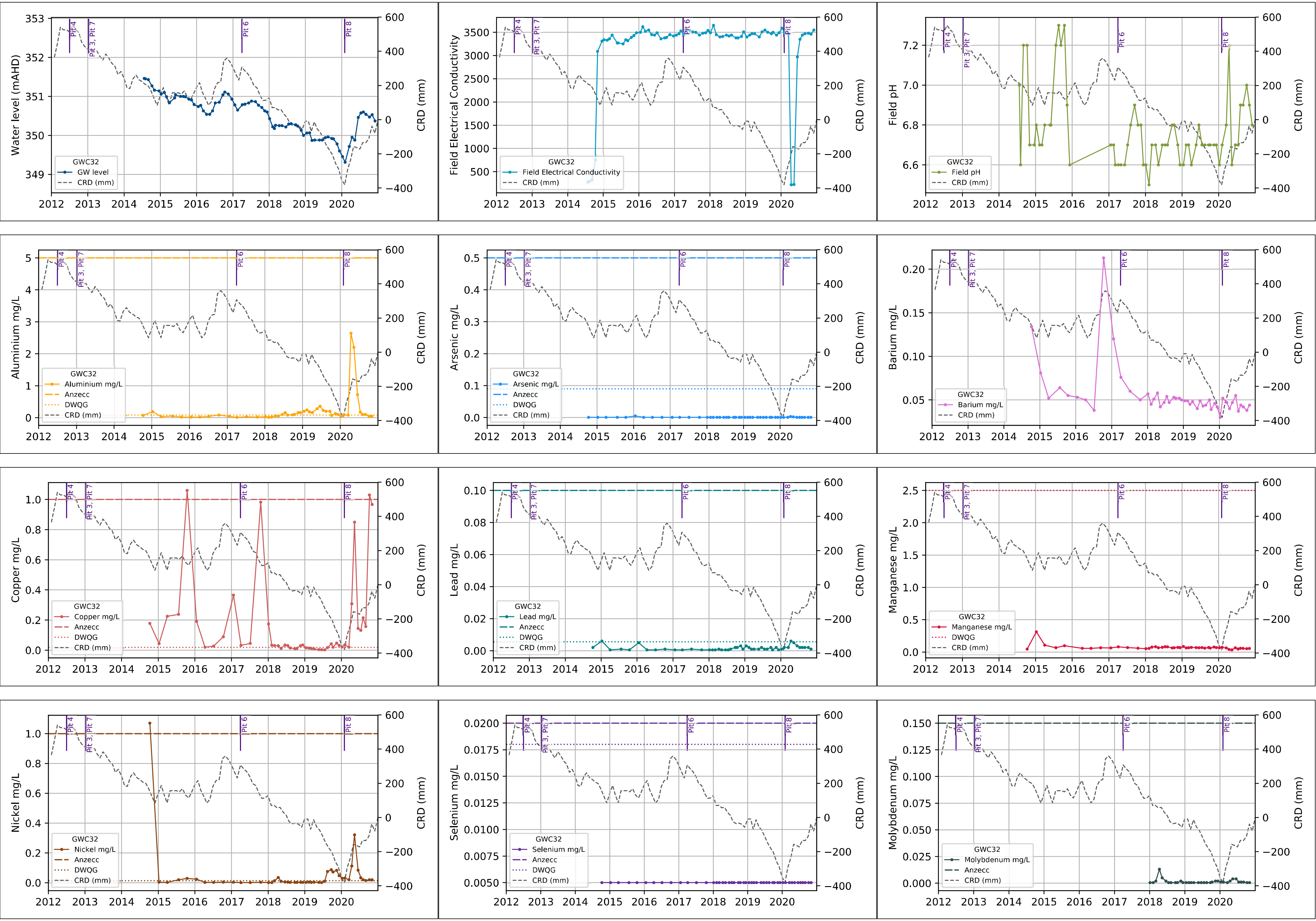


Water level (mAHD)
CRD (mm)
GWC22
GW level
CRD (mm)
Pit 4
Pit 3, Pit 7
Pit 6
Pit 8
Field Electrical Conductivity
GWC22
Field Electrical Conductivity
CRD (mm)
Field pH
GWC22
Field pH
CRD (mm)
Aluminium mg/L
GWC22
Aluminium mg/L
Anzecc
DWQG
CRD (mm)
Arsenic mg/L
GWC22
Arsenic mg/L
Anzecc
DWQG
CRD (mm)
Barium mg/L
GWC22
Barium mg/L
CRD (mm)
Copper mg/L
GWC22
Copper mg/L
Anzecc
DWQG
CRD (mm)
Lead mg/L
GWC22
Lead mg/L
Anzecc
DWQG
CRD (mm)
Manganese mg/L
GWC22
Manganese mg/L
DWQG
CRD (mm)
Nickel mg/L
GWC22
Nickel mg/L
Anzecc
DWQG
CRD (mm)
Selenium mg/L
GWC22
Selenium mg/L
Anzecc
DWQG
CRD (mm)
Molybdenum mg/L
GWC22
Molybdenum mg/L
Anzecc
CRD (mm)
2012
2013
2014
2015
2016
2017
2018
2019
2020

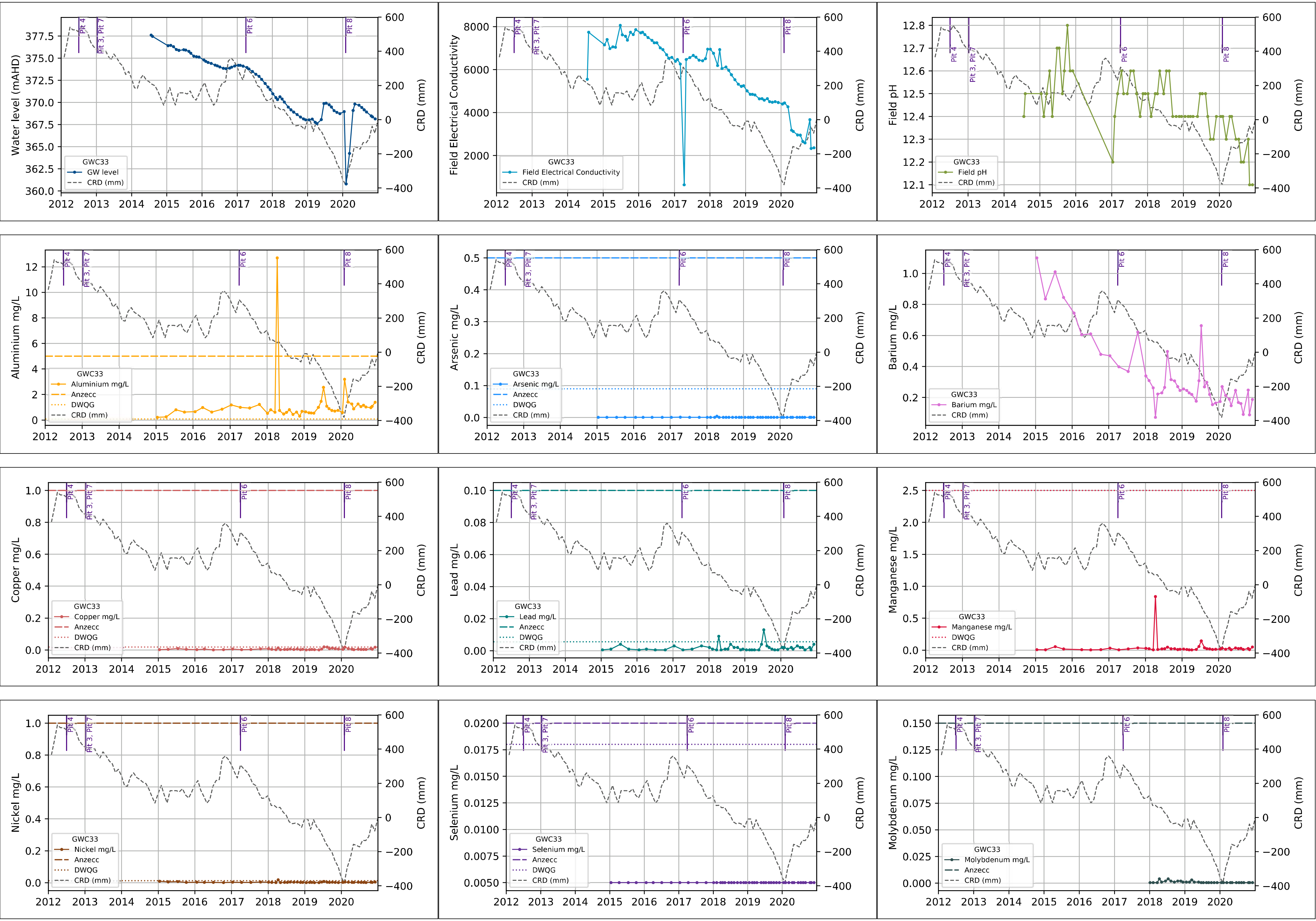


Water level (mAHD)
CRD (mm)
GWC25
GW level
CRD (mm)
Field Electrical Conductivity
GWC25
Field Electrical Conductivity
CRD (mm)
Field pH
GWC25
Field pH
CRD (mm)
Aluminium mg/L
GWC25
Aluminium mg/L
Anzecc
DWQG
CRD (mm)
Arsenic mg/L
GWC25
Arsenic mg/L
Anzecc
DWQG
CRD (mm)
Barium mg/L
GWC25
Barium mg/L
CRD (mm)
Copper mg/L
GWC25
Copper mg/L
Anzecc
DWQG
CRD (mm)
Lead mg/L
GWC25
Lead mg/L
Anzecc
DWQG
CRD (mm)
Manganese mg/L
GWC25
Manganese mg/L
DWQG
CRD (mm)
Nickel mg/L
GWC25
Nickel mg/L
Anzecc
DWQG
CRD (mm)
Selenium mg/L
GWC25
Selenium mg/L
Anzecc
DWQG
CRD (mm)
Molybdenum mg/L
GWC25
Molybdenum mg/L
Anzecc
CRD (mm)
Pit 4
Pit 3, Pit 7
Pit 6
Pit 8
2012
2013
2014
2015
2016
2017
2018
2019
2020

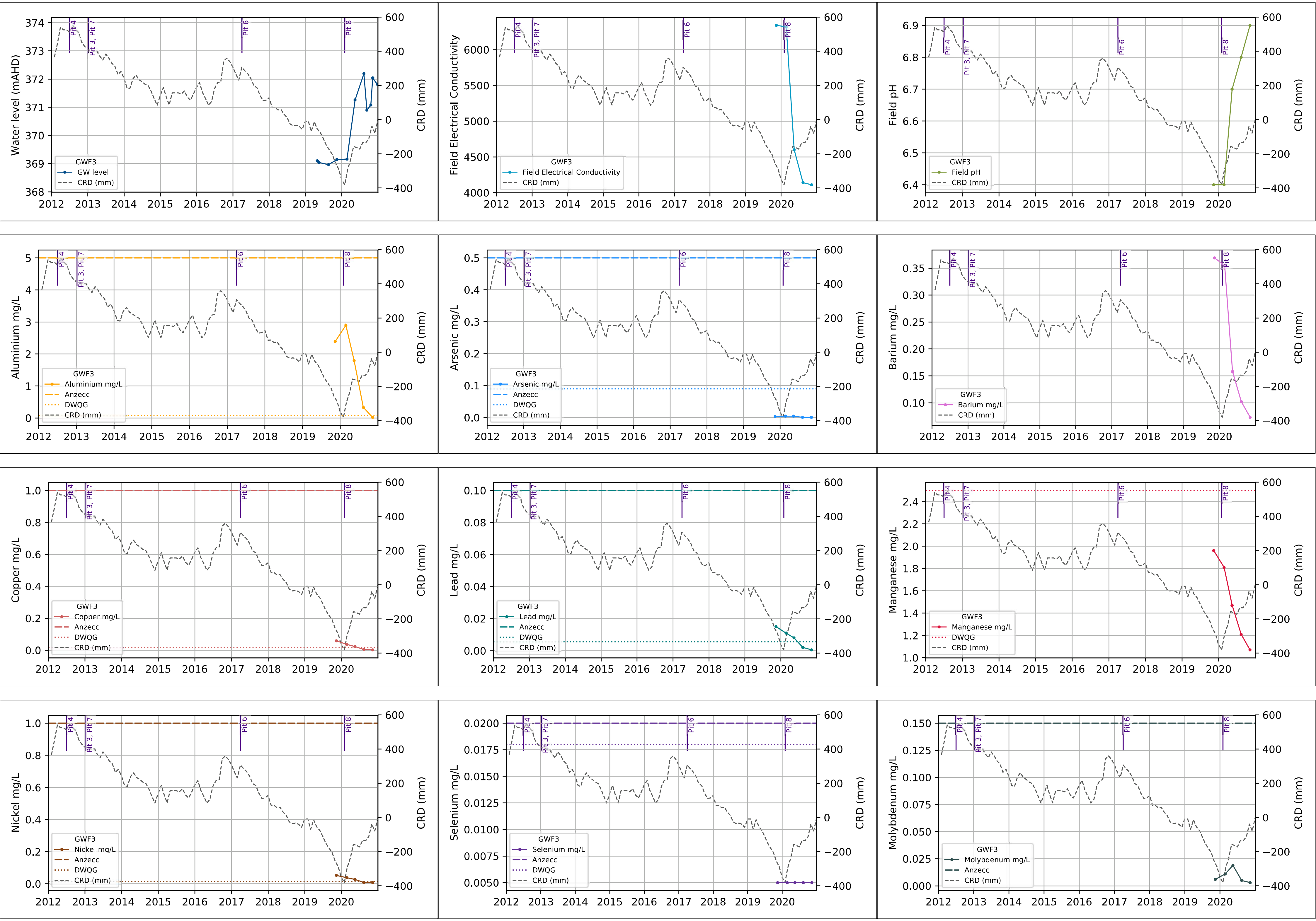

Water level (mAHD)
CRD (mm)
GWC26
GW level
CRD (mm)
Field Electrical Conductivity
GWC26
Field Electrical Conductivity
Field pH
GWC26
Field pH
Aluminium mg/L
GWC26
Aluminium mg/L
Anzecc
DWQG
Arsenic mg/L
GWC26
Arsenic mg/L
Barium mg/L
GWC26
Barium mg/L
Copper mg/L
GWC26
Copper mg/L
Lead mg/L
GWC26
Lead mg/L
Manganese mg/L
GWC26
Manganese mg/L
Nickel mg/L
GWC26
Nickel mg/L
Selenium mg/L
GWC26
Selenium mg/L
Molybdenum mg/L
GWC26
Molybdenum mg/L
Pit 4
Pit 3, Pit 7
Pit 6
Pit 8
2012
2013
2014
2015
2016
2017
2018
2019
2020



Water level (mAHD)
CRD (mm)
GWC32
GW level
CRD (mm)
Pit 4
Pit 3, Pit 7
Pit 6
Pit 8
Field Electrical Conductivity
GWC32
Field Electrical Conductivity
CRD (mm)
Field pH
GWC32
Field pH
CRD (mm)
Aluminium mg/L
GWC32
Aluminium mg/L
Anzecc
DWQG
CRD (mm)
Arsenic mg/L
GWC32
Arsenic mg/L
Anzecc
DWQG
CRD (mm)
Barium mg/L
GWC32
Barium mg/L
CRD (mm)
Copper mg/L
GWC32
Copper mg/L
Anzecc
DWQG
CRD (mm)
Lead mg/L
GWC32
Lead mg/L
Anzecc
DWQG
CRD (mm)
Manganese mg/L
GWC32
Manganese mg/L
DWQG
CRD (mm)
Nickel mg/L
GWC32
Nickel mg/L
Anzecc
DWQG
CRD (mm)
Selenium mg/L
GWC32
Selenium mg/L
Anzecc
DWQG
CRD (mm)
Molybdenum mg/L
GWC32
Molybdenum mg/L
Anzecc
CRD (mm)
2012
2013
2014
2015
2016
2017
2018
2019
2020



Water level (mAHD)
CRD (mm)
GWC33
GW level
CRD (mm)
Field Electrical Conductivity
CRD (mm)
GWC33
Field Electrical Conductivity
CRD (mm)
Field pH
CRD (mm)
GWC33
Field pH
CRD (mm)
Aluminium mg/L
CRD (mm)
GWC33
Aluminium mg/L
Anzecc
DWQG
CRD (mm)
Arsenic mg/L
CRD (mm)
GWC33
Arsenic mg/L
Anzecc
DWQG
CRD (mm)
Barium mg/L
CRD (mm)
GWC33
Barium mg/L
CRD (mm)
Copper mg/L
CRD (mm)
GWC33
Copper mg/L
Anzecc
DWQG
CRD (mm)
Lead mg/L
CRD (mm)
GWC33
Lead mg/L
Anzecc
DWQG
CRD (mm)
Manganese mg/L
CRD (mm)
GWC33
Manganese mg/L
DWQG
CRD (mm)
Nickel mg/L
CRD (mm)
GWC33
Nickel mg/L
Anzecc
DWQG
CRD (mm)
Selenium mg/L
CRD (mm)
GWC33
Selenium mg/L
Anzecc
DWQG
CRD (mm)
Molybdenum mg/L
CRD (mm)
GWC33
Molybdenum mg/L
Anzecc
CRD (mm)
Pit 4
Pit 3, Pit 7
Pit 6
Pit 8
2012 2013 2014 2015 2016 2017 2018 2019 2020



Water level (mAHD)
CRD (mm)
GWF3
GW level
CRD (mm)
Field Electrical Conductivity
Field pH
Aluminium mg/L
Arsenic mg/L
Barium mg/L
Copper mg/L
Lead mg/L
Manganese mg/L
Nickel mg/L
Selenium mg/L
Molybdenum mg/L
Anzecc
DWQG
Pit 4
Pit 3, Pit 7
Pit 6
Pit 8
2012
2013
2014
2015
2016
2017
2018
2019
2020

APPENDIX D

Modelled vs Observed Hydrographs

Figure 31 GWa1 Calibration Hydrographs

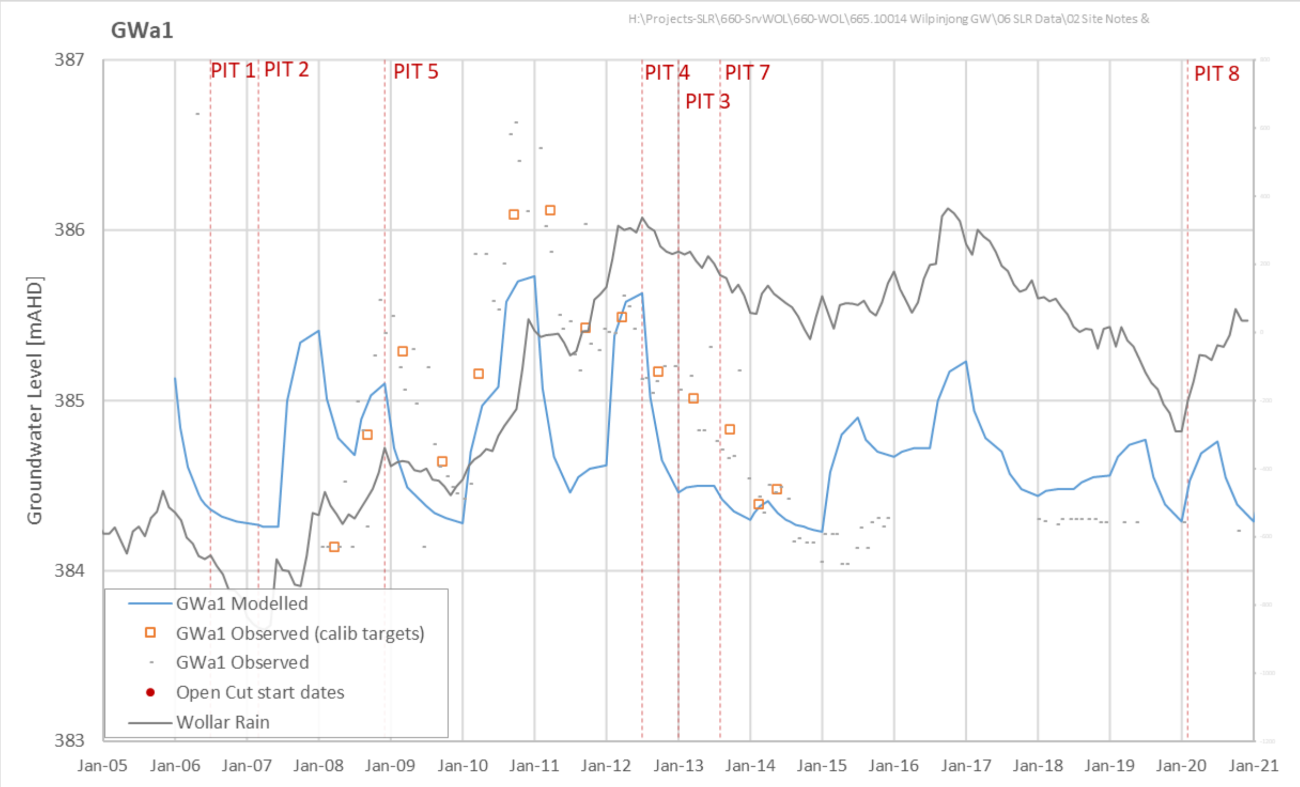


Figure 32 GWa3 Calibration Hydrographs

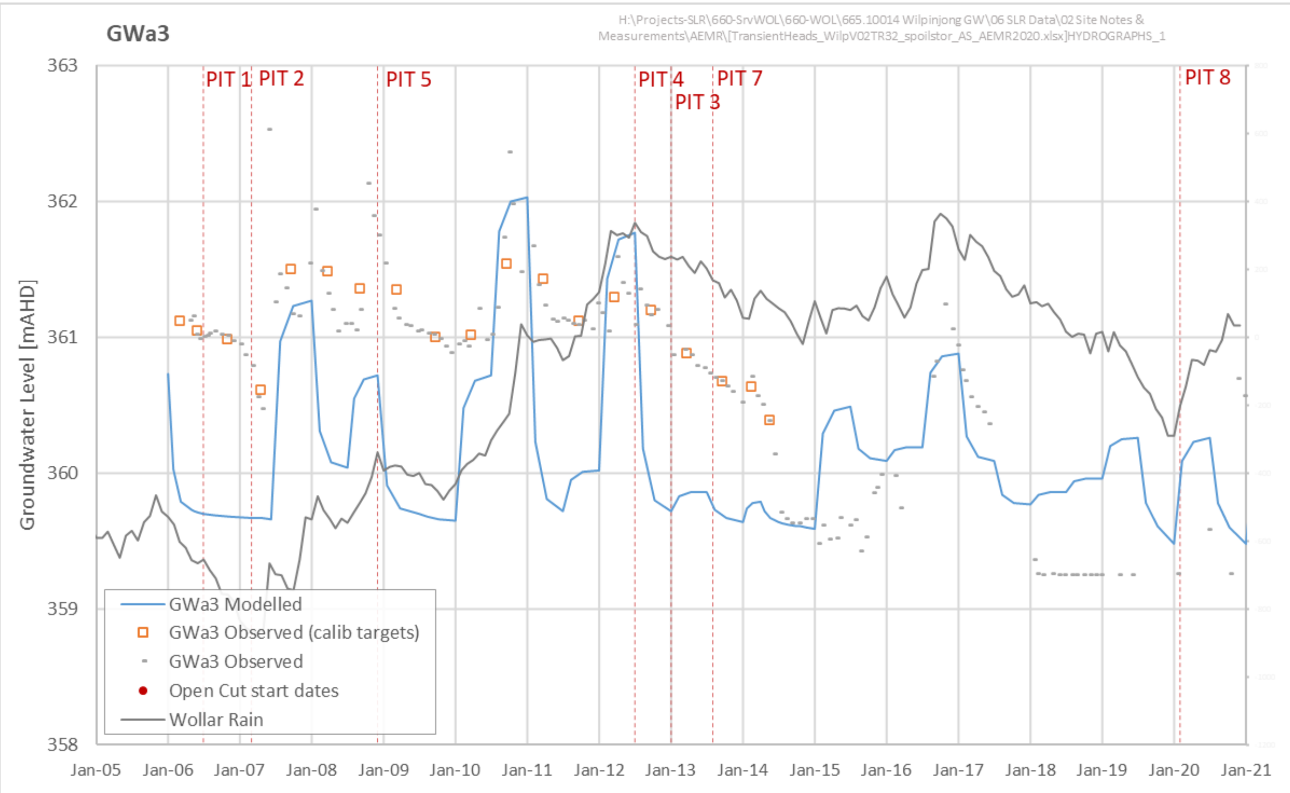


Figure 33 GWa4 Calibration Hydrographs

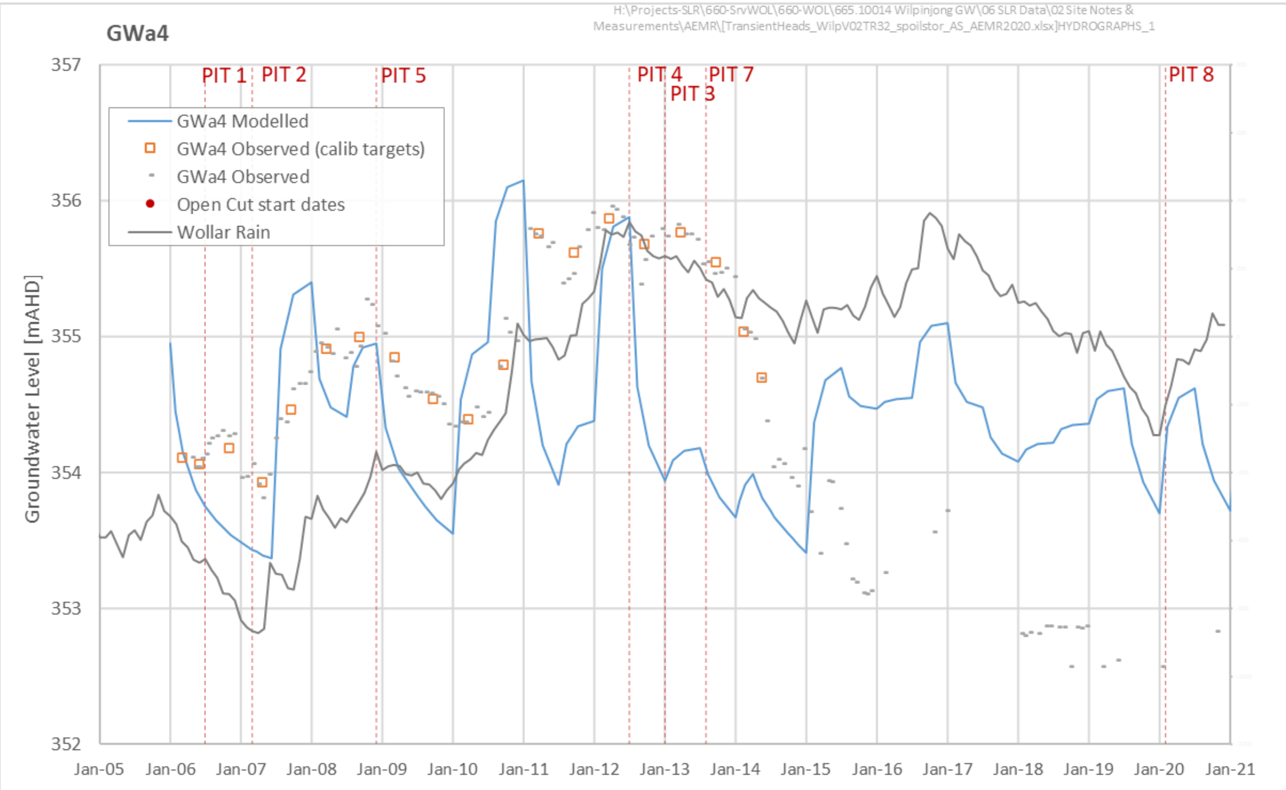


Figure 34 GWa5 Calibration Hydrographs

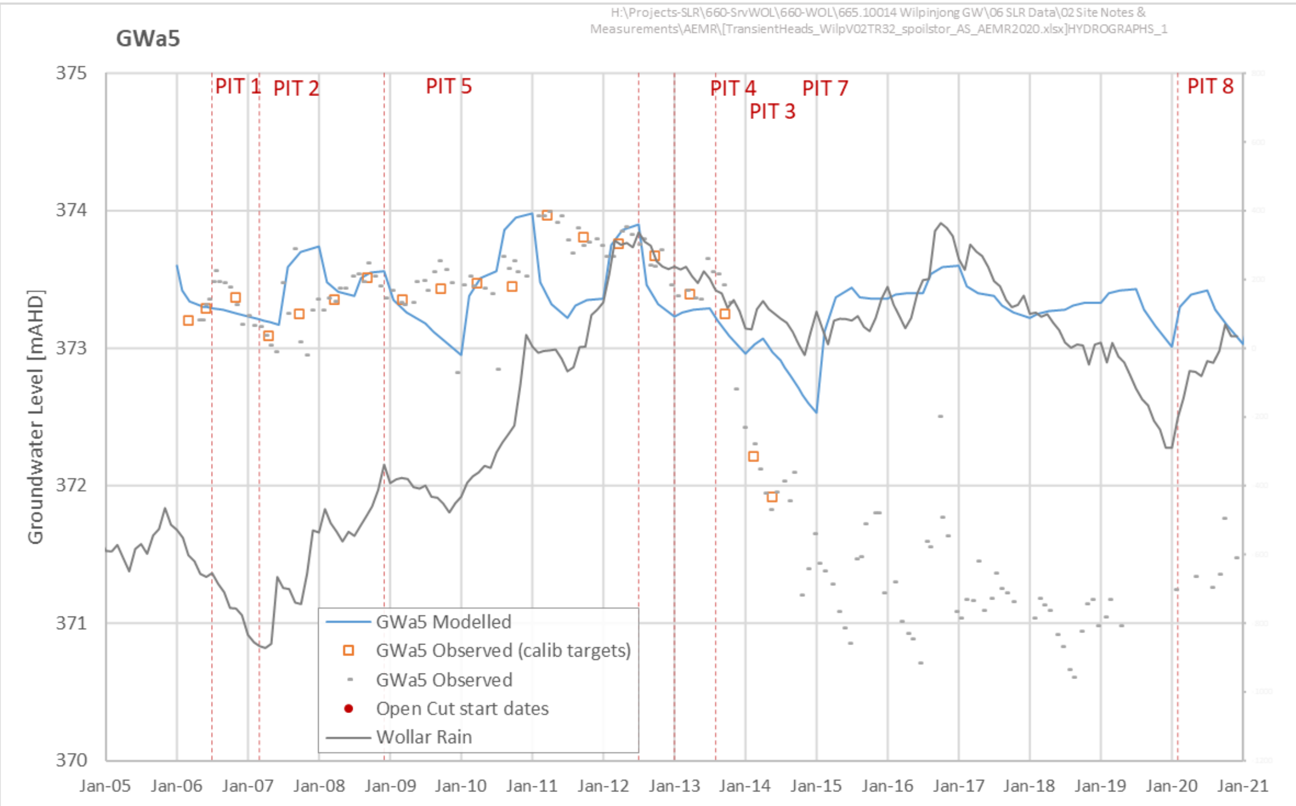


Figure 35 GWa6 Calibration Hydrographs

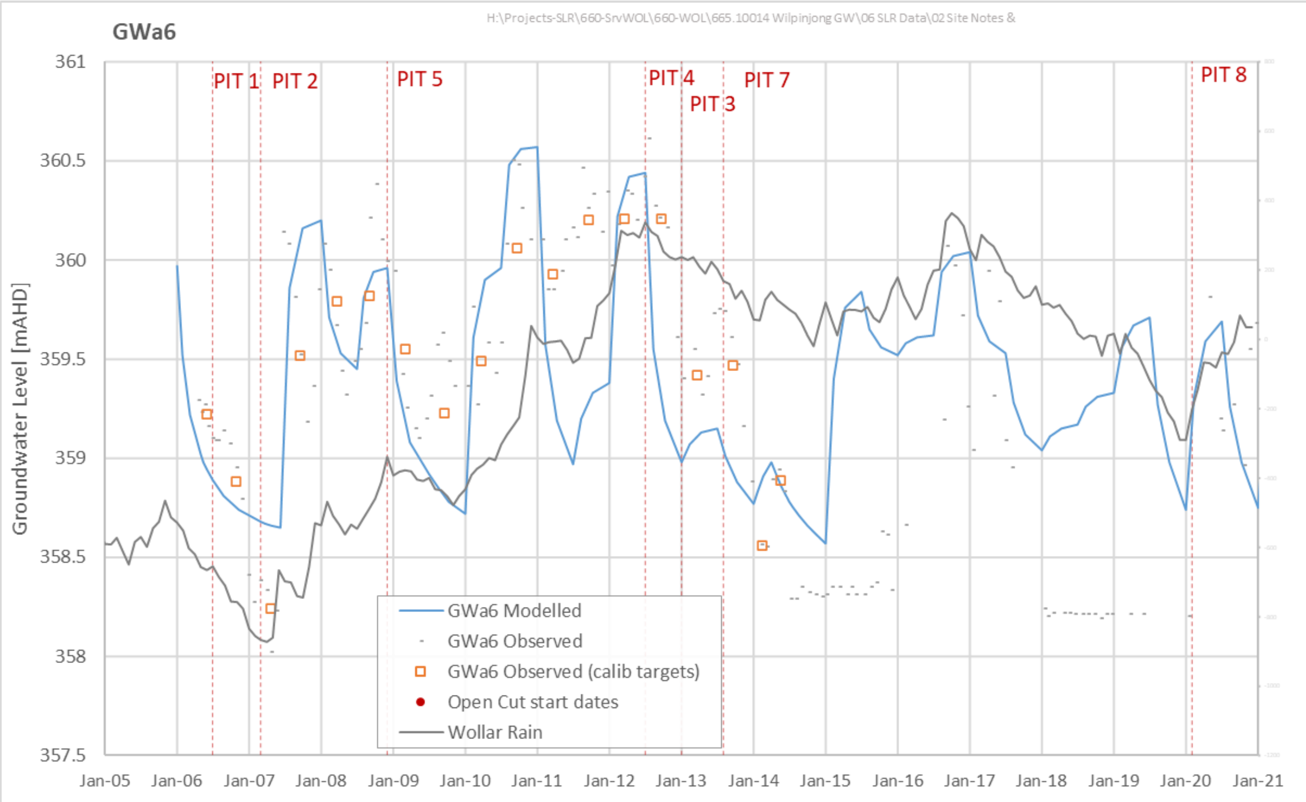


Figure 36 GWa12 Calibration Hydrographs

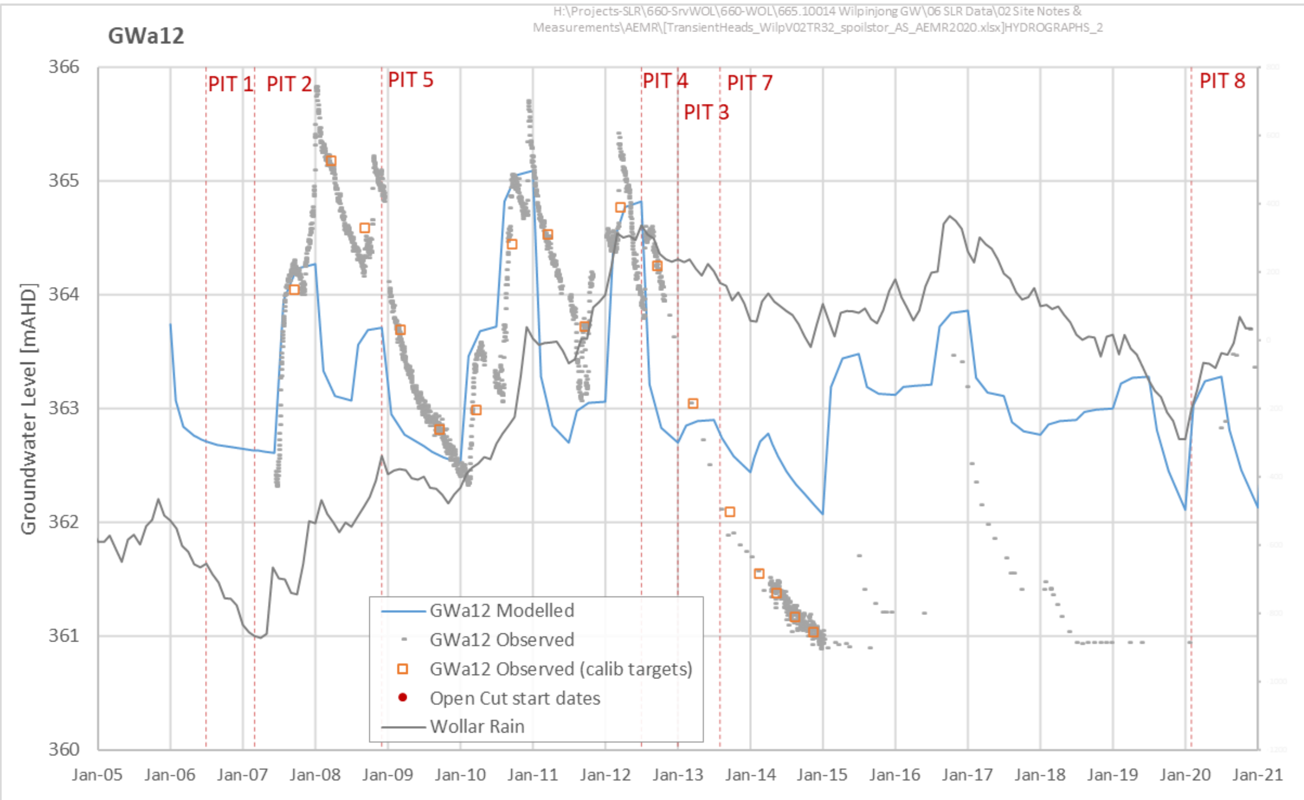


Figure 37 GWa14 Calibration Hydrographs

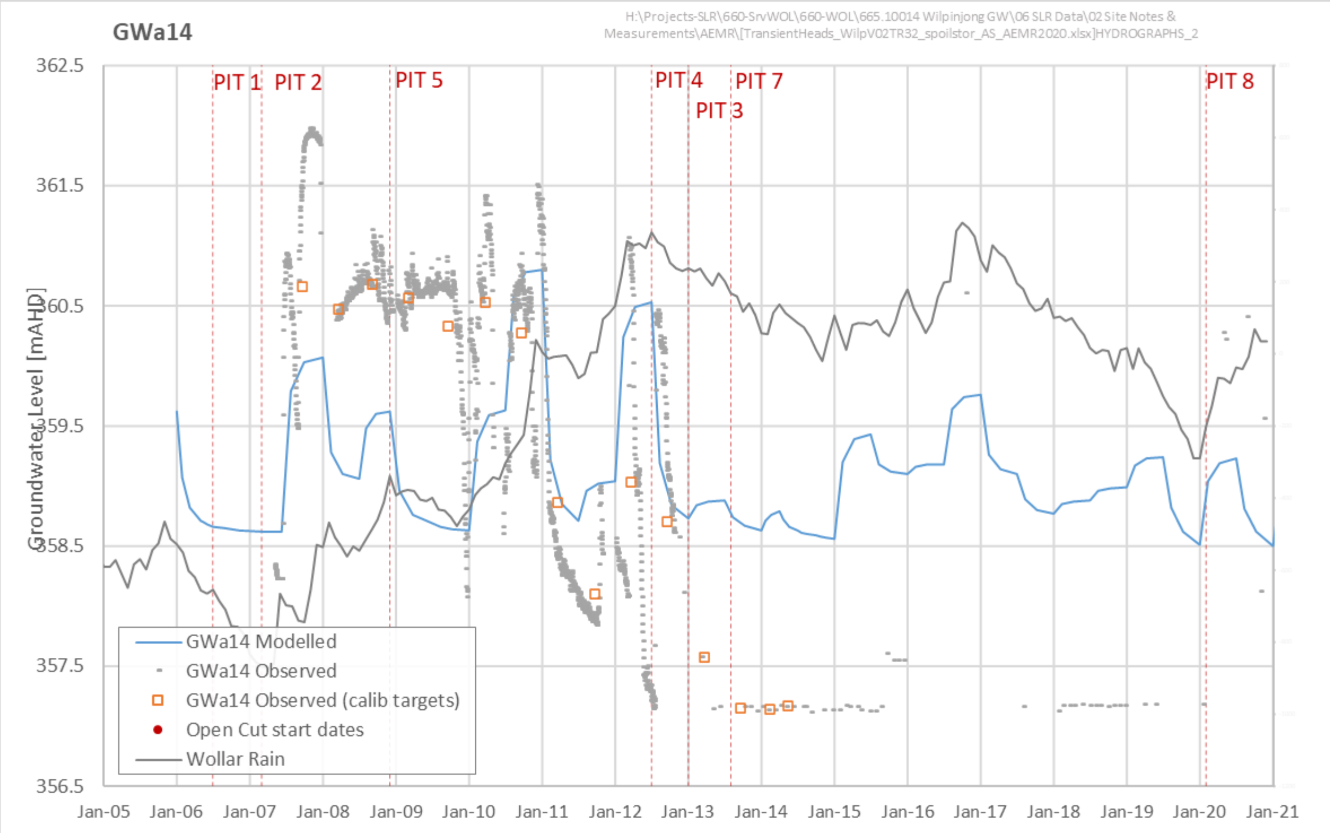


Figure 38 GWa15 Calibration Hydrographs

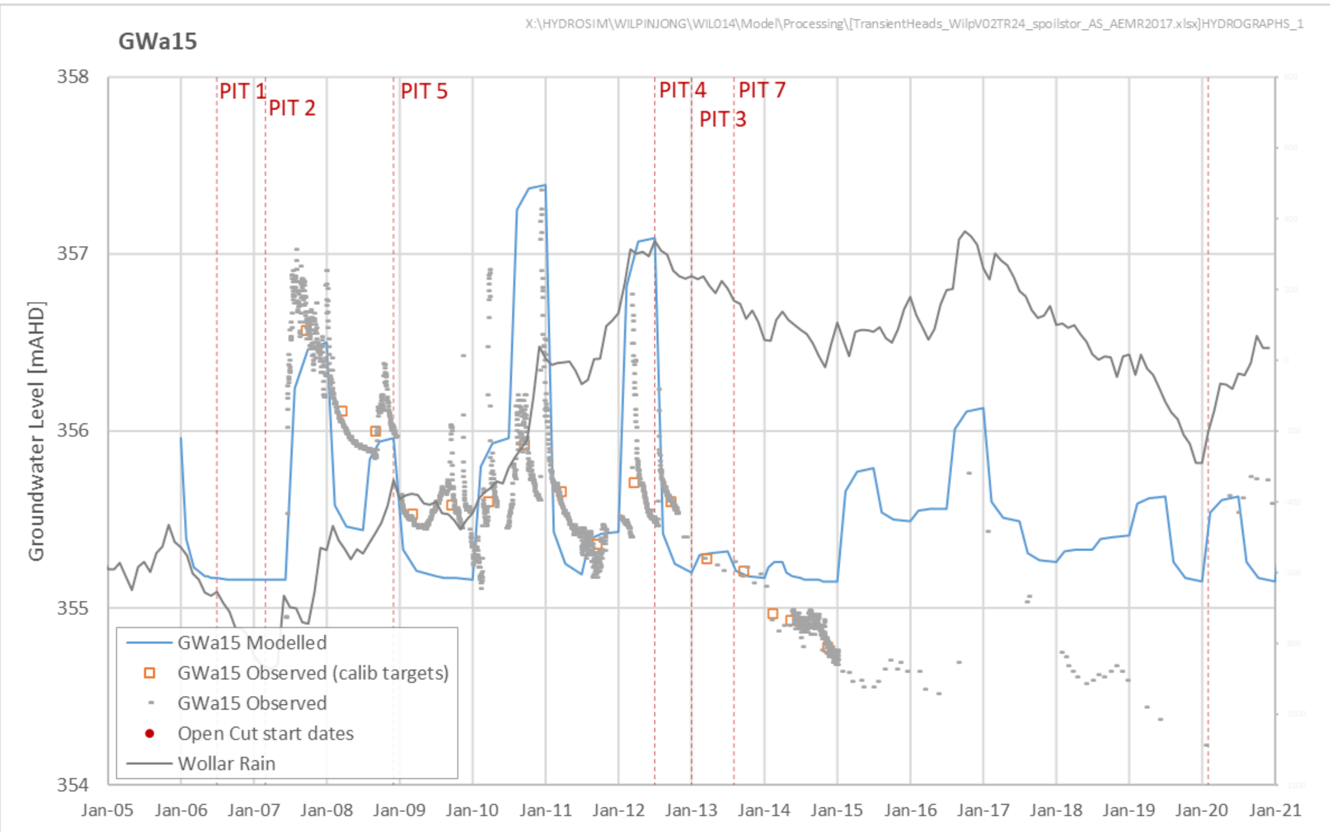


Figure 39 GWc1 Calibration Hydrographs

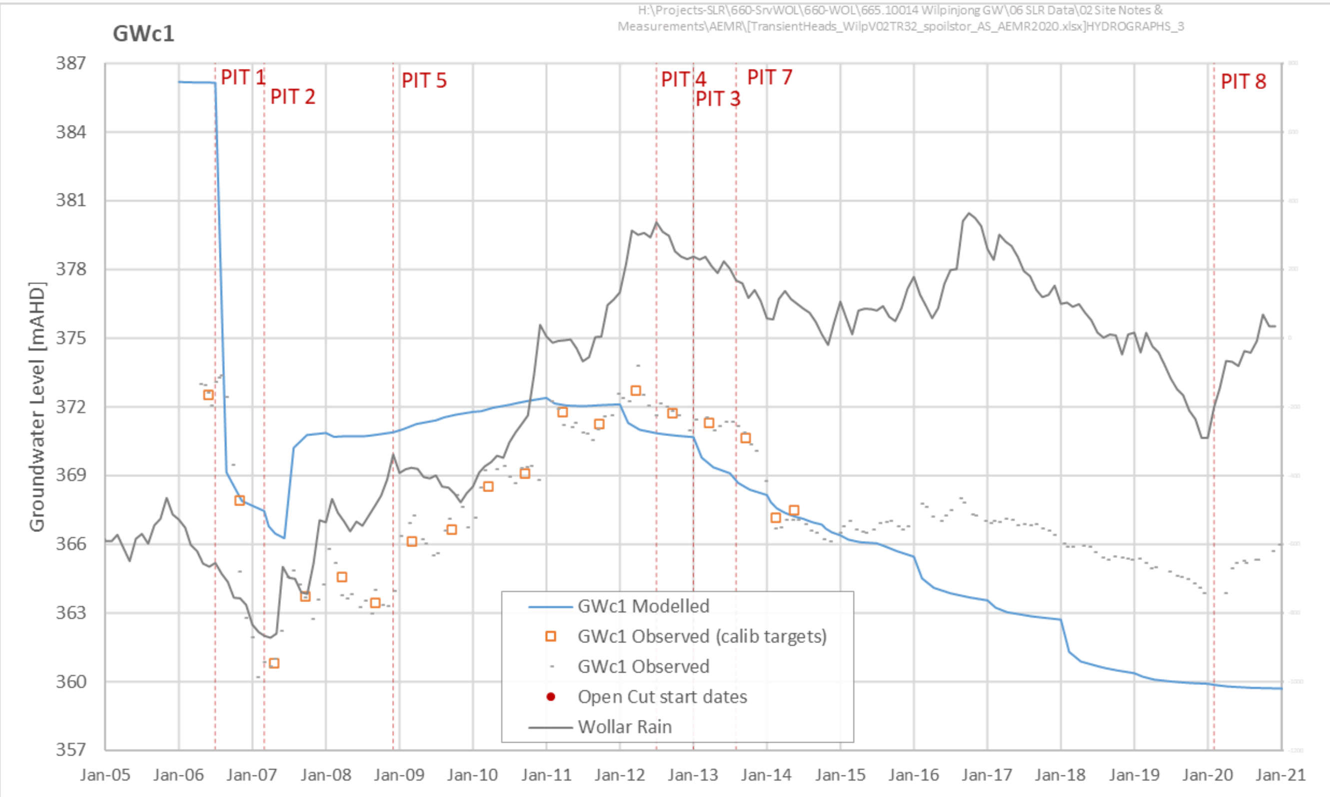


Figure 40 GWc2 Calibration Hydrographs

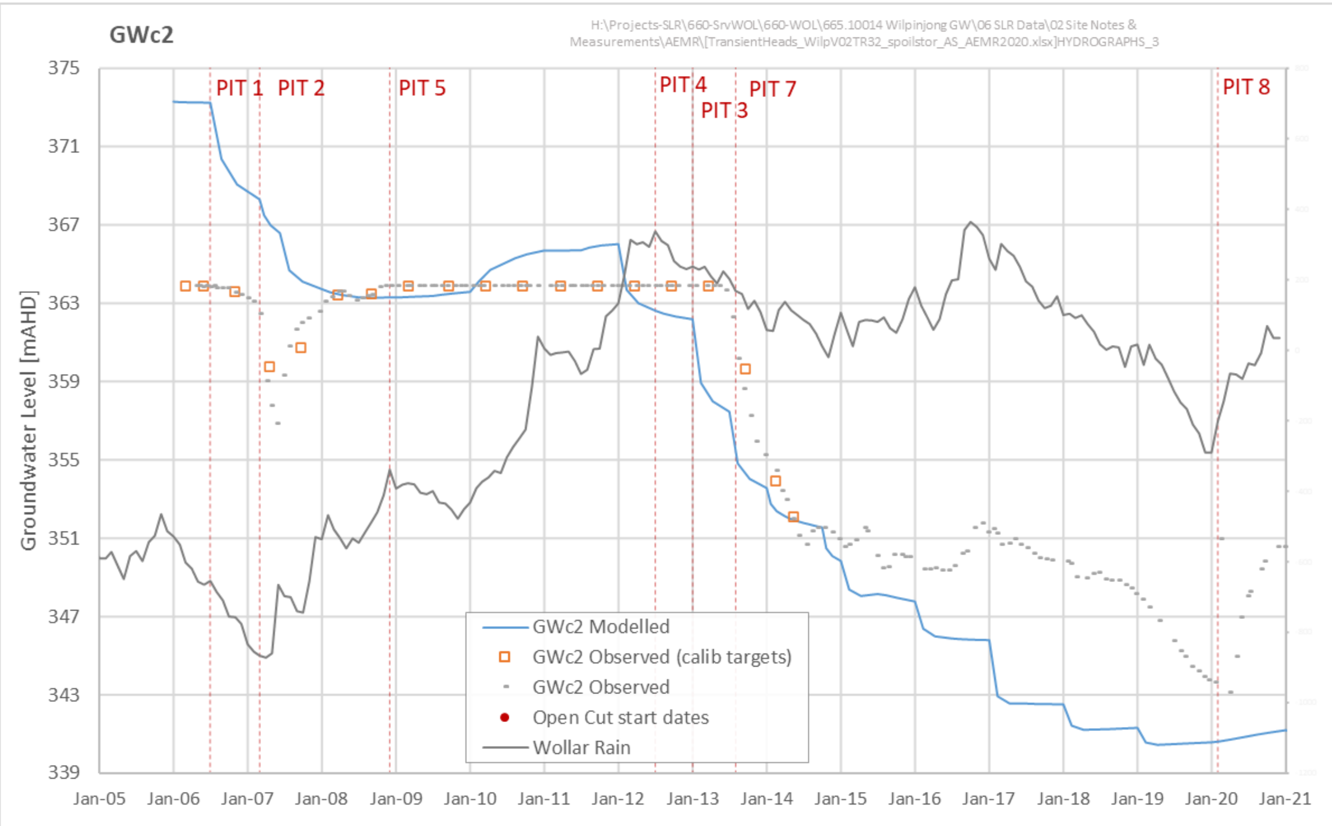


Figure 41 GWc3 Calibration Hydrographs

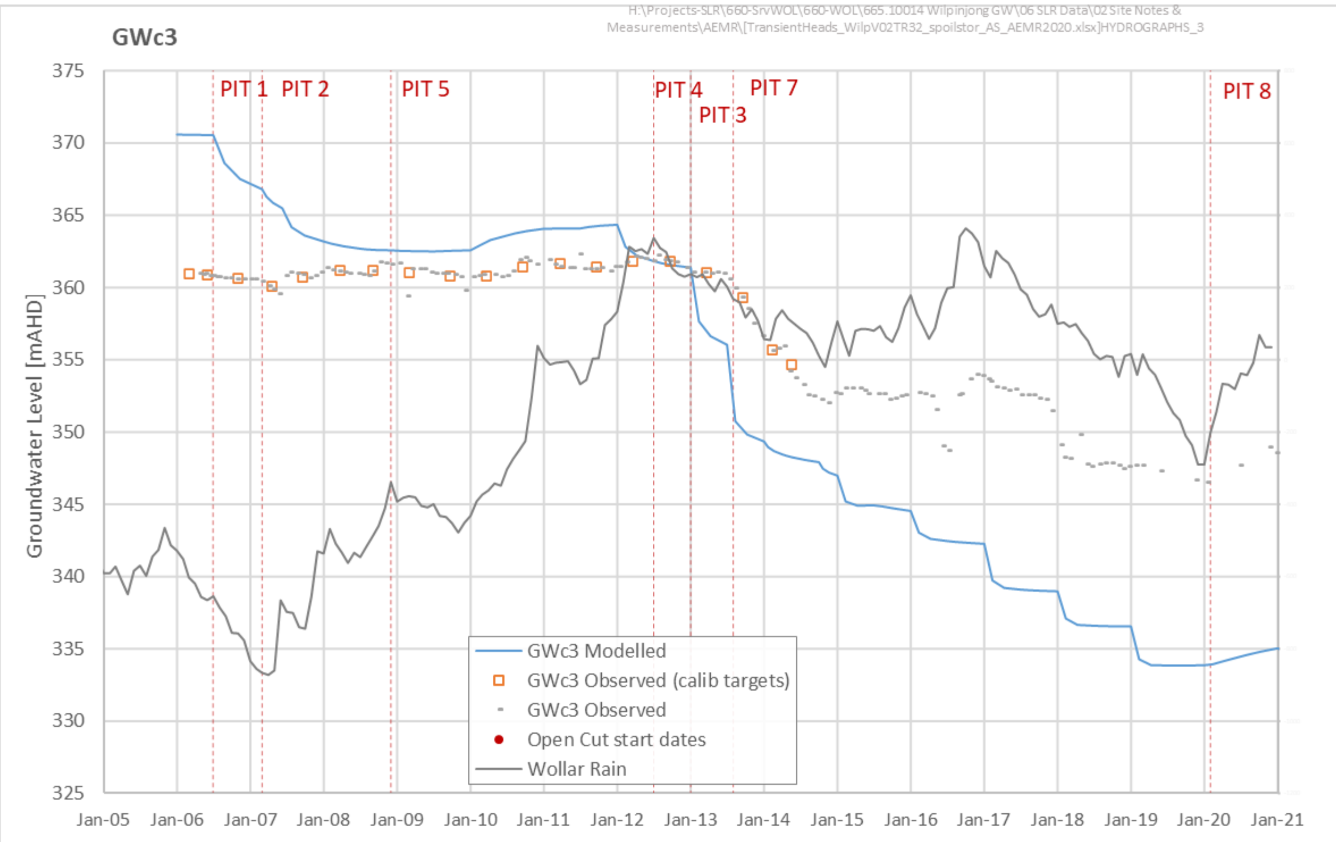


Figure 42 GWc11 Calibration Hydrographs

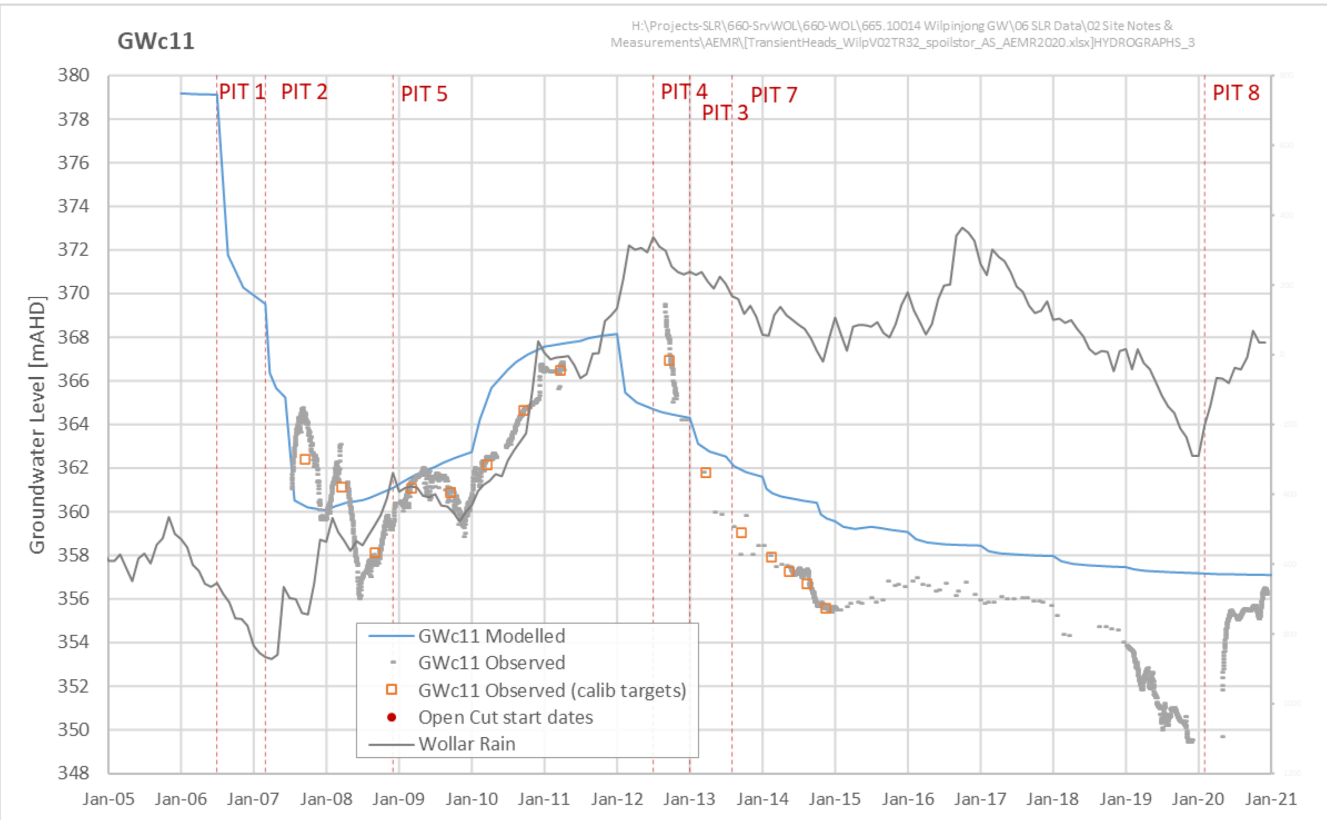


Figure 43 GWc12 Calibration Hydrographs

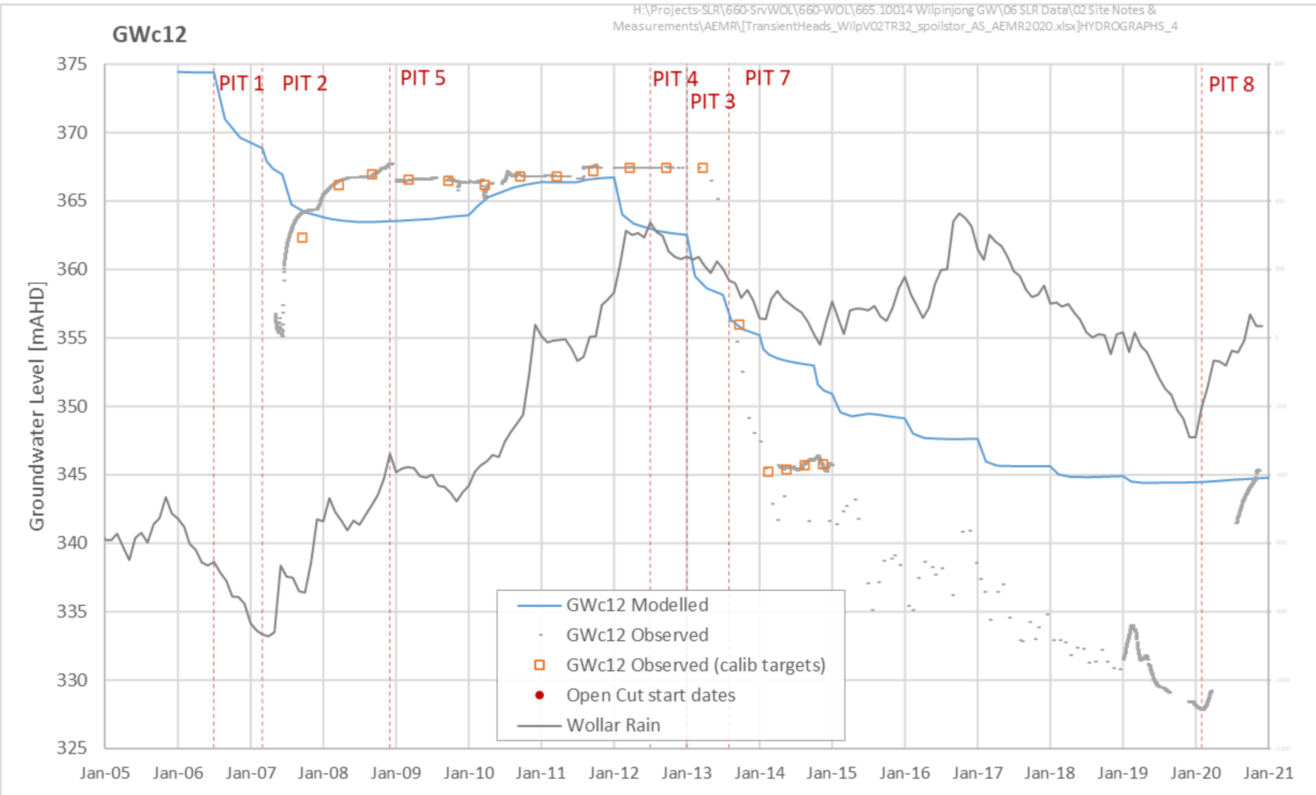


Figure 44 GWc14 Calibration Hydrographs

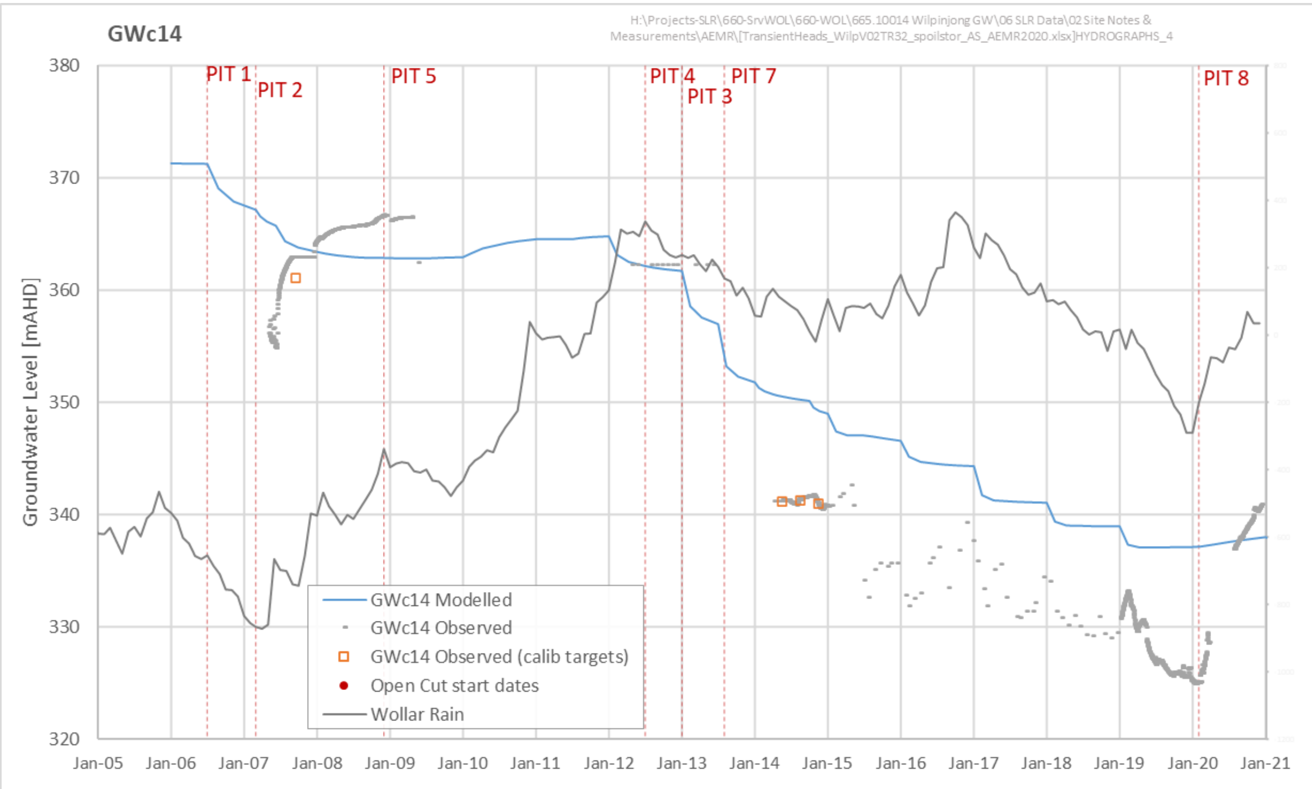


Figure 45 GWc15 Calibration Hydrographs

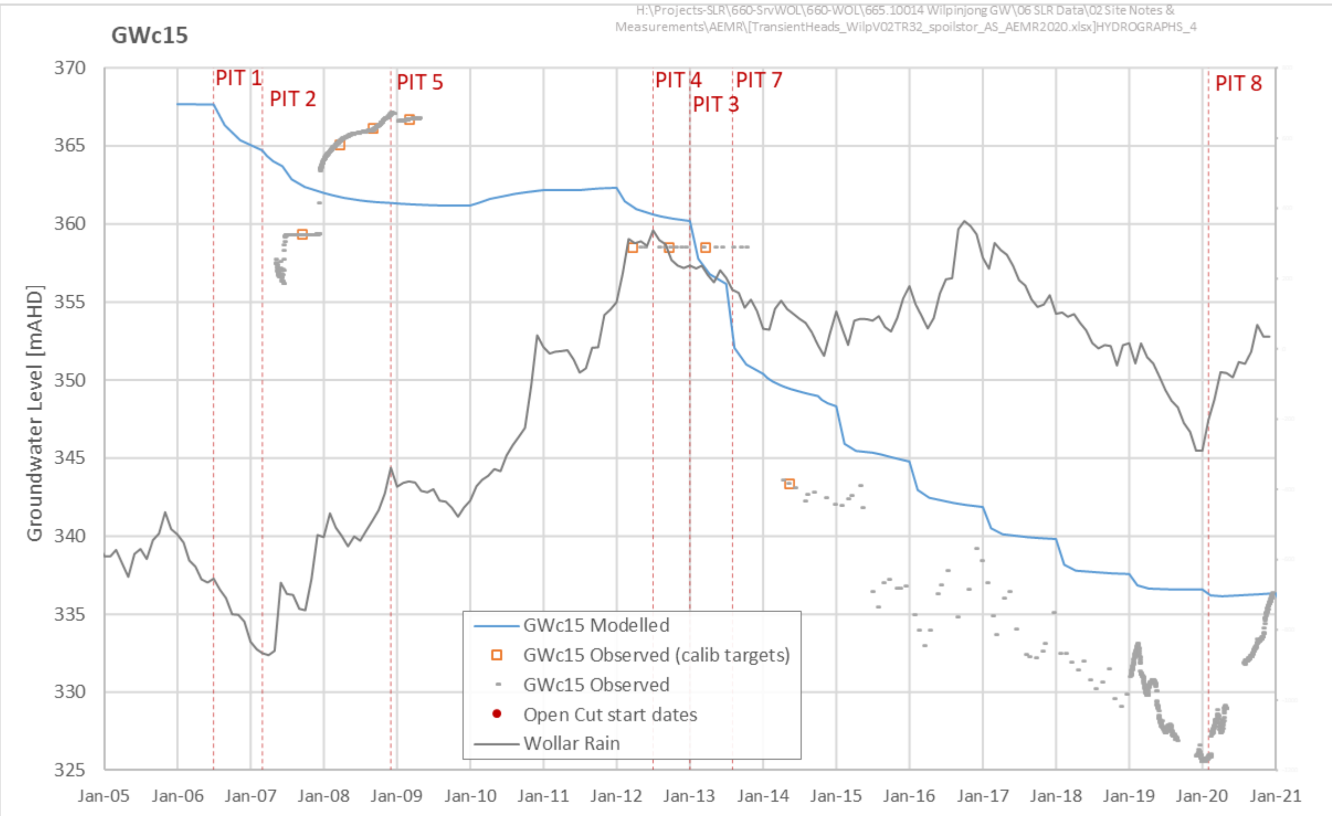


Figure 46 GWc22 Calibration Hydrographs

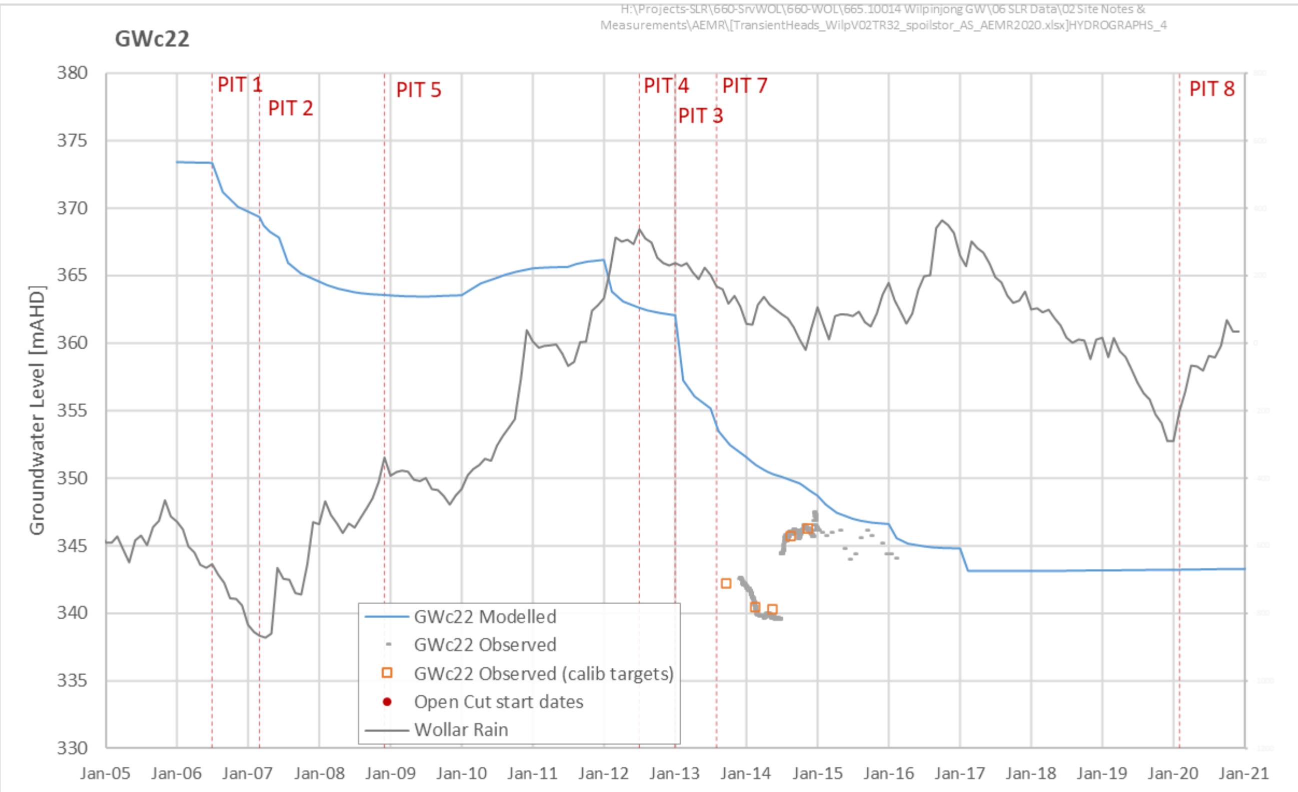


Figure 47 GWc28 Calibration Hydrographs

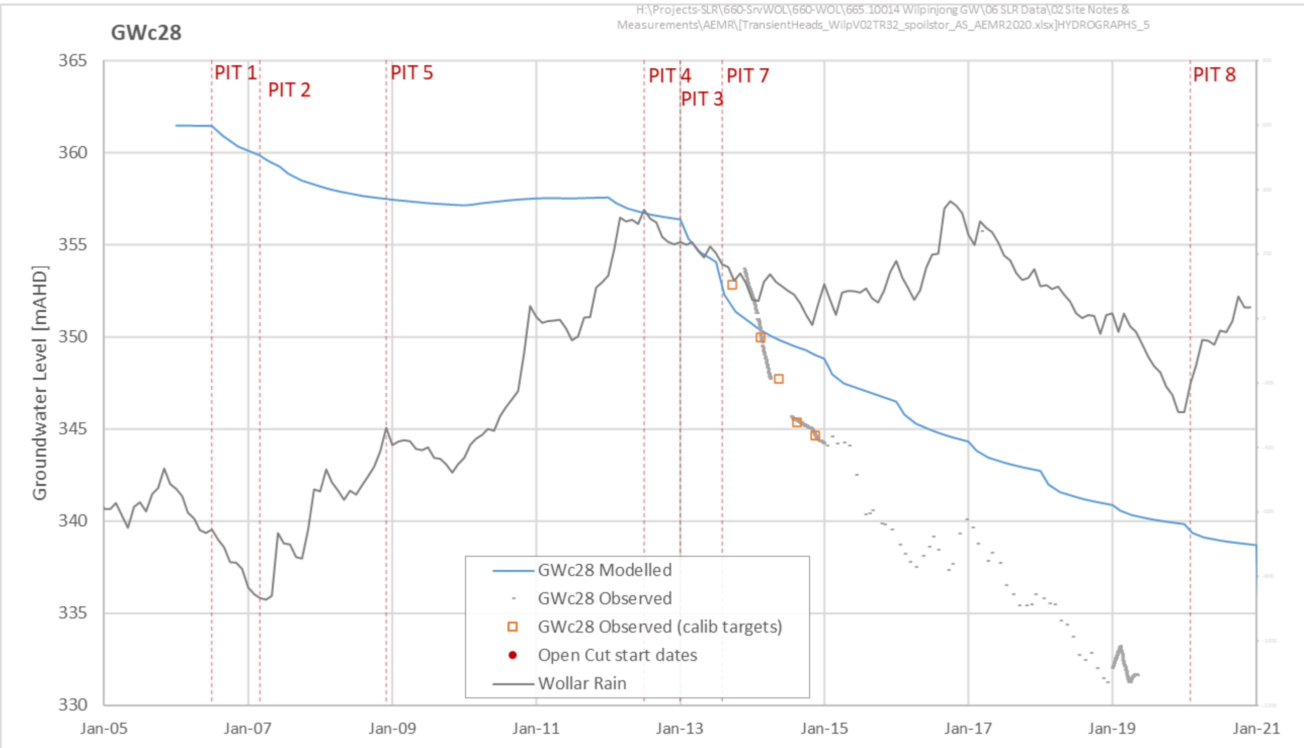
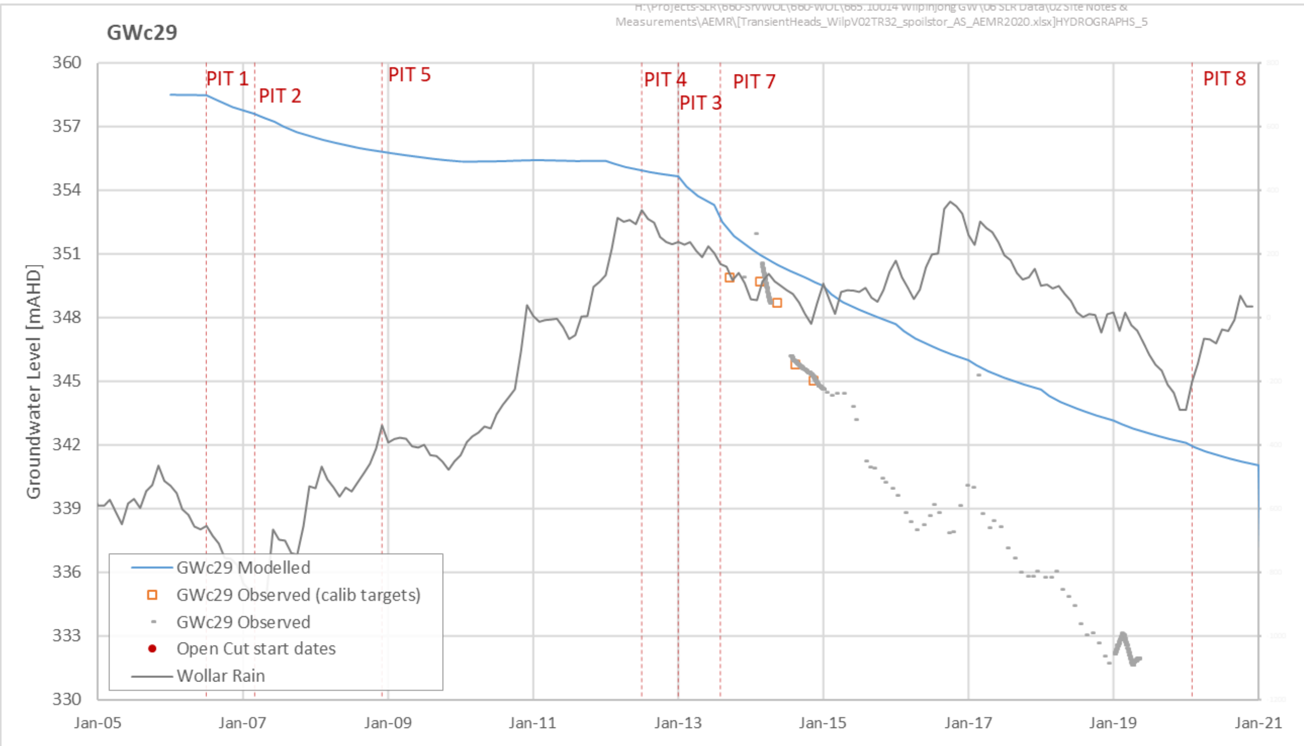


Figure 48 GWc29 Calibration Hydrographs



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