APPENDIX 3D – GROUNDWATER MONITORING DATA

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

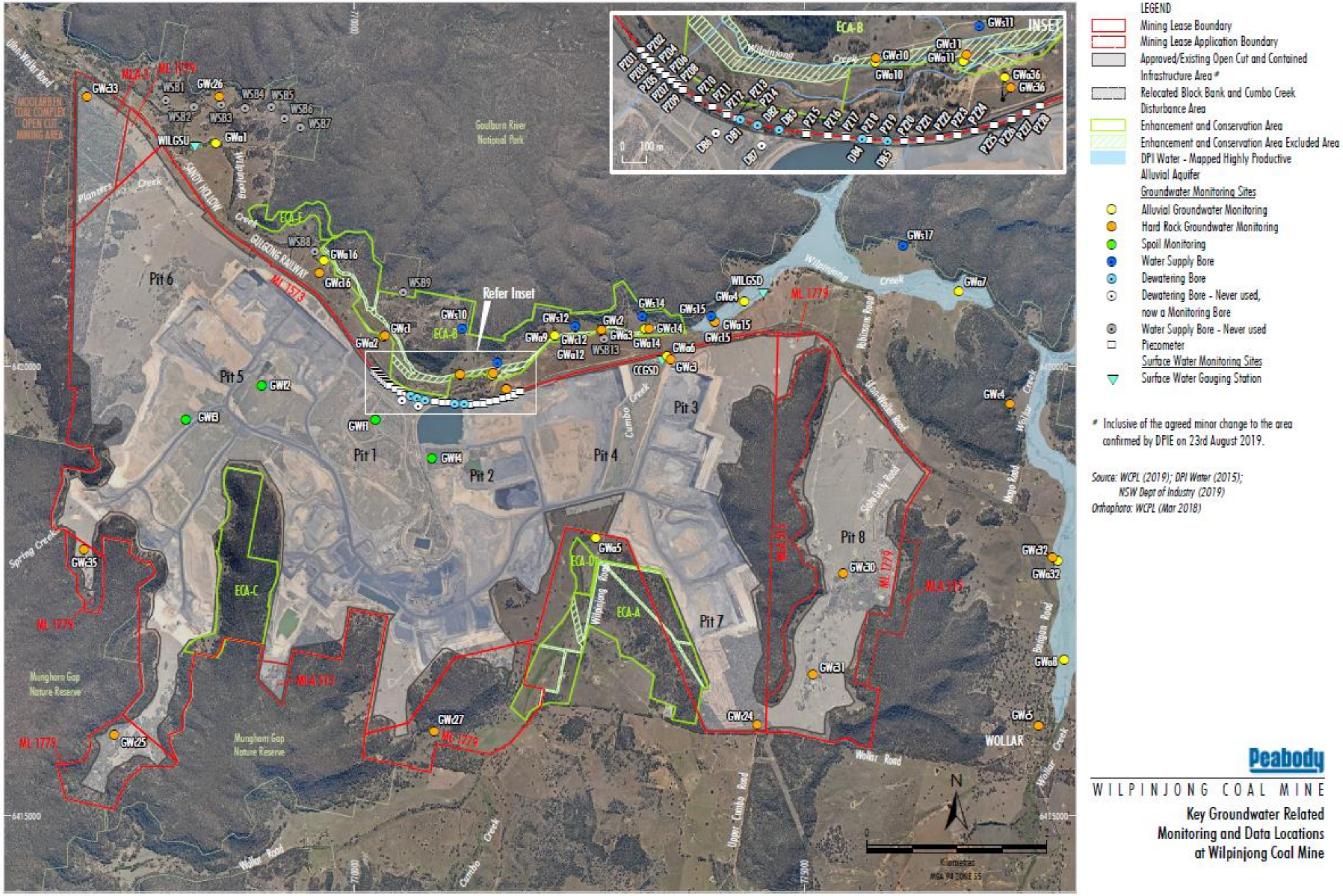
Site	Water Level (mbgl)			pH			EC (uS/cm)		
	Min	Max	Ave	Min	Max	Ave	Min	Max	Ave
GWa1	4.85	5.20	4.94	0.00	0.00	0.00	0.00	0.00	0.00
GWa2	1.37	4.27	3.09	6.60	7.00	6.76	1480.00	1910.00	1621.82
GWa3	3.62	5.12	4.22	7.00	7.40	7.17	500.00	2580.00	1281.43
GWa4	4.02	4.89	4.56	7.00	7.20	7.10	3040.00	3850.00	3546.67
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



2019 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	pH - pH Unit (Field)	Potassium - Dissolved mg/L	Selenium mg/L	Sodium - Dissolved mg/L	Strontium mg/L	Sulfate mg/L	Temperature °C	Total Alkalinity as CaCO3 mg/L	Total Anions meq/L	Total Cations meq/L	Total Dissolved Solids @180°C - Dissolved mg/L	Zinc mg/L
ME1900072001	GWA1	17-Jan-2019	1136																															
ME1900072002	GWA2	24-Jan-2019	1438	23.8	0.213	0.383	164	26	<1	308	0.051			1390	<1	4.78	359	0.034	39	4.85	0.002	0.054	6.9	6	0.02	182	0.455	90	21.0	164	13.8	12.6	1010	0.082
ME1900072003	GWA3	24-Jan-2019	1504																															
ME1900072004	GWA4	25-Jan-2019	1438																															
ME1900072005	GWA5	18-Jan-2019	1312	0.83	0.013	0.148	606	536	<1	2370	0.005			11800	<1	6.13	1.46	0.003	664	0.088	0.004	0.020	7.5	28	<0.01	1500	5.99	4210	22.5	606	167	147	7260	0.052
ME1900072006	GWA6	24-Jan-2019	1554																															
ME1900072007	GWA7	18-Jan-2019	1217																															
ME1900072008	GWA8	18-Jan-2019	1407	0.97	0.001	0.060	247	109	<1	359	0.006			2220	<1	7.48	1.64	0.002	100	12.5	<0.001	0.010	7.0	10	<0.01	207	1.20	556	23.0	247	26.6	22.9	1610	0.024
ME1900072009	GWC1	24-Jan-2019	1448	0.09	0.002	0.084	467	123	<1	626	<0.001			3410	<1	3.38	3.89	0.001	104	0.886	<0.001	0.005	7.1	26	<0.01	441	1.57	479	19.5	467	37.0	34.5	2320	0.028
ME1900072010	GWC2	24-Jan-2019	1512	1.11	<0.001	0.388	489	48	<1	77	0.004			1190	<1	3.85	2.08	0.002	27	0.082	<0.001	0.004	7.1	24	<0.01	141	0.577	16	20.5	489	12.3	11.4	669	0.011
ME1900072011	GWC3	24-Jan-2019	1532	7.51	0.011	0.114	685	148	<1	627	0.031			4430	<1	2.45	43.5	0.039	142	0.525	<0.001	0.021	6.9	39	<0.01	620	1.70	866	21.5	685	49.4	47.0	3260	0.065
ME1900072012	GWC4	18-Jan-2019	1306	0.13	<0.001	0.093	626	167	<1	343	0.004			2380	<1	5.54	3.94	0.002	76	0.064	<0.001	0.004	6.6	47	<0.01	207	1.93	265	22.5	626	27.7	24.8	1550	0.029
ME1900072013	GWC5	18-Jan-2019	1429	0.09	<0.001	0.224	2240	259	<1	534	0.002			5410	<1	2.99	0.98	0.007	139	1.52	<0.001	0.030	6.6	79	<0.01	853	8.00	364	20.0	2240	67.4	63.5	4020	0.028
ME1900072014	GWA10	25-Jan-2019	1053	2.68	0.008	0.068	496	110	<1	610	0.006			3260	<1	1.33	7.54	0.004	115	2.00	<0.001	0.014	7.0	1	<0.01	406	1.10	224	20.5	496	31.8	32.6	2210	0.012
ME1900072015	GWC10	25-Jan-2019	1114	0.35	<0.001	0.042	192	216	<1	387	0.011			3750	<1	1.12	2.94	<0.001	124	0.269	<0.001	0.002	7.0	30	<0.01	493	1.66	1320	20.0	192	42.2	43.2	2970	0.006
ME1900072016	GWA11	25-Jan-2019	1130																															
ME1900072017	GWC11	25-Jan-2019	1154	14.6	0.002	0.136	323	155	<1	314	0.078			3760	<1	2.02	22.9	0.038	160	2.01	<0.001	0.027	6.6	32	0.01	473	1.54	1380	21.5	323	44.0	42.3	2280	0.612
ME1900072018	GWA12	25-Jan-2019	1209																															
ME1900072019	GWC12	25-Jan-2019	1256	3.46	<0.001	0.205	1250	44	<1	201	0.020			3200	<1	1.15	5.37	0.004	28	0.261	<0.001	0.017	7.2	27	<0.01	688	0.767	254	23.0	1250	35.9	35.1	2300	0.060
ME1900072020	GWA14	25-Jan-2019	1325																															
ME1900072021	GWC14	25-Jan-2019	1348	0.46	<0.001	3.82	513	39	<1	67	0.005			1140	<1	2.95	1.22	0.010	18	0.094	0.003	0.011	7.4	15	<0.01	180	0.685	10	21.5	513	12.3	11.6	725	0.025
ME1900072022	GWA15	25-Jan-2019	1404																															
ME1900072023	GWC15	25-Jan-2019	1426	0.61	<0.001	1.12	612	43	<1	175	0.009			1670	<1	4.51	1.77	0.005	26	0.060	<0.001	0.005	7.1	20	<0.01	266	0.672	36	21.5	612	17.9	16.4	1080	0.029
ME1900072024	GWC25	24-Jan-2019	1226	0.42	0.001	0.102	454	24	<1	268	0.021			1690	<1	3.39	0.90	0.005	75	0.542	0.002	0.097	6.9	6	<0.01	221	0.366	82	21.5	454	18.3	17.1	858	0.023
ME1900072025	GWC35	24-Jan-2019	1119	8.40	0.026	0.833	448	55	<1	104	0.106			1220	<1	5.97	38.1	0.049	42	1.56	0.002	0.035	7.2	24	<0.01	107	0.796	50	23.0	448	12.9	11.5	660	0.106
ME1900072026	GWC33	17-Jan-2019	1044	0.64	<0.001	0.255	<1	362	155	124	<0.001			5010	811	6.66	0.33	<0.001	<1	0.016	0.001	<0.001	12.4	18	<0.01	42	0.287	22	22.0	966	23.2	20.4	1280	0.014
ME1900072027	GWC26	17-Jan-2019	1123	0.66	0.001	0.298	360	44	<1	160	0.006			1210	<1	4.04	3.03	0.004	26	0.096	<0.001	0.004	7.1	17	<0.01	158	0.556	44	22.0	360	12.6	11.6	776	0.027
ME1900072028	GWC16	17-Jan-2019	1207	1.79	<0.001	0.275	648	38	<1	314	0.011			2110	<1	7.10	13.5	0.010	32	0.073	<0.001	0.005	7.2	20	<0.01	355	0.752	87	22.5	648	23.6	20.5	1340	0.031
ME1900072029	GWA16	17-Jan-2019	1217																															
ME1900072030	GWC28	17-Jan-2019	1354	0.19	<0.001	0.108	833	121	<1	499	0.012			3210	<1	7.54	1.87	0.002	77	0.075	0.002	0.012	6.8	36	<0.01	441	2.12	339	23.0	833	37.8	32.5	1730	0.022
ME1900072031	GWC29	17-Jan-2019	1426	0.11	<0.001	0.142	629	93	<1	309	0.011			2250	<1	5.78	0.64	<0.001	88	0.068	0.006	0.026	7.0	33	<0.01	240	1.02	227	24.0	629	26.0	23.2	1290	0.011
ME1900072032	GWC30	17-Jan-2019	1458	0.75	<0.001	0.168	550	194	<1	597	0.009			2990	<1	5.83	4.16	0.003	149	0.188	<0.001	0.006	6.8	46	<0.01	174	2.46	320	22.5	550	34.5	30.7	1710	0.032
ME1900072033	GWC31	15-Jan-2019	1321																															
ME1900072034	GWC24	15-Jan-2019	1404	0.29	<0.001	0.037	<1	113	<1	604	<0.001			3470	<1	2.58	13.5	<0.001	156	7.11	<0.001	0.251	4.8	66	<0.01	345	0.853	786	22.5	<1	33.4	35.2	2600	0.267
ME1900072035	GWC27	15-Jan-2019	1437	1.92	0.011	0.084	5	30	<1	371	0.039			1690	<1	5.67	12.3	0.022	38	3.65	0.001	0.102	5.1	33	<0.01	212	0.165	283	21.0	5	16.4	14.7	1200	0.537
ME1900072036	GWC32	15-Jan-2019	1211	0.20	<0.001	0.049	1330	110	<1	335	0.016			3400	<1	2.92	1.81	0.003	110	0.086	<0.001	0.002	6.6	44	<0.01	538	4.40	259	20.0	1330	41.4	39.1	2120	0.006
ME1900072037	GWA32	15-Jan-2019	1154	0.04	<0.001	0.044	379	124	<1	559	0.002			3240	<1	0.53	0.07	<0.001	152	0.284	0.002	<0.001	7.2	21	<0.01	343	1.96	537	22.5	379	34.5	34.2	2400	0.007

ME1900072038	GWA34	15-Jan-2019	1239	21.4	0.003	0.016	<1	514	<1	360	0.012			6140	<1	0.36	151	0.002	515	11.9	<0.001	0.988	4.3	5	0.05	399	0.733	3590	21.0	<1	84.9	85.5	4860	2.50
ME1900072039	GWC34	15-Jan-2019	1254	1.19	0.002	0.088	1680	73	<1	243	0.044			4660	<1	4.96	2.53	0.010	87	0.114	0.004	0.158	7.1	23	<0.01	1080	5.82	597	21.5	1680	52.8	58.4	3030	0.059
ME1900072040	GWA36	17-Jan-2019	1234																															
ME1900072041	GWC36	17-Jan-2019	1253	4.42	0.002	0.135	194	193	<1	394	0.016			4230	<1	3.56	52.8	0.014	209	3.11	0.003	0.029	6.3	38	0.02	484	1.64	1800	21.0	194	52.5	48.8	3800	0.114
ME1900072042	PZ13	24-Jan-2019	1355																															
ME1900072043	PZ20	24-Jan-2019	1331	6.56	0.002	0.034	380	32	<1	40	0.007			979	<1	1.46	4.11	0.004	32	0.240	0.002	0.010	7.5	15	<0.01	137	0.207	104	23.0	380	10.9	10.6	554	0.029
ME1900072044	PZ21	24-Jan-2019	1320	0.80	0.002	0.038	321	19	<1	30	0.006			775	<1	4.60	0.94	0.003	12	0.534	0.002	0.009	7.6	6	<0.01	133	0.376	66	23.0	321	8.63	7.87	475	0.015
ME1900072045	PZ26	24-Jan-2019	1304																															
ME1900073001	GWA1	17-Jan-2019	1136										4.970																					
ME1900073002	GWA2	24-Jan-2019	1430									4.800																						
ME1900073003	GWA3	24-Jan-2019	1504										5.610																					
ME1900073004	GWA4	25-Jan-2019	1436										4.970																					
ME1900073005	GWA5	18-Jan-2019	1505									4.005																						
ME1900073006	GWA6	24-Jan-2019	1554										2.890																					
ME1900073007	GWA7	18-Jan-2019	1216										4.900																					
ME1900073008	GWA8	18-Jan-2019	1401									1.675																						
ME1900073009	GWC1	24-Jan-2019	1443									11.230																						
ME1900073010	GWC2	24-Jan-2019	1507									16.420																						
ME1900073011	GWC3	24-Jan-2019	1524									15.265																						
ME1900073012	GWC4	18-Jan-2019	1258									15.520																						
ME1900073013	GWC5	18-Jan-2019	1420									5.905																						
ME1900073014	GWA10	25-Jan-2019	1040									4.800																						
ME1900073015	GWC10	25-Jan-2019	1105									6.260																						
ME1900073016	GWA11	25-Jan-2019	1127										4.230																					
ME1900073017	GWC11	25-Jan-2019	1142									16.650																						
ME1900073018	GWA12	25-Jan-2019	1209										5.800																					
ME1900073019	GWC12	25-Jan-2019	1217									34.490																						
ME1900073020	GWA14	25-Jan-2019	1325										4.960																					
ME1900073021	GWC14	25-Jan-2019	1335									29.800																						
ME1900073022	GWA15	25-Jan-2019	1401										3.715																					
ME1900073023	GWC15	25-Jan-2019	1414									26.165																						
ME1900073024	GWC25	24-Jan-2019	1211									29.660																						
ME1900073025	GWC35	24-Jan-2019	1052									47.730																						
ME1900073026	GWC33	17-Jan-2019	1033									42.330																						
ME1900073027	GWC26	17-Jan-2019	1108									40.810																						
ME1900073028	GWC16	17-Jan-2019	1154									31.630																						
ME1900073029	GWA16	17-Jan-2019	1217										4.070																					
ME1900073030	GWC28	17-Jan-2019	1340									43.580																						
ME1900073031	GWC29	17-Jan-2019	1413									44.420																						
ME1900073032	GWC30	17-Jan-2019	1446									32.390																						
ME1900073033	GWC31	15-Jan-2019	1317										51.110																					
ME1900073034	GWC24	15-Jan-2019	1354									23.615																						
ME1900073035	GWC27	15-Jan-2019	1424									16.210																						
ME1900073036	GWC32	15-Jan-2019	1204									4.430																						
ME1900073037	GWA32	15-Jan-2019	1145									2.085																						
ME1900073038	GWA34	15-Jan-2019	1229									4.510																						

ME1900073039	GWC34	15-Jan-2019	1247									20.330																						
ME1900073040	GWA36	17-Jan-2019	1234										5.940																					
ME1900073041	GWC36	17-Jan-2019	1242									16.370																						
ME1900073042	PZ13	24-Jan-2019	1355										2.330																					
ME1900073043	PZ20	24-Jan-2019	1327									1.900																						
ME1900073044	PZ21	24-Jan-2019	1315									3.050																						
ME1900073045	PZ26	24-Jan-2019	1304										4.370																					
ME1900073046	Barologger Office	29-Jan-2019	1108																															
ME1900202001	GWA1	13-Feb-2019	1112																															
ME1900202002	GWA2	25-Feb-2019	1156	28.1	0.245	0.670	157	28	<1	354	0.089			1410	<1	3.59	749	0.068	43	8.49	0.002	0.080	6.8	9	0.02	211	0.595	110	21.5	157	15.4	14.3	808	0.139
ME1900202003	GWA3	25-Feb-2019	1225																															
ME1900202004	GWA4	13-Feb-2019	1216																															
ME1900202005	GWA5	13-Feb-2019	1504	2.02	0.023	0.246	549	508	<1	1960	0.006			10900	<1	2.07	2.92	0.006	621	0.091	0.006	0.022	7.5	37	<0.01	1450	5.88	3850	21.0	549	146	140	8480	0.067
ME1900202006	GWA6	25-Feb-2019	1344																															
ME1900202007	GWA7	25-Feb-2019	1405																															
ME1900202008	GWA8	25-Feb-2019	1506	2.74	0.001	0.103	228	113	<1	394	0.006			2290	<1	0.58	4.15	0.003	108	18.2	<0.001	0.012	7.0	14	<0.01	232	1.26	461	22.5	228	25.3	25.0	1540	0.018
ME1900202009	GWC1	25-Feb-2019	1207	0.32	0.002	0.116	442	130	<1	667	0.003			3260	<1	2.33	4.89	0.001	101	0.890	<0.001	0.007	7.0	30	<0.01	464	1.47	471	18.5	442	37.4	35.7	1950	0.017
ME1900202010	GWC2	25-Feb-2019	1252	10.1	0.001	0.444	486	62	<1	111	0.018			1220	<1	1.88	9.47	0.006	28	0.142	<0.001	0.020	7.1	28	<0.01	153	0.671	20	22.0	486	13.2	12.8	628	0.040
ME1900202011	GWC3	25-Feb-2019	1336	40.2	0.048	0.989	570	168	<1	740	0.110			4430	<1	0.86	157	0.111	147	0.913	0.002	0.091	6.9	44	0.01	668	1.90	842	20.5	570	49.8	50.7	2930	0.239
ME1900202012	GWC4	25-Feb-2019	1446	0.16	<0.001	0.070	605	163	<1	361	0.003			2350	<1	2.50	5.87	0.001	80	0.048	<0.001	0.001	6.6	48	<0.01	216	2.04	210	20.5	605	26.6	25.3	1380	0.033
ME1900202013	GWC5	25-Feb-2019	1527	0.05	<0.001	0.218	2020	258	<1	547	0.001			5310	<1	0.66	0.98	0.003	143	1.55	<0.001	0.028	6.6	86	<0.01	833	8.23	310	19.0	2020	62.2	63.1	3500	0.020
ME1900202014	GWA10	19-Feb-2019	1253	11.5	0.014	0.108	444	112	<1	672	0.044			3340	<1	7.84	17.2	0.011	128	2.01	0.002	0.032	7.0	2	<0.01	560	1.12	327	22.0	444	34.6	40.5	1950	0.038
ME1900202015	GWC10	19-Feb-2019	1314	1.79	<0.001	0.053	397	217	<1	410	0.016			3860	<1	2.60	4.10	0.002	133	0.305	<0.001	0.003	7.0	40	<0.01	644	2.35	1380	21.0	397	48.2	50.8	2800	0.011
ME1900202016	GWA11	19-Feb-2019	1350																															
ME1900202017	GWC11	19-Feb-2019	1411	41.7	0.005	0.497	293	181	<1	364	0.312			4100	<1	0.42	45.7	0.109	194	2.31	0.002	0.086	6.4	41	0.02	623	1.89	1800	21.0	293	53.6	53.1	3200	1.36
ME1900202018	GWA12	19-Feb-2019	1422																															
ME1900202019	GWC12	19-Feb-2019	1447	10.8	<0.001	5.06	1450	35	<1	236	0.029			3850	<1	10.1	12.3	0.014	19	0.211	<0.001	0.029	7.2	40	<0.01	1140	1.03	403	22.0	1450	44.0	53.9	2100	0.050
ME1900202020	GWA14	20-Feb-2019	1310																															
ME1900202021	GWC14	20-Feb-2019	1328	0.19	<0.001	2.60	545	33	<1	82	0.003			1250	<1	3.03	0.87	0.006	16	0.146	0.004	0.016	7.2	22	<0.01	247	0.676	11	21.0	545	13.4	14.3	671	0.020
ME1900202022	GWA15	20-Feb-2019	1350																															
ME1900202023	GWC15	20-Feb-2019	1411	0.14	<0.001	0.349	595	36	<1	190	0.003			1610	<1	5.70	0.70	0.001	26	0.060	<0.001	<0.001	7.0	28	<0.01	352	0.697	27	20.5	595	17.8	20.0	995	0.008
ME1900202024	GWC25	18-Feb-2019	1358	0.34	<0.001	0.102	452	22	<1	288	0.014			1700	<1	4.91	0.49	0.004	77	0.180	0.002	0.098	6.8	9	<0.01	298	0.392	74	22.5	452	18.7	20.6	990	0.023
ME1900202025	GWC35	18-Feb-2019	1245	2.42	0.032	0.510	451	64	<1	108	0.078			1220	<1	0.87	42.5	0.056	42	3.33	<0.001	0.028	7.1	31	<0.01	130	0.894	61	24.5	451	13.3	13.1	726	0.102
ME1900202026	GWC33	18-Feb-2019	1543	0.57	<0.001	0.245	<1	400	80	114	0.002			4850	891	1.21	0.26	<0.001	<1	0.010	0.001	0.002	12.4	18	<0.01	46	0.289	17	22.0	971	23.0	22.4	916	0.010
ME1900202027	GWC26	18-Feb-2019	1501	0.30	<0.001	0.217	394	54	<1	153	0.003			1240	<1	7.90	2.32	0.001	28	0.078	<0.001	<0.001	7.1	23	<0.01	220	0.485	36	21.5	394	12.9	15.2	652	0.022
ME1900202028	GWC16	19-Feb-2019	1138	1.61	<0.001	0.140	654	56	<1	242	0.002			1930	<1	1.27	1.94	0.002	28	0.047	<0.001	0.002	7.2	18	<0.01	340	0.626	47	22.0	654	20.9	20.3	1100	0.009
ME1900202029	GWA16	19-Feb-2019	1150																															
ME1900202030	GWC28	15-Feb-2019	1113	0.17	<0.001	0.090	886	134	<1	478	0.007			3310	<1	2.80	1.86	<0.001	83	0.059	0.001	0.007	6.7	40	<0.01	591	2.24	330	21.0	886	38.0	40.2	2200	0.014
ME1900202031	GWC29	15-Feb-2019	1149	0.18	<0.001	0.143	654	105	<1	296	0.010			2300	<1	1.10	1.13	<0.001	92	0.072	0.007	0.024	6.9	41	<0.01	305	1.06	246	21.5	654	26.5	27.1	1500	0.016
ME1900202032	GWC30	15-Feb-2019	1241	0.19	<0.001	0.110	580	205	<1	550	0.004			2920	<1	0.36	4.75	<0.001	156	0.179	<0.001	0.003	6.7	49	<0.01	212	2.27	321	20.5	580	33.8	33.5	1540	0.018
ME1900202033	GWC31	12-Feb-2019	1406																															
ME1900202034	GWC24	12-Feb-2019	1438	34.7	0.002	0.093	<1	114	<1	595	0.072			3620	<1	6.65	87.4	0.005	168	8.48	0.002	0.280	4.6	74	<0.01	386	0.888	1290	21.5	<1	43.6	38.2	2120	0.136
ME1900202035	GWC27	12-Feb-2019	1515	0.95	0.004	0.066	5	31	<1	341	0.027			1700	<1	1.30	3.84	0.016	40	4.28	<0.001	0.086	4.9	41	<0.01	259	0.192	336	19.5	5	16.7	17.2	1210	0.740
ME1900202036	GWC32	12-Feb-2019	1244	0.24	<0.001	0.049	1360	143	<1	317	0.014			3440	<1	0.25	1.79	0.002	115	0.064	<0.001	0.004	6.7	52	<0.01	570	4.82	307	19.5	1360	42.5	42.7	2270	0.015
ME1900202037	GWA32	12-Feb-2019	1224	0.17	<0.001	0.053	376	155	<1	513	0.002			3320	<1	3.49	0.08	<0.001	170	0.170	0.003	0.002	7.3	27	<0.01	412	2.31	751	22.0	376	37.6	40.3	2390	0.010

ME1900202038	GWA34	12-Feb-2019	1326	22.5	0.002	0.016	<1	495	<1	341	0.037			6240	<1	2.35	120	0.003	591	14.9	<0.001	1.02	4.8	8	0.02	484	0.896	4300	21.0	<1	99.1	94.6	6200	2.67
ME1900202039	GWC34	12-Feb-2019	1339																															
ME1900202040	GWA36	19-Feb-2019	1206																															
ME1900202041	GWC36	19-Feb-2019	1222	3.49	0.002	0.319	169	217	<1	365	0.012			4350	<1	1.47	54.1	0.007	247	3.96	0.003	0.036	6.3	48	<0.01	634	1.62	2140	20.5	169	58.2	60.0	3370	0.127
ME1900202042	PZ13	18-Feb-2019	1145																															
ME1900202043	PZ20	18-Feb-2019	1122	6.09	0.005	0.062	470	35	<1	37	0.012			1080	<1	3.03	5.28	0.011	35	0.884	0.002	0.018	7.5	22	<0.01	192	0.478	111	23.5	470	12.7	13.5	672	0.038
ME1900202044	PZ21	18-Feb-2019	1107	2.73	0.003	0.030	404	16	<1	35	0.007			1010	<1	8.65	2.33	0.002	16	0.639	0.003	0.009	7.7	11	<0.01	241	0.270	85	23.5	404	10.8	12.9	618	0.016
ME1900202045	PZ26	18-Feb-2019	1047																															
ME1900203001	GWA1	13-Feb-2019	1112										4.970																					
ME1900203002	GWA2	25-Feb-2019	1146									4.915																						
ME1900203003	GWA3	25-Feb-2019	1225										5.610																					
ME1900203004	GWA4	13-Feb-2019	1216										5.090																					
ME1900203005	GWA5	13-Feb-2019	1457									3.870																						
ME1900203006	GWA6	25-Feb-2019	1344										2.890																					
ME1900203007	GWA7	25-Feb-2019	1405										5.190																					
ME1900203008	GWA8	25-Feb-2019	1502									2.130																						
ME1900203009	GWC1	25-Feb-2019	1202									11.435																						
ME1900203010	GWC2	25-Feb-2019	1230									16.825																						
ME1900203011	GWC3	25-Feb-2019	1329									15.280																						
ME1900203012	GWC4	25-Feb-2019	1434									15.640																						
ME1900203013	GWC5	25-Feb-2019	1521									6.150																						
ME1900203014	GWA10	19-Feb-2019	1243									4.910																						
ME1900203015	GWC10	19-Feb-2019	1303									6.810																						
ME1900203016	GWA11	19-Feb-2019	1347										4.400																					
ME1900203017	GWC11	19-Feb-2019	1357									17.320																						
ME1900203018	GWA12	19-Feb-2019	1422										5.800																					
ME1900203019	GWC12	19-Feb-2019	1429									33.490																						
ME1900203020	GWA14	20-Feb-2019	1310										4.950																					
ME1900203021	GWC14	20-Feb-2019	1317									30.160																						
ME1900203022	GWA15	20-Feb-2019	1350										3.760																					
ME1900203023	GWC15	20-Feb-2019	1400									27.065																						
ME1900203024	GWC25	18-Feb-2019	1340									30.075																						
ME1900203025	GWC35	18-Feb-2019	1225									47.790																						
ME1900203026	GWC33	18-Feb-2019	1526									42.250																						
ME1900203027	GWC26	18-Feb-2019	1449									41.150																						
ME1900203028	GWC16	19-Feb-2019	1128									32.050																						
ME1900203029	GWA16	19-Feb-2019	1150										4.080																					
ME1900203030	GWC28	15-Feb-2019	1055									43.210																						
ME1900203031	GWC29	15-Feb-2019	1137									44.000																						
ME1900203032	GWC30	15-Feb-2019	1230									32.360																						
ME1900203033	GWC31	12-Feb-2019	1401										51.240																					
ME1900203034	GWC24	12-Feb-2019	1425									24.860																						
ME1900203035	GWC27	12-Feb-2019	1505									16.135																						
ME1900203036	GWC32	12-Feb-2019	1235									4.425																						
ME1900203037	GWA32	12-Feb-2019	1214									2.365																						
ME1900203038	GWA34	12-Feb-2019	1312									4.560																						

ME1900203039	GWC34	12-Feb-2019	1333										20.470																					
ME1900203040	GWA36	19-Feb-2019	1206										5.940																					
ME1900203041	GWC36	19-Feb-2019	1213									16.670																						
ME1900203042	PZ13	18-Feb-2019	1145										2.330																					
ME1900203043	PZ20	18-Feb-2019	1116									3.275																						
ME1900203044	PZ21	18-Feb-2019	1052									3.815																						
ME1900203045	PZ26	18-Feb-2019	1047										4.370																					
ME1900203046	Barologger Office	20-Feb-2019	1245																															
ME1900340001	GWA1	13-Mar-2019	1229																															
ME1900340002	GWA2	25-Mar-2019	1341	12.1	0.118	1.10	156	28	<1	345	0.127			1440	<1	7.41	403	0.021	40	10.3	0.001	0.069	6.8	7	0.03	191	0.857	117	21.0	156	15.3	13.2	924	0.118
ME1900340003	GWA3	25-Mar-2019	1408																															
ME1900340004	GWA4	13-Mar-2019	1301																															
ME1900340005	GWA5	13-Mar-2019	1455	1.70	0.018	0.257	553	504	<1	2250	0.007			10900	<1	6.48	2.58	0.004	569	0.093	0.010	0.022	7.5	27	<0.01	1360	5.94	3630	22.0	553	150	132	9520	0.078
ME1900340006	GWA6	25-Mar-2019	1443																															
ME1900340007	GWA7	25-Mar-2019	1510																															
ME1900340008	GWA8	25-Mar-2019	1601	4.51	0.003	0.339	256	117	<1	381	0.016			2300	<1	6.87	9.52	0.009	103	28.4	0.001	0.034	7.0	11	<0.01	212	1.46	551	21.0	256	27.3	23.8	1560	0.044
ME1900340009	GWC1	25-Mar-2019	1353	0.30	0.003	0.135	513	132	<1	618	0.003			3230	<1	5.65	3.96	0.001	95	0.825	<0.001	0.006	7.1	25	<0.01	420	1.58	462	18.5	513	37.3	33.3	1930	0.018
ME1900340010	GWC2	25-Mar-2019	1415	21.3	0.004	1.05	546	68	<1	114	0.087			1220	<1	6.06	30.1	0.029	28	0.555	<0.001	0.059	7.2	26	<0.01	149	0.820	18	19.5	546	14.5	12.8	1110	0.088
ME1900340011	GWC3	25-Mar-2019	1435	4.57	0.007	0.076	736	169	<1	701	0.049			4380	<1	4.70	15.2	0.042	140	0.439	<0.001	0.015	6.9	38	<0.01	615	1.91	860	20.0	736	52.4	47.7	3030	0.044
ME1900340012	GWC4	25-Mar-2019	1539	0.52	<0.001	0.072	681	168	<1	340	0.004			2350	<1	6.29	6.58	0.002	77	0.056	<0.001	0.003	6.6	47	<0.01	210	2.12	251	20.5	681	28.4	25.0	1570	0.021
ME1900340013	GWC5	25-Mar-2019	1615	0.09	<0.001	0.218	2410	134	<1	517	0.003			5370	<1	37.0	0.74	0.004	72	1.54	<0.001	0.028	6.6	41	<0.01	426	8.54	351	19.0	2410	70.0	32.2	3660	0.021
ME1900340014	GWA10	21-Mar-2019	1132	6.78	0.013	0.135	531	116	<1	694	0.034			3370	<1	4.99	12.0	0.018	115	2.19	<0.001	0.033	7.0	2	<0.01	426	1.19	346	22.0	531	37.4	33.8	2030	0.033
ME1900340015	GWC10	21-Mar-2019	1159	2.49	<0.001	0.057	425	218	<1	429	0.024			3840	<1	0.54	4.22	0.003	122	0.304	<0.001	0.006	7.0	31	<0.01	490	2.49	1100	20.0	425	43.5	43.0	2840	0.014
ME1900340016	GWA11	21-Mar-2019	1208																															
ME1900340017	GWC11	21-Mar-2019	1228	35.7	0.006	0.595	292	189	<1	380	0.234			4190	<1	3.20	50.2	0.080	192	2.40	0.007	0.091	6.4	36	0.02	510	2.08	1680	20.5	292	51.5	48.3	3250	0.592
ME1900340018	GWA12	21-Mar-2019	1239																															
ME1900340019	GWC12	21-Mar-2019	1304	8.63	<0.001	8.74	1030	33	<1	179	0.019			2450	<1	4.38	9.74	0.004	13	0.156	0.002	0.025	7.3	20	<0.01	541	0.829	172	22.0	1030	29.2	26.8	1750	0.034
ME1900340020	GWA14	21-Mar-2019	1321																															
ME1900340021	GWC14	21-Mar-2019	1343	0.16	<0.001	3.04	551	38	<1	101	0.002			1120	<1	8.48	0.90	0.004	17	0.038	<0.001	0.001	7.2	16	<0.01	184	0.590	1	20.5	551	13.9	11.7	750	0.009
ME1900340022	GWA15	21-Mar-2019	1358																															
ME1900340023	GWC15	21-Mar-2019	1416	0.14	<0.001	0.207	639	54	<1	194	0.003			1580	<1	7.73	0.59	<0.001	25	0.057	<0.001	<0.001	7.1	20	<0.01	250	0.657	29	20.5	639	18.8	16.1	1050	0.010
ME1900340024	GWC25	29-Mar-2019	1132	0.28	<0.001	0.084	414	31	<1	283	0.016			1800	<1	4.83	0.65	0.004	86	1.03	0.001	0.114	6.9	8	<0.01	254	0.440	86	20.5	414	18.0	19.9	976	0.036
ME1900340025	GWC35	25-Mar-2019	1212	12.7	0.049	1.28	469	74	<1	114	0.120			1180	<1	5.62	95.0	0.095	40	6.44	0.001	0.076	7.0	24	<0.01	104	0.989	47	21.5	469	13.6	12.1	780	0.293
ME1900340026	GWC33	13-Mar-2019	1122	0.55	<0.001	0.230	<1	406	94	107	0.003			4850	863	0.56	0.09	<0.001	<1	0.005	0.003	0.002	12.4	19	<0.01	46	0.282	17	21.0	957	22.5	22.7	1350	0.012
ME1900340027	GWC26	13-Mar-2019	1214	0.43	<0.001	0.186	395	58	<1	159	0.005			1220	<1	3.68	1.57	<0.001	26	0.084	<0.001	0.003	7.1	16	<0.01	157	0.494	40	21.0	395	13.2	12.3	710	0.027
ME1900340028	GWC16	15-Mar-2019	1239	1.92	<0.001	0.146	650	38	<1	252	0.006			1870	<1	4.47	3.16	0.005	27	0.065	<0.001	0.004	7.2	19	<0.01	335	0.605	42	21.5	650	21.0	19.2	1080	0.025
ME1900340029	GWA16	15-Mar-2019	1250																															
ME1900340030	GWC28	15-Mar-2019	1353	0.08	<0.001	0.068	819	145	<1	507	0.006			3270	<1	2.40	1.89	<0.001	84	0.053	<0.001	0.002	6.8	38	<0.01	464	2.45	306	21.5	819	37.0	35.3	1840	0.025
ME1900340031	GWC29	15-Mar-2019	1427	0.20	<0.001	0.087	745	117	<1	308	0.005			2440	<1	3.51	2.00	0.001	100	0.056	0.002	0.009	6.8	34	<0.01	268	1.17	238	21.5	745	28.5	26.6	1460	0.016
ME1900340032	GWC30	15-Mar-2019	1456	0.19	<0.001	0.078	571	213	<1	583	0.004			2920	<1	4.23	1.88	0.001	146	0.173	<0.001	0.005	6.8	49	<0.01	177	2.67	314	20.5	571	34.4	31.6	2010	0.022
ME1900340033	GWC31	08-Mar-2019	1328																															
ME1900340034	GWC24	08-Mar-2019	1412																															
ME1900340035	GWC27	08-Mar-2019	1442	0.78	0.003	0.064	11	28	<1	340	0.022			1690	<1	5.14	3.97	0.013	38	3.74	<0.001	0.090	5.1	35	<0.01	224	0.207	336	20.5	11	16.8	15.2	1000	0.703
ME1900340036	GWC32	08-Mar-2019	1214	0.18	<0.001	0.045	1380	149	<1	329	0.012			3470	<1	1.31	1.48	0.001	111	0.066	<0.001	0.002	6.7	45	<0.01	547	4.54	277	20.0	1380	42.6	41.5	1940	0.012
ME1900340037	GWA32	08-Mar-2019	1143	0.12	<0.001	0.048	395	151	<1	543	0.002			3300	<1	3.66	0.07	<0.001	156	0.280	0.002	0.002	7.3	23	<0.01	361	2.01	780	22.0	395	39.4	36.7	2250	0.007

ME1900340038	GWA34	08-Mar-2019	1246	21.8	0.002	0.020	<1	486	<1	361	0.036			6240	<1	9.12	119	0.003	539	14.6	<0.001	1.01	4.7	6	0.03	416	0.849	4520	21.0	<1	104	86.9	4930	2.54
ME1900340039	GWC34	08-Mar-2019	1301	1.37	0.003	0.168	1760	66	<1	218	0.056			4610	<1	14.3	3.93	0.015	61	0.144	0.004	0.170	7.1	16	0.01	748	7.26	659	20.5	1760	55.0	41.2	2940	0.087
ME1900340040	GWA36	15-Mar-2019	1303																															
ME1900340041	GWC36	15-Mar-2019	1316	0.58	<0.001	0.027	179	210	<1	389	0.007			4340	<1	4.54	48.6	0.002	226	4.44	0.002	0.034	6.3	41	<0.01	500	1.98	2030	20.5	179	56.8	51.9	3930	0.106
ME1900340042	PZ13	25-Mar-2019	1320																															
ME1900340043	PZ20	25-Mar-2019	1111																															
ME1900340044	PZ21	25-Mar-2019	1108																															
ME1900340045	PZ26	25-Mar-2019	1050																															
ME1900341001	GWA1	13-Mar-2019	1229									4.970																						
ME1900341002	GWA2	25-Mar-2019	1335										5.010																					
ME1900341003	GWA3	25-Mar-2019	1408									5.610																						
ME1900341004	GWA4	13-Mar-2019	1301									5.170																						
ME1900341005	GWA5	13-Mar-2019	1449										3.940																					
ME1900341006	GWA6	25-Mar-2019	1443									2.890																						
ME1900341007	GWA7	25-Mar-2019	1510									5.190																						
ME1900341008	GWA8	25-Mar-2019	1557										2.340																					
ME1900341009	GWC1	25-Mar-2019	1346									11.690																						
ME1900341010	GWC2	25-Mar-2019	1410										17.350																					
ME1900341011	GWC3	25-Mar-2019	1428										15.445																					
ME1900341012	GWC4	25-Mar-2019	1532										15.650																					
ME1900341013	GWC5	25-Mar-2019	1613										6.145																					
ME1900341014	GWA10	21-Mar-2019	1122										5.025																					
ME1900341015	GWC10	21-Mar-2019	1142										7.430																					
ME1900341016	GWA11	21-Mar-2019	1206									4.720																						
ME1900341017	GWC11	21-Mar-2019	1215										18.170																					
ME1900341018	GWA12	21-Mar-2019	1239									5.800																						
ME1900341019	GWC12	21-Mar-2019	1245										35.520																					
ME1900341020	GWA14	21-Mar-2019	1321									4.950																						
ME1900341021	GWC14	21-Mar-2019	1332										32.400																					
ME1900341022	GWA15	21-Mar-2019	1358									3.800																						
ME1900341023	GWC15	21-Mar-2019	1406										28.810																					
ME1900341024	GWC25	29-Mar-2019	1139										30.250																					
ME1900341025	GWC35	25-Mar-2019	1155										48.000																					
ME1900341026	GWC33	21-Mar-2019	1040										42.605																					
ME1900341027	GWC26	13-Mar-2019	1157										41.320																					
ME1900341028	GWC16	15-Mar-2019	1222										31.720																					
ME1900341029	GWA16	15-Mar-2019	1250									4.080																						
ME1900341030	GWC28	15-Mar-2019	1341										44.405																					
ME1900341031	GWC29	15-Mar-2019	1411										44.750																					
ME1900341032	GWC30	15-Mar-2019	1446										32.180																					
ME1900341033	GWC31	08-Mar-2019	1322									51.140																						
ME1900341034	GWC24	08-Mar-2019	1354									26.280																						
ME1900341035	GWC27	08-Mar-2019	1428										16.325																					
ME1900341036	GWC32	08-Mar-2019	1204										4.620																					
ME1900341037	GWA32	21-Mar-2019	1500										2.420																					
ME1900341038	GWA34	08-Mar-2019	1235										4.645																					

ME1900341039	GWC34	08-Mar-2019	1253										20.325																					
ME1900341040	GWA36	15-Mar-2019	1303									5.940																						
ME1900341041	GWC36	15-Mar-2019	1308										17.135																					
ME1900341042	PZ13	25-Mar-2019	1320									2.330																						
ME1900341043	PZ20	25-Mar-2019	1111									3.750																						
ME1900341044	PZ21	25-Mar-2019	1108									5.610																						
ME1900341045	PZ26	25-Mar-2019	1050									4.380																						
ME1900341046	Barologger Office	25-Mar-2019	1020																															
ME1900471001	GWA1	08-Apr-2019	1250																															
ME1900471002	GWA2	16-Apr-2019	1057	9.93	0.075	1.38	120	27	<1	336	0.140			1480	<1	5.42	522	0.018	43	11.7	<0.001	0.075	6.8	7	0.07	183	1.04	127	20.0	120	14.5	13.0	1420	0.128
ME1900471003	GWA3	16-Apr-2019	1146																															
ME1900471004	GWA4	16-Apr-2019	1135																															
ME1900471005	GWA5	11-Apr-2019	1529	1.50	0.022	0.168	472	501	<1	2260	0.007			11300	<1	0.45	2.88	0.005	654	0.118	0.011	0.024	7.5	28	<0.01	1400	5.56	3170	20.0	472	139	140	8590	0.074
ME1900471006	GWA6	16-Apr-2019	1225																															
ME1900471007	GWA7	16-Apr-2019	1242																															
ME1900471008	GWA8	04-Apr-2019	1311	0.75	<0.001	0.083	207	123	<1	385	0.007			2370	<1	3.54	1.36	0.002	107	16.7	<0.001	0.012	7.0	12	<0.01	219	1.33	557	21.5	207	26.6	24.8	1380	0.012
ME1900471009	GWC1	16-Apr-2019	1111	0.08	0.001	0.068	392	131	<1	591	0.002			3290	<1	1.31	2.18	<0.001	103	0.680	<0.001	0.006	7.1	25	<0.01	422	1.44	500	18.0	392	34.9	34.0	1810	0.012
ME1900471010	GWC2	16-Apr-2019	1153	56.7	0.008	1.00	442	75	<1	111	0.114			1260	<1	3.94	56.7	0.039	31	0.586	<0.001	0.131	7.1	24	<0.01	146	0.850	14	20.0	442	12.2	13.2	1030	0.157
ME1900471011	GWC3	16-Apr-2019	1219																															
ME1900471012	GWC4	16-Apr-2019	1334	0.16	<0.001	0.061	553	162	<1	333	0.002			2380	<1	2.32	2.56	<0.001	76	0.047	<0.001	0.002	6.6	45	<0.01	204	1.90	244	20.0	553	25.5	24.4	1450	0.014
ME1900471013	GWC5	04-Apr-2019	1329	0.08	<0.001	0.217	2060	301	<1	524	0.006			5470	<1	3.94	0.72	0.003	151	1.64	<0.001	0.029	6.7	88	<0.01	886	8.36	342	19.0	2060	63.1	68.2	3510	0.023
ME1900471014	GWA10	12-Apr-2019	1054	7.74	0.009	0.106	451	110	<1	694	0.030			3360	<1	1.42	11.1	0.013	126	1.74	<0.001	0.023	7.0	2	<0.01	415	1.06	305	21.5	451	34.9	34.0	2000	0.028
ME1900471015	GWC10	12-Apr-2019	1116	0.03	<0.001	0.141	356	215	<1	426	<0.001			3840	<1	3.53	0.13	<0.001	130	0.049	0.001	0.008	7.0	29	<0.01	471	0.305	1280	19.5	356	45.8	42.6	2930	0.058
ME1900471016	GWA11	12-Apr-2019	1127																															
ME1900471017	GWC11	12-Apr-2019	1149	18.2	0.004	0.228	242	191	<1	378	0.098			4190	<1	3.10	44.1	0.044	209	2.11	0.004	0.045	6.4	36	0.01	491	1.75	1760	19.5	242	52.1	49.0	3220	0.355
ME1900471018	GWA12	12-Apr-2019	1201																															
ME1900471019	GWC12	12-Apr-2019	1228	6.60	<0.001	5.44	717	32	<1	149	0.020			2040	<1	1.02	8.12	0.005	16	0.155	0.003	0.019	7.4	18	<0.01	410	0.697	108	21.0	717	20.8	21.2	1300	0.030
ME1900471020	GWA14	12-Apr-2019	1300																															
ME1900471021	GWC14	12-Apr-2019	1325	0.18	<0.001	3.78	429	40	<1	78	0.003			1110	<1	2.41	1.12	0.003	18	0.048	<0.001	0.001	7.2	16	<0.01	171	0.658	1	19.5	429	10.8	11.3	636	0.011
ME1900471022	GWA15	12-Apr-2019	1336																															
ME1900471023	GWC15	12-Apr-2019	1354	0.15	<0.001	0.411	514	50	<1	175	0.003			1570	<1	0.64	0.50	0.002	26	0.063	<0.001	0.001	7.1	19	<0.01	247	0.676	22	19.0	514	15.7	15.9	888	0.013
ME1900471024	GWC25	17-Apr-2019	1210	0.35	0.002	0.095	401	36	32	327	0.023			2010	<1	0.64	0.68	0.005	91	0.860	0.002	0.126	7.0	9	<0.01	246	0.529	125	20.0	433	20.5	20.2	1150	0.048
ME1900471025	GWC35	17-Apr-2019	1113	6.41	0.036	0.719	359	74	12	100	0.078			1200	<1	5.14	66.6	0.063	44	4.34	0.001	0.046	7.1	24	<0.01	104	0.938	48	21.5	371	11.2	12.4	674	0.179
ME1900471026	GWC33	08-Apr-2019	1146	0.54	<0.001	0.220	<1	411	62	112	0.002			4820	731	8.90	0.07	<0.001	<1	0.004	0.001	<0.001	12.4	20	<0.01	47	0.276	14	21.5	793	19.3	23.1	1370	0.008
ME1900471027	GWC26	08-Apr-2019	1226	0.62	0.002	0.046	332	61	<1	159	0.004			1210	<1	1.49	61.3	0.002	28	4.06	0.003	0.035	7.1	18	<0.01	150	1.63	41	20.5	332	12.0	12.3	644	0.103
ME1900471028	GWC16	08-Apr-2019	1321	0.45	<0.001	0.124	571	56	<1	230	0.005			1880	<1	2.81	2.49	0.002	26	0.037	<0.001	0.003	7.2	18	<0.01	331	0.575	39	21.0	571	18.7	19.8	850	0.008
ME1900471029	GWA16	08-Apr-2019	1330																															
ME1900471030	GWC28	10-Apr-2019	1236	0.07	<0.001	0.055	750	153	<1	485	0.007			3310	<1	0.10	1.65	<0.001	82	0.053	0.001	<0.001	6.8	39	<0.01	455	2.05	309	21.5	750	35.1	35.2	1790	0.016
ME1900471031	GWC29	10-Apr-2019	1305	0.22	<0.001	0.073	624	126	<1	299	0.012			2420	<1	0.68	1.73	0.001	100	0.042	0.002	0.008	6.8	33	<0.01	246	1.14	231	20.5	624	25.7	26.1	1300	0.013
ME1900471032	GWC30	10-Apr-2019	1338	0.12	<0.001	0.066	539	221	<1	545	0.006			3030	<1	0.11	1.39	<0.001	148	0.164	<0.001	0.007	6.8	50	<0.01	177	2.43	287	20.0	539	32.1	32.2	1840	0.019
ME1900471033	GWC31	04-Apr-2019	1415																															
ME1900471034	GWC24	04-Apr-2019	1444	15.6	0.011	0.254	<1	116	<1	558	2.33			3480	<1	5.83	86.4	0.051	155	8.07	0.006	0.467	4.8	67	<0.01	346	0.928	1150	21.0	<1	39.7	35.3	2200	1.37
ME1900471035	GWC27	04-Apr-2019	1543	1.02	0.007	0.067	9	28	<1	365	0.028			1690	<1	4.27	13.3	0.016	38	3.66	<0.001	0.112	5.3	34	<0.01	214	0.178	266	19.0	9	16.0	14.7	890	0.533
ME1900471036	GWC32	04-Apr-2019	1154	0.16	<0.001	0.048	1180	152	<1	332	0.009			3470	<1	3.78	1.84	0.001	110	0.071	<0.001	0.004	6.6	43	<0.01	536	4.80	246	19.5	1180	38.1	41.0	2000	0.013
ME1900471037	GWA32	04-Apr-2019	1136	0.16	<0.001	0.059	347	164	<1	712	0.004			4070	<1	1.95	<0.05	<0.001	191	0.080	0.002	0.002	7.2	23	<0.01	451	2.52	905	20.5	347	45.9	44.1	2460	<0.005

ME1900471038	GWA34	04-Apr-2019	1228	21.8	0.002	0.017	<1	470	<1	360	0.009			6240	<1	6.21	126	0.002	529	13.1	<0.001	1.07	4.3	6	0.02	404	0.791	4120	21.0	<1	95.9	84.7	6640	2.60
ME1900471039	GWC34	04-Apr-2019	1241																															
ME1900471040	GWA36	08-Apr-2019	1341																															
ME1900471041	GWC36	08-Apr-2019	1358	0.23	<0.001	0.180	91	211	<1	345	0.006			4330	<1	4.74	1.74	<0.001	228	0.091	<0.001	0.004	6.3	39	<0.01	481	0.513	2150	20.0	91	56.3	51.2	2860	0.027
ME1900471042	PZ13	17-Apr-2019	1410																															
ME1900471043	PZ20	17-Apr-2019	1339	6.16	0.004	0.051	258	26	15	30	0.018			806	<1	3.14	4.96	0.009	24	0.566	0.002	0.021	7.6	14	<0.01	109	0.310	75	21.5	273	7.86	8.37	619	0.046
ME1900471044	PZ21	17-Apr-2019	1327	7.54	0.003	0.041	279	23	19	39	0.014			930	<1	2.35	5.38	0.005	18	0.426	0.002	0.017	7.7	8	<0.01	157	0.277	104	22.0	298	9.22	9.66	721	0.034
ME1900471045	PZ26	17-Apr-2019	1312																															
ME1900472001	GWA1	08-Apr-2019	1250										4.970																					
ME1900472002	GWA2	16-Apr-2019	1052									5.030																						
ME1900472003	GWA3	16-Apr-2019	1146										5.610																					
ME1900472004	GWA4	16-Apr-2019	1132										5.030																					
ME1900472005	GWA5	11-Apr-2019	1521									4.065																						
ME1900472006	GWA6	16-Apr-2019	1225										2.890																					
ME1900472007	GWA7	16-Apr-2019	1242										5.190																					
ME1900472008	GWA8	04-Apr-2019	1307									1.970																						
ME1900472009	GWC1	16-Apr-2019	1105									11.610																						
ME1900472010	GWC2	16-Apr-2019	1149									17.550																						
ME1900472011	GWC3	16-Apr-2019	1214										15.790																					
ME1900472012	GWC4	16-Apr-2019	1321									15.730																						
ME1900472013	GWC5	04-Apr-2019	1325									6.270																						
ME1900472014	GWA10	12-Apr-2019	1045									4.970																						
ME1900472015	GWC10	12-Apr-2019	1107									7.430																						
ME1900472016	GWA11	12-Apr-2019	1125										4.715																					
ME1900472017	GWC11	12-Apr-2019	1135									17.510																						
ME1900472018	GWA12	12-Apr-2019	1201										5.800																					
ME1900472019	GWC12	12-Apr-2019	1208									35.880																						
ME1900472020	GWA14	12-Apr-2019	1300										4.950																					
ME1900472021	GWC14	12-Apr-2019	1313									31.840																						
ME1900472022	GWA15	12-Apr-2019	1336										3.820																					
ME1900472023	GWC15	12-Apr-2019	1343									28.040																						
ME1900472024	GWC25	17-Apr-2019	1158									30.610																						
ME1900472025	GWC35	17-Apr-2019	1100									48.165																						
ME1900472026	GWC33	08-Apr-2019	1133									42.750																						
ME1900472027	GWC26	08-Apr-2019	1212									41.370																						
ME1900472028	GWC16	08-Apr-2019	1310									30.760																						
ME1900472029	GWA16	08-Apr-2019	1330										4.080																					
ME1900472030	GWC28	10-Apr-2019	1219									44.605																						
ME1900472031	GWC29	10-Apr-2019	1254									45.210																						
ME1900472032	GWC30	10-Apr-2019	1328									32.000																						
ME1900472033	GWC31	04-Apr-2019	1407										51.335																					
ME1900472034	GWC24	04-Apr-2019	1431									25.230																						
ME1900472035	GWC27	04-Apr-2019	1530									16.420																						
ME1900472036	GWC32	04-Apr-2019	1146									4.610																						
ME1900472037	GWA32	04-Apr-2019	1126									2.100																						
ME1900472038	GWA34	04-Apr-2019	1218									4.580																						

ME1900472039	GWC34	04-Apr-2019	1235										20.510																					
ME1900472040	GWA36	08-Apr-2019	1341										5.940																					
ME1900472041	GWC36	08-Apr-2019	1349									17.005																						
ME1900472042	PZ13	17-Apr-2019	1408										3.290																					
ME1900472043	PZ20	17-Apr-2019	1335									3.220																						
ME1900472044	PZ21	17-Apr-2019	1320									3.780																						
ME1900472045	PZ26	17-Apr-2019	1312										4.380																					
ME1900472046	Barologger Office	17-Apr-2019	1053																															
ME1900472047	GWF3	30-Apr-2019	1535									20.900																						
ME1900472048	GWF4	30-Apr-2019	1513										12.970																					
ME1900608001	GWA1	20-May-2019	1254																															
ME1900608002	GWA2	30-May-2019	1131	44.4	0.434	1.46	143	32	<1	320	0.151			1500	<1	5.95	1920	0.120	46	13.5	0.005	0.148	6.8	8	0.10	257	1.01	144	16.0	143	14.9	16.8	924	0.240
ME1900608003	GWA3	30-May-2019	1215																															
ME1900608004	GWA4	30-May-2019	1243																															
ME1900608005	GWA5	20-May-2019	1516																															
ME1900608006	GWA6	30-May-2019	1340																															
ME1900608007	GWA7	23-May-2019	1400																															
ME1900608008	GWA8	22-May-2019	1417	1.73	0.001	0.076	224	118	<1	355	0.005			2320	<1	0.55	3.57	0.004	110	18.3	<0.001	0.013	7.0	13	<0.01	247	1.29	540	19.0	224	25.7	26.0	1540	0.018
ME1900608009	GWC1	30-May-2019	1150	0.41	0.003	0.216	426	105	<1	464	0.005			2860	<1	7.95	5.58	0.001	74	0.614	<0.001	0.006	7.1	27	<0.01	534	1.17	406	15.5	426	30.0	35.2	1710	0.020
ME1900608010	GWC2	30-May-2019	1227	64.6	0.007	1.02	506	72	<1	100	0.111			1260	<1	6.19	70.2	0.041	30	0.557	<0.001	0.139	7.1	27	0.01	191	0.867	18	17.5	506	13.3	15.1	715	0.149
ME1900608011	GWC3	30-May-2019	1332																															
ME1900608012	GWC4	23-May-2019	1431	0.41	<0.001	0.126	530	160	<1	337	0.006			2340	<1	1.59	6.16	0.003	80	0.112	<0.001	0.002	6.6	47	<0.01	212	3.31	274	20.0	530	25.8	25.0	1340	0.028
ME1900608013	GWC5	22-May-2019	1436	0.05	<0.001	0.217	1940	151	<1	516	0.001			5350	<1	24.4	0.66	0.002	85	1.54	<0.001	0.028	6.7	47	<0.01	487	8.02	354	19.0	1940	60.7	36.9	3520	0.021
ME1900608014	GWA10	29-May-2019	1249	32.7	0.019	0.206	466	118	<1	710	0.116			3360	<1	2.64	38.2	0.038	123	2.10	0.001	0.068	7.1	1	<0.01	435	1.28	361	19.0	466	36.8	35.0	2170	0.095
ME1900608015	GWC10	29-May-2019	1311	1.80	<0.001	0.046	372	223	<1	458	0.002			3830	<1	7.73	1.03	<0.001	129	0.258	<0.001	0.003	7.0	32	<0.01	501	2.19	847	18.0	372	38.0	44.4	2360	0.010
ME1900608016	GWA11	29-May-2019	1323																															
ME1900608017	GWC11	29-May-2019	1348	28.2	0.007	0.414	229	199	<1	391	0.166			4240	<1	2.50	74.9	0.065	207	2.28	0.006	0.092	6.4	38	0.03	530	1.77	1580	17.5	229	48.5	51.0	3360	0.427
ME1900608018	GWA12	29-May-2019	1417																															
ME1900608019	GWC12	29-May-2019	1456	10.6	<0.001	13.1	788	24	<1	170	0.022			2090	<1	1.48	16.2	0.007	18	0.207	0.001	0.023	7.3	20	<0.01	445	1.14	129	18.0	788	23.2	22.5	1200	0.051
ME1900608020	GWA14	29-May-2019	1510																															
ME1900608021	GWC14	29-May-2019	1527	0.56	<0.001	30.2	441	24	<1	102	0.007			1130	<1	6.36	2.03	0.020	18	0.041	<0.001	0.003	7.3	16	<0.01	166	2.63	1	18.0	441	11.7	10.3	712	0.067
ME1900608022	GWA15	29-May-2019	1540																															
ME1900608023	GWC15	29-May-2019	1559	0.91	<0.001	1.53	542	62	<1	209	0.026			1700	<1	1.91	7.01	0.006	30	0.208	<0.001	0.003	7.2	22	<0.01	281	0.829	45	17.5	542	17.7	18.3	962	0.026
ME1900608024	GWC25	17-May-2019	1304	0.40	0.001	0.088	364	45	<1	377	0.040			2020	<1	2.57	0.45	0.004	95	0.425	0.002	0.107	6.9	11	<0.01	252	0.553	112	20.0	364	20.2	21.3	1070	0.060
ME1900608025	GWC35	17-May-2019	1201	11.2	0.042	1.16	335	76	<1	106	0.089			1190	<1	7.83	75.2	0.081	42	4.53	0.001	0.063	7.0	28	0.01	107	0.976	53	21.0	335	10.8	12.6	600	0.316
ME1900608026	GWC33	23-May-2019	1100	0.99	<0.001	0.176	<1	361	62	133	<0.001			4640	544	12.8	0.13	<0.001	<1	0.011	0.001	<0.001	12.4	20	<0.01	53	0.250	12	21.0	606	16.1	20.8	1300	<0.005
ME1900608027	GWC26	23-May-2019	1145	0.58	<0.001	0.253	343	61	37	162	0.006			1200	<1	2.36	1.92	0.002	27	0.103	<0.001	<0.001	7.2	17	<0.01	153	0.576	38	19.5	380	13.0	12.4	645	0.037
ME1900608028	GWC16	23-May-2019	1226	7.07	0.003	0.223	596	59	39	243	0.017			1870	<1	6.33	11.2	0.027	30	0.205	<0.001	0.008	7.2	22	<0.01	396	0.688	43	20.5	635	20.4	23.2	1070	0.050
ME1900608029	GWA16	23-May-2019	1236																															
ME1900608030	GWC28	08-May-2019	1141	0.06	<0.001	0.055	716	148	<1	425	0.003			3300	<1	1.15	1.75	<0.001	76	0.062	<0.001	0.003	6.8	38	<0.01	436	2.18	313	20.5	716	32.8	33.6	1880	0.055
ME1900608031	GWC29	08-May-2019	1225	0.18	<0.001	0.076	580	130	<1	271	0.008			2390	<1	2.68	1.55	0.001	93	0.045	0.002	0.008	6.8	34	<0.01	235	1.17	225	20.5	580	23.9	25.2	1400	0.019
ME1900608032	GWC30	22-May-2019	1202	0.18	<0.001	0.062	570	213	<1	541	0.003			3000	<1	1.29	2.17	<0.001	153	0.173	<0.001	0.005	6.8	47	<0.01	189	2.43	248	20.0	570	31.8	32.6	1920	0.022
ME1900608033	GWC31	08-May-2019	1345																															
ME1900608034	GWC24	08-May-2019	1426																															
ME1900608035	GWC27	23-May-2019	1511	2.24	0.014	0.108	7	28	<1	357	0.048			1650	<1	3.69	16.2	0.021	39	4.05	0.001	0.118	5.3	36	<0.01	235	0.190	324	18.5	7	17.0	15.7	958	0.568
ME1900608036	GWC32	22-May-2019	1400	0.28	<0.001	0.040	1260	124	<1	306	0.004			3400	<1	0.34	1.74	0.001	100	0.069	<0.001	0.002	6.7	41	<0.01	559	4.56	274	20.0	1260	39.5	39.8	1960	0.011

ME1900608037	GWA32	22-May-2019	1343	0.22	<0.001	0.048	370	143	<1	481	0.002			3160	<1	1.33	<0.05	<0.001	150	0.112	0.001	0.002	7.2	22	<0.01	391	1.98	726	18.5	370	36.1	37.0	2110	0.006
ME1900608038	GWA34	08-May-2019	1315	22.6	0.002	0.017	<1	486	<1	306	0.010			6270	<1	10.1	107	0.002	503	12.5	<0.001	1.08	4.3	6	0.04	397	0.788	4470	20.0	<1	102	83.1	5850	2.66
ME1900608039	GWC34	08-May-2019	1327																															
ME1900608040	GWA36	23-May-2019	1306																															
ME1900608041	GWC36	23-May-2019	1335	3.02	0.003	0.243	49	210	<1	340	0.008			4220	<1	3.84	86.5	0.006	251	5.87	0.003	0.049	6.2	42	0.02	504	1.67	2300	19.5	49	58.4	54.1	3430	0.142
ME1900608042	PZ13	17-May-2019	1541																															
ME1900608043	PZ20	17-May-2019	1511																															
ME1900608044	PZ21	17-May-2019	1501	4.03	0.003	0.030	309	21	<1	33	0.008			948	<1	9.16	2.68	0.004	18	0.407	0.003	0.011	7.7	9	<0.01	180	0.244	82	21.0	309	8.81	10.6	606	0.024
ME1900608045	PZ26	17-May-2019	1443																															
ME1900609001	GWA1	20-May-2019	1254									4.970																						
ME1900609002	GWA2	30-May-2019	1123										5.070																					
ME1900609003	GWA3	30-May-2019	1215									5.610																						
ME1900609004	GWA4	30-May-2019	1243									5.120																						
ME1900609005	GWA5	20-May-2019	1516										4.270																					
ME1900609006	GWA6	30-May-2019	1340									2.890																						
ME1900609007	GWA7	23-May-2019	1400									5.190																						
ME1900609008	GWA8	22-May-2019	1415										2.025																					
ME1900609009	GWC1	30-May-2019	1139										11.720																					
ME1900609010	GWC2	30-May-2019	1220										18.085																					
ME1900609011	GWC3	30-May-2019	1325									15.680																						
ME1900609012	GWC4	23-May-2019	1425										15.785																					
ME1900609013	GWC5	22-May-2019	1436										6.210																					
ME1900609014	GWA10	29-May-2019	1241										4.960																					
ME1900609015	GWC10	29-May-2019	1304										7.055																					
ME1900609016	GWA11	29-May-2019	1320									4.740																						
ME1900609017	GWC11	29-May-2019	1334										18.910																					
ME1900609018	GWA12	29-May-2019	1417									5.800																						
ME1900609019	GWC12	29-May-2019	1432										37.080																					
ME1900609020	GWA14	29-May-2019	1510									4.950																						
ME1900609021	GWC14	29-May-2019	1517										34.540																					
ME1900609022	GWA15	29-May-2019	1540									3.875																						
ME1900609023	GWC15	29-May-2019	1547										30.580																					
ME1900609024	GWC25	17-May-2019	1251										31.260																					
ME1900609025	GWC35	17-May-2019	1148										48.250																					
ME1900609026	GWC33	23-May-2019	1050										42.300																					
ME1900609027	GWC26	23-May-2019	1126										41.670																					
ME1900609028	GWC16	23-May-2019	1212										32.000																					
ME1900609029	GWA16	23-May-2019	1236									4.080																						
ME1900609030	GWC28	08-May-2019	1110										44.505																					
ME1900609031	GWC29	08-May-2019	1201										45.070																					
ME1900609032	GWC30	22-May-2019	1148										31.840																					
ME1900609033	GWC31	08-May-2019	1345									51.220																						
ME1900609034	GWC24	08-May-2019	1407									24.570																						
ME1900609035	GWC27	23-May-2019	1501										16.485																					
ME1900609036	GWC32	22-May-2019	1354										4.610																					
ME1900609037	GWA32	22-May-2019	1336										2.200																					

ME1900609038	GWA34	08-May-2019	1307										4.575																					
ME1900609039	GWC34	08-May-2019	1322									20.495																						
ME1900609040	GWA36	23-May-2019	1306									5.940																						
ME1900609041	GWC36	23-May-2019	1320										17.305																					
ME1900609042	PZ13	17-May-2019	1541									2.310																						
ME1900609043	PZ20	17-May-2019	1509									3.800																						
ME1900609044	PZ21	17-May-2019	1455										3.980																					
ME1900609045	PZ26	17-May-2019	1443									4.380																						
ME1900609046	Barologger Office	29-May-2019	1213																															
ME1900609047	GWF1	17-May-2019	1044										16.480																					
ME1900609048	GWF2	17-May-2019	1113									23.790																						
ME1900609049	GWF3	17-May-2019	1125										20.960																					
ME1900609050	GWF4	17-May-2019	1523										12.970																					
ME1900745001	GWA1	19-Jun-2019	1221																															
ME1900745002	GWA2	24-Jun-2019	1437	3.06	0.020	0.579	140	32	<1	322	0.055			1500	<1	1.27	204	0.007	46	4.77	<0.001	0.032	6.9	7	0.01	200	0.666	132	18.0	140	14.6	14.3	942	0.051
ME1900745003	GWA3	24-Jun-2019	1514																															
ME1900745004	GWA4	24-Jun-2019	1503																															
ME1900745005	GWA5	21-Jun-2019	1501																															
ME1900745006	GWA6	21-Jun-2019	1141																															
ME1900745007	GWA7	21-Jun-2019	1214																															
ME1900745008	GWA8	21-Jun-2019	1410	0.44	<0.001	0.069	215	126	<1	328	0.003			2390	<1	4.30	1.09	0.001	120	19.6	<0.001	0.012	7.1	14	<0.01	259	1.26	574	15.5	215	25.5	27.8	1530	0.014
ME1900745009	GWC1	24-Jun-2019	1449	0.38	0.002	0.128	357	100	<1	493	0.002			2740	<1	2.18	4.06	0.002	74	0.632	<0.001	0.006	7.1	23	<0.01	375	1.04	276	17.0	357	26.8	28.0	1460	0.016
ME1900745010	GWC2	24-Jun-2019	1529	9.59	0.004	1.09	449	74	<1	112	0.078			1260	<1	4.74	31.2	0.033	32	0.657	<0.001	0.072	7.1	25	<0.01	156	0.832	18	17.5	449	12.5	13.8	662	0.067
ME1900745011	GWC3	21-Jun-2019	1136																															
ME1900745012	GWC4	21-Jun-2019	1314	0.17	<0.001	0.074	595	182	<1	296	0.005			2410	<1	4.65	4.64	0.002	86	0.074	<0.001	0.002	6.7	54	<0.01	244	1.99	260	18.0	595	25.6	28.2	1340	0.024
ME1900745013	GWC5	21-Jun-2019	1426	0.03	<0.001	0.208	2090	288	<1	453	0.002			5520	<1	9.65	1.32	0.002	175	1.51	<0.001	0.027	6.7	90	<0.01	1000	8.06	332	17.5	2090	61.4	74.6	3490	0.024
ME1900745014	GWA10	25-Jun-2019	1122	14.6	0.012	0.122	459	120	<1	740	0.042			3340	<1	1.38	14.8	0.016	124	1.91	<0.001	0.032	7.1	2	<0.01	440	1.25	304	18.5	459	36.4	35.4	2000	0.038
ME1900745015	GWC10	25-Jun-2019	1148	1.04	<0.001	0.051	389	222	<1	467	0.004			3810	<1	4.30	0.73	<0.001	129	0.265	<0.001	0.003	7.1	33	<0.01	510	2.33	965	19.0	389	41.0	44.7	2070	0.008
ME1900745016	GWA11	25-Jun-2019	1158																															
ME1900745017	GWC11	25-Jun-2019	1221	15.7	0.008	0.141	219	204	<1	428	0.079			4300	<1	1.14	49.0	0.032	212	1.83	0.006	0.049	6.4	40	0.01	541	1.90	1660	18.5	219	51.0	52.2	3330	0.167
ME1900745018	GWA12	25-Jun-2019	1235																															
ME1900745019	GWC12	25-Jun-2019	1311	6.29	<0.001	5.09	1270	58	<1	242	0.014			3560	<1	1.28	8.58	0.005	24	0.197	<0.001	0.015	7.1	30	<0.01	822	1.08	391	19.5	1270	40.3	41.4	2320	0.033
ME1900745020	GWA14	25-Jun-2019	1322																															
ME1900745021	GWC14	25-Jun-2019	1346	1.38	<0.001	15.6	452	41	<1	102	0.009			1130	<1	0.80	2.60	0.021	19	0.046	<0.001	0.005	7.4	19	<0.01	185	1.46	2	19.0	452	11.9	12.1	641	0.048
ME1900745022	GWA15	25-Jun-2019	1357																															
ME1900745023	GWC15	25-Jun-2019	1427	2.29	0.001	4.37	530	63	<1	225	0.053			1750	<1	0.58	9.18	0.023	29	0.264	<0.001	0.009	7.2	23	<0.01	276	1.08	47	17.5	530	17.9	18.1	672	0.091
ME1900745024	GWC25	24-Jun-2019	1308	0.30	<0.001	0.084	371	48	38	393	0.024			2040	<1	0.97	0.23	0.002	92	0.385	0.001	0.076	6.9	11	<0.01	246	0.537	100	19.0	410	21.4	20.9	1030	0.062
ME1900745025	GWC35	24-Jun-2019	1207																															
ME1900745026	GWC33	19-Jun-2019	1111	1.46	<0.001	0.308	<1	292	56	89	0.006			4650	799	7.41	0.74	0.004	<1	0.057	<0.001	0.004	12.5	20	<0.01	49	0.270	18	19.5	855	20.0	17.2	1190	0.055
ME1900745027	GWC26	19-Jun-2019	1202	0.55	<0.001	0.314	358	62	17	150	0.006			1220	<1	3.26	4.01	0.004	30	0.100	<0.001	0.004	7.2	20	<0.01	169	0.526	40	17.5	376	12.6	13.4	628	0.044
ME1900745028	GWC16	19-Jun-2019	1310	0.84	<0.001	0.313	642	50	<1	221	0.011			1920	<1	4.79	6.57	0.023	26	0.090	<0.001	0.004	7.2	21	<0.01	385	0.594	41	19.5	642	19.9	21.9	1050	0.047
ME1900745029	GWA16	19-Jun-2019	1319																															
ME1900745030	GWC30	19-Jun-2019	1434	0.12	<0.001	0.098	604	220	<1	526	0.004			3130	<1	0.74	1.45	0.002	164	0.164	<0.001	0.005	6.9	50	<0.01	198	2.46	334	19.0	604	33.8	34.4	2000	0.020
ME1900745031	GWC31	06-Jun-2019	1325																															
ME1900745032	GWC24	06-Jun-2019	1400																															

ME1900745033	GWC27	06-Jun-2019	1438	2.84	0.039	0.102	14	28	<1	347	0.168			1660	<1	1.33	27.9	0.025	41	3.63	0.001	0.156	5.5	33	<0.01	224	0.160	274	17.5	14	15.8	15.4	959	0.604
ME1900745034	GWC32	19-Jun-2019	1530	0.36	<0.001	0.049	1160	134	<1	302	0.003			3510	<1	5.02	1.44	0.002	109	0.066	<0.001	0.001	6.8	42	<0.01	564	4.70	270	18.5	1160	37.3	41.3	2250	0.012
ME1900745035	GWA32	19-Jun-2019	1503	0.68	<0.001	0.054	372	144	<1	460	<0.001			3220	<1	3.84	0.05	<0.001	162	0.088	0.002	0.002	7.3	24	<0.01	411	2.02	755	16.0	372	36.1	39.0	2050	<0.005
ME1900745036	GWA34	06-Jun-2019	1229	22.2	0.004	0.016	<1	475	<1	337	0.036			6350	<1	1.44	120	0.004	557	14.0	<0.001	1.07	4.8	7	0.04	465	0.908	3990	19.0	<1	92.6	90.0	6780	2.99
ME1900745037	GWC34	06-Jun-2019	1243																															
ME1900745038	GWA36	19-Jun-2019	1332																															
ME1900745039	GWC36	19-Jun-2019	1355	0.44	<0.001	0.024	71	203	<1	315	0.001			4280	<1	2.52	66.9	0.001	246	5.32	0.001	0.043	6.2	42	<0.01	533	1.51	2000	18.0	71	51.9	54.6	3360	0.132
ME1900745040	PZ13	24-Jun-2019	1415																															
ME1900745041	PZ20	24-Jun-2019	1100																															
ME1900745042	PZ21	24-Jun-2019	1043	3.32	0.004	0.057	365	17	54	40	0.003			1070	<1	2.48	5.99	0.012	18	0.627	0.001	0.015	7.8	8	<0.01	210	0.279	78	17.5	418	11.1	11.7	687	0.072
ME1900745043	PZ26	24-Jun-2019	1106																															
ME1900745044	GWF1	06-Jun-2019	1133																															
ME1900745045	GWF2	06-Jun-2019	1133																															
ME1900745046	GWF3	06-Jun-2019	1133																															
ME1900745047	GWF4	06-Jun-2019	1133																															
ME1900746001	GWA1	19-Jun-2019	1221										5.090																					
ME1900746002	GWA2	24-Jun-2019	1425									5.080																						
ME1900746003	GWA3	24-Jun-2019	1514										5.610																					
ME1900746004	GWA4	24-Jun-2019	1503										5.170																					
ME1900746005	GWA5	21-Jun-2019	1458										4.410																					
ME1900746006	GWA6	21-Jun-2019	1141										2.890																					
ME1900746007	GWA7	21-Jun-2019	1214										5.190																					
ME1900746008	GWA8	21-Jun-2019	1405									1.725																						
ME1900746009	GWC1	24-Jun-2019	1442									11.820																						
ME1900746010	GWC2	24-Jun-2019	1523									18.560																						
ME1900746011	GWC3	21-Jun-2019	1128										15.975																					
ME1900746012	GWC4	21-Jun-2019	1301									15.830																						
ME1900746013	GWC5	21-Jun-2019	1421									6.190																						
ME1900746014	GWA10	25-Jun-2019	1114									4.990																						
ME1900746015	GWC10	25-Jun-2019	1140									7.340																						
ME1900746016	GWA11	25-Jun-2019	1156										4.745																					
ME1900746017	GWC11	25-Jun-2019	1208									19.980																						
ME1900746018	GWA12	25-Jun-2019	1235										5.800																					
ME1900746019	GWC12	25-Jun-2019	1255									37.880																						
ME1900746020	GWA14	25-Jun-2019	1322										4.950																					
ME1900746021	GWC14	25-Jun-2019	1333									35.450																						
ME1900746022	GWA15	25-Jun-2019	1357										3.900																					
ME1900746023	GWC15	25-Jun-2019	1410									31.310																						
ME1900746024	GWC25	25-Jun-2019	0823									31.355																						
ME1900746025	GWC35	28-Jun-2019	1052										48.445																					
ME1900746026	GWC33	19-Jun-2019	1043									40.490																						
ME1900746027	GWC26	19-Jun-2019	1141									41.760																						
ME1900746028	GWC16	19-Jun-2019	1352									31.075																						
ME1900746029	GWA16	19-Jun-2019	1319										4.080																					
ME1900746030	GWC30	19-Jun-2019	1416									31.900																						
ME1900746031	GWC31	06-Jun-2019	1315									51.340																						

ME1900746032	GWC24	06-Jun-2019	1347										25.860																					
ME1900746033	GWC27	06-Jun-2019	1423									16.490																						
ME1900746034	GWC32	19-Jun-2019	1518									4.610																						
ME1900746035	GWA32	19-Jun-2019	1451									2.080																						
ME1900746036	GWA34	06-Jun-2019	1205									4.655																						
ME1900746037	GWC34	06-Jun-2019	1243										20.500																					
ME1900746038	GWA36	19-Jun-2019	1332										5.940																					
ME1900746039	GWC36	19-Jun-2019	1338									17.630																						
ME1900746040	PZ13	24-Jun-2019	1415										2.330																					
ME1900746041	PZ20	24-Jun-2019	1055										4.106																					
ME1900746042	PZ21	24-Jun-2019	1034									4.225																						
ME1900746043	PZ26	24-Jun-2019	1106										4.390																					
ME1900746044	GWF1	06-Jun-2019	1137																															
ME1900746045	GWF2	06-Jun-2019	1137																															
ME1900746046	GWF3	06-Jun-2019	1137																															
ME1900746047	GWF4	06-Jun-2019	1137																															
ME1900746048	Barologger Office	25-Jun-2019	1044																															
ME1900894001	GWA1	12-Jul-2019	1520																															
ME1900894002	GWA2	30-Jul-2019	1135	19.1	0.220	0.676	126	30	<1	353	0.057			1480	<1	8.35	603	0.043	41	6.26	0.002	0.068	6.8	7	0.02	188	0.654	152	17.5	126	15.6	13.2	905	0.096
ME1900894003	GWA3	30-Jul-2019	1220																															
ME1900894004	GWA4	30-Jul-2019	1207																															
ME1900894005	GWA5	16-Jul-2019	1510																															
ME1900894006	GWA6	30-Jul-2019	1312																															
ME1900894007	GWA7	30-Jul-2019	1333																															
ME1900894008	GWA8	30-Jul-2019	1433	0.94	<0.001	0.129	204	112	<1	386	0.002			2320	<1	1.26	1.70	0.004	113	24.6	<0.001	0.013	7.0	11	<0.01	229	1.24	519	14.5	204	25.8	25.1	1570	0.019
ME1900894009	GWC1	30-Jul-2019	1147	0.51	0.006	0.294	370	103	<1	518	0.004			2760	<1	4.36	7.77	0.003	67	0.659	<0.001	0.007	7.1	26	<0.01	364	1.05	366	17.0	370	29.6	27.2	1660	0.020
ME1900894010	GWC2	30-Jul-2019	1232	22.1	0.004	0.685	454	71	<1	120	0.034			1250	<1	0.81	26.3	0.018	27	0.298	<0.001	0.057	7.1	25	<0.01	143	0.726	18	18.0	454	12.8	12.6	764	0.056
ME1900894011	GWC3	30-Jul-2019	1304																															
ME1900894012	GWC4	30-Jul-2019	1409	0.35	<0.001	0.108	574	159	<1	354	0.003			2340	<1	1.15	4.81	0.002	90	0.068	<0.001	0.003	6.7	47	<0.01	239	1.92	234	18.5	574	26.3	26.9	1370	0.026
ME1900894013	GWC5	30-Jul-2019	1452	0.19	<0.001	0.242	2170	264	<1	525	0.002			5450	<1	0.90	2.07	0.005	142	1.60	<0.001	0.027	6.7	83	<0.01	845	7.90	323	17.5	2170	64.9	63.7	3240	0.032
ME1900894014	GWA10	25-Jul-2019	1059	9.27	0.022	0.107	405	117	<1	742	0.093			3370	<1	5.52	16.9	0.016	116	1.97	0.001	0.585	7.1	2	<0.01	393	1.20	351	17.0	405	36.3	32.5	1890	0.046
ME1900894015	GWC10	25-Jul-2019	1122	1.30	<0.001	0.055	374	219	<1	456	0.027			3870	<1	0.92	1.88	0.002	128	0.321	<0.001	0.043	7.3	32	<0.01	510	2.46	1120	17.5	374	43.6	44.5	2040	0.015
ME1900894016	GWA11	25-Jul-2019	1133																															
ME1900894017	GWC11	25-Jul-2019	1200	14.8	0.006	0.108	207	189	<1	409	0.082			4250	<1	0.65	48.8	0.028	198	1.85	0.006	0.054	6.4	37	<0.01	522	1.80	1650	19.5	207	50.0	49.4	3350	0.124
ME1900894018	GWA12	25-Jul-2019	1218																															
ME1900894019	GWC12	25-Jul-2019	1243	3.86	<0.001	4.42	1270	52	<1	277	0.003			4300	<1	6.63	4.43	0.001	22	0.097	<0.001	0.017	7.1	32	<0.01	1040	1.13	528	20.5	1270	44.2	50.5	2870	0.014
ME1900894020	GWA14	25-Jul-2019	1323																															
ME1900894021	GWC14	25-Jul-2019	1355	2.53	<0.001	27.3	452	45	<1	104	0.012			1200	<1	4.14	5.42	0.024	21	0.100	<0.001	0.014	7.4	18	<0.01	200	1.91	6	18.0	452	12.1	13.1	695	0.074
ME1900894022	GWA15	25-Jul-2019	1411																															
ME1900894023	GWC15	25-Jul-2019	1434	0.88	<0.001	1.48	553	66	<1	226	0.017			1790	<1	3.95	3.54	0.007	34	0.138	<0.001	0.083	7.3	23	<0.01	311	0.873	60	18.0	553	18.7	20.2	1020	0.030
ME1900894024	GWC25	23-Jul-2019	1151	0.13	<0.001	0.081	374	50	<1	405	0.030			2060	<1	2.55	0.28	0.002	91	0.375	<0.001	1.13	6.9	12	<0.01	276	0.537	110	18.5	374	21.2	22.3	1150	0.058
ME1900894025	GWC35	23-Jul-2019	1055																															
ME1900894026	GWC33	12-Jul-2019	1354	2.56	<0.001	0.663	<1	343	46	109	0.019			4580	675	4.38	3.18	0.013	<1	0.144	<0.001	0.008	12.5	18	<0.01	44	0.282	18	19.5	721	17.8	19.5	852	0.127
ME1900894027	GWC26	12-Jul-2019	1444	0.88	0.001	0.418	350	63	<1	160	0.012			1240	<1	6.92	4.74	0.009	30	0.127	<0.001	0.037	7.3	17	<0.01	189	0.498	44	18.0	350	12.4	14.3	647	0.067
ME1900894028	GWC16	19-Jul-2019	1138	2.02	<0.001	0.138	545	63	<1	240	0.002			1970	<1	5.13	9.19	0.014	29	0.193	<0.001	0.002	7.3	19	<0.01	336	0.548	46	19.0	545	18.6	20.6	1150	0.015
ME1900894029	GWA16	19-Jul-2019	1150																															
ME1900894030	GWC30	19-Jul-2019	1310	0.16	<0.001	0.079	507	262	<1	569	0.004			3110	<1	5.92	3.98	0.002	167	0.164	<0.001	0.020	6.8	47	<0.01	186	2.64	283	19.0	507	32.1	36.1	1870	0.022

ME1900894031	GWC31	11-Jul-2019	1312																															
ME1900894032	GWC24	11-Jul-2019	1411																															
ME1900894033	GWC27	11-Jul-2019	1445	2.46	0.021	0.149	13	30	<1	358	0.115			1690	<1	2.90	27.3	0.018	42	3.96	0.001	0.239	5.4	38	<0.01	238	0.170	331	17.0	13	17.2	16.3	1100	0.436
ME1900894034	GWC32	19-Jul-2019	1414	0.23	<0.001	0.043	1250	190	<1	526	0.002			3550	<1	6.74	1.75	0.001	130	0.068	<0.001	0.010	6.7	50	<0.01	620	4.90	750	18.5	1250	55.4	48.4	2020	0.008
ME1900894035	GWA32	19-Jul-2019	1357	0.08	<0.001	0.046	334	163	<1	494	0.039			3260	<1	0.11	0.09	<0.001	155	0.087	0.001	0.001	7.3	20	<0.01	346	2.10	765	15.0	334	36.5	36.4	2100	<0.005
ME1900894036	GWA34	11-Jul-2019	1220	22.3	0.001	0.026	<1	517	<1	359	0.014			6340	<1	5.11	129	0.001	579	14.9	<0.001	0.999	4.3	7	0.01	479	0.683	4540	18.5	<1	105	94.5	6820	2.64
ME1900894037	GWC34	11-Jul-2019	1245	0.79	0.002	0.153	1750	69	<1	268	0.047			4760	<1	2.89	3.00	0.011	77	0.242	0.004	0.164	7.2	22	0.01	1030	7.09	764	16.0	1750	58.4	55.1	3300	0.079
ME1900894038	GWA36	19-Jul-2019	1207																															
ME1900894039	GWC36	19-Jul-2019	1229	0.50	0.007	0.028	14	205	<1	319	0.001			4140	<1	11.6	117	<0.001	215	6.08	0.004	0.040	6.2	38	0.03	437	1.20	2460	18.0	14	60.5	47.9	3050	0.129
ME1900894040	PZ13	23-Jul-2019	1350																															
ME1900894041	PZ20	23-Jul-2019	1310																															
ME1900894042	PZ21	23-Jul-2019	1253	21.6	0.008	0.104	418	16	<1	48	0.024			1180	<1	7.92	19.9	0.020	18	0.659	0.005	0.035	8.0	9	<0.01	270	0.303	118	18.0	418	12.2	14.2	1030	0.102
ME1900894043	PZ26	23-Jul-2019	1235																															
ME1900894044	GWF1	11-Jul-2019	1500																															
ME1900894045	GWF2	11-Jul-2019	0818																															
ME1900894046	GWF3	11-Jul-2019	0818																															
ME1900894047	GWF4	11-Jul-2019	0818																															
ME1900895001	GWA1	12-Jul-2019	1520										5.090																					
ME1900895002	GWA2	30-Jul-2019	1125									5.090																						
ME1900895003	GWA3	30-Jul-2019	1220										5.610																					
ME1900895004	GWA4	30-Jul-2019	1207										5.170																					
ME1900895005	GWA5	16-Jul-2019	1505										4.530																					
ME1900895006	GWA6	30-Jul-2019	1312										2.890																					
ME1900895007	GWA7	30-Jul-2019	1333										5.190																					
ME1900895008	GWA8	30-Jul-2019	1430									1.635																						
ME1900895009	GWC1	30-Jul-2019	1130									11.980																						
ME1900895010	GWC2	30-Jul-2019	1224									19.090																						
ME1900895011	GWC3	30-Jul-2019	1256										15.710																					
ME1900895012	GWC4	30-Jul-2019	1405									15.860																						
ME1900895013	GWC5	30-Jul-2019	1447									6.185																						
ME1900895014	GWA10	25-Jul-2019	1052									5.000																						
ME1900895015	GWC10	25-Jul-2019	1114									7.330																						
ME1900895016	GWA11	25-Jul-2019	1132										4.745																					
ME1900895017	GWC11	25-Jul-2019	1150									20.060																						
ME1900895018	GWA12	25-Jul-2019	1218										5.800																					
ME1900895019	GWC12	25-Jul-2019	1228									38.020																						
ME1900895020	GWA14	25-Jul-2019	1323										4.950																					
ME1900895021	GWC14	25-Jul-2019	1330									35.200																						
ME1900895022	GWA15	25-Jul-2019	1411										3.930																					
ME1900895023	GWC15	25-Jul-2019	1415									30.950																						
ME1900895024	GWC25	23-Jul-2019	1137									48.310																						
ME1900895025	GWC35	23-Jul-2019	1055										48.310																					
ME1900895026	GWC33	12-Jul-2019	1329									40.450																						
ME1900895027	GWC26	12-Jul-2019	1425									41.800																						
ME1900895028	GWC16	19-Jul-2019	1131									32.450																						
ME1900895029	GWA16	19-Jul-2019	1150										4.080																					
ME1900895030	GWC30	19-Jul-2019	1258									32.300																						

ME1900895031	GWC31	11-Jul-2019	1307									51.330																						
ME1900895032	GWC24	11-Jul-2019	1358										26.140																					
ME1900895033	GWC27	11-Jul-2019	1431									16.450																						
ME1900895034	GWC32	19-Jul-2019	1406									4.550																						
ME1900895035	GWA32	19-Jul-2019	1348									1.980																						
ME1900895036	GWA34	11-Jul-2019	1209									4.580																						
ME1900895037	GWC34	11-Jul-2019	1232									20.340																						
ME1900895038	GWA36	19-Jul-2019	1207										5.940																					
ME1900895039	GWC36	19-Jul-2019	1215									17.770																						
ME1900895040	PZ13	23-Jul-2019	1350										2.330																					
ME1900895041	PZ20	23-Jul-2019	1310										4.160																					
ME1900895042	PZ21	23-Jul-2019	1248									4.360																						
ME1900895043	PZ26	23-Jul-2019	1235										4.390																					
ME1900895044	GWF1	12-Jul-2019	1500																															
ME1900895045	GWF2	12-Jul-2019	0829																															
ME1900895046	GWF3	12-Jul-2019	0829																															
ME1900895047	GWF4	12-Jul-2019	0829																															
ME1900895048	Barologger Office	25-Jul-2019	1023																															
ME1901003001	GWA1	13-Aug-2019	1239																															
ME1901003002	GWA2	21-Aug-2019	1421	30.8	0.407	0.904	133	31	<1	315	0.121			1500	<1	1.85	674	0.076	46	7.31	0.003	0.106	6.8	7	0.04	201	0.789	156	17.0	133	14.8	14.2	1030	0.176
ME1901003003	GWA3	19-Aug-2019	1145																															
ME1901003004	GWA4	19-Aug-2019	1132																															
ME1901003005	GWA5	19-Aug-2019	1535																															
ME1901003006	GWA6	19-Aug-2019	1219																															
ME1901003007	GWA7	16-Aug-2019	1144																															
ME1901003008	GWA8	16-Aug-2019	1408	1.08	<0.001	0.082	204	121	<1	364	0.006			2370	<1	6.59	1.88	0.005	119	23.7	<0.001	0.014	7.0	13	<0.01	263	1.24	473	14.5	204	24.2	27.6	1560	0.018
ME1901003009	GWC1	21-Aug-2019	1439	0.68	0.004	0.158	384	100	<1	506	0.005			2810	<1	0.19	5.91	0.002	75	0.615	<0.001	0.007	7.2	25	<0.01	410	1.04	364	17.0	384	29.5	29.6	1570	0.022
ME1901003010	GWC2	19-Aug-2019	1155	19.4	0.004	0.895	483	74	<1	105	0.056			1280	<1	5.53	31.6	0.027	31	0.494	<0.001	0.067	7.1	29	<0.01	174	0.785	20	17.5	483	13.0		726	0.068
ME1901003011	GWC3	19-Aug-2019	1216																															
ME1901003012	GWC4	16-Aug-2019	1259	0.28	<0.001	0.083	554	178	<1	327	0.003			2400	<1	2.84	3.84	0.002	83	0.068	<0.001	0.002	6.7	50	<0.01	242	1.87	274	19.5	554	26.0	27.5	1370	0.018
ME1901003013	GWC5	16-Aug-2019	1425	0.07	<0.001	0.215	1400	261	<1	512	0.003			5540	<1	12.6	1.21	0.004	148	1.51	<0.001	0.027	6.7	79	<0.01	849	9.10	354	17.5	1400	49.8	64.2	3330	0.020
ME1901003014	GWA10	23-Aug-2019	1117	4.62	0.018	0.092	418	124	<1	629	0.113			3320	<1	6.67	16.2	0.012	128	2.18	<0.001	0.163	7.1	1	<0.01	496	1.17	357	16.5	418	33.5	38.3	2000	0.036
ME1901003015	GWC10	23-Aug-2019	1137	0.36	<0.001	0.051	398	222	<1	390	0.091			3820	<1	0.60	1.38	0.003	132	0.280	<0.001	0.023	7.4	37	<0.01	593	2.24	1400	17.5	398	48.1	48.7	2810	0.021
ME1901003016	GWA11	23-Aug-2019	1148																															
ME1901003017	GWC11	23-Aug-2019	1207	7.01	0.004	0.055	201	190	<1	342	0.078			4100	<1	0.03	50.8	0.039	210	1.99	0.003	0.042	6.5	39	0.02	610	1.63	1950	18.5	201	54.3	54.3	3090	0.219
ME1901003018	GWA12	23-Aug-2019	1221																															
ME1901003019	GWC12	23-Aug-2019	1258	4.88	<0.001	5.16	1340	37	<1	248	0.013			4280	<1	6.00	9.75	0.006	23	0.159	<0.001	0.024	7.1	37	<0.01	1130	1.17	671	21.0	1340	47.7	53.8	2960	0.046
ME1901003020	GWA14	23-Aug-2019	1320																															
ME1901003021	GWC14	23-Aug-2019	1346	0.27	<0.001	2.55	459	42	<1	78	0.002			1140	<1	6.98	0.78	0.003	19	0.020	<0.001	0.004	7.4	19	<0.01	207	0.600	3	18.5	459	11.4	13.1	658	0.008
ME1901003022	GWA15	23-Aug-2019	1355																															
E1901003023	GWC15	23-Aug-2019	1415	0.45	<0.001	0.588	554	69	<1	201	0.033			1760	<1	5.37	3.27	0.004	33	0.114	<0.001	0.005	7.2	23	<0.01	300	0.870	50	18.5	554	17.8	19.8	918	
ME1901003024	GWC25	21-Aug-2019	1136	0.22	<0.001	0.084	377	56	<1	395	0.503			2080	<1	3.98	0.71	0.003	98	0.216	0.002	0.120	6.8	13	<0.01	262	0.572	105	18.5	377	20.9	22.6	1110	
ME1901003025	GWC35	21-Aug-2019	1210																															
ME1901003026	GWC33	13-Aug-2019	1139	1.08	<0.001	0.268	<1	327	33	100	0.018			4650	650	5.38	0.72	0.003	<1	0.037	<0.001	0.003	12.5	17	<0.01	44	0.240	14	18.5	683	16.8	18.7	998	
ME1901003027	GWC26	13-Aug-2019	1225	0.37	0.002	0.217	345	53	47	163	0.010			1260	<1	2.78	2.23	0.005	27	0.070	<0.001	0.183	7.2	16	<0.01	168	0.434	42	18.5	392	13.3	12.6	648	
ME1901003028	GWC16	13-Aug-2019	1317	1.09	<0.001	0.127	572	52	25	267	0.002			1960	<1	1.03	5.62	0.012	28	0.131	<0.001	0.005	7.2	19	<0.01	344	0.564	63	19.0	597	20.8	20.3	1010	

ME1901003029	GWA16	13-Aug-2019	1326																														
ME1901003030	GWC30	16-Aug-2019	1233	0.52	<0.001	0.180	511	227	<1	565	0.011			3040	<1	1.84	7.19	0.005	162	0.213	<0.001	0.011	6.8	47	<0.01	198	2.24	340	19.0	511	33.2	34.5	2050
ME1901003031	GWC31	05-Aug-2019	1300																														
ME1901003032	GWC24	05-Aug-2019	1345																														
ME1901003033	GWC27	05-Aug-2019	1431	2.46	0.016	0.118	48	33	<1	373	0.266			1700	<1	11.9	31.5	0.018	45	3.39	<0.001	0.675	5.8	35	<0.01	189	0.136	332	17.5	48	18.4	14.5	1020
ME1901003034	GWC32	16-Aug-2019	1351	0.20	<0.001	0.044	1190	136	<1	317	0.017			3500	<1	3.83	1.96	0.001	106	0.060	<0.001	0.075	6.7	43	<0.01	578	5.12	286	18.0	1190	38.7	41.8	2110
ME1901003035	GWA32	16-Aug-2019	1337	0.05	<0.001	0.045	334	148	<1	491	0.018			3190	<1	5.25	0.12	<0.001	158	0.064	0.001	0.002	7.4	23	<0.01	412	1.83	696	14.5	334	35.0	38.9	2030
ME1901003036	GWA34	05-Aug-2019	1223	21.9	0.002	0.019	<1	466	<1	358	0.039			6340	<1	8.84	126	0.003	571	14.7	<0.001	1.13	4.6	6	0.02	424	0.710	4610	18.0	<1	106	88.8	6870
ME1901003037	GWC34	05-Aug-2019	1237																														
ME1901003038	GWA36	16-Aug-2019	1058																														
ME1901003039	GWC36	16-Aug-2019	1118	0.52	0.009	0.042	45	188	<1	315	<0.001			4040	<1	2.19	132	<0.001	221	6.04	0.005	0.046	6.2	41	0.05	524	1.24	2110	18.0	45	53.7	51.4	2890
ME1901003040	PZ13	21-Aug-2019	1400																														
ME1901003041	PZ20	21-Aug-2019	1328																														
ME1901003042	PZ21	21-Aug-2019	1319																														
ME1901003043	PZ26	21-Aug-2019	1254																														
ME1901003044	GWF1	21-Aug-2019	1014																														
ME1901003045	GWF2	21-Aug-2019	1026																														
ME1901003046	GWF3	21-Aug-2019	1046																														
ME1901003047	GWF4	21-Aug-2019	1309																														
ME1901004001	GWA1	13-Aug-2019	1239										5.090																				
ME1901004002	GWA2	21-Aug-2019	1414									5.100																					
ME1901004003	GWA3	19-Aug-2019	1145										5.610																				
ME1901004004	GWA4	19-Aug-2019	1132										5.170																				
ME1901004005	GWA5	19-Aug-2019	1534										4.640																				
ME1901004006	GWA6	19-Aug-2019	1219										2.890																				
ME1901004007	GWA7	16-Aug-2019	1144										5.190																				
ME1901004008	GWA8	16-Aug-2019	1405									1.590																					
ME1901004009	GWC1	21-Aug-2019	1431									12.040																					
ME1901004010	GWC2	19-Aug-2019	1149									19.365																					
ME1901004011	GWC3	19-Aug-2019	1216										16.160																				
ME1901004012	GWC4	16-Aug-2019	1253									15.910																					
ME1901004013	GWC5	16-Aug-2019	1420									6.820																					
ME1901004014	GWA10	23-Aug-2019	1108									5.010																					
ME1901004015	GWC10	23-Aug-2019	1130									7.505																					
ME1901004016	GWA11	23-Aug-2019	1148										4.745																				
ME1901004017	GWC11	23-Aug-2019	1155									19.310																					
ME1901004018	GWA12	23-Aug-2019	1221										5.800																				
ME1901004019	GWC12	23-Aug-2019	1232									38.350																					
ME1901004020	GWA14	23-Aug-2019	1320										4.950																				
ME1901004021	GWC14	23-Aug-2019	1336									36.100																					
ME1901004022	GWA15	23-Aug-2019	1355										3.955																				
ME1901004023	GWC15	23-Aug-2019	1403									31.810																					
ME1901004024	GWC25	21-Aug-2019	1122									31.475																					
ME1901004025	GWC35	21-Aug-2019	1206										48.380																				
ME1901004026	GWC33	13-Aug-2019	1121									40.625																					
ME1901004027	GWC26	13-Aug-2019	1212									42.120																					
ME1901004028	GWC16	13-Aug-2019	1305									32.230																					

ME1901004029	GWA16	13-Aug-2019	1326										4.080																					
ME1901004030	GWC30	16-Aug-2019	1218									32.585																						
ME1901004031	GWC31	05-Aug-2019	1300										51.240																					
ME1901004032	GWC24	05-Aug-2019	1338										26.320																					
ME1901004033	GWC27	05-Aug-2019	1413									16.555																						
ME1901004034	GWC32	16-Aug-2019	1345									4.530																						
ME1901004035	GWA32	16-Aug-2019	1328									1.920																						
ME1901004036	GWA34	05-Aug-2019	1212									4.630																						
ME1901004037	GWC34	05-Aug-2019	1233										20.430																					
ME1901004038	GWA36	16-Aug-2019	1058										5.940																					
ME1901004039	GWC36	16-Aug-2019	1107									17.640																						
ME1901004040	PZ13	21-Aug-2019	1400										2.330																					
ME1901004041	PZ20	21-Aug-2019	1328										4.160																					
ME1901004042	PZ21	21-Aug-2019	1313										4.500																					
ME1901004043	PZ26	21-Aug-2019	1254										4.390																					
ME1901004044	GWF1	21-Aug-2019	1011										16.900																					
ME1901004045	GWF2	21-Aug-2019	1026										23.790																					
ME1901004046	GWF3	21-Aug-2019	1040										21.035																					
ME1901004047	GWF4	21-Aug-2019	1309																															
ME1901004048	Barologger Office	23-Aug-2019	1239																															
ME1901165001	GWA1	05-Sep-2019	1244																															
ME1901165002	GWA2	24-Sep-2019	1148	4.16	0.044	0.285	128	35	<1	302	0.039			1530	<1	1.46	101	0.018	48	3.25	<0.001	0.026	6.9	7	<0.01	201	0.472	150	17.0	128	14.2	14.6	886	
ME1901165003	GWA3	24-Sep-2019	1225																															
ME1901165004	GWA4	24-Sep-2019	1215																															
ME1901165005	GWA5	18-Sep-2019	1525																															
ME1901165006	GWA6	24-Sep-2019	1255																															
ME1901165007	GWA7	24-Sep-2019	1315																															
ME1901165008	GWA8	24-Sep-2019	1503	1.08	<0.001	0.100	220	132	<1	347	0.005			2420	<1	0.18	2.32	0.003	119	22.6	<0.001	0.018	7.0	12	<0.01	227	1.15	590	15.5	220	26.5	26.6	1570	
ME1901165009	GWC1	24-Sep-2019	1202	0.34	0.003	0.106	411	111	<1	460	0.006			2870	<1	3.99	4.06	0.002	77	0.606	<0.001	0.006	7.1	26	<0.01	414	0.962	337	17.5	411	28.2	30.5	1650	
ME1901165010	GWC2	24-Sep-2019	1236	17.1	0.004	1.07	496	82	<1	103	0.070			1270	<1	5.42	35.7	0.030	33	0.671	<0.001	0.090	7.1	27	<0.01	164	0.748	15	19.0	496	13.1	14.6	709	
ME1901165011	GWC3	24-Sep-2019	1252																															
ME1901165012	GWC4	24-Sep-2019	1428	0.19	<0.001	0.078	567	186	<1	306	0.009			2410	<1	4.28	3.86	0.002	87	0.056	<0.001	0.003	6.6	52	<0.01	228	1.72	262	19.5	567	25.4	27.7	1390	
ME1901165013	GWC5	24-Sep-2019	1523	0.14	<0.001	0.211	1880	285	<1	462	0.005			5560	<1	8.04	1.29	0.006	151	1.52	<0.001	0.028	6.7	85	<0.01	886	7.13	324	17.5	1880	57.3	67.4	3540	0.038
ME1901165014	GWA10	11-Sep-2019	1124	3.30	0.018	0.085	423	120	<1	779	0.068			3350	<1	0.35	13.6	0.013	124	1.93	<0.001	0.047	7.1	2	<0.01	491	1.20	332	16.5	423	37.3	37.6	2010	0.030
ME1901165015	GWC10	11-Sep-2019	1150	0.31	<0.001	0.052	380	236	<1	416	0.057			3900	<1	2.20	1.00	0.002	132	0.192	<0.001	0.113	7.4	34	<0.01	529	2.35	1210	18.0	380	44.5	46.5	2750	0.013
ME1901165016	GWA11	11-Sep-2019	1204																															
ME1901165017	GWC11	11-Sep-2019	1223	8.91	0.004	0.092	214	198	<1	372	0.056			4230	<1	1.96	51.3	0.025	210	2.10	0.005	0.037	6.4	40	0.01	553	1.75	1900	19.0	214	54.3	52.2	3020	0.133
ME1901165018	GWA12	11-Sep-2019	1303																															
ME1901165019	GWC12	11-Sep-2019	1333	4.25	<0.001	6.61	1220	53	<1	302	0.011			4490	<1	8.91	7.65	0.004	22	0.149	<0.001	0.031	7.1	37	<0.01	1100	1.34	559	21.5	1220	44.5	53.2	2940	0.034
ME1901165020	GWA14	11-Sep-2019	1347																															
ME1901165021	GWC14	11-Sep-2019	1415	0.99	<0.001	3.88	470	44	<1	106	0.005			1190	<1	4.64	1.72	0.011	20	0.032	<0.001	0.009	7.4	19	<0.01	216	0.673	6	19.0	470	12.5	13.7	676	0.027
ME1901165022	GWA15	11-Sep-2019	1430																															
ME1901165023	GWC15	11-Sep-2019	1455	0.35	<0.001	0.372	527	66	<1	243	0.026			1800	<1	6.85	3.03	0.005	30	0.138	<0.001	0.006	7.2	24	<0.01	336	0.804	44	19.0	527	18.3	21.0	1020	0.024
ME1901165024	GWC25	20-Sep-2019	1331	0.08	<0.001	0.088	371	64	<1	431	0.573			2110	<1	0.38	0.31	0.001	95	0.481	0.001	0.139	6.8	13	<0.01	249	0.574	117	20.0	371	22.0	22.2	1090	0.074
ME1901165025	GWC35	20-Sep-2019	1138																															

ME1901165026	GWC33	05-Sep-2019	1151	0.89	<0.001	0.298	<1	357	26	77	0.008			4510	795	3.05	0.46	0.002	<1	0.022	<0.001	0.002	12.4	17	<0.01	42	0.246	16	20.5	820	18.9	20.1	994	0.034
ME1901165027	GWC26	05-Sep-2019	1230	0.22	<0.001	0.195	402	54	<1	169	0.011			1240	<1	3.99	1.63	0.003	27	0.076	0.001	0.066	7.2	16	<0.01	166	0.464	38	20.5	402	13.6	12.5	680	0.050
ME1901165028	GWC16	05-Sep-2019	1328	1.96	<0.001	0.169	582	55	<1	265	0.007			1890	<1	1.29	3.98	0.010	28	0.086	<0.001	0.004	7.2	20	<0.01	342	0.607	39	20.5	582	19.9	20.4	1030	0.018
ME1901165029	GWA16	05-Sep-2019	1336																															
ME1901165030	GWC30	05-Sep-2019	1445	0.16	<0.001	0.114	547	226	<1	646	0.008			3060	<1	2.71	3.64	0.002	160	0.154	<0.001	0.030	6.8	48	<0.01	181	2.45	301	20.0	547	35.4	33.5	1840	0.029
ME1901165031	GWC31	05-Sep-2019	1512																															
ME1901165032	GWC24	23-Sep-2019	1448																															
ME1901165033	GWC27	23-Sep-2019	1511	0.85	0.005	0.071	6	30	<1	327	0.084			1680	<1	3.32	11.3	0.013	39	3.33	<0.001	0.093	5.0	34	<0.01	213	0.165	313	18.0	6	15.9	14.8	1050	0.598
ME1901165034	GWC32	23-Sep-2019	1252	0.20	<0.001	0.050	1180	178	<1	303	0.042			3470	<1	9.48	1.48	0.002	122	0.070	<0.001	0.087	6.7	49	<0.01	596	3.95	288	18.0	1180	38.1	46.1	2040	0.024
ME1901165035	GWA32	23-Sep-2019	1231	<0.01	<0.001	0.049	361	171	<1	542	0.009			3660	<1	3.26	<0.05	<0.001	187	0.019	0.002	0.004	7.5	22	<0.01	420	1.93	843	14.5	361	40.0	42.8	2550	0.007
ME1901165036	GWA34	23-Sep-2019	1353	21.2	0.001	0.017	<1	466	<1	327	0.087			6280	<1	9.27	108	0.002	556	13.2	<0.001	1.05	4.5	6	0.01	410	0.682	4590	18.0	<1	105	87.0	7270	3.10
ME1901165037	GWC34	23-Sep-2019	1413	1.20	0.002	0.185	1640	101	<1	230	0.036			4700	<1	6.61	2.73	0.012	88	0.188	0.003	0.150	7.2	23	0.01	1090	5.60	651	18.0	1640	52.8	60.3	3250	0.079
ME1901165038	GWA36	05-Sep-2019	1347																															
ME1901165039	GWC36	05-Sep-2019	1404	0.62	0.018	0.032	21	171	<1	368	0.002			4010	<1	7.23	188	0.001	194	6.39	0.007	0.050	6.1	36	0.09	413	1.30	1890	19.5	21	50.2	43.4	2980	0.162
ME1901165040	PZ13	20-Sep-2019	1016																															
ME1901165041	PZ20	20-Sep-2019	1101																															
ME1901165042	PZ21	20-Sep-2019	1053	9.81	0.010	0.120	444	24	<1	65	0.016			1540	<1	3.50	17.2	0.025	28	1.38	0.003	0.038	7.8	10	<0.01	310	0.397	258	18.5	444	16.1	17.2	993	0.183
ME1901165043	PZ26	20-Sep-2019	1033																															
ME1901165044	GWF1	05-Sep-2019	1500																															
ME1901165045	GWF2	05-Sep-2019	1100																															
ME1901165046	GWF3	05-Sep-2019	1100																															
ME1901165047	GWF4	05-Sep-2019	1100																															
ME1901166001	GWA1	05-Sep-2019	1244										5.090																					
ME1901166002	GWA2	24-Sep-2019	1140									5.110																						
ME1901166003	GWA3	24-Sep-2019	1225										5.610																					
ME1901166004	GWA4	24-Sep-2019	1215										5.170																					
ME1901166005	GWA5	18-Sep-2019	1522										4.760																					
ME1901166006	GWA6	24-Sep-2019	1255										2.890																					
ME1901166007	GWA7	24-Sep-2019	1315										5.190																					
ME1901166008	GWA8	24-Sep-2019	1458									1.590																						
ME1901166009	GWC1	24-Sep-2019	1154									12.130																						
ME1901166010	GWC2	24-Sep-2019	1228									19.850																						
ME1901166011	GWC3	24-Sep-2019	1248										16.065																					
ME1901166012	GWC4	24-Sep-2019	1418									16.000																						
ME1901166013	GWC5	24-Sep-2019	1515									6.380																						
ME1901166014	GWA10	11-Sep-2019	1117									5.015																						
ME1901166015	GWC10	11-Sep-2019	1144									7.860																						
ME1901166016	GWA11	11-Sep-2019	1201										4.740																					
ME1901166017	GWC11	11-Sep-2019	1214									19.610																						
ME1901166018	GWA12	11-Sep-2019	1303										5.800																					
ME1901166019	GWC12	11-Sep-2019	1314									38.430																						
ME1901166020	GWA14	11-Sep-2019	1347										4.950																					
ME1901166021	GWC14	11-Sep-2019	1403									36.530																						
ME1901166022	GWA15	11-Sep-2019	1430										3.970																					
ME1901166023	GWC15	11-Sep-2019	1438									32.535																						
ME1901166024	GWC25	20-Sep-2019	1310									31.495																						
ME1901166025	GWC35	20-Sep-2019	1134										48.470																					

ME1901166026	GWC33	05-Sep-2019	1137									40.880																						
ME1901166027	GWC26	05-Sep-2019	1217									42.200																						
ME1901166028	GWC16	05-Sep-2019	1318									31.730																						
ME1901166029	GWA16	05-Sep-2019	1336										4.080																					
ME1901166030	GWC30	05-Sep-2019	1433									32.700																						
ME1901166031	GWC31	05-Sep-2019	1510										51.200																					
ME1901166032	GWC24	23-Sep-2019	1436										26.315																					
ME1901166033	GWC27	23-Sep-2019	1503									16.570																						
ME1901166034	GWC32	23-Sep-2019	1246									4.570																						
ME1901166035	GWA32	23-Sep-2019	1202									1.930																						
ME1901166036	GWA34	23-Sep-2019	1344									4.645																						
ME1901166037	GWC34	23-Sep-2019	1400									20.260																						
ME1901166038	GWA36	05-Sep-2019	1347										5.940																					
ME1901166039	GWC36	05-Sep-2019	1354									17.725																						
ME1901166040	PZ13	20-Sep-2019	1016										2.330																					
ME1901166041	PZ20	20-Sep-2019	1101										4.160																					
ME1901166042	PZ21	20-Sep-2019	1046									4.590																						
ME1901166043	PZ26	20-Sep-2019	1033										4.390																					
ME1901166044	GWF1	06-Sep-2019	1500																															
ME1901166045	GWF2	06-Sep-2019	1116																															
ME1901166046	GWF3	06-Sep-2019	1116																															
ME1901166047	GWF4	06-Sep-2019	1116																															
ME1901166048	Barologger Office	23-Sep-2019	1120																															
ME1901335001	GWA1	04-Oct-2019	1022																															
ME1901335002	GWA2	25-Oct-2019	1130	23.2	0.209	0.393	156	33	<1	355	0.054			1540	<1	6.98	221	0.037	50	4.50	0.002	0.056	6.9	7	<0.01	200	0.583	178	20.5	156	16.8	14.6	1140	0.100
ME1901335003	GWA3	25-Oct-2019	1240																															
ME1901335004	GWA4	25-Oct-2019	1232																															
ME1901335005	GWA5	15-Oct-2019	1357																															
ME1901335006	GWA6	25-Oct-2019	1328																															
ME1901335007	GWA7	15-Oct-2019	1205																															
ME1901335008	GWA8	31-Oct-2019	1313	2.97	0.001	0.115	245	123	<1	429	0.008			2420	<1	3.98	5.52	0.006	124	23.5	<0.001	0.017	7.0	12	<0.01	234	1.36	579	18.0	245	29.0	26.8	1640	0.019
ME1901335009	GWC1	25-Oct-2019	1142	0.36	0.004	0.115	458	104	<1	530	0.005			2900	<1	2.73	4.34	0.001	79	0.582	<0.001	0.007	7.1	26	<0.01	435	1.11	429	19.5	458	33.0	31.3	1560	0.016
ME1901335010	GWC2	25-Oct-2019	1249	23.7	0.003	0.676	521	72	<1	114	0.036			1260	<1	1.52	26.6	0.017	31	0.319	<0.001	0.057	7.1	26	<0.01	158	0.727	23	20.5	521	14.1	13.7	730	0.061
ME1901335011	GWC3	25-Oct-2019	1320																															
ME1901335012	GWC4	15-Oct-2019	1245	0.17	<0.001	0.065	635	178	<1	323	0.007			2380	<1	0.38	3.51	0.001	83	0.045	<0.001	0.002	6.7	50	<0.01	234	1.92	248	21.5	635	27.0	27.2	1440	0.020
ME1901335013	GWC5	31-Oct-2019	1257	0.19	<0.001	0.220	2870	341	<1	559	0.005			5440	<1	1.52	0.72	0.003	184	1.44	<0.001	0.028	6.7	105	<0.01	1090	7.97	321	19.0	2870	79.8	82.2	2840	0.034
ME1901335014	GWA10	11-Oct-2019	1141	2.33	0.015	0.091	420	116	<1	690	0.077			3350	<1	0.01	12.8	0.018	129	2.08	<0.001	0.045	7.0	1	<0.01	438	1.17	366	17.0	420	35.5	35.5	1940	0.022
ME1901335015	GWC10	11-Oct-2019	1201	0.92	<0.001	0.052	367	214	<1	424	0.319			3880	<1	6.05	2.26	0.003	130	0.119	0.001	0.517	7.3	32	<0.01	522	2.27	984	18.0	367	39.8	44.9	2960	0.016
ME1901335016	GWA11	11-Oct-2019	1209																															
ME1901335017	GWC11	11-Oct-2019	1224	5.24	0.003	0.044	222	180	<1	385	0.056			4200	<1	2.24	46.9	0.022	207	1.90	0.004	0.027	6.4	39	<0.01	539	1.66	1800	19.5	222	52.8	50.5	3140	0.075
ME1901335018	GWA12	11-Oct-2019	1235																															
ME1901335019	GWC12	11-Oct-2019	1255	1.64	<0.001	1.88	1190	74	<1	292	0.003			4490	<1	11.6	3.22	<0.001	30	0.095	<0.001	0.012	7.1	39	<0.01	1180	1.18	689	21.5	1190	46.4	58.5	2940	0.010
ME1901335020	GWA14	11-Oct-2019	1312																															
ME1901335021	GWC14	11-Oct-2019	1329	1.86	<0.001	3.63	475	44	<1	105	0.004			1250	<1	3.28	2.58	0.003	21	0.043	<0.001	0.009	7.4	18	<0.01	209	0.604	8	19.5	475	12.6	13.5	734	0.011
ME1901335022	GWA15	11-Oct-2019	1338																															
ME1901335023	GWC15	11-Oct-2019	1359	0.37	<0.001	0.362	551	62	<1	219	0.013			1770	<1	2.40	2.48	0.003	32	0.101	<0.001	0.003	7.2	22	<0.01	292	0.697	44	19.0	551	18.1	19.0	1020	0.011

ME1901335024	GWC25	17-Oct-2019	1157	0.14	0.002	0.110	414	66	<1	402	0.424			2120	<1	3.73	1.31	0.004	96	1.41	0.001	0.130	6.8	14	<0.01	277	0.758	110	20.5	414	21.9	23.6	1180	0.079
ME1901335025	GWC35	17-Oct-2019	1024																															
ME1901335026	GWC33	03-Oct-2019	1351	0.75	<0.001	0.220	<1	370	36	69	0.012			4480	719	9.18	0.41	0.001	<1	0.019	<0.001	0.003	12.3	18	<0.01	46	0.222	17	21.5	756	17.4	20.9	1100	0.025
ME1901335027	GWC26	04-Oct-2019	1004	0.16	<0.001	0.155	365	54	32	158	0.008			1270	<1	1.89	1.91	0.001	26	0.058	<0.001	0.017	7.1	17	<0.01	172	0.413	41	20.0	397	13.2	12.8	705	0.028
ME1901335028	GWC16	03-Oct-2019	1434	7.70	0.003	0.172	611	57	<1	259	0.011			1910	<1	2.08	12.8	0.028	29	0.241	0.001	0.010	7.2	21	<0.01	362	0.565	54	21.0	611	20.6	21.5	1100	0.045
ME1901335029	GWA16	03-Oct-2019	1453																															
ME1901335030	GWC30	04-Oct-2019	1159	0.21	<0.001	0.113	557	230	<1	617	0.006			3150	<1	1.40	3.59	0.002	167	0.178	<0.001	0.038	6.8	49	<0.01	194	2.26	354	20.5	557	35.9	34.9	1920	0.027
ME1901335031	GWC31	10-Oct-2019	1336																															
ME1901335032	GWC24	10-Oct-2019	1404																															
ME1901335033	GWC27	10-Oct-2019	1438	0.67	0.009	0.062	16	27	<1	353	0.133			1700	<1	7.79	18.0	0.010	40	3.68	<0.001	0.189	5.4	33	<0.01	203	0.145	310	18.5	16	16.7	14.3	995	0.481
ME1901335034	GWC32	10-Oct-2019	1209	0.07	<0.001	0.039	1150	156	<1	335	0.020			3500	<1	6.74	0.85	<0.001	121	0.061	0.001	0.072	6.7	46	<0.01	582	4.65	299	19.0	1150	38.6	44.2	2100	0.008
ME1901335035	GWA32	10-Oct-2019	1152	<0.01	<0.001	0.040	348	135	<1	494	0.010			3150	<1	2.17	<0.05	<0.001	155	0.047	0.002	<0.001	7.2	20	<0.01	354	1.89	625	15.5	348	33.9	35.4	2180	<0.005
ME1901335036	GWA34	10-Oct-2019	1247	22.2	0.002	0.016	3	470	<1	359	0.087			6430	<1	4.51	111	0.002	585	14.9	<0.001	0.960	4.8	6	<0.01	436	0.975	4280	18.0	3	99.3	90.7	7440	2.94
ME1901335037	GWC34	10-Oct-2019	1302																															
ME1901335038	GWA36	04-Oct-2019	1037																															
ME1901335039	GWC36	04-Oct-2019	1055																															
ME1901335040	PZ13	17-Oct-2019	0930																															
ME1901335041	PZ20	31-Oct-2019	1440																															
ME1901335042	PZ21	31-Oct-2019	1431	6.64	0.007	0.076	525	25	<1	76	0.014			1720	<1	0.95	9.56	0.010	34	1.18	0.006	0.019	7.8	11	<0.01	348	0.432	346	19.5	525	19.8	19.5	998	0.066
ME1901335043	PZ26	31-Oct-2019	1412																															
ME1901335044	GWF1	08-Oct-2019	1500																															
ME1901335045	GWF2	08-Oct-2019	1354																															
ME1901335046	GWF3	08-Oct-2019	1354																															
ME1901335047	GWF4	08-Oct-2019	1354																															
ME1901336001	GWA1	04-Oct-2019	1022										5.090																					
ME1901336002	GWA2	25-Oct-2019	1122									5.120																						
ME1901336003	GWA3	25-Oct-2019	1240										5.610																					
ME1901336004	GWA4	25-Oct-2019	1232										5.170																					
ME1901336005	GWA5	15-Oct-2019	1355										4.640																					
ME1901336006	GWA6	25-Oct-2019	1328										2.890																					
ME1901336007	GWA7	15-Oct-2019	1205										5.190																					
ME1901336008	GWA8	31-Oct-2019	1308									1.860																						
ME1901336009	GWC1	25-Oct-2019	1136									12.340																						
ME1901336010	GWC2	25-Oct-2019	1243									20.080																						
ME1901336011	GWC3	25-Oct-2019	1315										16.110																					
ME1901336012	GWC4	15-Oct-2019	1234									16.010																						
ME1901336013	GWC5	31-Oct-2019	1251									6.310																						
ME1901336014	GWA10	11-Oct-2019	1132									5.035																						
ME1901336015	GWC10	11-Oct-2019	1152									8.380																						
ME1901336016	GWA11	11-Oct-2019	1207										4.740																					
ME1901336017	GWC11	11-Oct-2019	1215									19.970																						
ME1901336018	GWA12	11-Oct-2019	1235										5.790																					
ME1901336019	GWC12	11-Oct-2019	1242									38.625																						
ME1901336020	GWA14	11-Oct-2019	1312										4.950																					
ME1901336021	GWC14	11-Oct-2019	1318									36.405																						
ME1901336022	GWA15	11-Oct-2019	1338										3.990																					
ME1901336023	GWC15	11-Oct-2019	1346									32.665																						
ME1901336024	GWC25	17-Oct-2019	1146									31.650																						

ME1901336025	GWC35	17-Oct-2019	1018										48.530																					
ME1901336026	GWC33	03-Oct-2019	1325									41.290																						
ME1901336027	GWC26	04-Oct-2019	0953									42.310																						
ME1901336028	GWC16	03-Oct-2019	1420									32.600																						
ME1901336029	GWA16	03-Oct-2019	1453										4.080																					
ME1901336030	GWC30	04-Oct-2019	1144									32.705																						
ME1901336031	GWC31	10-Oct-2019	1329										51.100																					
ME1901336032	GWC24	10-Oct-2019	1400										26.270																					
ME1901336033	GWC27	10-Oct-2019	1423									16.550																						
ME1901336034	GWC32	10-Oct-2019	1201									4.580																						
ME1901336035	GWA32	10-Oct-2019	1137									2.085																						
ME1901336036	GWA34	10-Oct-2019	1238									4.670																						
ME1901336037	GWC34	10-Oct-2019	1257										20.590																					
ME1901336038	GWA36	04-Oct-2019	1037										5.940																					
ME1901336039	GWC36	04-Oct-2019	1046										18.080																					
ME1901336040	PZ13	17-Oct-2019	0930										2.330																					
ME1901336041	PZ20	31-Oct-2019	1440										4.160																					
ME1901336042	PZ21	31-Oct-2019	1422									4.660																						
ME1901336043	PZ26	31-Oct-2019	1412										4.390																					
ME1901336044	GWF1	11-Oct-2019	1500																															
ME1901336045	GWF2	11-Oct-2019	0853																															
ME1901336046	GWF3	11-Oct-2019	0853																															
ME1901336047	GWF4	11-Oct-2019	0853																															
ME1901336048	Barologger Office	17-Oct-2019	1533																															
ME1901466001	GWA1	01-Nov-2019	1235																															
ME1901466002	GWA2	21-Nov-2019	1151	21.4	0.207	0.303	144	35	<1	385	0.047			1540	<1	6.55	190	0.038	52	4.36	0.002	0.050	6.8	8	<0.01	211	0.521	184	20.0	144	17.6	15.4	950	0.087
ME1901466003	GWA3	21-Nov-2019	1230																															
ME1901466004	GWA4	21-Nov-2019	1222																															
ME1901466005	GWA5	14-Nov-2019	1430																															
ME1901466006	GWA6	21-Nov-2019	1305																															
ME1901466007	GWA7	14-Nov-2019	1228																															
ME1901466008	GWA8	21-Nov-2019	1420	2.38	0.002	0.144	254	124	<1	431	0.008			2440	<1	4.11	4.96	0.006	119	26.2	0.001	0.017	7.1	12	<0.01	232	1.50	548	20.0	254	28.6	26.4	1640	0.026
ME1901466009	GWC1	21-Nov-2019	1204	0.13	0.002	0.074	490	99	<1	484	0.003			2960	<1	2.41	3.11	<0.001	75	0.571	<0.001	0.006	7.1	28	<0.01	446	1.10	448	19.5	490	32.8	31.2	1880	0.010
ME1901466010	GWC2	21-Nov-2019	1244	39.6	0.005	0.904	532	49	<1	120	0.063			1250	<1	6.87	52.4	0.030	29	0.592	<0.001	0.104	7.2	26	<0.01	164	0.761	23	21.0	532	14.5	12.6	837	0.096
ME1901466011	GWC3	21-Nov-2019	1305																															
ME1901466012	GWC4	21-Nov-2019	1354	0.16	<0.001	0.067	658	158	<1	369	0.005			2360	<1	7.14	4.40	0.001	81	0.057	<0.001	0.003	6.7	50	<0.01	215	2.12	264	21.5	658	29.0	25.2	1520	0.018
ME1901466013	GWC5	21-Nov-2019	1437	0.10	<0.001	0.222	2430	268	<1	576	0.004			5430	<1	2.96	0.57	0.003	154	1.62	<0.001	0.028	6.7	87	<0.01	901	8.68	326	19.0	2430	71.6	67.5	3480	0.024
ME1901466014	GWA10	26-Nov-2019	1130	9.01	0.017	0.122	469	123	<1	782	0.098			3310	<1	2.76	19.6	0.022	128	2.29	<0.001	0.062	7.0	2	<0.01	461	1.14	357	21.5	469	38.9	36.8	1980	0.045
ME1901466015	GWC10	26-Nov-2019	1152	0.55	<0.001	0.046	423	219	<1	487	0.338			3810	<1	7.76	2.28	0.003	131	0.287	<0.001	0.068	7.0	39	<0.01	542	2.36	837	21.0	423	39.6	46.3	2800	0.011
ME1901466016	GWA11	26-Nov-2019	1220																															
ME1901466017	GWC11	26-Nov-2019	1240	4.78	0.003	0.051	264	190	<1	434	0.027			4200	<1	2.55	32.6	0.007	206	1.86	0.006	0.020	6.5	49	<0.01	583	1.71	1840	23.0	264	55.8	53.0	3080	0.058
ME1901466018	GWA12	26-Nov-2019	1251																															
ME1901466019	GWC12	26-Nov-2019	1327	1.45	<0.001	1.22	1350	69	<1	293	0.004			4480	<1	2.92	3.12	0.001	29	0.146	<0.001	0.009	7.1	43	<0.01	1030	1.18	651	23.0	1350	48.8	51.7	2970	0.011
ME1901466020	GWA14	26-Nov-2019	1337																															
ME1901466021	GWC14	26-Nov-2019	1356	0.98	<0.001	2.42	536	46	<1	117	0.021			1240	<1	1.31	1.74	0.004	21	0.053	<0.001	0.005	7.4	21	<0.01	214	0.578	11	21.5	536	14.2	13.9	696	0.028
ME1901466022	GWA15	26-Nov-2019	1405																															

ME1901466023	GWC15	26-Nov-2019	1426	0.73	<0.001	0.451	589	64	<1	228	0.019			1720	<1	0.73	3.37	0.005	30	0.140	<0.001	0.004	7.2	26	<0.01	300	0.747	43	21.0	589	19.1	19.4	986	0.022
ME1901466024	GWC25	13-Nov-2019	1209	0.13	<0.001	0.104	394	63	<1	433	0.103			2140	<1	3.07	0.74	0.002	92	1.16	<0.001	0.098	6.8	14	<0.01	245	0.690	145	19.5	394	23.1	21.7	1200	0.073
ME1901466025	GWC35	13-Nov-2019	1111																															
ME1901466026	GWC33	01-Nov-2019	1145	0.70	<0.001	0.154	<1	385	74	67	0.008			4510	749	7.73	0.21	<0.001	<1	0.011	<0.001	0.002	12.3	18	<0.01	46	0.211	12	22.0	822	18.6	21.7	1200	0.013
ME1901466027	GWC26	01-Nov-2019	1222	0.15	<0.001	0.149	425	58	19	143	0.020			1270	<1	1.17	2.02	0.001	27	0.059	<0.001	0.006	7.1	17	<0.01	180	0.415	39	21.0	443	13.7	13.4	673	0.022
ME1901466028	GWC16	01-Nov-2019	1311	4.76	0.002	0.139	708	53	<1	237	0.006			1960	<1	3.65	7.57	0.015	27	0.157	<0.001	0.005	7.2	19	<0.01	343	0.572	47	21.5	708	21.8	20.3	1080	0.026
ME1901466029	GWA16	01-Nov-2019	1331																															
ME1901466030	GWC30	15-Nov-2019	1053	0.18	<0.001	0.097	567	215	<1	631	0.006			2960	<1	5.38	5.21	0.002	152	0.220	<0.001	0.005	6.8	46	<0.01	178	2.25	321	20.5	567	35.8	32.2	2140	0.044
ME1901466031	GWC31	15-Nov-2019	1316																															
ME1901466032	GWC24	15-Nov-2019	1342																															
ME1901466033	GWC27	15-Nov-2019	1416	1.86	0.014	0.093	28	32	<1	384	0.294			1680	<1	8.49	25.6	0.012	46	3.73	<0.001	0.243	5.7	37	<0.01	203	0.162	316	19.0	28	18.0	15.2	1020	0.357
ME1901466034	GWC32	15-Nov-2019	1142	0.13	<0.001	0.046	1360	139	<1	358	0.047			3440	<1	3.69	1.19	0.002	110	0.078	0.002	0.083	6.7	45	<0.01	532	4.46	293	19.0	1360	43.4	40.3	2110	0.023
ME1901466035	GWA32	15-Nov-2019	1127	0.03	<0.001	0.042	388	139	<1	566	0.012			3170	<1	3.30	0.06	<0.001	153	0.092	0.002	0.002	7.3	21	<0.01	352	1.89	676	18.0	388	37.8	35.4	2240	0.008
ME1901466036	GWA34	15-Nov-2019	1242	22.9	0.003	0.026	2	470	<1	399	0.166			6320	<1	5.94	113	0.005	570	14.9	<0.001	1.02	4.9	6	<0.01	424	0.946	4270	19.0	2	100	89.0	7040	3.08
ME1901466037	GWC34	15-Nov-2019	1255																															
ME1901466038	GWA36	01-Nov-2019	1346																															
ME1901466039	GWC36	01-Nov-2019	1350																															
ME1901466040	PZ13	13-Nov-2019	1425																															
ME1901466041	PZ20	13-Nov-2019	1351																															
ME1901466042	PZ21	13-Nov-2019	1344	6.44	0.008	0.093	435	27	13	104	0.020			1940	<1	0.96	9.72	0.014	38	1.68	0.005	0.022	7.7	12	<0.01	368	0.521	448	19.0	447	21.2	20.8	1080	0.095
ME1901466043	PZ26	13-Nov-2019	1317																															
ME1901466044	GWF1	13-Nov-2019	1046																															
ME1901466045	GWF2	13-Nov-2019	1032																															
ME1901466046	GWF3	13-Nov-2019	1242	2.39	0.003	0.369	191	144	<1	1680	0.059			6340	<1	2.39	16.2	0.015	205	1.96	0.006	0.052	6.4	35	<0.01	817	1.78	310	20.0	191	57.7	60.5	3380	0.149
ME1901466047	GWF4	29-Nov-2019	1143																															
ME1901467001	GWA1	01-Nov-2019	1235										5.090																					
ME1901467002	GWA2	21-Nov-2019	1145									5.155																						
ME1901467003	GWA3	21-Nov-2019	1230										5.610																					
ME1901467004	GWA4	21-Nov-2019	1222										5.117																					
ME1901467005	GWA5	14-Nov-2019	1425										4.490																					
ME1901467006	GWA6	21-Nov-2019	1309										2.890																					
ME1901467007	GWA7	14-Nov-2019	1228										5.190																					
ME1901467008	GWA8	21-Nov-2019	1408									2.045																						
ME1901467009	GWC1	21-Nov-2019	1158									12.520																						
ME1901467010	GWC2	21-Nov-2019	1235									20.380																						
ME1901467011	GWC3	21-Nov-2019	1300									16.260																						
ME1901467012	GWC4	21-Nov-2019	1340									16.100																						
ME1901467013	GWC5	21-Nov-2019	1432									6.210																						
ME1901467014	GWA10	26-Nov-2019	1118									5.100																						
ME1901467015	GWC10	26-Nov-2019	1142									9.475																						
ME1901467016	GWA11	26-Nov-2019	1220										4.740																					
ME1901467017	GWC11	26-Nov-2019	1227									21.190																						
ME1901467018	GWA12	26-Nov-2019	1251										5.800																					
ME1901467019	GWC12	26-Nov-2019	1300									38.970																						
ME1901467020	GWA14	26-Nov-2019	1337										4.960																					
ME1901467021	GWC14	26-Nov-2019	1344									36.740																						
ME1901467022	GWA15	26-Nov-2019	1405										4.020																					

ME1901467023	GWC15	26-Nov-2019	1412									32.795																						
ME1901467024	GWC25	13-Nov-2019	1153									32.110																						
ME1901467025	GWC35	13-Nov-2019	1105										48.620																					
ME1901467026	GWC33	01-Nov-2019	1130									41.480																						
ME1901467027	GWC26	01-Nov-2019	1210									42.450																						
ME1901467028	GWC16	01-Nov-2019	1251									32.700																						
ME1901467029	GWA16	01-Nov-2019	1331										4.080																					
ME1901467030	GWC30	15-Nov-2019	1042									32.865																						
ME1901467031	GWC31	15-Nov-2019	1316										51.100																					
ME1901467032	GWC24	15-Nov-2019	1340										26.400																					
ME1901467033	GWC27	15-Nov-2019	1402									16.510																						
ME1901467034	GWC32	15-Nov-2019	1135									4.710																						
ME1901467035	GWA32	15-Nov-2019	1118									2.260																						
ME1901467036	GWA34	15-Nov-2019	1233									4.700																						
ME1901467037	GWC34	15-Nov-2019	1250										20.390																					
ME1901467038	GWA36	01-Nov-2019	1346										5.940																					
ME1901467039	GWC36	01-Nov-2019	1350										18.570																					
ME1901467040	PZ13	13-Nov-2019	1425										2.330																					
ME1901467041	PZ20	13-Nov-2019	1351										4.160																					
ME1901467042	PZ21	13-Nov-2019	1334									4.680																						
ME1901467043	PZ26	13-Nov-2019	1317										4.390																					
ME1901467044	GWF1	13-Nov-2019	1041										16.945																					
ME1901467045	GWF2	13-Nov-2019	1032										23.780																					
ME1901467046	GWF3	13-Nov-2019	1234									20.855																						
ME1901467047	GWF4	29-Nov-2019	1143																															
ME1901467048	Barologger Office	26-Nov-2019	1056																															
ME1901633001	GWA1	02-Dec-2019	1258																															
ME1901633002	GWA2	12-Dec-2019	1030																															
ME1901633003	GWA3	12-Dec-2019	1103																															
ME1901633004	GWA4	12-Dec-2019	1056																															
ME1901633005	GWA5	12-Dec-2019	1538																															
ME1901633006	GWA6	12-Dec-2019	1136																															
ME1901633007	GWA7	12-Dec-2019	1152																															
ME1901633008	GWA8	12-Dec-2019	1422	2.00	0.001	0.162	231	114	<1	374	0.010			2400	<1	3.39	4.47	0.003	107	20.7	<0.001	0.021	7.1	11	<0.01	216	1.35	514	20.0	231	25.9	24.2	1750	0.031
ME1901633009	GWC1	12-Dec-2019	1040	0.44	0.004	0.084	415	98	<1	459	0.004			3030	<1	0.08	4.26	0.002	73	0.435	<0.001	0.005	7.2	27	<0.01	439	1.16	456	19.0	415	30.7	30.7	1900	0.020
ME1901633010	GWC2	12-Dec-2019	1115	11.2	0.002	0.882	448	57	<1	115	0.042			1270	<1	0.64	26.8	0.020	27	0.502	<0.001	0.058	7.1	25	<0.01	163	0.741	21	21.0	448	12.6	12.8	820	0.047
ME1901633011	GWC3	12-Dec-2019	1133																															
ME1901633012	GWC4	12-Dec-2019	1316	0.24	<0.001	0.066	553	160	<1	342	0.004			2390	<1	1.98	3.36	0.001	78	0.052	<0.001	0.001	6.7	48	<0.01	212	1.99	248	22.0	553	25.8	24.8	1300	0.016
ME1901633013	GWC5	12-Dec-2019	1439	0.06	<0.001	0.218	2360	277	<1	526	<0.001			5520	<1	1.70	0.42	0.002	150	1.57	<0.001	0.027	6.7	83	<0.01	875	8.37	320	19.5	2360	68.6	66.4	3500	0.017
ME1901633014	GWA10	18-Dec-2019	1309	8.66	0.022	0.149	442	111	<1	679	0.182			3360	<1	1.67	17.5	0.037	118	2.24	<0.001	0.112	7.1	2	<0.01	425	1.22	334	20.5	442	34.9	33.8	2180	0.062
ME1901633015	GWC10	18-Dec-2019	1340	0.23	<0.001	0.040	389	198	<1	438	0.095			3810	<1	3.00	1.38	<0.001	119	0.207	<0.001	0.012	7.0	30	<0.01	493	2.24	928	20.5	389	39.4	41.9	2790	<0.005
ME1901633016	GWA11	20-Dec-2019	1156																															
ME1901633017	GWC11	20-Dec-2019	1220	2.46	0.002	0.031	276	209	<1	378	0.021			4160	<1	3.76	25.2	0.008	218	1.74	0.004	0.022	6.4	41	<0.01	571	1.66	1640	21.0	276	50.3	54.2	2770	0.058
ME1901633018	GWA12	20-Dec-2019	1232																															
ME1901633019	GWC12	20-Dec-2019	1258	0.70	<0.001	0.631	1540	88	<1	271	0.002			4510	<1	4.34	2.01	<0.001	34	0.115	<0.001	0.012	7.1	40	<0.01	1140	1.19	700	23.0	1540	53.0	57.8	3060	0.010

ME1901633020	GWA14	20-Dec-2019	1335																															
ME1901633021	GWC14	20-Dec-2019	1406	0.18	<0.001	0.994	622	50	<1	108	0.001			1260	<1	3.41	0.44	<0.001	23	0.020	0.002	0.002	7.4	21	<0.01	224	0.540	11	22.0	622	15.7	14.7	706	<0.005
ME1901633022	GWA15	20-Dec-2019	1418																															
ME1901633023	GWC15	20-Dec-2019	1438	0.10	<0.001	0.215	712	68	<1	213	0.004			1710	<1	4.14	1.39	0.001	32	0.061	<0.001	0.009	7.2	25	<0.01	293	0.722	41	21.5	712	21.1	19.4	984	0.010
ME1901633024	GWC25	09-Dec-2019	1330	7.71	0.017	0.300	416	61	<1	346	0.293			2130	<1	4.14	12.2	0.038	93	6.06	0.003	0.212	6.9	11	<0.01	241	1.13	252	22.0	416	23.3	21.5	1240	0.094
ME1901633025	GWC35	09-Dec-2019	1218																															
ME1901633026	GWC33	02-Dec-2019	1203	0.76	<0.001	0.164	<1	343	36	50	0.006			4470	761	5.42	0.18	<0.001	<1	0.013	<0.001	0.001	12.4	17	<0.01	45	0.218	8	20.5	797	17.5	19.5	1060	0.010
ME1901633027	GWC26	02-Dec-2019	1242	0.24	<0.001	0.184	405	44	31	154	0.036			1250	<1	7.11	1.04	0.003	24	0.063	<0.001	0.006	7.1	16	<0.01	172	0.429	41	18.0	436	13.9	12.1	698	0.053
ME1901633028	GWC16	02-Dec-2019	1352	2.86	<0.001	0.149	616	42	<1	262	0.004			1960	<1	2.62	4.30	0.008	25	0.096	<0.001	0.003	7.2	18	<0.01	345	0.596	47	19.0	616	20.7	19.6	1040	0.020
ME1901633029	GWA16	02-Dec-2019	1400																															
ME1901633030	GWC30	12-Dec-2019	1229	0.22	<0.001	0.092	516	206	<1	585	0.004			3090	<1	1.62	4.73	0.001	152	0.186	<0.001	0.018	6.8	46	<0.01	182	2.44	294	21.5	516	32.9	31.9	2130	0.027
ME1901633031	GWC31	10-Dec-2019	1320																															
ME1901633032	GWC24	10-Dec-2019	1340																															
ME1901633033	GWC27	10-Dec-2019	1422	1.60	0.019	0.100	42	29	<1	364	0.160			1670	<1	9.08	30.1	0.012	42	4.23	0.001	0.161	5.6	34	<0.01	199	0.144	298	20.5	42	17.3	14.4	1100	0.340
ME1901633034	GWC32	10-Dec-2019	1225	0.10	<0.001	0.042	1140	135	<1	351	0.032			3490	<1	0.01	1.11	<0.001	105	0.069	0.002	0.047	6.7	41	<0.01	517	5.05	299	20.5	1140	38.9	38.9	2120	0.010
ME1901633035	GWA32	10-Dec-2019	1206	0.05	<0.001	0.041	376	126	<1	498	0.012			3040	<1	4.12	<0.05	<0.001	137	0.185	0.002	0.002	7.3	20	<0.01	330	1.97	656	20.0	376	35.2	32.4	1960	<0.005
ME1901633036	GWA34	10-Dec-2019	1122	23.8	0.002	0.024	7	462	<1	374	0.107			6390	<1	7.06	127	0.003	563	17.7	<0.001	0.869	4.9	6	0.01	422	1.06	4350	21.0	7	101	87.9	7010	2.62
ME1901633037	GWC34	10-Dec-2019	1138																															
ME1901633038	GWA36	02-Dec-2019	1420																															
ME1901633039	GWC36	02-Dec-2019	1410																															
ME1901633040	PZ13	09-Dec-2019	1442																															
ME1901633041	PZ20	09-Dec-2019	1149																															
ME1901633042	PZ21	09-Dec-2019	1143																															
ME1901633043	PZ26	09-Dec-2019	1108																															
ME1901633047	GWF4	09-Dec-2019	1120																															
ME1901634001	GWA1	02-Dec-2019	1258										5.120																					
ME1901634002	GWA2	12-Dec-2019	1023										5.210																					
ME1901634003	GWA3	12-Dec-2019	1103										5.600																					
ME1901634004	GWA4	12-Dec-2019	1056										5.170																					
ME1901634005	GWA5	12-Dec-2019	1536										4.365																					
ME1901634006	GWA6	12-Dec-2019	1136										2.910																					
ME1901634007	GWA7	12-Dec-2019	1152										5.190																					
ME1901634008	GWA8	12-Dec-2019	1418									2.255																						
ME1901634009	GWC1	12-Dec-2019	1035									12.730																						
ME1901634010	GWC2	12-Dec-2019	1106									20.560																						
ME1901634011	GWC3	12-Dec-2019	1131										16.350																					
ME1901634012	GWC4	12-Dec-2019	1308									16.145																						
ME1901634013	GWC5	12-Dec-2019	1435									6.560																						
ME1901634014	GWA10	18-Dec-2019	1254									5.190																						
ME1901634015	GWC10	18-Dec-2019	1324									10.155																						
ME1901634016	GWA11	20-Dec-2019	1155										4.740																					
ME1901634017	GWC11	20-Dec-2019	1207									21.855																						
ME1901634018	GWA12	20-Dec-2019	1232										5.800																					
ME1901634019	GWC12	20-Dec-2019	1242									39.060																						
ME1901634020	GWA14	20-Dec-2019	1335										4.960																					
ME1901634021	GWC14	20-Dec-2019	1352									36.800																						
ME1901634022	GWA15	20-Dec-2019	1418										4.020																					

ME1901634023	GWC15	20-Dec-2019	1425									32.920																						
ME1901634024	GWC25	09-Dec-2019	1320									32.635																						
ME1901634025	GWC35	09-Dec-2019	1212										48.770																					
ME1901634026	GWC33	02-Dec-2019	1154									41.630																						
ME1901634027	GWC26	02-Dec-2019	1230									42.520																						
ME1901634028	GWC16	02-Dec-2019	1339									32.520																						
ME1901634029	GWA16	02-Dec-2019	1400										4.080																					
ME1901634030	GWC30	12-Dec-2019	1217									33.020																						
ME1901634031	GWC31	10-Dec-2019	1315										51.030																					
ME1901634032	GWC24	10-Dec-2019	1332										26.460																					
ME1901634033	GWC27	10-Dec-2019	1405									16.550																						
ME1901634034	GWC32	10-Dec-2019	1215									4.890																						
ME1901634035	GWA32	10-Dec-2019	1158									2.540																						
ME1901634036	GWA34	10-Dec-2019	1113									4.730																						
ME1901634037	GWC34	10-Dec-2019	1131										20.350																					
ME1901634038	GWA36	02-Dec-2019	1410										5.970																					
ME1901634039	GWC36	02-Dec-2019	1416										18.520																					
ME1901634040	PZ13	09-Dec-2019	1442										2.330																					
ME1901634041	PZ20	09-Dec-2019	1149										4.160																					
ME1901634042	PZ21	09-Dec-2019	1138										4.670																					
ME1901634043	PZ26	09-Dec-2019	1108										4.390																					
ME1901634047	GWF4	09-Dec-2019	1120										12.950																					
ME1901634048	Barologger Office	20-Dec-2019	1515																															

Groundwater Review & Water Licence Review

GROUNDWATER WILPINJONG ANNUAL REVIEW 2019

Prepared for:

Wilpinjong Coal Pty Ltd

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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

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APPENDICES

1 Introduction

SLR Consulting Australia Pty Ltd (SLR) was commissioned to conduct the Groundwater Annual Review 2019 for the Wilpinjong Coal Mine (WCM).

This letter report contains the analysis and information required to address the relevant water licence conditions for pit extraction and dewatering production bores for the 'water year' 01 July 2018 - 30 June 2019. It also contributes to the requirements of the Annual Review (AR) for the WCM for the 2019 calendar year. The report is presented in three sections that address the following requests

1. Reporting against the commitments in the WCM Groundwater Monitoring Program (GWMP)[1] – 01 January 2019 to 31 December 2019.
2. Reporting against water licence conditions 2, 3, 4 and 6 for pit extraction – 01 July 2018 to 30 June 2019.
3. Reporting against water licence conditions 7, 9 and 10 for dewatering production bores – 01 July 2018 to 30 June 2019.

While the commitments in the GWMP occupy a later period in time to the water licence conditions, the data presented in reporting on the GWMP commitments will also be used in addressing water licence conditions for both pit extraction and dewatering production bores.

Open Cut pit names and pit progression during 2018-2019 are indicated in **Figure 1**. Groundwater monitoring bore locations are displayed on **Figure 2.**

It should also be noted that cause and effect analysis and assessment against water level and quality triggers during 2019 has occurred during an extended period of below average rainfall. The persistent dry conditions make the separation of mining vs climatic effects difficult.

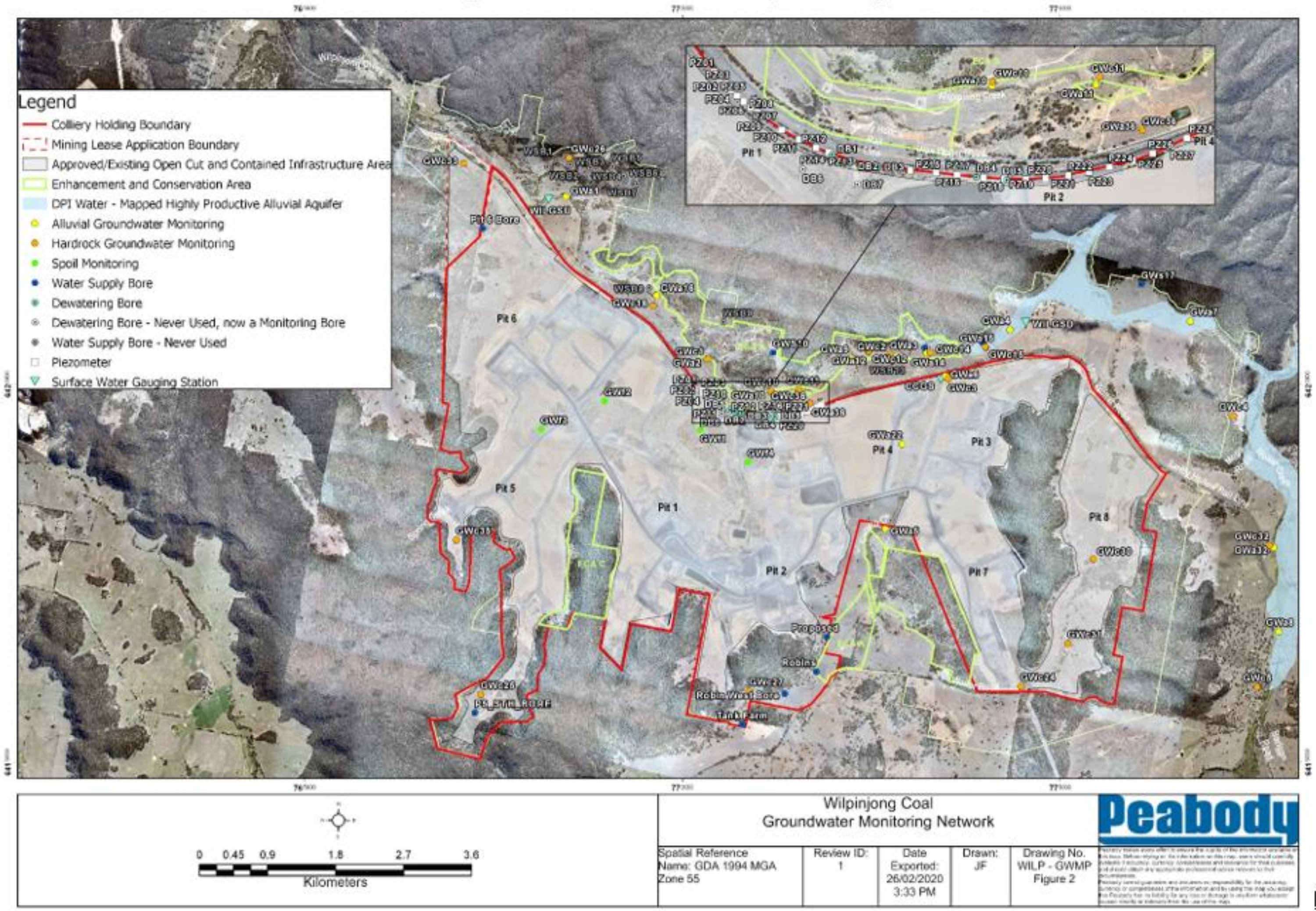
The following report and groundwater modelling undertaken for this study is referenced as (SLR, 2020) with HydroSimulations[2] as of March 2019 an SLR Consulting Australia Company.

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

[2] HydroSimulations (an SLR company) has a long-standing relationship with WCM, with groundwater work and advice provided since 2005. HydroSimulations undertook the Wilpinjong Coal Mine Modification 6 Groundwater Impact Assessment (HydroSimulations, 2014) and the Wilpinjong Extension Project Groundwater Impact Assessment (HydroSimulations, 2015). HydroSimulations has conducted licence audits, trigger investigations and annual groundwater assessments for WCM since 2014.

Figure 1 Wilpinjong Coal Mine open cut progression 2016 - 2019

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 2019 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 (2006-2019) have also been assessed to provide context for the 2019 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. There is currently insufficient data available to analyse water level and quality trends at these locations, however, future Annual Reviews will conduct analysis where possible.

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 (GWMP, 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 as a result of cumulative mining activities. Accordingly, trigger levels for water levels in the coal measures are not considered to be warranted (GWMP, 2017).

2.1.1 Review of groundwater level data

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 are included in **Appendix A**. The declining rainfall residual mass trend from mid-2017 to the end of 2019 demonstrates a persistent period of below average rainfall in the area (**Figure 3**). The NSW DPI State Seasonal Update for December 2019 (DPI, 2019) indicates the western coalfield / Central Tablelands Region is in 'intense drought', and has been for a period of drought greater than 24 months. **Table 1** displays monthly and annual rainfall compared to the long-term average at the Wollar (Barrigan St) BOM station for 2016-2019, which further indicates the extended period of below average rainfall from 2017-2019. 2019 in particular only recorded 293.5mm compared the long-term average of 586.8mm. These persistent dry conditions make the separation of mining versus climatic effects difficult in cause and effect analysis.

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

*Jan 2017 – no rainfall recorded at Wollar (Barrigan St). Rainfall from Bylong (Glenview) – 062107 used.

Summary bore hydrographs are shown in **Figure 3** (alluvial) and **Figure 4** (coal seam).

Figure 3 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 a distance of 8.4 km, from GWa1 to GWa7, with hydraulic gradient 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 (i.e. Pits) 1 and 2 occurred during a pronounced dry period from later 2006 to early 2007. Following the cutting of these Pits, the annual rainfall began to rise steadily to a peak in annual rainfall in 2012.

The transition from a very dry period to a very wet period explains the initial experience 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, complicating the detection of potential mining effects that may have resulted from this pit as well as Pit 3.

A return to wetter conditions occurred in 2016, with most alluvial bores showing a response to this increased rainfall. From 2017 to 2019 conditions have become progressively drier causing a widespread decline in monitored groundwater levels, with a number of alluvial bores recording 'dry' conditions.

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 (i.e groundwater level decrease) 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 know stresses. A lack of increase, or muted response in groundwater level associated with period of rainfall can also be interpreted as a mining effect:

- GWa1 (**Figure 3**) at 1.2 km north of Pit 5. This bore has recorded dry conditions since 2014, with a decline in water levels of at least 1 m.
- GWa3 (**Figure 14**) at 450 m north of Pit 4; groundwater level decline in the order of 1 m occurred during 2014; and then reported as dry from mid-2017 throughout 2018 and 2019, to the end of the 2019 AR reporting period.
- GWa14 (**Figure 15**) at 300 m north of Pit 4; groundwater level decline of approximately 1 m during 2013 and 2014. This bore has gone dry, probably due to a combination of climate and mining. As the bore is dry, the estimate of drawdown is uncertain.
- GWa5 (**Figure 9**) at Cumbo Creek between Pit 2 and Pit 3, 500 m south of Pit 4; groundwater level has declined in the order of approximately 3 m between from 2013 to 2019. After a period of stabilisation around this reduced level and responses to rainfall events, the bore has recorded dry conditions since May 2019 to the end of the reporting period. 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 at 450 m north of Pit 3; groundwater has declined in the order of 1 m from 2014 to 2016 and then reported dry through to 2019.
- GWa15 (**Figure 17**) at 250 m north of Pit 3; groundwater level decline of less than 1 m but mining effect obscuring the rainfall response from 2012 to 2016. This bore was dry throughout the entire 2019 AR monitoring period.
- GWa6 (**Figure 16)** at the northern junction of Pit 3 and Pit4; groundwater level declined approximately 1 m during 2014 (this bore has gone dry at times, probably due to a combination of climate and mining drivers, and so the estimate of drawdown is uncertain). The bore was dry throughout the entire 2019 AR monitoring period.
- GWa10 (**Figure 11**) located to the north-west of Pit 4 along Wilpinjong Creek shows a potential mining impact, with average groundwater levels being approximately 2 m lower than those recorded prior to the extraction of Pit 4. Observed water levels at the beginning of 2019 do not respond as much to rainfall events as in the past, showing a slight decline throughout 2019 but likely exacerbated by dry condition.
- GWa11 (**Figure 12**) at 500m north of Pit 4 has gone dry in 2019 likely due to a combination of mining at Pit 4 and declining rainfall since mid-2017.
- GWa12 (**Figure 13**) at 300m north of Pit 4; groundwater level decline observed in the order of 3 m in 2014 likely due to the excavation of Pit 4, then reported dry early 2015 before responding to short term rain fluctuations. Recovery of ~1 m below the pre-mining water levels was observed in mid-2016, however due to declining rainfall throughout 2017 and 2018 the full extent of this recovery is difficult to ascertain. GWa12 reported ‘dry’ conditions throughout 2019.
- The other bore hydrographs from the Wilpinjong Creek alluvium (e.g., GWa2 (**Figure 10**), GWa7 (**Figure 18**), GWa8 (**Figure 19**) show no discernible mining effects.

Figure 3 Transition in Alluvial Bore Groundwater Levels from West to East along Wilpinjong Creek

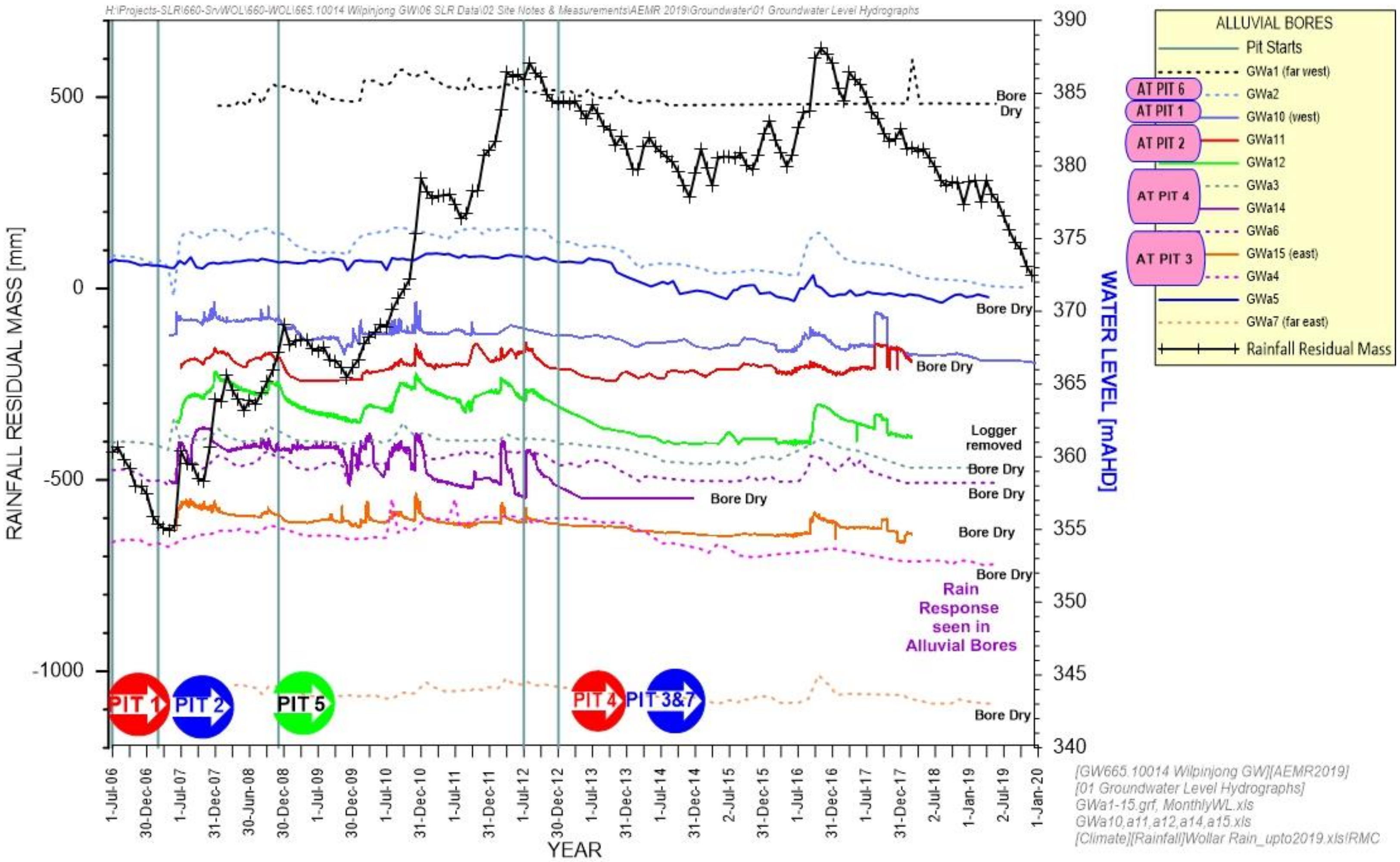


Figure 4 Transition in Coal Bore Groundwater Levels from West to East along Wilpinjong Creek

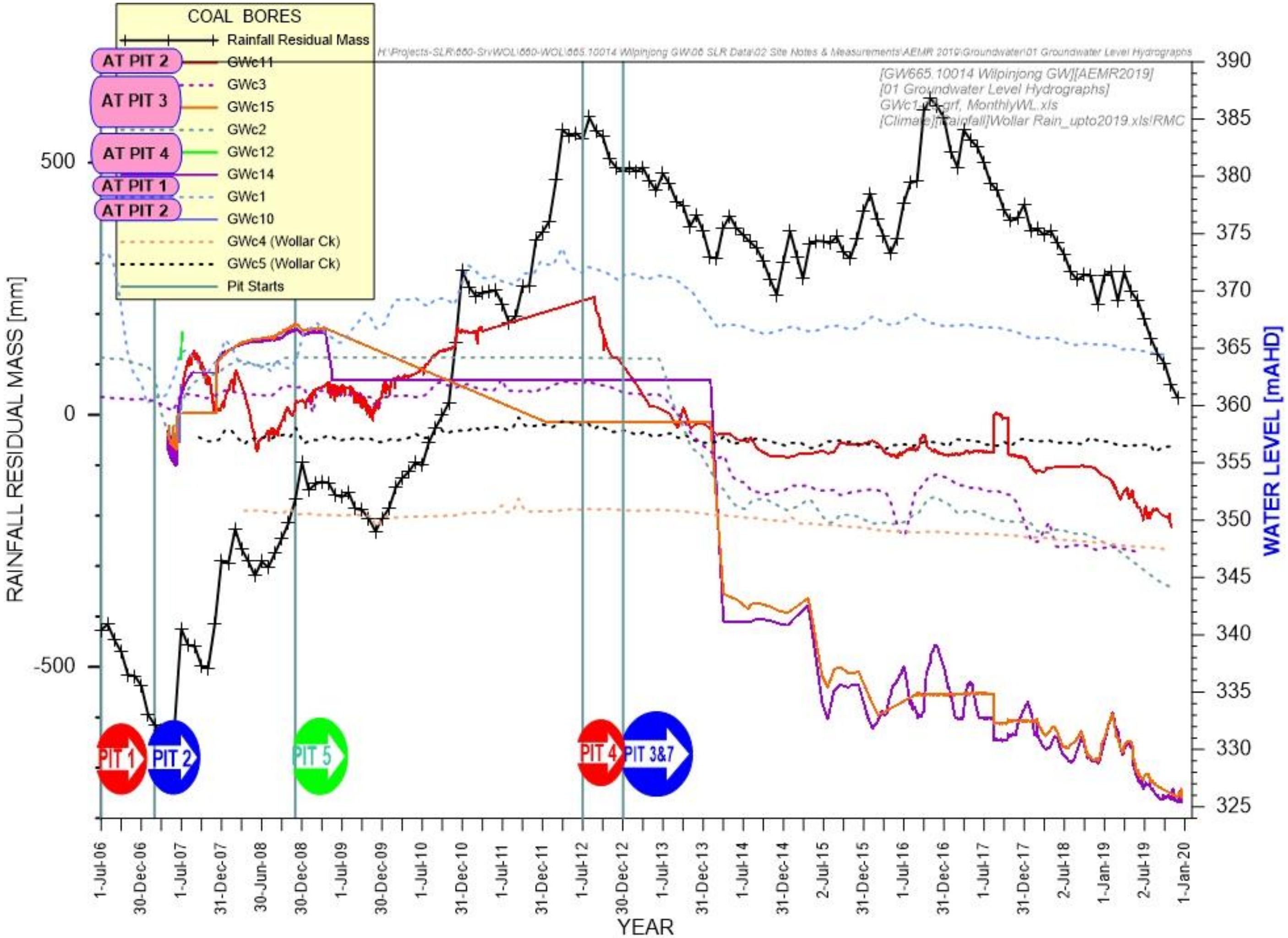


Figure 4presents the groundwater hydrographs for all coal monitoring bores from the west (higher elevations) to the east (lower elevations), in relation to rainfall residual mass and the commencement of mining in each Pit.

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 monitoring bores, e.g. GWc14 and GWc15, show response to the short period of historical pumping at production bores at WCM. This is exemplified by the short and sharp drawdown and subsequent recovery seen in early to mid-2007.

At the other coal monitoring bores, the pre-mining water levels are not known exactly. 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.

Three of the coal monitoring bores are considered to have been unreliable (GWc14, GWc15 and GWc12) in early years at high pressures. It is noted that they display artesian conditions. However, readings in 2014 to 2019 appear plausible in response to depressurisation caused by 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 10)** – 1 m drawdown throughout 2019; drawdown about 4-5 m since mid-2013.
- GWc11 – impacted primarily by Pit 2 and Pit 4 (**Figure 12**) - drawdown about 17 - 18 m with a drawdown of approximately 4m drawdown throughout 2019.
- GWc12 - impacted primarily by Pit 4 (**Figure 13**) - drawdown more than 30 m with a continued effect of Pit 4 and 5 in 2019.
- GWc2 - impacted primarily by Pit 4 (**Figure 14**) - drawdown more than 20 m with a 5m drawdown during 2019, however the drier condition since 2017 complicates the observations of a mining effect at this location.
- GWc14 - impacted primarily by Pit 3 and Pit 4 (**Figure 15**) - drawdown more than 20 m.
- GWc3 – impacted primarily by Pit 3 and Pit 4 (**Figure 16**) - drawdown about 8 m and reported as dry since mid-2018.
- GWc15 - primarily due to Pit 3 and Pit 4 (**Figure 17**) - drawdown more than 20 m.
- GWc4 – primarily due to Pit 3 (**Figure 18**) – drawdown of approximately 1.5m.
- GWc33 – primarily due to Pit 5 (**Figure 25**) – drawdown of about 5m.

For bores not displayed in **Figure 3** or **Figure 4**:

- 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 21**).

- There are definite mining effects at coal monitoring bores GWc28 and GWc29 in Slate Gully, with approximately 15m of drawdown. These monitoring bores were decommissioned in May 2019to allow initial support infrastructure for future mining.(**Figure 22**).
- There are no obvious mining effects at any other coal monitoring bores.

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.

2.1.2 Review of groundwater quality data

Groundwater electrical conductivity (EC) statistics have been computed from 1,680 measurements from April 2006 to December 2019 (**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, the alluvial groundwaters are more saline than the coal seam waters. 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 (µS/cm)

Alluvium Monitoring Bores	Mean	Standard Deviation	Coal Monitoring Bores	Mean	Standard Deviation	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

Alluvium Monitoring Bores	Mean	Standard Deviation	Coal Monitoring Bores	Mean	Standard Deviation	Location
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

H:\Projects-SLR\660-SrvWOL\660-WOL\665.10014 Wilpinjong GW\06 SLR Data\02 Site Notes & Measurements\Groundwater\01 Quantity\MonthlyWL.xlsx

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 28** for alluvium and **Figure 29** for the coal seam) 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 these locations, however, future Annual Reviews will conduct analysis where possible.

Initially, it is recommended that the full chemical suite be analysed at these sites whenever a successful sample is able to 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).

Table 3 WCM Spoil Monitoring bores

Bore ID	WCM Mine Area	Coordinate Reference System (GDA94 Z55)		Bore Depth (m)	Bore Est.	Sampling Freq	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	24-02-20	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 2019 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 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

As stated in **Section 2.1**, numerical modelling conducted for WCM (SLR, 2020) 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 successive 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 2019 monitoring period due to the persistent below average rainfall conditions making the assessment of whether a bore is dry due to climatic or mining influence difficult to separate.

This persistent dry period that has occurred since 2017 (more detail in **Section 2.1.1**) has caused bores not impacted by mining, such as GWa7, to go dry and exceed the defined trigger level. Earlier dry periods observed between 2012 and 2014 with below average rainfall have not resulted in GWa7 going dry, indicating that drought conditions from 2017-2019 are more severe than others within the monitoring record at some sites . The groundwater level trends for all those alluvium monitoring bores that have exceeded their defined trigger level are discussed in the following section.

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 results in the initiation of the groundwater impact investigation protocol found in the WCM Surface and Groundwater Response Plan (SGWRP) ().

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 2019 AR monitoring period.

Table 5 Trigger Level exceedances in the 2019 monitoring year

Bore	Trigger Level Exceedance in 2019 Observations			
	Minimum RWL (mAHD)	EC	pH min	pH max
GWa1^	#N/A	No measurement in 2019		
GWa2	Y			
GWa3^	Y^	^	^	^
GWa4^	Y^	^	^	^
GWa5^	Y^	^	^	^

Bore	Trigger Level Exceedance in 2019 Observations			
	Minimum RWL (mAHD)	EC	pH min	pH max
GWa6^	#N/A	^	^	^
GWa7^	#N/A	^	^	^
GWa8				
GWa10				
GWa11^	Y^			
GWa12^	Y	#N/A	#N/A	#N/A
GWa14^	Y			
GWa15	Y			
GWc1		Y		
GWc2				
GWc3	#N/A	Y		
GWc4				
GWc5		Y		

Blank cells represent no trigger exceedance, #Not applicable, Y= Yes (no. of trigger exceedances recorded), ^ Bore was dry/ goes dry during 2019,

3.1.1 Groundwater Level Trigger Exceedances

The following section examines trigger exceedances at WCM alluvial monitoring bores during the 2019 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).

3.1.1.1.1 GWa2

Groundwater levels recorded for GWa2 (**Figure 31**) during 2019 exceeded the trigger level for the entire period. On average the groundwater levels were 0.7 m below the trigger level (see **Table 4**), with the maximum exceedance being 0.75 m (October 2019). 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 is being caused by the reduced rainfall since 2017.

3.1.1.1.2 GWa3

Groundwater level observations at GWa3 (**Figure 32**) reported the bore as 'dry' for the entire 2019 monitoring period. Previous reporting by HydroSimulations identified a potential mining effect from WCM during 2011, noting the magnitude of groundwater fluctuation in response to rainfall had decreased (HydroSimulations, 2018). This behaviour is believed to be ongoing, with recovery observed in 2016 placing groundwater levels approximately 1 m below peaks observed prior to 2011. The current dry conditions first occurred in mid-2017. As this decline in groundwater level correlates with the extended period of below average rainfall also observed over this period, the exceedance of the groundwater level trigger at GWa3 has likely occurred due to both climatic and mining effects.

3.1.1.1.3 GWa4

GWa4 (**Figure 33**) has reported dry conditions for the entire 2019 monitoring period. This trigger exceedance first began in 2017, with GWa4 also reporting dry for the full 2017 and 2018 monitoring periods. The AR for 2017 concluded that the drawdown at this bore had likely occurred as a result of mining at Pit 3, with the period of below average rainfall during 2017 exacerbating this drawdown (SLR, 2018). As the below average rainfall conditions have continued during 2019 it is likely that this conclusion remains true.

3.1.1.1.4 GWa5

Groundwater levels collected for GWa5 (**Figure 34**) during 2019 continued to exceed the trigger level for the entire period. On average the groundwater levels were 0.3 m below the trigger level (see **Table 2**), with the maximum exceedance being 0.4 m (April 2019). GWa5 was then reported as dry from May 2019 likely due to drier condition. A potential, ongoing mining effect beginning in late 2011 as a result of mining in Pit 2 and the excavation in the lower reaches of Cumbo Creek has been identified in previous reporting by SLR (HydroSimulations, 2018). This effect intensifies during 2014 with groundwater levels falling by around 3 m from early 2014 to the end of 2019. Response to rainfall is still observable at this bore with small fluctuations occurring due to local rainfall events being recorded throughout 2018 and beginning of 2019. It is likely that the groundwater level trigger exceedance at GWa5 is being exacerbated by the reduced rainfall throughout the 2019 monitoring period.

3.1.1.1.5 GWa11

GWa11 (**Figure 38**) has reported dry conditions and exceeded the trigger level for the entire 2019 monitoring period. The trigger exceedance is set at the base of the bore. A mining effect due to Pit 4 could influence the decrease in groundwater levels however the below average rainfall since mid-2017 likely drives the bore to be dry and induces exceedances in groundwater level at GWa11.

3.1.1.1.6 GWa12

Exceedances of the GWa12 (**Figure 39**) trigger level occurred during the entire 2019 monitoring period and was also reported dry until the end of the reporting period. From 2016 to 2018 groundwater levels have been reporting a decline (~2.5 m over this period) consistent with the decline in the rainfall residual mass curve. However, a potential mining effect can be observed in data collected following the commencement of extraction at Pit 4 in mid-2012. As reported above (**Section2.1**, a drop in the order of 3 m occurred between late 2012 and 2014. Some recovery in water levels was observed in 2016 and early 2017, however, the reduced rainfall that has characterised the second half 2017, 2018 and 2019 has limited this. It is likely that a combination of mining and climatic influences has caused groundwater levels at GWa12 to exceed the designated trigger level for the 2019 monitoring period.

3.1.1.1.7 GWa14

GWa14 (**Figure 40**) has continued to report groundwater levels below the trigger level throughout the 2019 monitoring period, indicating 'dry' conditions at this monitoring bore for the entire monitoring period. This behaviour also occurred during the 2017 monitoring period (HydroSimulations, 2018), with GWa14 showing little response to rainfall since 2013. A mining effect due to Pit 4 is believed to have occurred since late 2012 causing water levels to decrease by approximately 2 m (HydroSimulations, 2018). The exceedances recorded during 2019 are expected to have resulted due to impacts from mining at Pit 4, along with the reduction in rainfall events throughout the year.

3.1.1.1.8 GWa15

GWa15 (**Figure 41**) has been reported 'dry' for the entire 2019 monitoring period and consequently exceeded the trigger level to the end of the reporting period. The groundwater level trend at GWa15 is similar to those at GWa12 with a decline in groundwater levels (~1.3 m) from 2016 to 2018. Little responses to rainfall were still observable with small fluctuations in December 2017 and at the end of 2018. The exceedance of the groundwater level at GWa15 in 2019 is likely due to a combination of mining effect from Pit 4 and climatic influences.

3.1.1.2 Additional Bores of Concern

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 (**Figure 30**), GWa6 (**Figure 35**) and GWa7 (**Figure 36**).

3.1.1.2.1 GWa1

Since mid-2014, GWa1 (**Figure 30**) has reported dry conditions. The pre-mining water levels at this bore were positioned ~1 m above the base of the bore, indicating normal climatic fluctuations could cause water levels to fall below the base of the bore. Data collected between 2007 and 2010 shows a reasonable correlation with the rainfall trend, with water levels rising in response to periods of higher rainfall. However, from 2011 to 2014 water levels began falling steadily despite a pronounced increase in rainfall over this period. Groundwater levels continued to remain below the base of the bore throughout the increase in rainfall observed in 2016, contrasting the increases in alluvial groundwater levels observed at other monitoring bores during this period. It has previously been suggested (HydroSimulations, 2018) that GWa1 has been impacted by mining activity associated with Pit 5 despite being positioned approximately 2 km from active mining at WCM. The impact to groundwater levels at GWa1 is more pronounced than impacts that are observed at bores in closer proximity to WCM mining. Given this information HydroSimulations has previously (HydroSimulations, 2018) and continues to recommend that an investigation into the functionality of bore GWa1 be conducted to ensure there are no obstructions within the bore that is preventing accurate water measurements to be collected.

3.1.1.2.2 GWa6

GWa6 has reported dry conditions from September 2017 and throughout the 2018 and 2019 monitoring periods. Due to incorrect trigger assignment in previous years (HydroSimulations, 2018) GWa6 was removed from the list of alluvial bores to be assessed for trigger exceedances. **Figure 35** presents a trigger level proposed by HydroSimulations in the 2017 AR reporting period (HydroSimulations, 2018) based on bore depth obtained from a bore construction log. As the bore is dry it exceeds this proposed trigger level.

The first dry conditions observed at GWa6 followed the commencement of extraction at Pit 3 at the end of 2014. Recovery was observed during 2016 and early 2017 due to a period of above average rainfall. The current dry period coincides with a period of below average rainfall, which is likely to have partially contributed to the observed decline in water levels. However, groundwater levels dropped suddenly and significantly by about 2 m following September 2017, a trend not previously observed in other periods of below average rainfall. It is likely that the low rainfall throughout the 2018 and 2019 monitoring periods have enhanced a mining affect caused by extraction at Pits 3 and 4.

3.1.1.2.3 GWa7

GWa7 is no longer assessed using a trigger level in the current GWMP (Peabody, 2017) (**Figure 36**). GWa7 is located over 3 km east of current mining at WCM, so it is not likely to be directly affected by mining. The decrease in water level throughout 2017 and 2018 correlates with the declining rainfall trend. The full recovery in mid-2016 following an increase in the rainfall trend confirms this. Recovering groundwater levels were observed in November and December 2018 following a dry period, due to declining rainfall, that occurred from April to October 2018. Since January 2019, GWa7 is reported as dry, likely due to below average rainfall condition.

3.1.2 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**.

No trigger exceedances in EC at alluvial bores occurred during the 2019 AR reporting period.

Monitoring bores GWa1, GWa3, GWa4, GWa5, GWa6 and GWa7 (**Figure 30 to Figure 36**) have gone or continued to be dry throughout the 2019 AR reporting period, with the last recorded EC value being above the designated trigger level (GWa3, GWa4 and GWa6).

Each of these alluvial monitoring bores follow similar trends despite varying baseline EC levels with each of the bores recording declines in groundwater level due to reduced rainfall and mining (GWa3, GWa4, GWa5 GWa6 and GWa7).

The increased EC at these monitoring bores is expected to be correlated to dry conditions with alluvial groundwater exposed to high evaporation rate for longer time. The reduction in less saline Permian groundwater due to mining and dry climate condition could also explain higher EC values, with less mixing of Permian and alluvial groundwater in the alluvium formation.

Exceedance of the EC trigger level at GWa5 and GWa7 was identified in 2018 likely due to climatic factors. EC decreased to below the trigger level from the beginning of the 2019, likely due to rainfall events between January and May 2019 freshening alluvial water. There were no measurements of EC at GWa7 during 2019 as it is reported as dry, then exceedance of the EC trigger level cannot be identified at this location.

Trigger exceedances for coal monitoring bores are observed in GWc1, GWc3 and GWc5 (**Figure 42 to Figure 46**)

The increases in EC observed at GWc1 and GWc5 appear to be occurring independently of climatic and groundwater level influences. As reported in the 2017 AR (HydroSimulations, 2018) EC at GWc1 recorded exceedances of the assigned trigger in both 2016 and 2017. The increases that occur are sudden, with EC recording consistent values around 500 µS/cm above the trigger level for the period of the exceedance. During 2018 EC at GWc1 was approximately 700 µS/cm above the trigger level, with this exceedance occurring since mid-2017. Throughout 2019, EC slightly decreased to be 145 µS/cm above the trigger level at the end of the reporting period.

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, apparently separate to climatic or groundwater level influence, stabilised around 5,500 µS/cm at the end of 2017 before slightly falling to an average of 5,222 µS/cm in 2018. (HydroSimulations, 2018; 2019). A sudden drop in EC was recorded in mid-June of 2018, with EC falling to 3,570 µS/cm, 1,228 µS/cm below the trigger level. During the 2019 reporting, period, measured EC stayed above the trigger level, showing a similar trend as in 2018 and show no responses to groundwater levels. The maximum measured EC reached 5,500 µS/cm in September 2019 before decreasing slightly in October 2019 to 5,440 µS/cm. The decline in EC seen in 2019 and in previous reporting periods does not correlate with an increase in groundwater levels at this bore.

EC exceedances previously reported for GWc3 (**Figure 44)** have been suggested as potentially occurring due to WCM mining activity due to the corresponding 8 m decline in groundwater levels following extraction at Pit 3 (HydroSimulations, 2018). It is suspected that the mining related drawdown has allowed groundwater from more saline aquifers to enter the area monitored by GWc3. EC measurements made during 2018 record a steady increase in salinity throughout the year, with the maximum EC for the reporting period recorded in December 2018 at 4,500 µS/cm. Measured EC in 2019 slightly decreased to 4,380 µS/cm (May 2019). Groundwater levels at GWc3 continued to fall during 2018 and 2019, reaching the lowest recorded levels since the beginning of mining in May 2019. GWc3 was then reported as dry from May 2019 with no EC measurements made possible between May and December 2019. It is likely then that the EC exceedances in 2019 can be attributed to the declining groundwater levels at GWc3.

3.1.3 pH Trigger Exceedances

No Exceedances of pH trigger levels were observed during the 2019 AR monitoring period.

4 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 the Wilpinjong Coal Mine 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) has been updated in 2020 by HydroSimulations now SLR, in line with the recommendations from the 2018 Annual Review (HydroSimulations, 2019). These changes aimed to improve calibration with observed conditions.

As is required by the GWMP (Peabody, 2017), the following section reports on the new model (SLR, 2020) 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.

4.1 Updated groundwater model

4.1.1 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.

4.1.2 Model Updates (2020)

The numerical groundwater model (SLR, 2020) 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 more closely reflect the actual schedule and extent of mining 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.
- Update the observation target file with any additional bores and recent groundwater level data (observed data).

4.2 Model Verification

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

4.2.1 Model Performance at Alluvium Monitoring Bores

The SLR (2020) modelling predictions are consistent with HydroSimulations (2015) predictions at the alluvial monitoring sites along Wilpinjong Creek, with approximately 1m drawdown for the life of approved mining (GWa6 has the maximum predicted drawdown in an alluvial monitoring bore of ~1.5 m occurring in 2029). However, substantial drawdowns in excess of 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** (**Figure 47 to Figure 54**)

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, 2020) model has improved at GWa3 (Wilpinjong Creek) and GWa6 (Cumbo Creek) where modelled groundwater level better captures the observed groundwater responses to rainfall recharge after 2015.

Amplitudes and overall base levels are generally well represented for the alluvium monitoring bores along Wilpinjong Creek, e.g. 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 drawdown at GWa5 due to Pits 3 and 7 is not replicated to the full degree by the groundwater model.

The observed drawdown is often greater (e.g. GWa5, GWa12, GWa14) than is seen in the (SLR, 2020) modelled data. This may be attributed to the hydraulic and storage properties using the (HydroSimulations, 2015b) model into the (SLR, 2020) 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.

4.2.2 Comments on possible discrepancies

Large discrepancies exist between observed and modelled for GWa1 (**Figure 47**) for the period from 2015 to 2017. The groundwater model predicted recovery of groundwater levels, following drawdown that began in 2011, to commence in 2015. However, the observed data has indicated dry conditions at this bore from mid-2014 to the end of 2018. It is expected that a cumulative impact from mining and below average rainfall have caused groundwater levels to fall below the base of the bore, with mining expected to be a more dominant control on the continued drawdown at GWa1. Until rainfall in this region increases it is difficult to assess the performance of the model in estimating recovery at GWa1.

Observed drawdown at GWa5 (**Figure 50**) is approximately 1.5 m greater than the drawdown predicted by the model for the period between 2013 and the end of 2019. A lack of inflow at Cumbo Creek due to reduced rainfall has been attributed to this difference (HydroSimulations, 2018). Despite this, modelled and observed data both show good correlation with the fluctuation in rainfall.

Similar differences between observed and modelled data at GWa5 are also apparent at GWa14 (**Figure 53**). The drawdown in observed groundwater level is about 1.5 m greater than that predicted by the model, with the limited observed response to rainfall trends. As has been the case with other bores monitored by WCM, the additional drawdown observed at GWa14 may be attributable to the period of below average rainfall beginning in 2017 and continuing throughout 2018 and 2019. Although the below average rainfall series has been included into the model, the simulated groundwater level still show sign of recovery while GWa14 has gone dry. The dry/near dry conditions that have prevailed at GWa14 since 2014 have prevented the full extent of drawdown related to climatic influences or mining from being evaluated.

4.2.3 Model Performance at Coal Monitoring Bores

Figure 55 to Figure 64 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, 2020) 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, 2020) 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, 2020) 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, 2020) improved the timing in drawdown after the extraction of Pit 4 and following below average rainfall condition 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 in general lower than the observed data in the revised model (SLR, 2020) at GWc12, GWc15, GWc14, GWc28 and higher at GWc1, GWc2 and GWc3.

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 2019).

	GWc1	GWc2	GWc3	GWc11	GWc12	GWc14	GWc15	GWc28	GWc29
Predicted	12	25	29	11	22	26	25	17	13
Observed	8	25	14	20	37	33	29	22.5	18

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

5 Review of Water Balance and Groundwater 'Take'

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

5.1 Trends in Inflow

Figure 5 presents the 'inferred groundwater inflow' at WCM, with the most recent values for the 2018-2019 water year provided by WRM (May, 2019), who estimated the gross inflow at 2.0 ML/day.

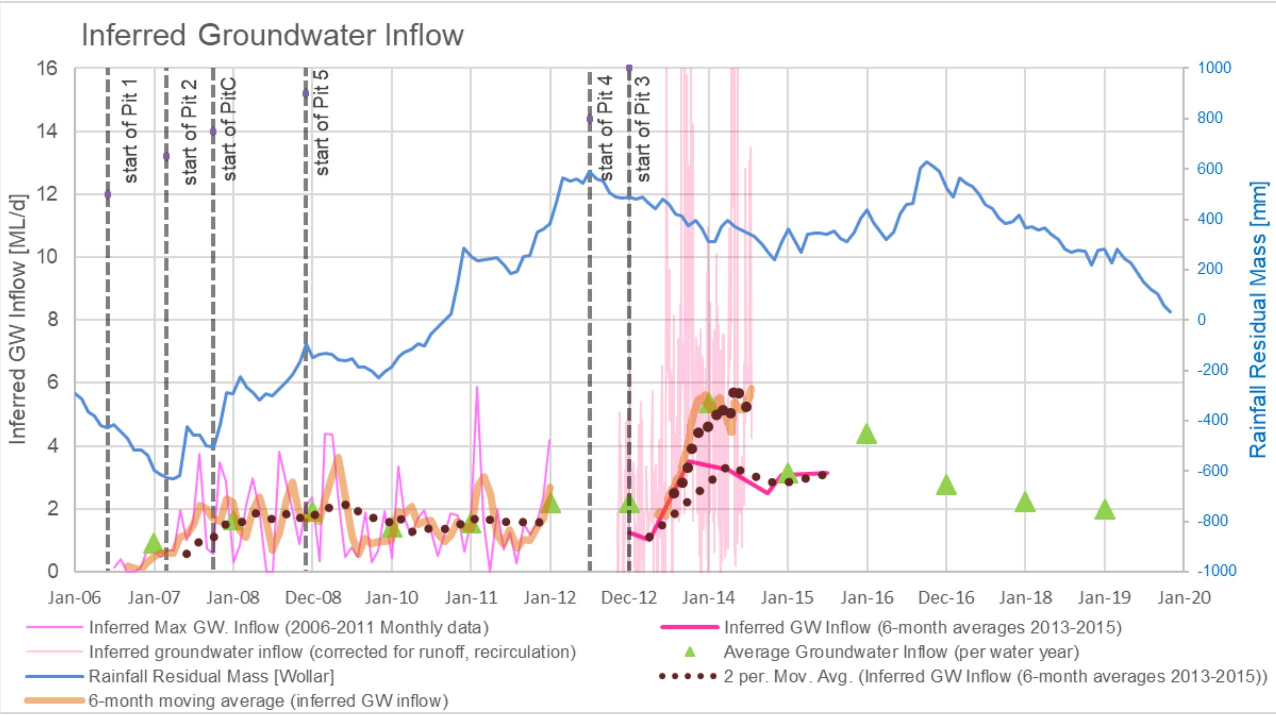
Figure 5 includes the historical data used in previous groundwater licensing audits for 2013-2014 and 2014-2015 water years (SLR, 2014; SLR 2015a).

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.

Moving average trends of 6-months and 12-months have been plotted, as well as the 'Rainfall Residual Mass' (rainfall trend) curve. Steep slopes in either direction are indicative of more extreme rainfall patterns.

Figure 5 Historical Trends in Inferred Groundwater Inflow



The results suggest that there is some correlation between mine inflow trend (12-monthly dotted trend line) and the rainfall trend, e.g. there is a rise in mine inflow in 2006-2009 which is congruent with above average rainfall in this period. However, this period is also congruent with the commencement of several of the Pits at WCM. In 2009-2010, the inflow hydrograph and trend lines decline in accordance with the rainfall trend curve, along with a short-term rise in 2011.

From late 2012 the inferred groundwater flow on **Figure 5** is based on the net daily pump-out from each of the pits, minus an estimate of runoff to each area, as well as the water accumulated in storages and tailings dams near to active pits (as an attempt to account for recirculation from these).

After 2012 the pumping rates appear to have increased (**Figure 5**) although it should be noted that these increased rates do not agree with the rates subsequently estimated as part of WRM's water balance. Further analysis of these discrepancies is discussed in HydroSimulations (2015a).

With respect to groundwater inflow determined from the site water balance (the pink series 2013-2015 labelled as 'Inferred GW Inflow (6-month averages 2013-2015)' on **Figure 5**, the rise in inflow in 2013 does not correspond to a rise in rainfall trend. The subsequent levelling out of the inflow curve corresponds to average rainfall conditions from early 2014 into 2016.

5.2 Assessment of Annualised Groundwater Inflow against License

As of the water year 2018-2019, WCPL holds a consolidated licence (WAL41862) to cover the extraction of water from all Pits.

The total authorised volume of groundwater extraction is 3,121Unit Shares[3] which is equivalent to the combined total of the individual Pit entitlements for the 2018-19 water year (authorised by licences 20 BL173513, 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 in 2018-19 is 3,121 ML/a.

When annualised from a daily inflow value of 2.0 ML/day, the WRM (May 2019) estimate for the 2018-2019 water year is about 730 ML/a. **Table 8** presents the relevant entitlement volume for the consolidated licence, the estimated inflow or 'take' for 2018-19, as well as a summary of the groundwater take from each of the Pits, as inferred, for 2012-13, 2013-14, 2014-15, 2015-16, 2016-17 and 2017-18.

[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*

Table 6 also presents an assessment of compliance to the allocated licence volumes for each water year. The WRM (2019) annualised estimate is within the allocated licence volume for the 2018-19 water year.

The modelled estimate for groundwater take (SLR, 2020) also indicates the predicted inflow falls beneath the licensed volume for the 2018-19 water year. The groundwater volume extracted by the dewatering bores during the water year 2018-19 are also presented in **Table 8.**

Table 8 Summary of Annual Volume of Inferred Maximum Groundwater Take (water years: 2012-2019)

LICENSE	Pit	Limit [ML/A]	Inferred Groundwater Inflow [ML]													
			2012-13	2013-14	2014-15		2015-16			2016-2017		2017-2018		2018-2019		
					WRM inflow pro-rata w/ modelled	Modelled inflow (HS, 2015b		Hatch (2017)	Modelled inflow (HS, 2015b)	WRM inflow (2018)	Modelled inflow (HS, 2015b)	WRM Inflow (2019)	Modelled inflow (HS, 2015b)		WRM Inflow (2019)	Modelled inflow (HS, 2020)
20BL173517	Pit 1	1	0	0	6-11	13	Pit License Consolidated	1600	1043	1009	1033	815	980	Licence Consolidated – WAL418623	730	797
20BL173516	Pit 2	190	<1	<1	4- 7	9										
20BL173515	Pit 3	680	38- 54	890-1270	210- 351	433										
	Pit 7			10 to 16#	10 to 16#	20#										
20BL173514	Pit 4	350	136-273	345-695	100- 168	207										
20BL176513	Pit 5	800	160-453	140-405	347- 579	714										
	Pit 6		Not yet mined (commencement in 2019)													
Dewatering Bores		770	**No pumping recorded at bores**												56.1	
TOTAL		**2,021 (pit) + 770 (bore)**	**335-780**	**1380-1794**	**678-1133**	**1397**		**1600**	**1043**	**1009**	**1033**	**815**	**980**	**3,121**	786	848
			Full year (or scaled full year) of pumping data assessed: Compliant (based on available pumping data)													

Pit 7 inflow should be considered under the Pit 3 license (680 ML/a) *Volume of water pumped from dewatering bores [ML] for the water year 2018-19, refer to Sections 6 and 8 for license conditions

5.3 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** and **Figure 7** using predicted total annual inflows from two versions of the groundwater model for the WCM.

Figure 6 shows the results from the model developed in 2015 by HydroSimulations (HydroSimulations, 2015), as used to support the Wilpinjong Extension Project (WEP), while **Figure 7** shows the results for the better calibrated, current model (SLR, 2020).

In each figure, the total entitlement volumes are displayed as a red dashed line and the bar charts show the annualised inflow volumes from groundwater modelling (predicted inflows for Pits 1 to 6). The inflow estimates from WRM's (2019) water balance are shown as a continuous brown line (the "Annualised Inferred GW inflow").

Given that the simulated mine plans differ slightly between the (2015) and the (2020) model versions, the models are in good agreement for most years with respect to estimated groundwater take. Minor exceptions occur for the 2016-2017 and 2017-2018 water year with simulated inflows differ by 30 and 22 percent respectively.

For the 2018-2019 water year both models predict similar inflows with the previous model (HydroSimulations, 2015) predicting 905.9 ML/a, and the current model (SLR, 2020) estimating 848 ML/a (including dewatering bores extraction). These estimates are marginally greater than the 730 ML/a estimated by WRM for the 2018-2019 water year (WRM, 2019) (or 786 ML/a including the dewatering bores extraction).

Although the values are close, the current model performs better in predicting inflows, and is therefore more appropriate for use in predicting impacts to groundwater from WCM. Inflows predicted by both models and the independent water balance assessment (WRM, 2019) are all below the licenced 'take' of 3,121 ML/a.

The assessment between modelled and inferred groundwater flow (from the independent water balance), compared to licenced volumes for the period between 2006 and 2014 is outlined below:

- Inferred flow for the period 2006-2011 correlates total predicted inflow well, estimating inflows of 600-700 ML/a. This is in agreement with the 'take' authorised in the original licence. The estimate from the previous model (HydroSimulations, 2013) for the water year 2007-2008 are the exception.
- Inflow increases in 2012, as suggested by pumping records. Two lines are included on **Figures 6** and **7** to indicate the likely range in groundwater inflow for the water years 2012-2013 and 2014-2015. The upper estimate of water pumped from operating pits for the 2013-2014 water year was 1,870 ML. The site wide entitlement for that year was 2,021 ML.
- The progression of Pits 3, 4 and 5 beyond 2012 increased in pit inflows predicted by both models. Pit pumping rates are likely to have been exacerbated by problems with recirculating water after it is pumped from open cuts to nearby storages (i.e. water storages and tailings dams).
- Both models are in exact agreement for the 2014-2015 water year, but the opposite trend is apparent for the 2015-2016 water year. The difference may be due to differences in simulated mine progression between the models. Lower inflow is to be expected when developing areas to the south, which is both up-dip and away from the major drainage lines (**Figure 1**).

Figure 6 Comparison of Predicted and Pumped Volumes against Groundwater Entitlement for the HydroSimulations (2015b) Groundwater Model

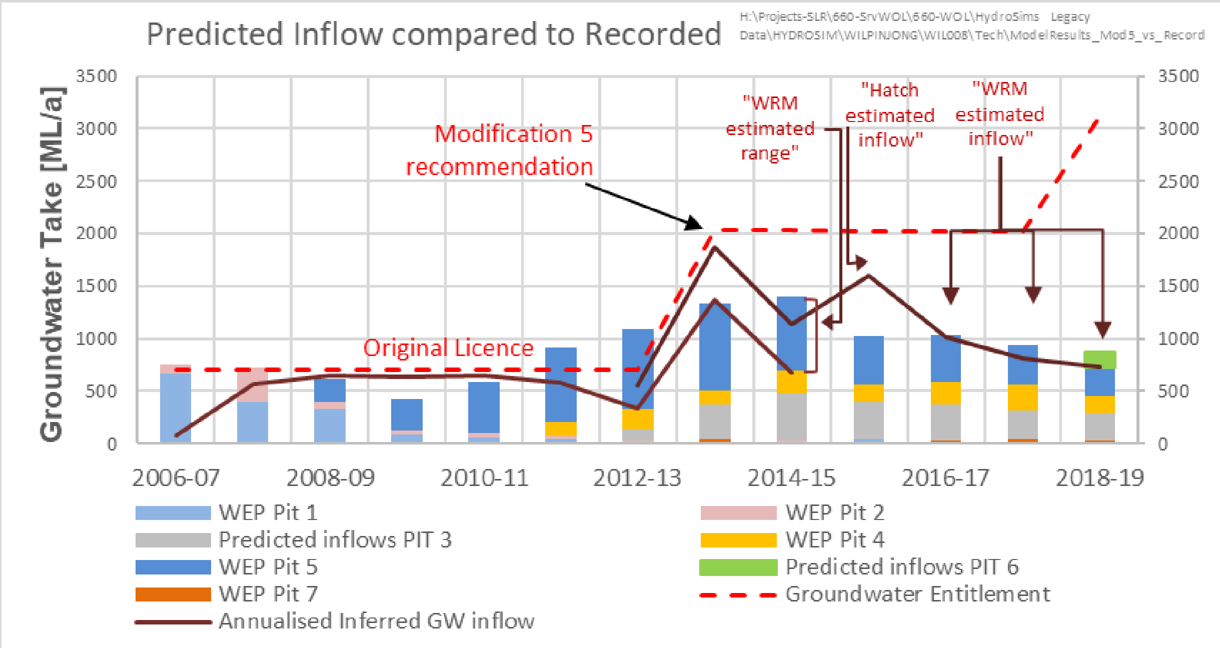
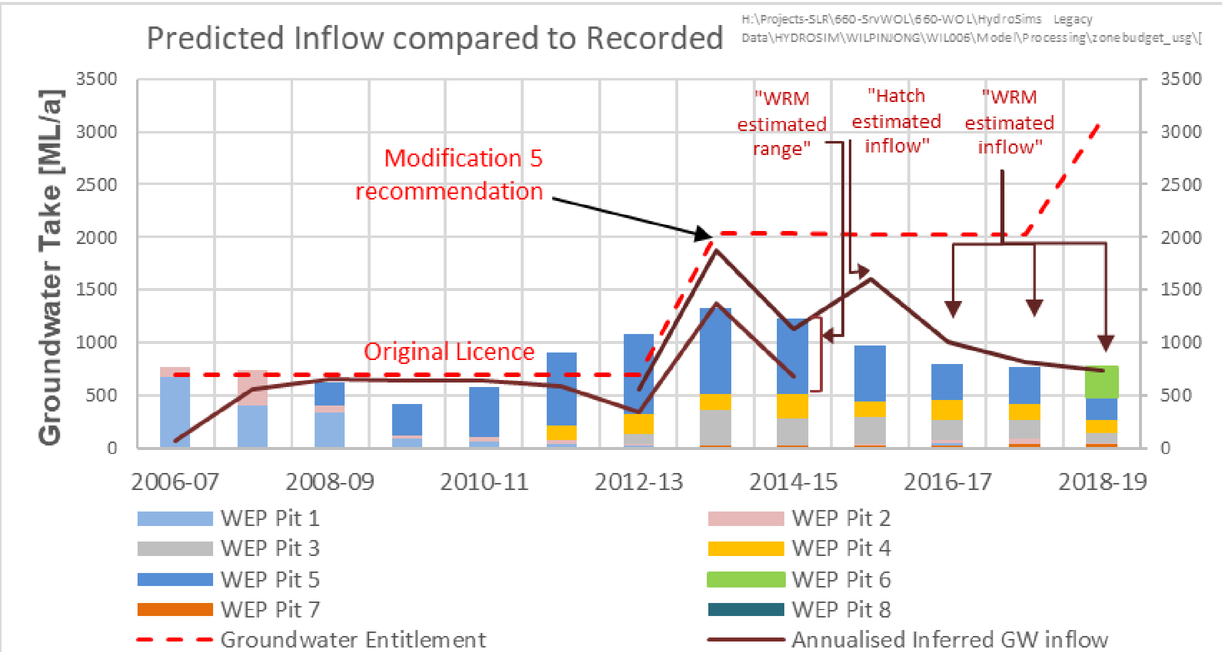


Figure 7 Comparison of Predicted and Pumped Volumes against Groundwater Entitlement for the HydroSimulations (2020) Groundwater Model



5.4 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 (2020) model has predicted the likely alluvial take during the 2018-2019 water year, as shown in **Figure 8** for both Wilpinjong Creek alluvium and Cumbo Creek alluvium. The predicted loss from Wollar Creek is negligible.

For the 2018-2019 water year the additional alluvial water loss, over and above what occurs naturally, is estimated to be about 0.20 ML/day from Wilpinjong Creek alluvium and about 0.16 ML/day from Cumbo Creek alluvium.

This gives a predicted alluvial groundwater take of about 131 ML/year. WCM holds 474ML 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.

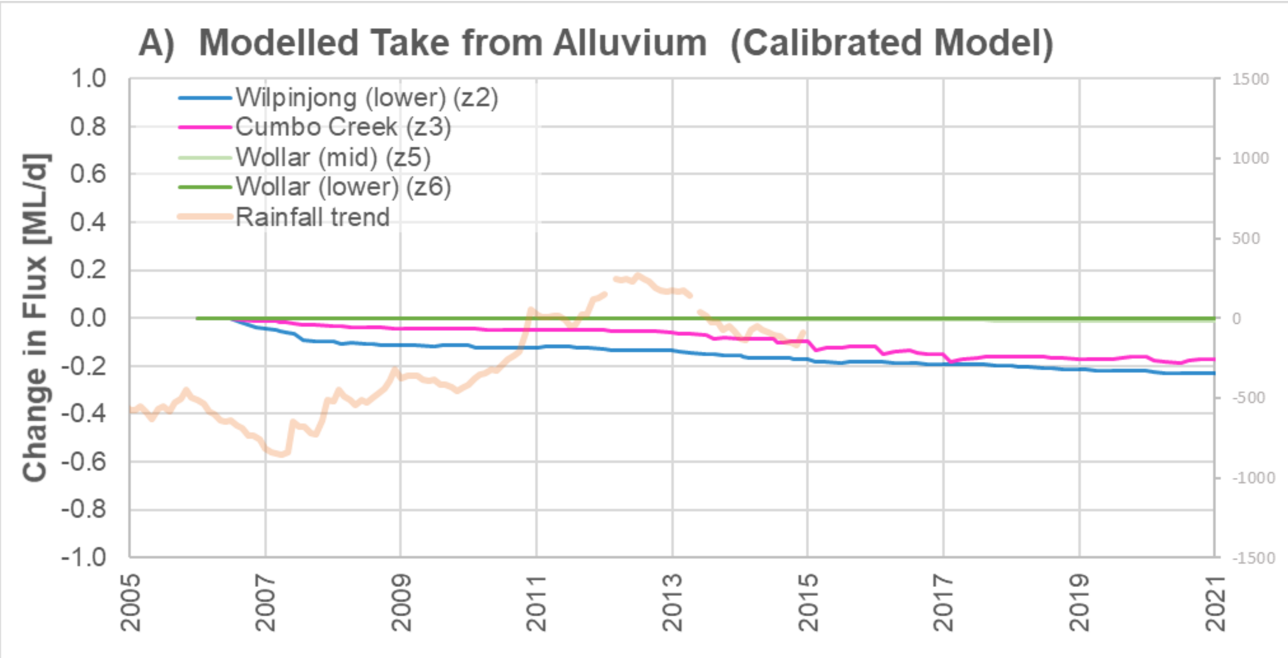


Figure 8 Modelled Take from Alluvium (SLR, 2020)

H:\Projects-SLR\660-SrvWOL\660-WOL\665.10014 Wilpinjong GW\06 SLR Data\05 Modelling\Processing\Alluvial Take\WilpV2TR33_USGzbud_AlluviumTake_v2.xlsx

6 Dewatering Bores

Seven water supply production bores (GWs10, GWs11, GWs12, GWs13 GWs14, GWs15, PB1) designed for water supply 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 has been constructed near a turkey's nest dam north of Pit 2 and Pit 4 during the 2018-19 water year at E: 771,905.67 N: 6,149,868.56 (GDA94 Z55). (**Figure 2**). Of these eight production bores, five were extracted from in the 2018-19 water year (**Table 9**).

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 3121 ML/yr

There have been recorded uses of the water supply production bores during the 2018-19 water year with a total of 56.1 ML.

Compliance of this extraction associated with relevant conditions from the previous licences are addressed in **Section 8.**

Table 9 summarises the pumping records for the dewatering bores during the 2018-19 water year.

Table 9 Pumping records for the dewatering bores for the 2018-19 water year.

Production Bores	2018-19 Water Year
	Total Pumped (ML)
GWs15	8.3
GWs14	8.5
GWs13	2.0
Cumbo shed (PB1)	8.6
Turkey nest	28.6
TOTAL	56.1

\\au.slr.local\Corporate\Projects-SLR\660-SrvWOL\660-WOL\665.10014 Wilpinjong GW\06 SLR Data\02 Site Notes & Measurements\AEMR 2019\Groundwater\04 Borefield\Borefield log_AR2019.xlsx

7 Pit Extraction Licensing Compliance

The following section contains information and analysis reporting against the licence conditions 2, 3, 4 and 8 for pit extraction for the water year 1 July 2018 to 30 June 2019. The conditions are assessed against the WAL 41862 extraction volume of 3121 ML/yr.

7.1 License Condition (2)

'The licence holder must implement the methodology to estimate the annual volume of alluvial water inflow (water budget), the licence holder is likely to extract during the water year. This estimate must be reported annually in the AR.'

The alluvial water inflow (water budget) for the 2018-19 water year is 131 ML/a (See **Section 5.4**).

7.2 License Condition (3)

'The licence holder must include in the AR a map which shows the licensed site and the current areas that mine works have interfered with alluvial sediment.'

Figure 1 shows the progression of mining in the last three years, and the extent of alluvium as mapped on the Western Coalfield 1:100000 geological sheet.

7.3 License Condition (4)

The licence holder must report in the AR:

I) the monitoring results of any groundwater monitoring with respect to this licence;

II) an assessment of compliance with this licence, regarding pit extraction,

III) a summary of new bores or pits constructed during the year;

IV) the trend graphs for monitoring data collected for each bore that is near to the licensed site;

V) a summary of any contingency event (event) that impacted on groundwater during the last report period, including actions taken to remedy the event and any additional monitoring carried out on the event.

VI) provide any recommendations for improvements for the next reporting period.

7.3.1 I) the monitoring results of any groundwater monitoring with respect to this license,

Groundwater monitoring results are presented in the form of time-series charts in **Appendix A** for groundwater level data and **Appendix B** for groundwater level, EC and pH data in relation to trigger level compliance.

7.3.2 II) an assessment of compliance with this license, regarding pit extraction,

See **Section 5.3, Figure 6 and Figure 7** for an assessment of compliance with this licence regarding pit extraction. The groundwater model estimate, and the independent water balance estimate are both less than the authorised volume of 3,121 ML/a associated with WAL41862.

7.3.3 III) summary of new bores or pits constructed during the year,

SLR has been advised that a new bore has been constructed during the 2018-19 water year near the turkey's nest dam north of Pit 2 and Pit 4 (771,905.67 N: 6,149,868.56 (GDA94 Z55).

Coal extraction started from Pit 6 in 2019 and all other coal extraction has come from pits that were already operational prior to the 2018-19 water year.

7.3.4 IV) The trend graphs for monitoring data collected for each bore that is near to the licensed sire,

Annotated trend graphs for alluvial and coal bores at Wilpinjong are provided in **Appendix A**.

7.3.5 V) a summary of any contingency event (event) that impacted on groundwater during the last report period, including actions taken to remedy the event and any additional monitoring carried out on the event,

See **Section 3.1** and **Table 5** for an assessment of groundwater level and quality in relation to trigger levels from the most recent GWMP (Peabody, 2017).

Trigger exceedances for minimum groundwater level occurred at alluvium monitoring bores GWa2, GWa3, GWa4, GWa5, GWa11, GWa12, GWa14 and GWa15.

Trigger exceedances for groundwater EC occurred at coal monitoring bores GWc1, GWc3, and GWc5.

No exceedance of groundwater pH occurred.

To the best of SLR's knowledge, no actions have yet been undertaken to remedy the events recorded in **Section 3**.

To the best of SLR's knowledge, no additional monitoring has been undertaken in response to the events in **Section 3**.

7.3.6 VI) provide any recommendations for improvements for the next reporting period.

- Drilling of deeper bores at alluvial locations that are frequently observed as dry (GWa1, GWa3, GWa6).
- Ensuring no obstructions within bore GWa1 that may be preventing accurate water measurements from being collected.
- Re-instatement of trigger level within GWMP for GWa6 now that correct bore depth can be used.
- Measuring volume of groundwater extracted by the dewatering/ water supply bores quarterly or monthly to allow for more accurate calculation of total extracted volume at the end of each water year (preferably including a recording of volume close to 30 June). This would allow for more accurate estimates of extracted volume during the entire water year.

7.4 License Condition (8)

The volume of groundwater extracted from the works authorised by this license and by license(s) WAL 41862 shall not exceed 3121 megalitres in any 12-month period commencing 1st July.

Sections 5.1 - 5.3- identify that both the WRM (2019) inferred groundwater extraction at 757 ML/year and SLR (2020) modelled inflow at 824 ML/year for the 2018-19 water year fall below the 3,121 megalitres allowed in any 12-month period as required by this licence condition. To note, the groundwater extracted by the dewatering bores during the water year 2018-19 (56.1 ML) have been added to the WRM (2019) and SLR (2020) modelled estimates.

8 Bore Dewatering License Compliance

The following section contains information and analysis reporting against the licence conditions 7, 9 and 10 for dewatering bores for the water year from 1 July 2018 to 30 June 2019. These conditions are assessed against the new consolidated licence WAL 41862.

8.1 License Condition (7)

The licence holder must report in the AR:

I) the monitoring results of any groundwater monitoring with respect to this licence;

II) an assessment of compliance with this licence, regarding water extraction,

III) a summary of new bores or pits constructed during the year;

IV) the trend graphs for monitoring data collected for each bore that is near to the licensed site;

V) a summary of any contingency event (event) that impacted on groundwater during the last report period, including actions taken to remedy the event and any additional monitoring carried out on the event.

VI) provide any recommendations for improvements for the next reporting period.

The 2019 AR response relevant to these bore dewatering licence conditions is essentially the same as is addressed in **Section 7.3** for the pit extraction licence condition [4].

8.1.1 I) the monitoring results of any groundwater monitoring with respect to this license

Groundwater monitoring results are presented in the form of time-series charts in **Appendix A** for groundwater level data and **Appendix B** for groundwater level, EC and pH data in relation to trigger level compliance.

8.1.2 II) an assessment of compliance with this license, regarding water extraction

See **Section 6** where it is noted that there have been recorded uses of the dewatering bores during the 2018-19 water year. Accordingly, groundwater extraction at these bores, and including groundwater reporting to WCM Pits is less than the authorised volume of 3121 ML/a.

8.1.3 III) a summary of new bores or pits constructed during the year

See **Section 6,** SLR has been advised that a new bore has been constructed during the 2018-19 water year near the turkey nest dam at E: 771,905.67 N: 6,149,868.56 (GDA94 Z55).

8.1.4 IV) the trend graphs for monitoring data collected for each bore that is near to the licensed site

Annotated trend graphs for alluvial and coal bores at Wilpinjong, close to the dewatering bores, are provided in **Appendix A.**

8.1.5 V) a summary of any contingency event (event) that impacted on groundwater during the last report period, including actions taken to remedy the event and any additional monitoring carried out on the event

Although dewatering occurred during the water year 2018-19, no event occurred.

8.1.6 VI) provide any recommendations for improvements for the next reporting period

No recommendations are necessary while the bores remain unused or no event occurred.

8.2 License Condition (9)

The volume of groundwater extracted from the works authorised by this licence shall not exceed 110 megalitres in any 12-month period commencing 1st July.

Licence Condition 9 is no longer relevant under WAL 41862. Please refer to **Sections 5.1** and **5.3** for additional detail on extract volumes of water during the 2018/19 water year.

8.3 License Condition (10)

The volume of groundwater extracted from the works authorised by this license and by license(s) 20BLL70148, 20BLL70149, 20BLL70150, 20BLL7015 I, 20BLL70152, 20BLL70153 shall not exceed 770 megalitres in any 12-month period commencing 1st July.

Licence Condition 10 is no longer relevant under WAL 41862. Please refer to **Sections 5.1** and **5.3** for additional detail on extract volumes of water during the 2018/19 water year.

9 Recommendations

Due to the difficulty of separating mining from climatic related declines in groundwater level for the past 3 Annual Review reports (2017, 2018, 2019), SLR recommends that a trigger investigation be undertaken that incorporates monitoring data following the February 2020 rainfall event. This investigation should revise the cause and effect analysis provided in this report to incorporate additional data from early 2020, and will provide an indication of the likely cause of recent trigger exceedances.

If there is sufficient water to sample at the spoil monitoring locations (**Section 2.2**), full chemical analysis is recommended to be undertaken for every successful sample. 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 (6 per year).

10 References

AGE (2005) *Wilpinjong Coal Project Groundwater Impact Assessment*. May 2005.

DPI, 2019, NSW DPI State Seasonal Update for December 2019 , website https://www.dpi.nsw.gov.au/climate-and-emergencies/seasonal-conditions/ssu/december-2019, accessed 26 March 2020

Hatch (2017) - *2016 Water Balance Model Update Baseline OPSIM Model Setup* for Wilpinjong Coal Pty Ltd. 31 March 2017

HydroAlgorithmics (2014) *AlgoMesh User Guide*. Version 1.0.4.

HydroSimulations (2013) *Wilpinjong Coal Mine Modification - Groundwater Assessment*. Report HC2013/11 for Wilpinjong Coal Pty Ltd. July 2013.

HydroSimulations (2014) *Review of Hydrogeological Data for Wilpinjong Licensing Audit.* Report HC2014/21 for Wilpinjong Coal Pty Ltd. September 2014.

HydroSimulations (2015a) *Review of Hydrogeological Data for Wilpinjong Licensing Audit.* Report HS2015/38 for Wilpinjong Coal Pty Ltd. October 2015.

HydroSimulations (2015b) *Wilpinjong Extension Project - Groundwater Assessment*. Report HS2015/42 for Wilpinjong Coal Pty Ltd. November 2015.

HydroSimulations (2018) *Wilpinjong Annual Review Groundwater Analysis*. Report HS2018/07 for Wilpinjong Coal Pty. Ltd. March 2018.

Peabody (2016) *Wilpinjong Coal Groundwater Monitoring Program.* Document No. WA-ENV-MNP-0006 May 2016.

Peabody (2017) *Wilpinjong Coal Groundwater Management Plan.* Document No. WI-ENV-MNP-0041 August 2017.

SLR (2020) Wilpinjong Coal Mine Groundwater Model Update Report, prepared for Wilpinjong Coal Pty Ltd, Report no. 665.10014-R01-v0.1

WRM Water and Environment (2015) *Estimation of Wilpinjong pit groundwater extraction 2014-2015*. WRM ref 1052-03-K1. October 2015.

WRM Water and Environment (2018) *Wilpinjong Mine – Site Water Balance for 2017 Annual Review*. WRM Job No 1 052-08-B. March 2018

WRM Water and Environment (2019) *Wilpinjong Mine – Site Water Balance for 2017 Annual Review.* WRM ref 1052-10-B. February 2019.

WRM Water and Environment (2019) *Wilpinjong Mine – Water balance model update 2019 – Model update & calibration report.* WRM ref 1052-10-C1. May 2019.

WRM Water and Environment (2019) *Wilpinjong Mine –2019 site water balance addendum.* WRM ref 1052-10-E. October 2019.

APPENDIX A

Groundwater Level Hydrographs

Figure 9 Alluvial Groundwater Hydrograph at GWa5 between Pit 2 and Pit 3, adjacent to Cumbo Creek

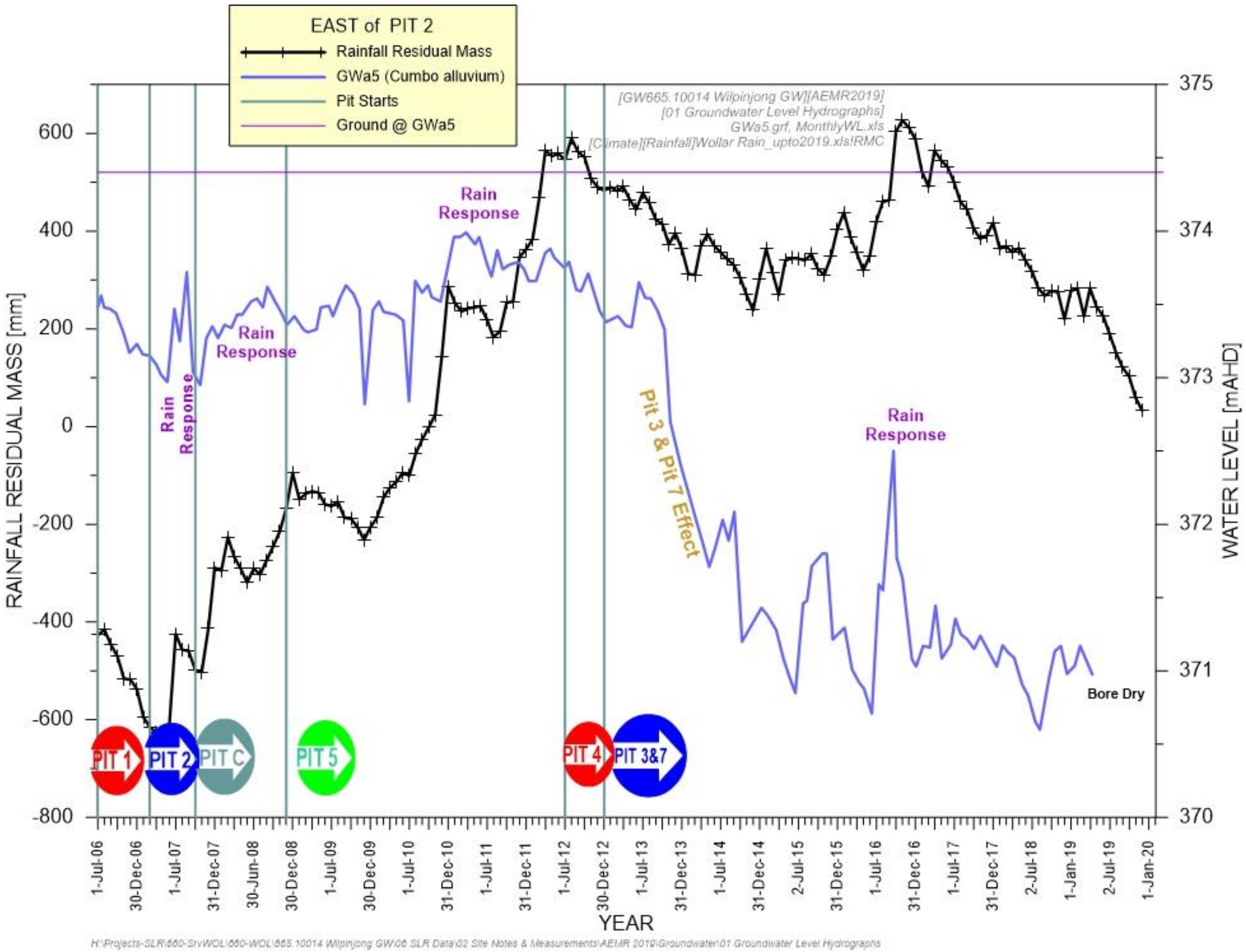


Figure 10 Groundwater Hydrographs at GWa2 and GWc1 at 0.3 km North-West of Pit 1

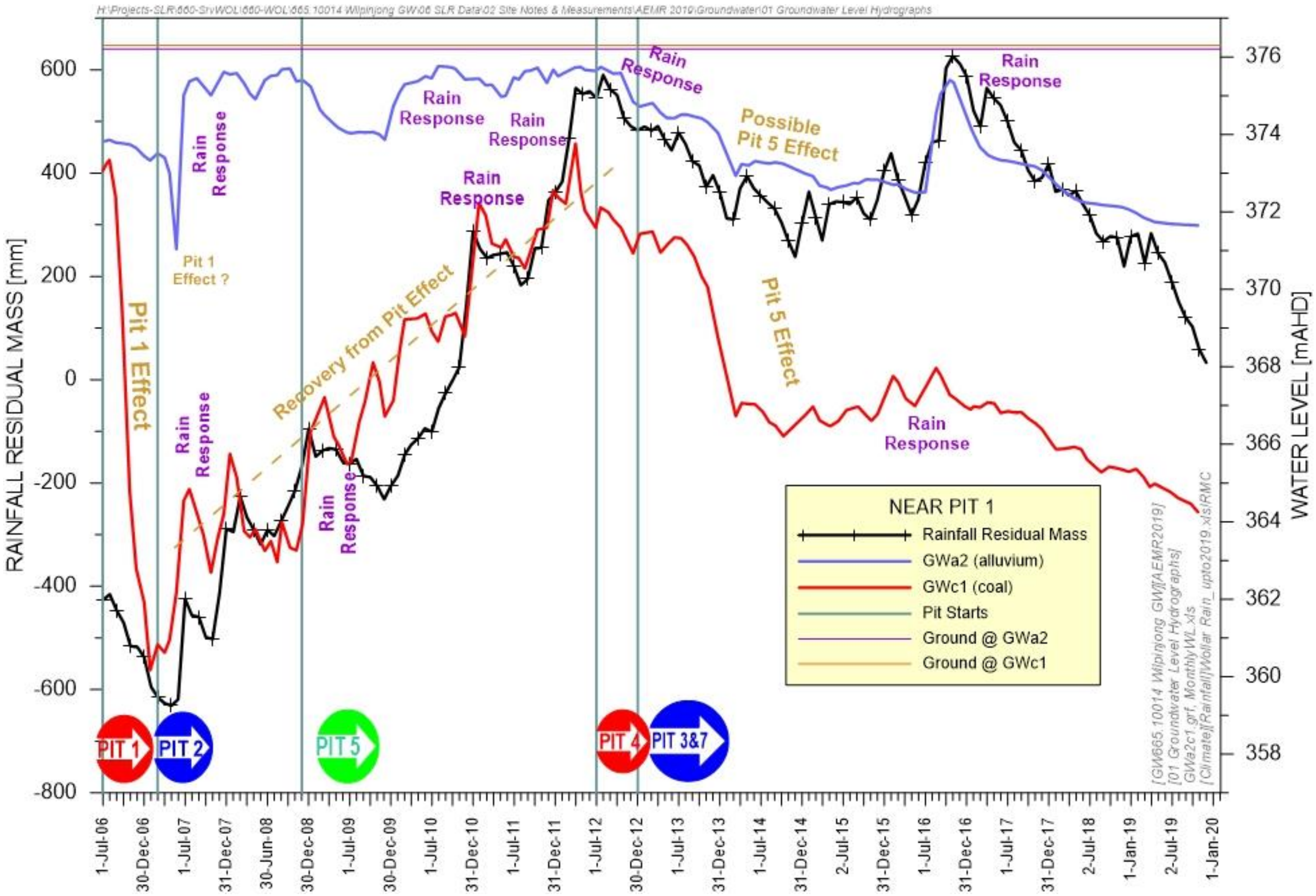


Figure 11 Groundwater Hydrographs at GWa10 and GWc10 at 0.3 km North-East of Pit 1

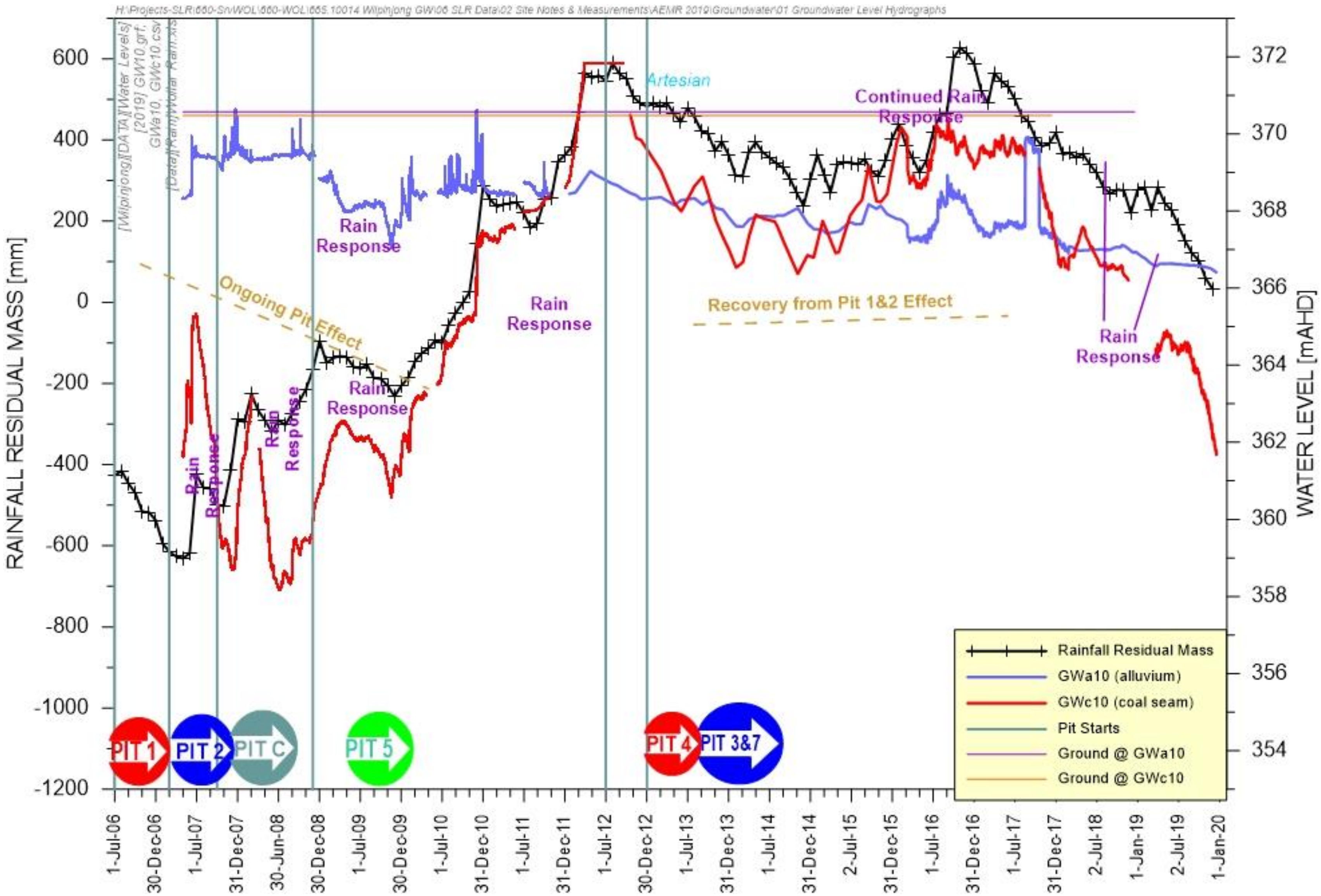


Figure 12 Groundwater Hydrographs at GWa11 and GWc11 at 0.3 km North of Pit 2

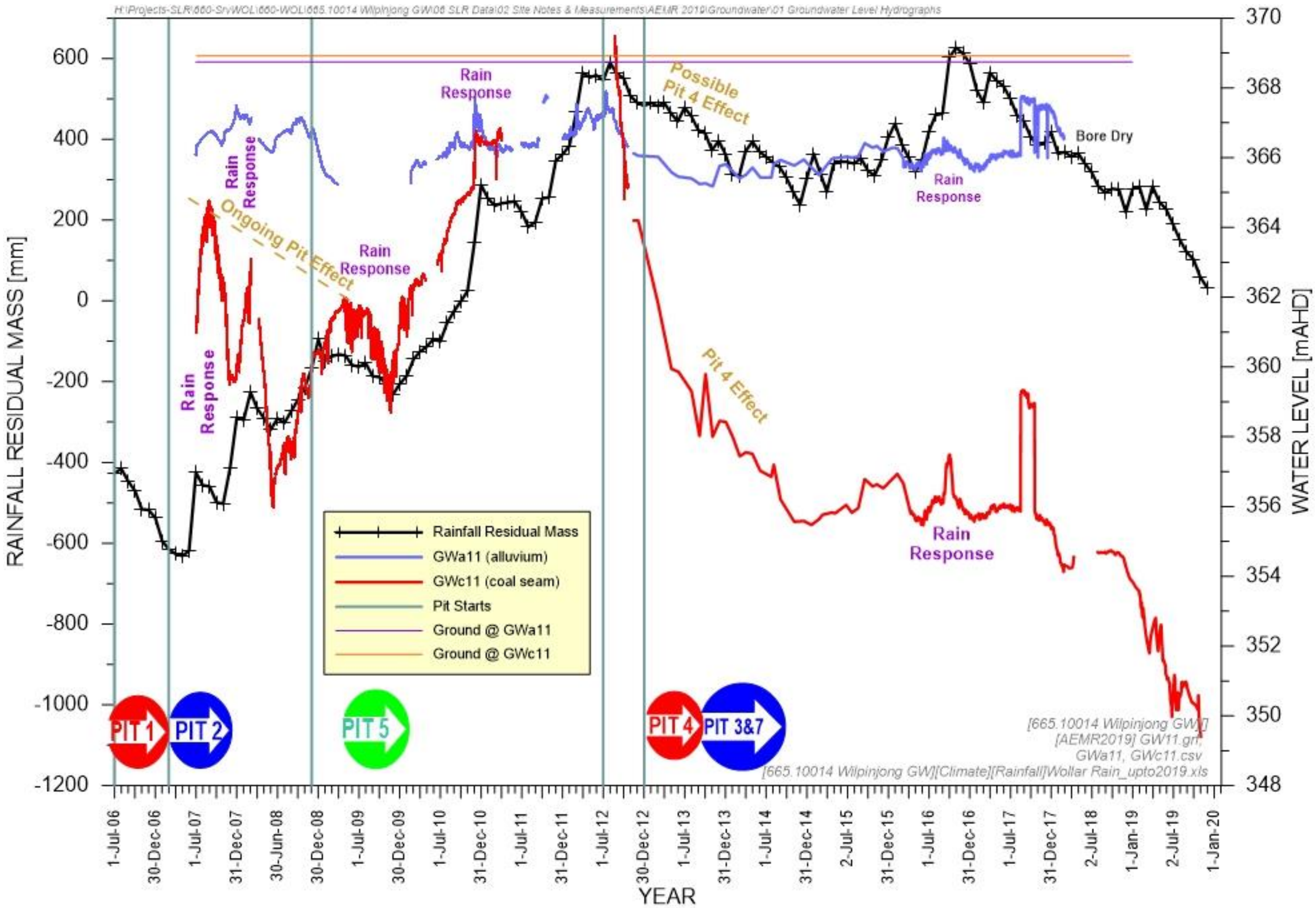


Figure 13 Groundwater Hydrographs at GWa12 and GWc12 at 0.5 km North of Pit 4

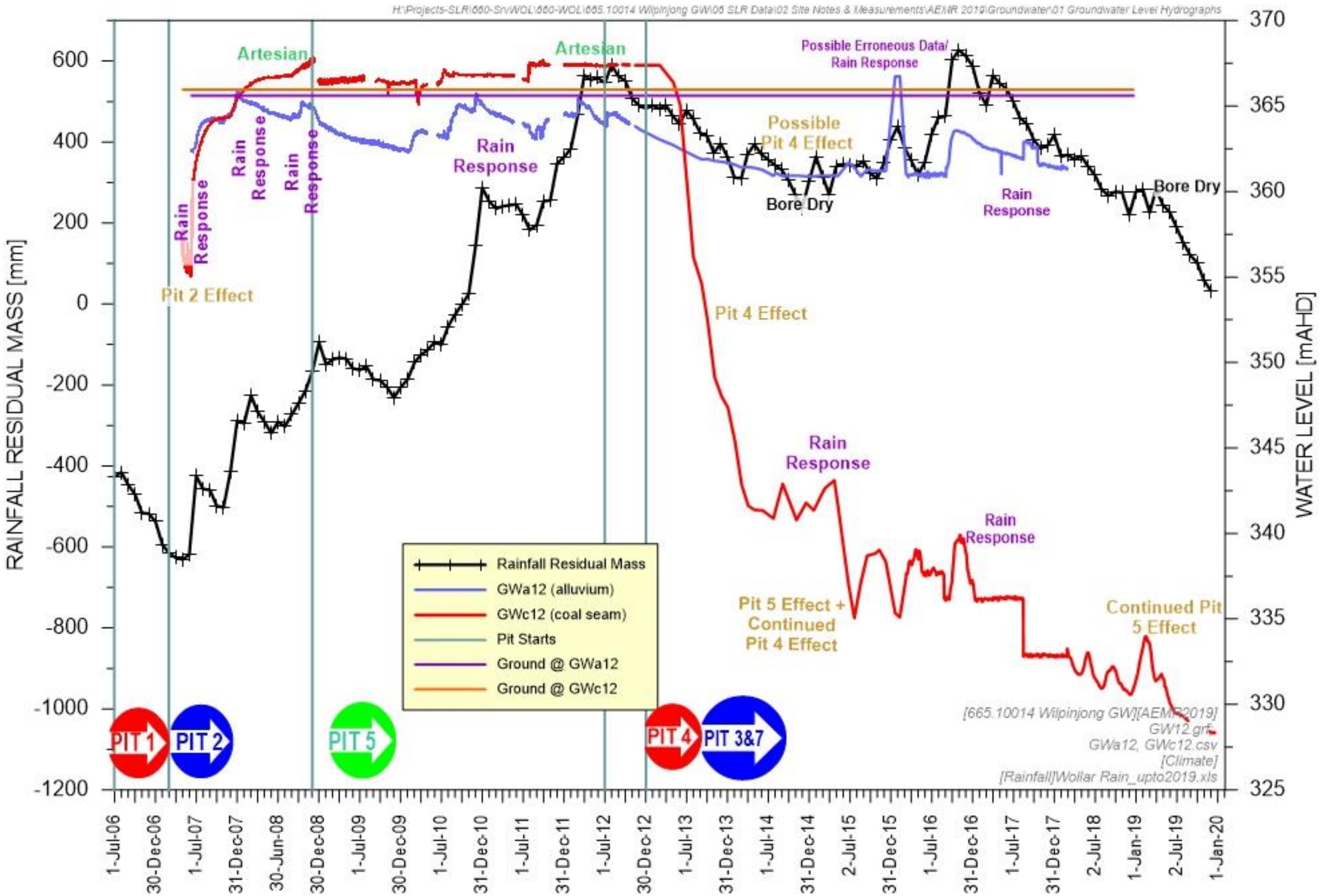


Figure 14 Groundwater Hydrographs at GWa3 and GWc2 at 0.45 km North of Pit 4

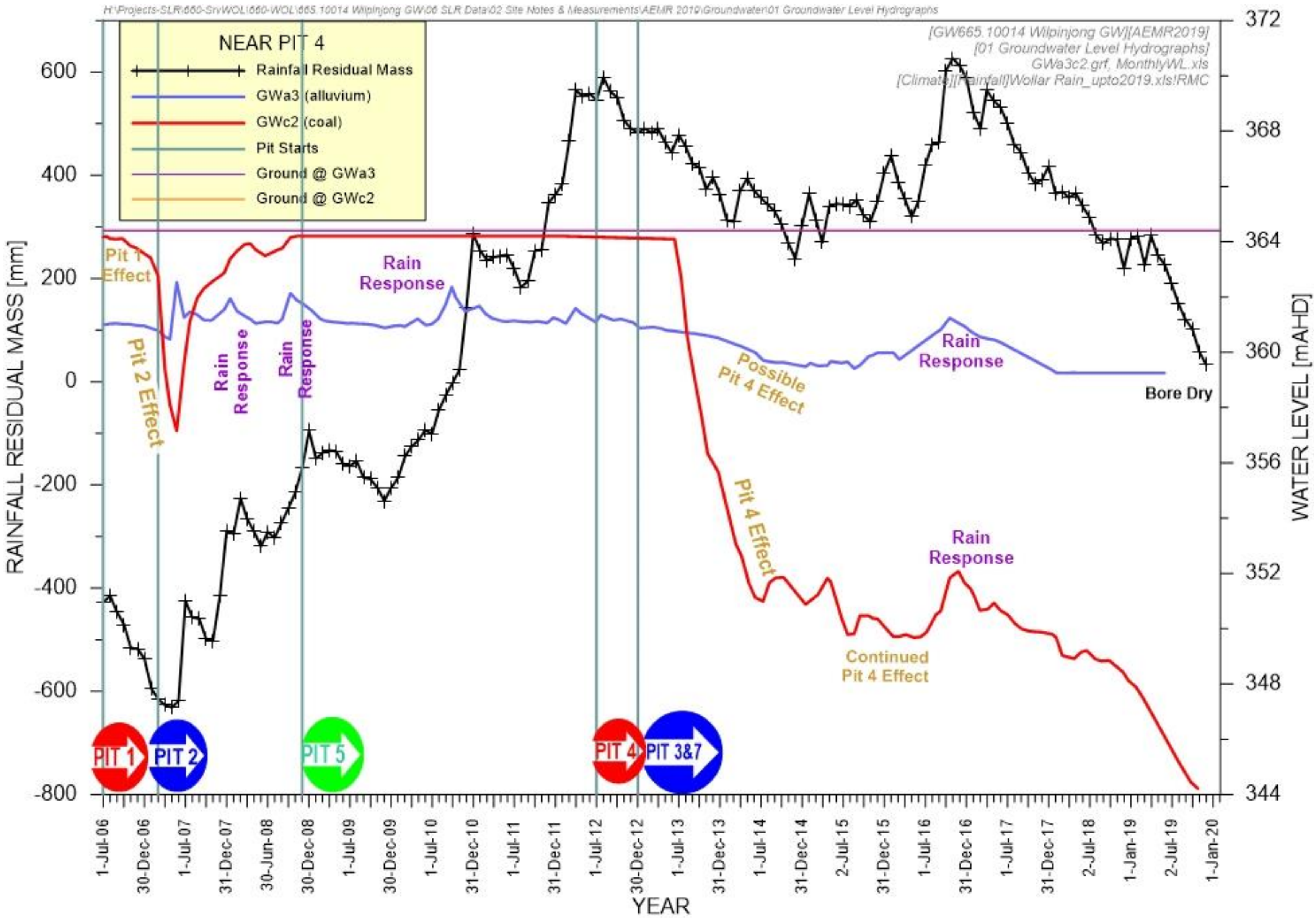


Figure 15 Groundwater Hydrographs at GWa14 and GWc14 at 0.3 km North of Pit 4

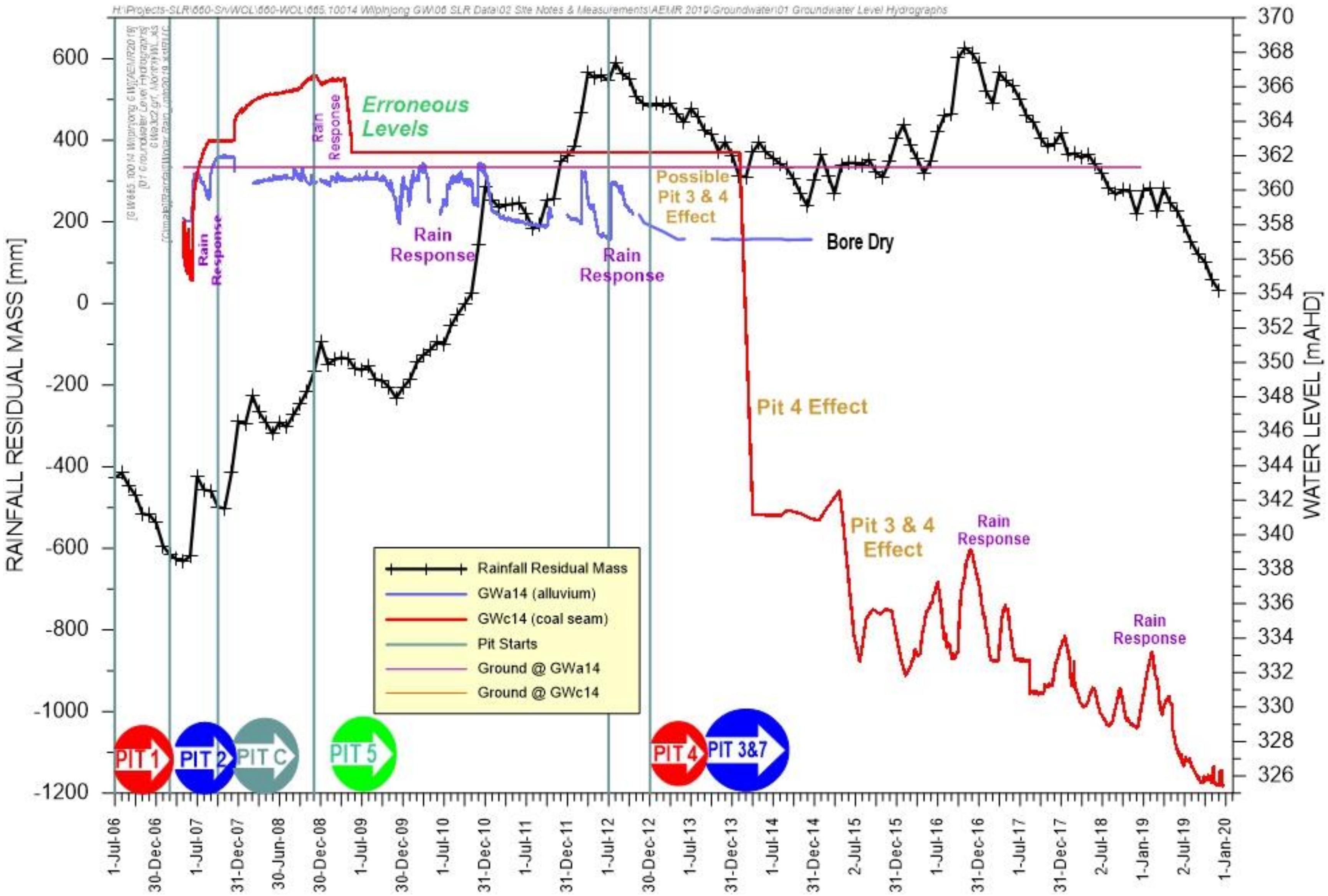


Figure 16 Groundwater Hydrographs at GWa6 and GWc3 at Northern Junction of Pits 3 and 4, adjacent to Cumbo Creek

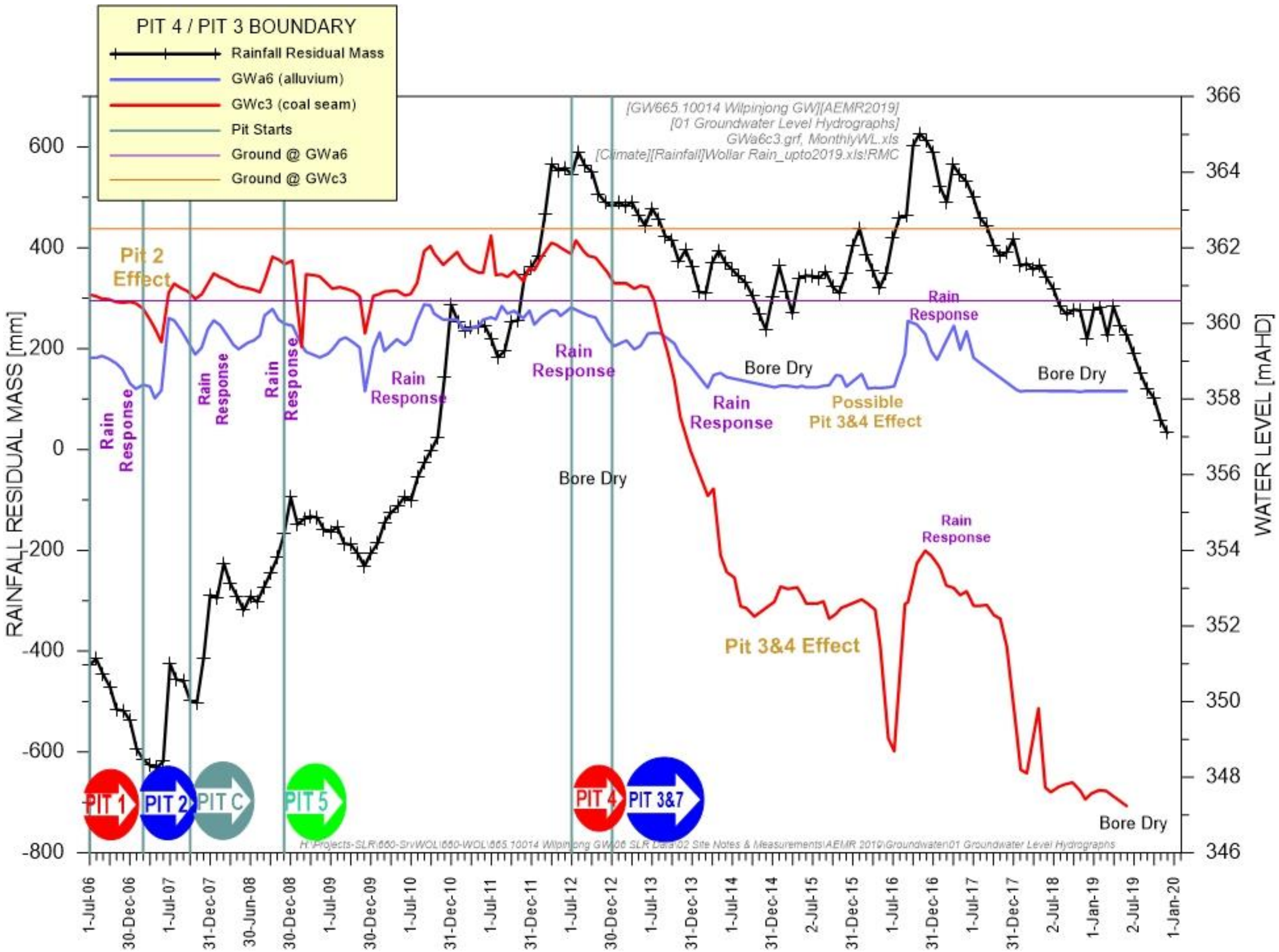


Figure 17 Groundwater Hydrographs at GWa15 and GWc15 at 0.2 km North of Pit 3

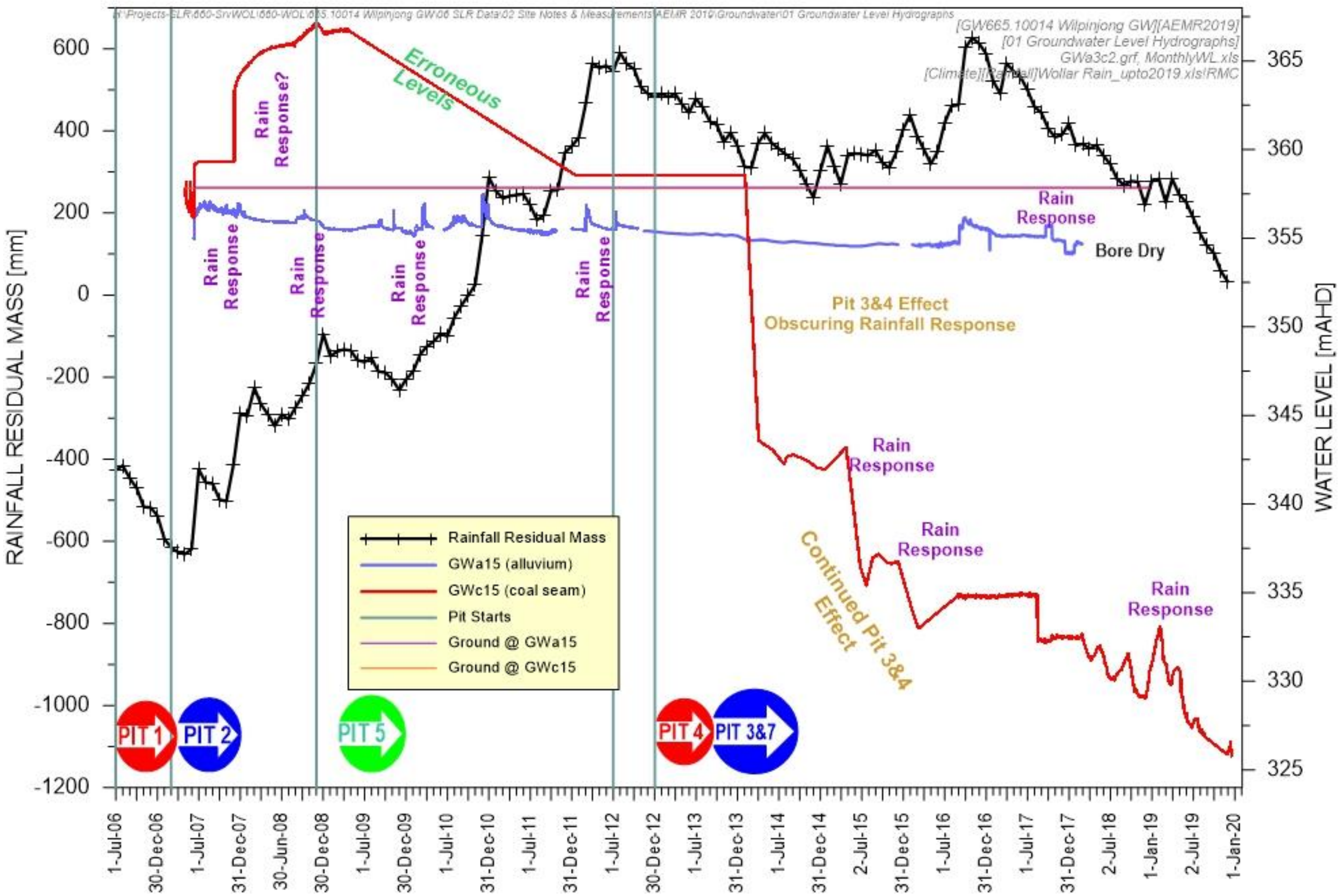


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Figure 18 Groundwater Hydrographs at GWa7 and GWc4 near the Confluence of Wilpinjong Creek and Wollar Creek

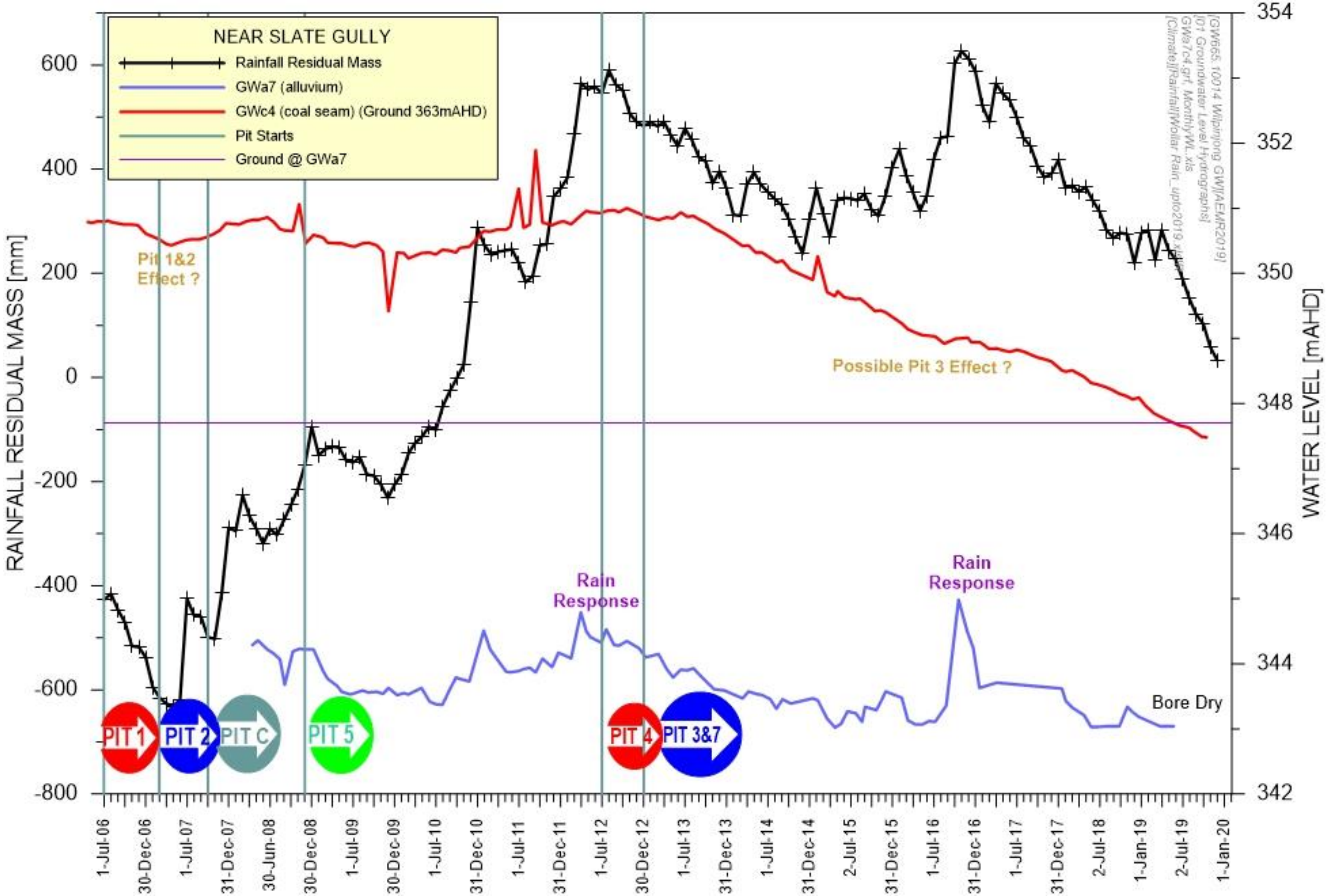


Figure 19 Groundwater Hydrographs at GWa8 and GWc5 near Wollar

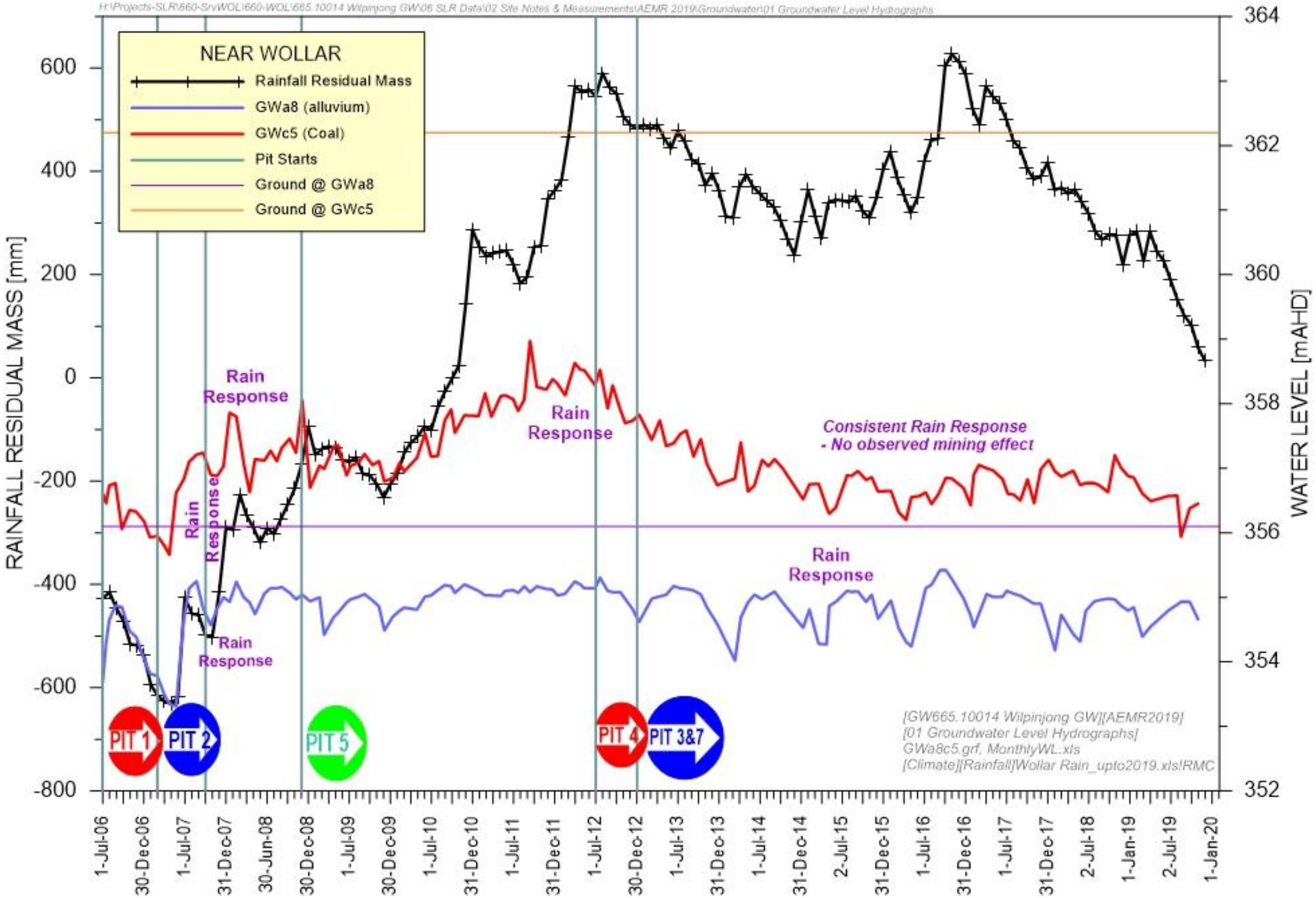


Figure 20 Groundwater Hydrographs at GWa32 and GWc32 adjacent to Wollar Creek

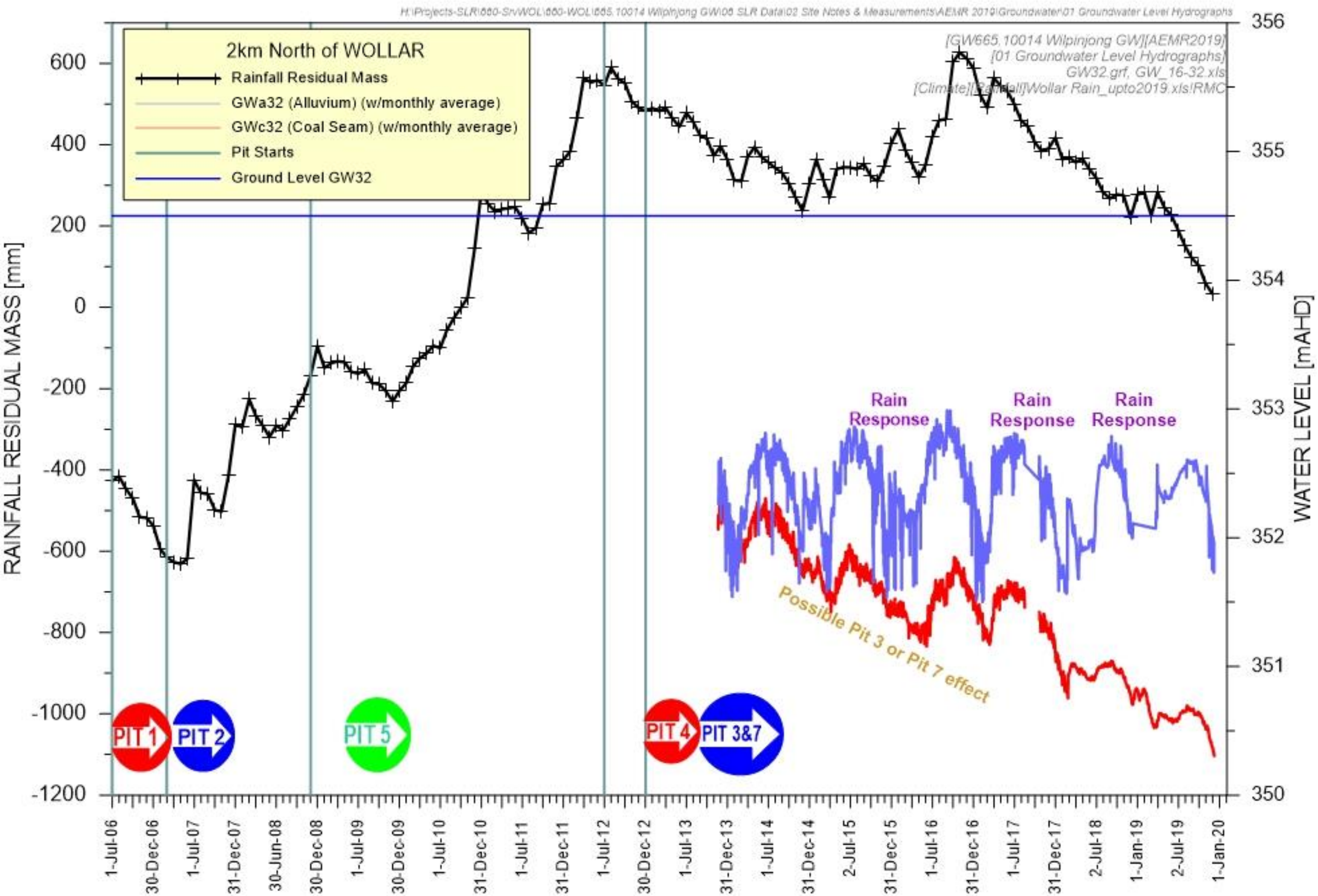


Figure 21 Groundwater Hydrographs at GWa22 and GWc22 adjacent to Cumbo Creek

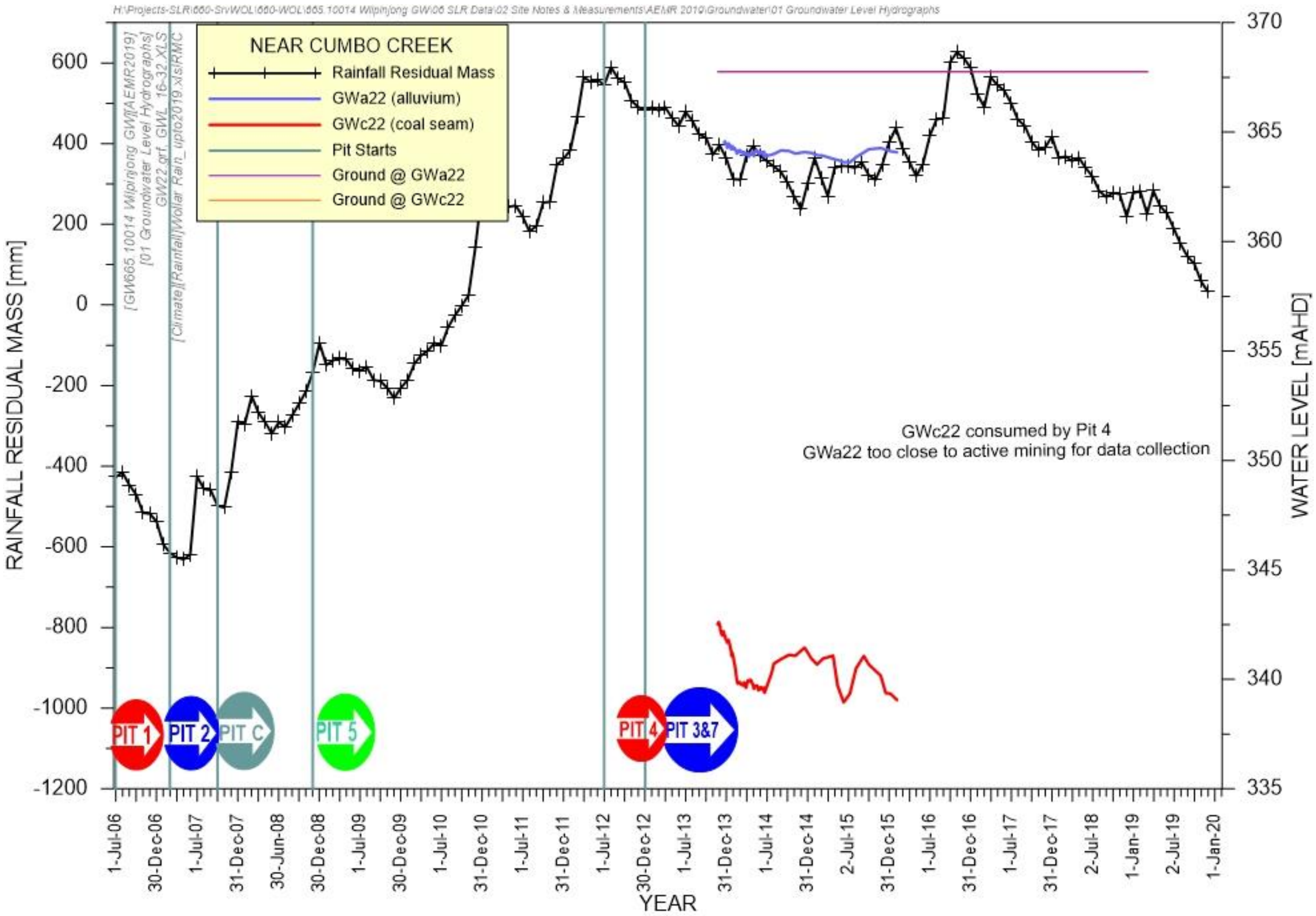


Figure 22 Groundwater Hydrographs at GWc28 and GWc29 in Slate Gully

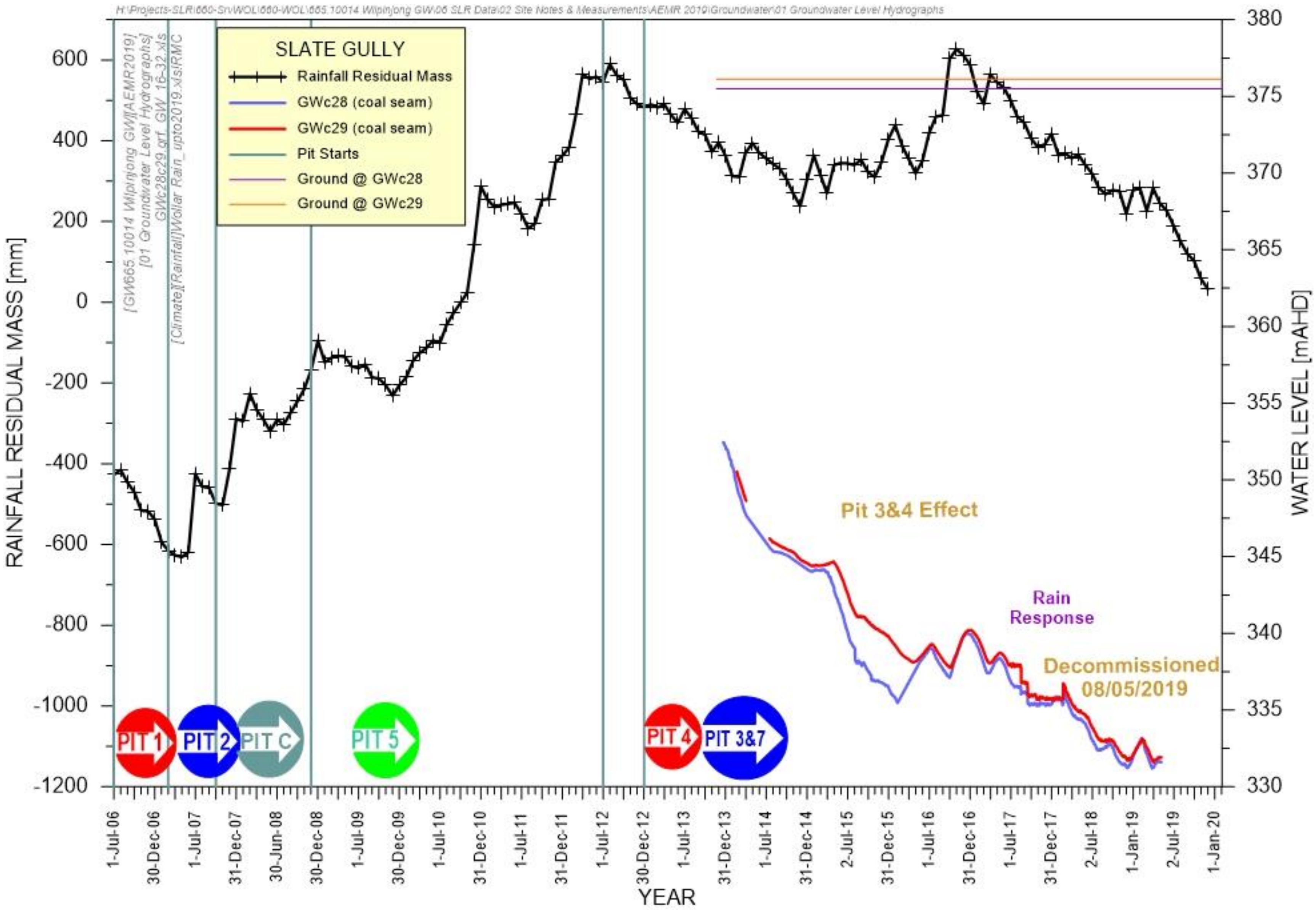


Figure 23 Groundwater Hydrographs at GWc16, GWc17 and GWc26 at Pit 6 and North of Pit 5

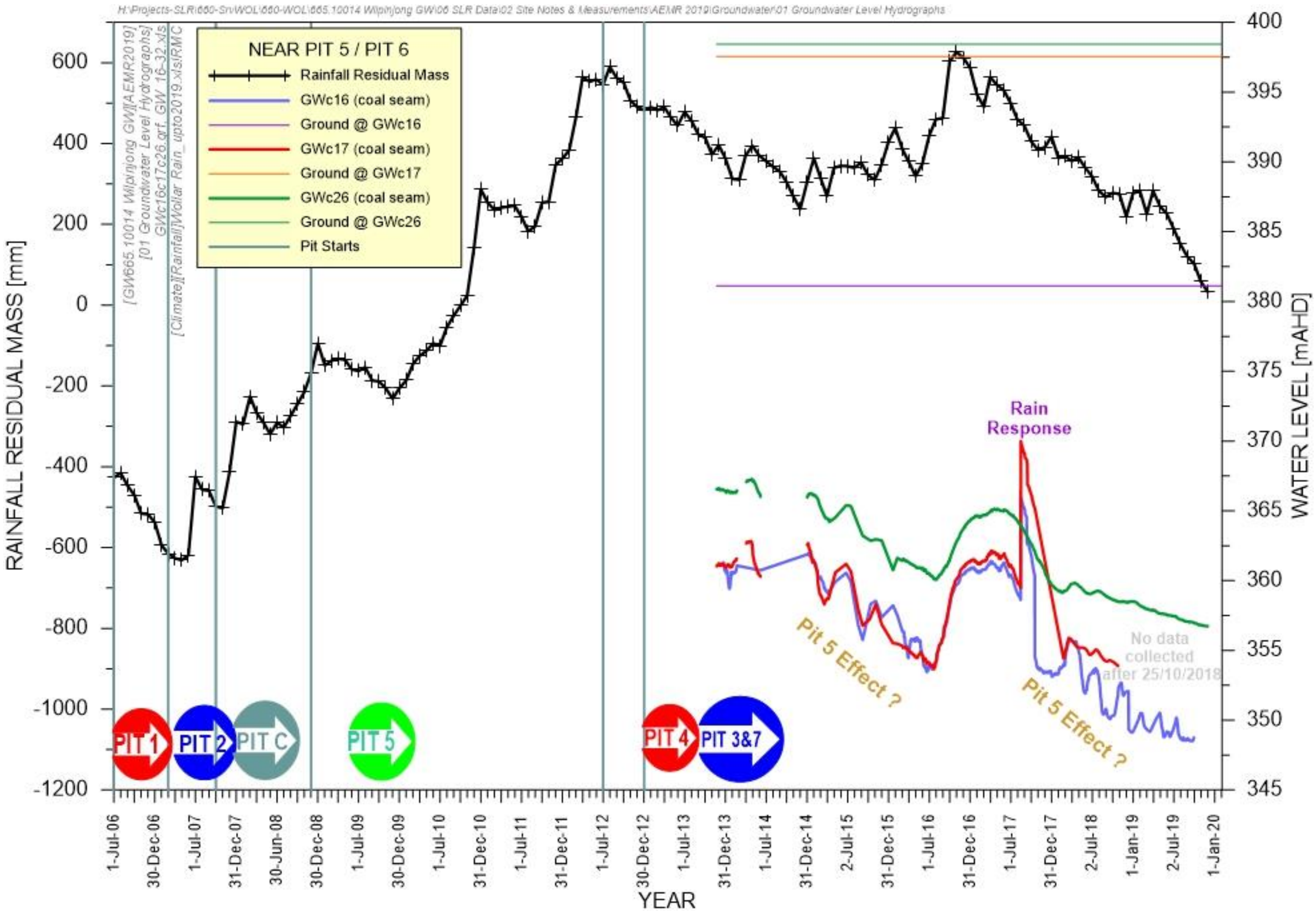


Figure 24 Groundwater Hydrographs at GWc24, GWc25 and GWc27 at the Southern Lease Boundary

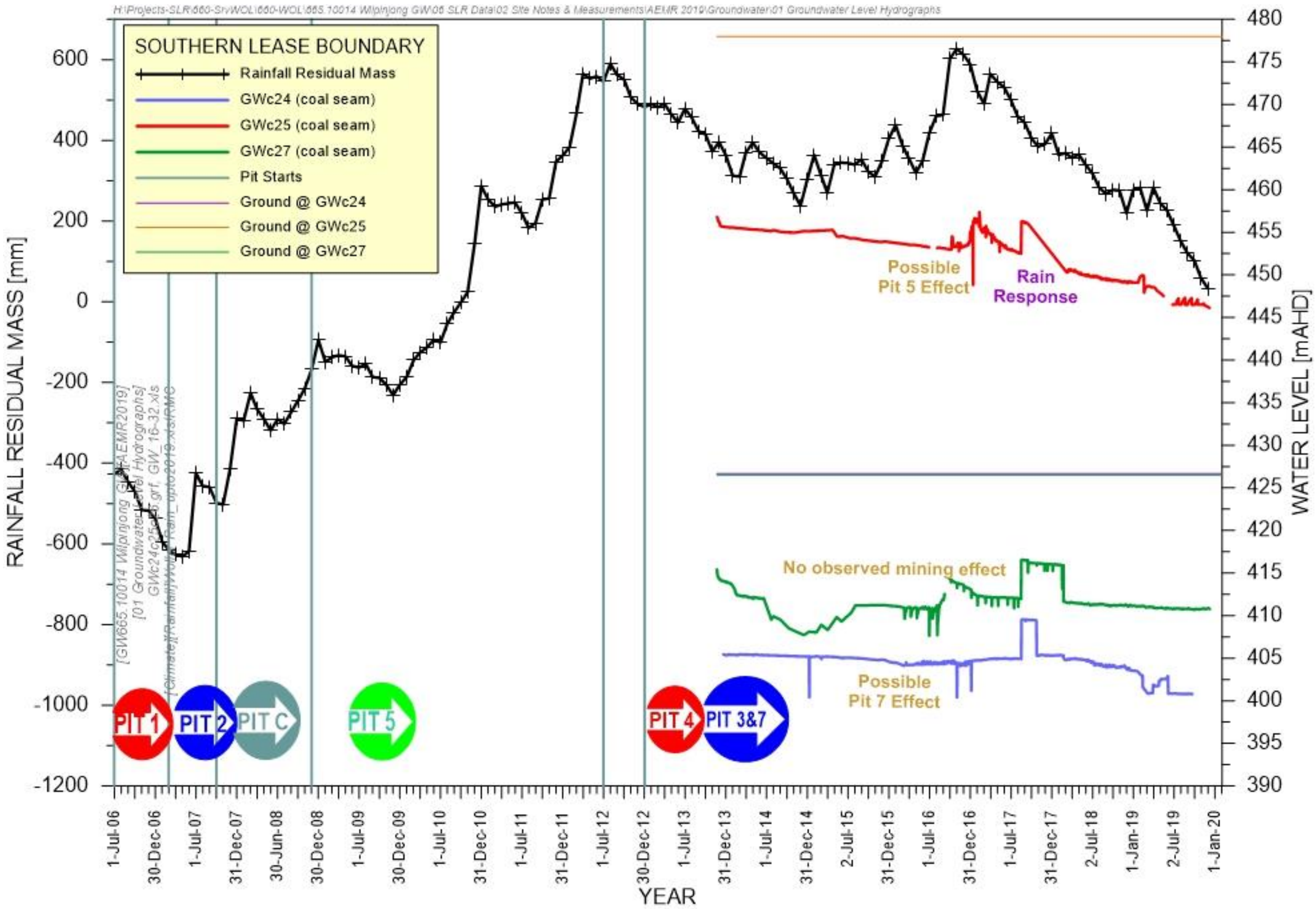


Figure 25 Groundwater Hydrographs at GWc26 GWc33 near Pit 6 and North of Pit 5

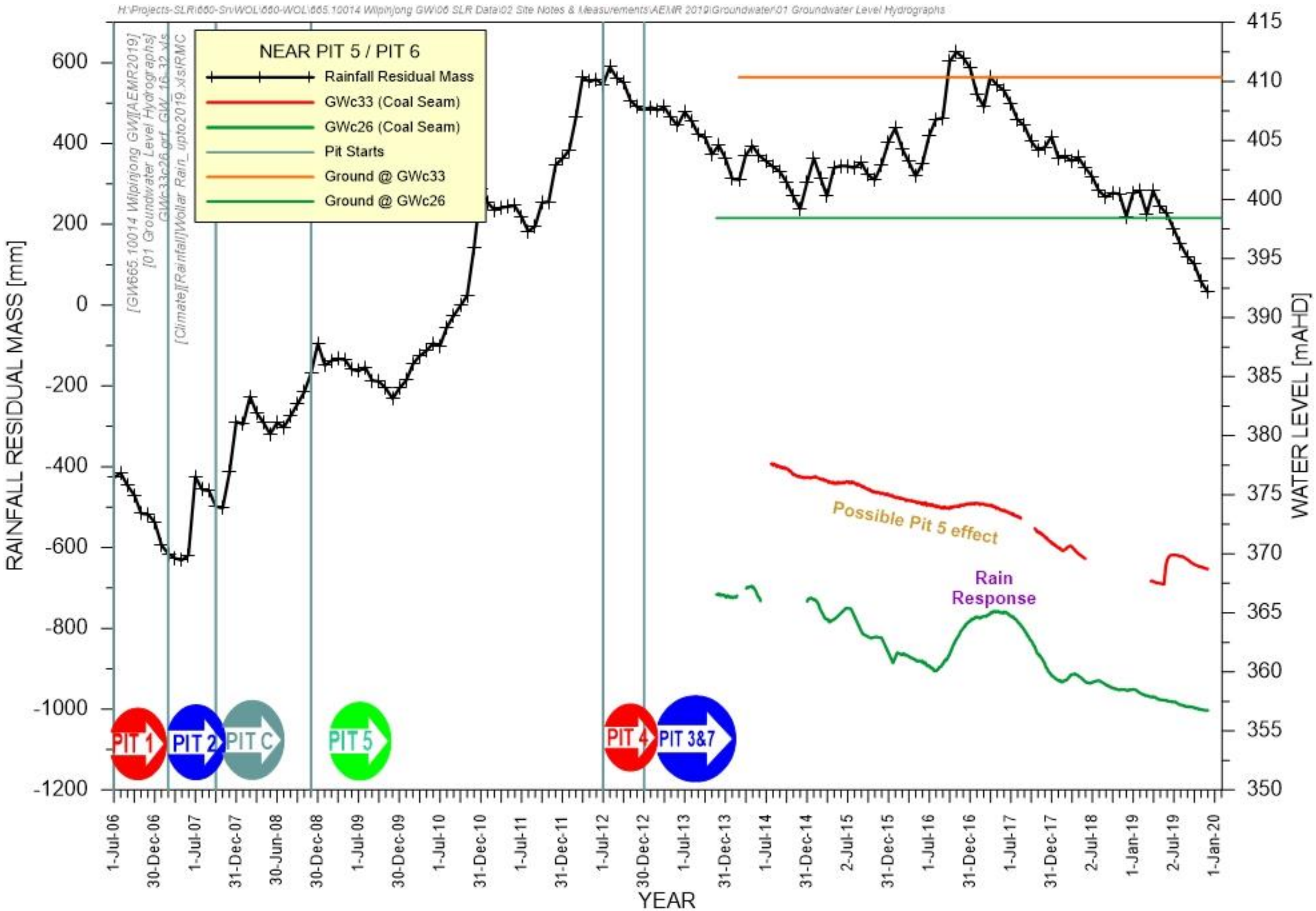


Figure 26 Groundwater Hydrographs at GWa34 and GWc34 adjacent to Wollar Ck ~3km south of Wollar

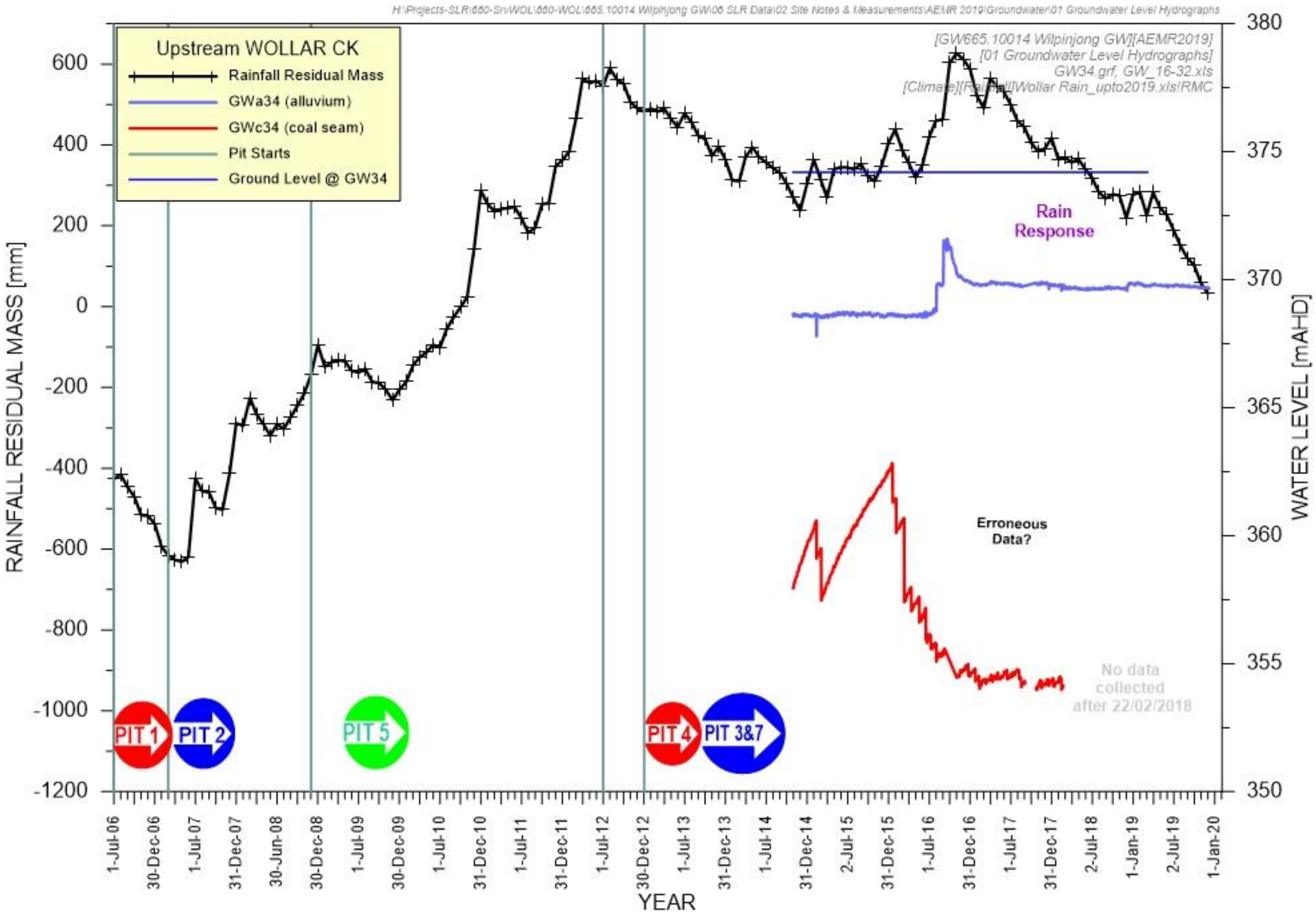


Figure 27 Groundwater Hydrographs at GWc30 and GWc31 within proposed Pit 8 boundary

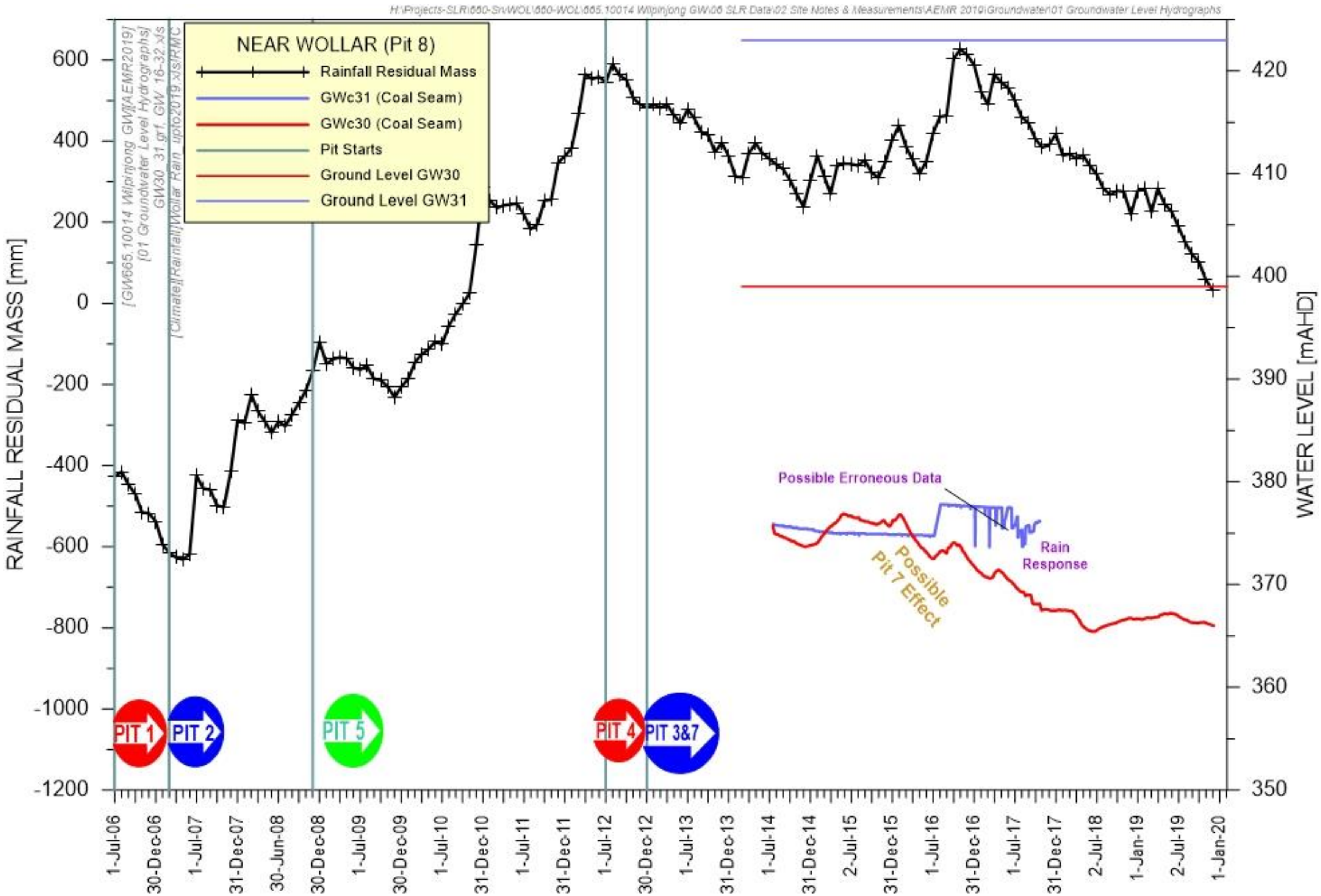
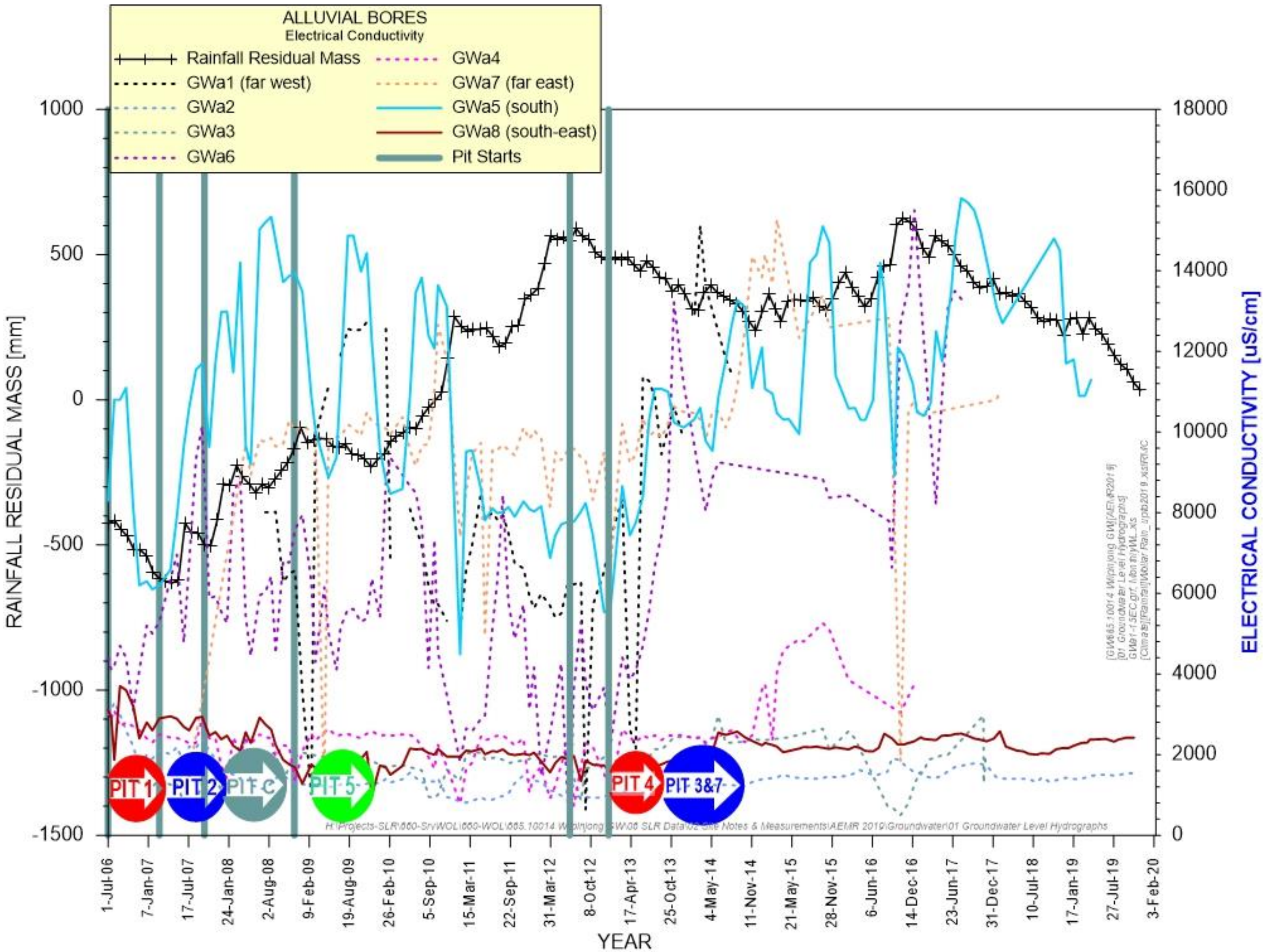
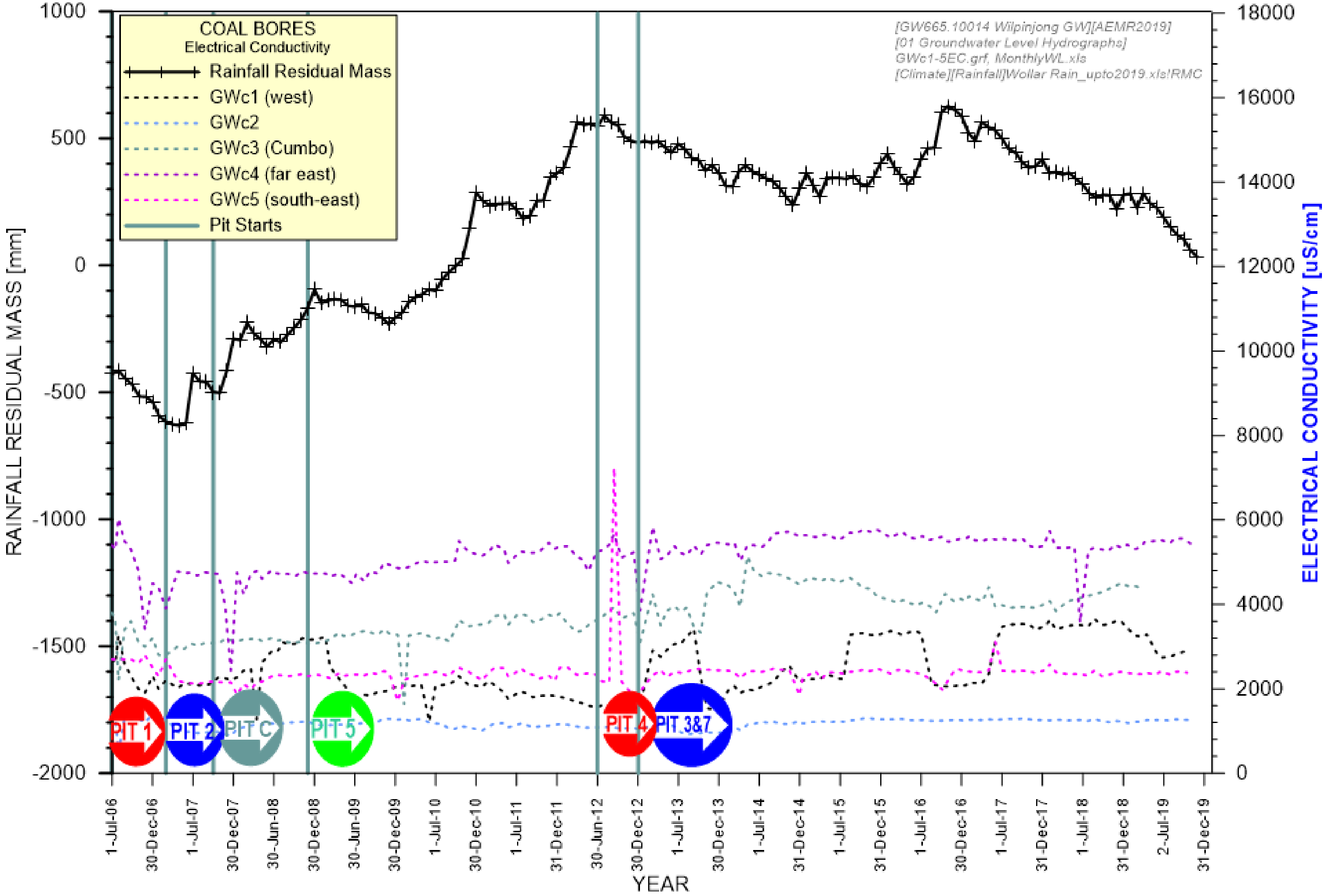


Figure 28 Alluvial Groundwater EC trends



SLR

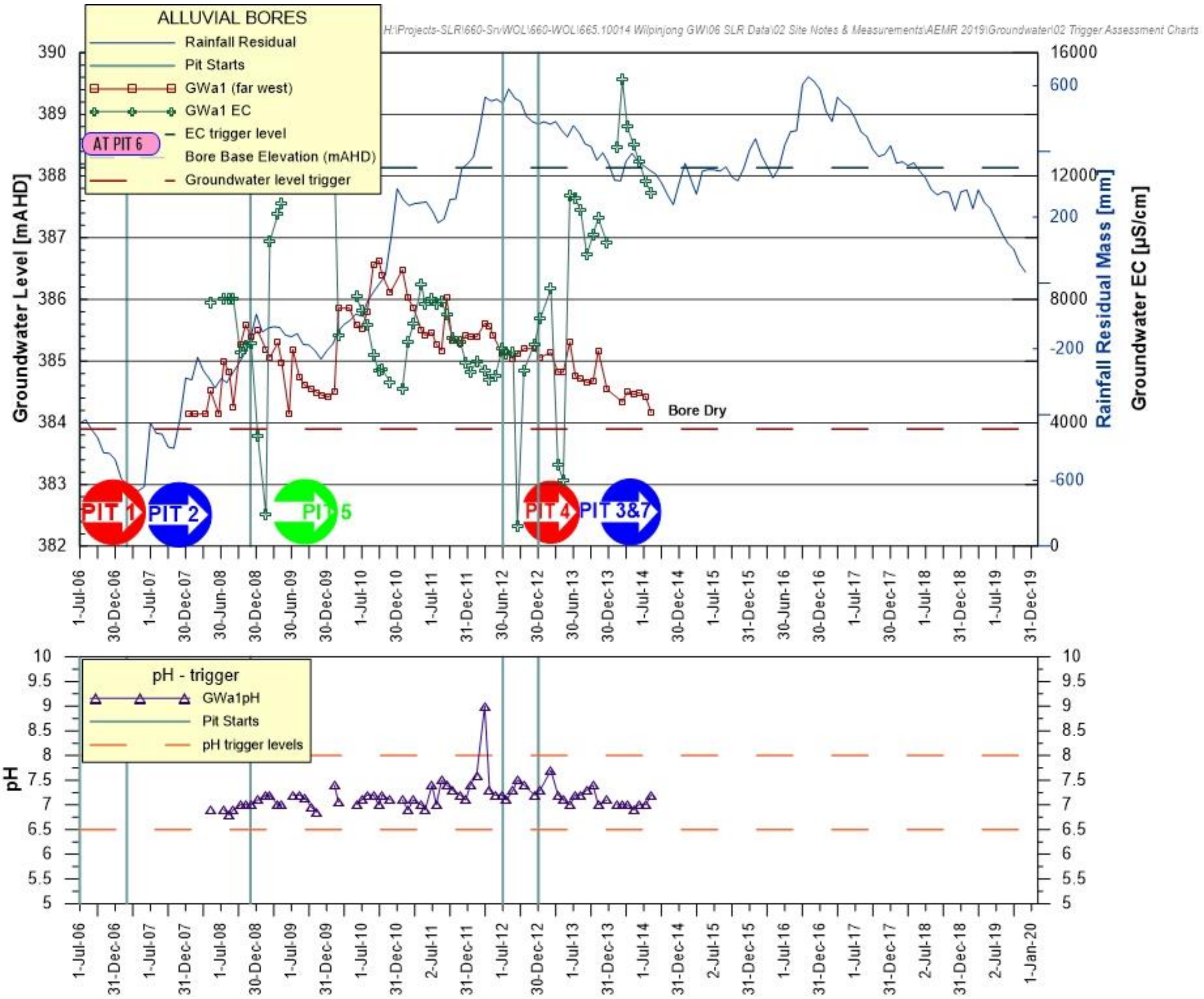
Figure 29 Coal Groundwater EC trends



APPENDIX B

Trigger Assessment Charts

Figure 30 GWa1 trigger assessment chart



SLR

Figure 31 GWa2 trigger assessment chart

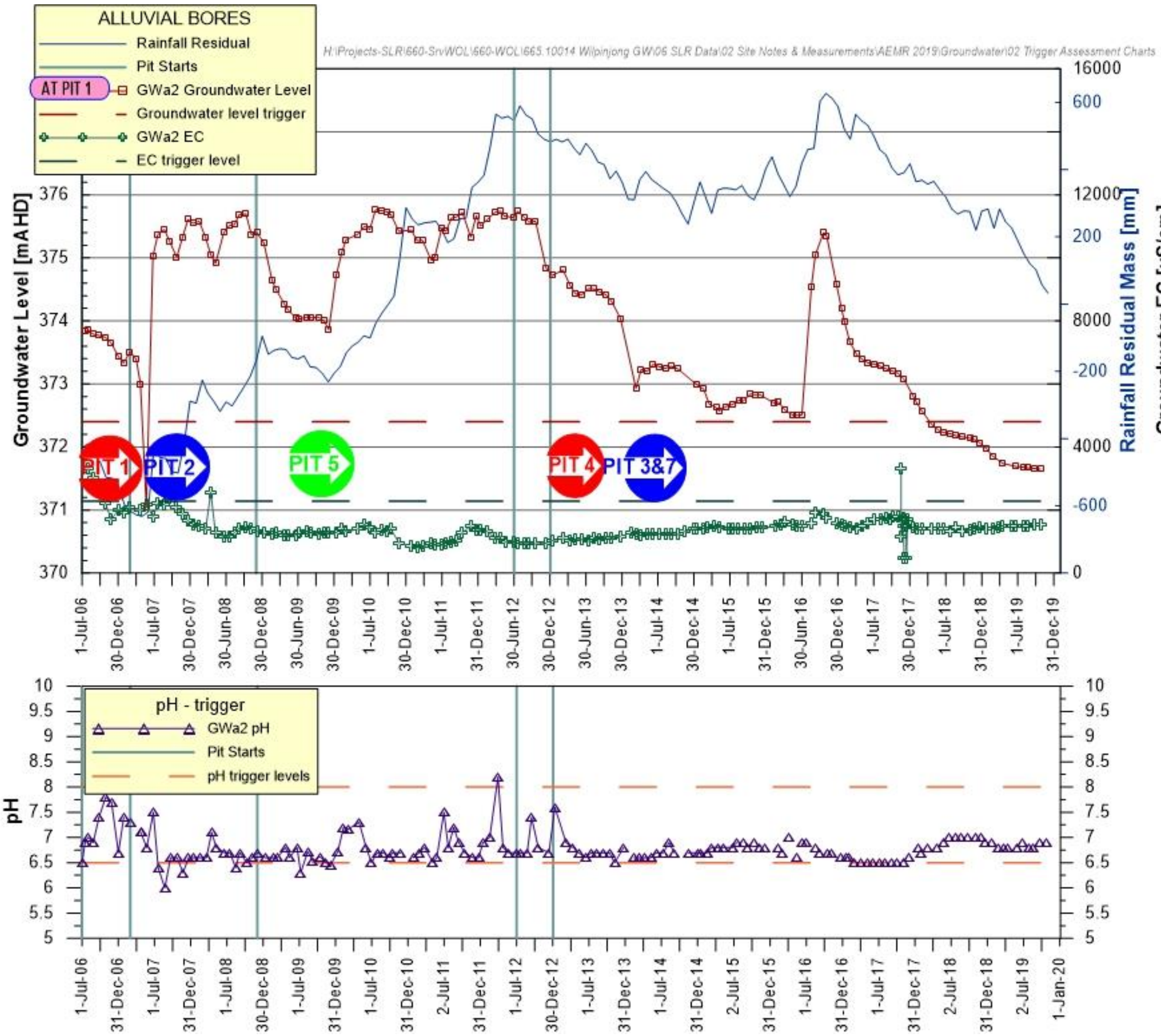


Figure 32 GWa3 trigger assessment chart

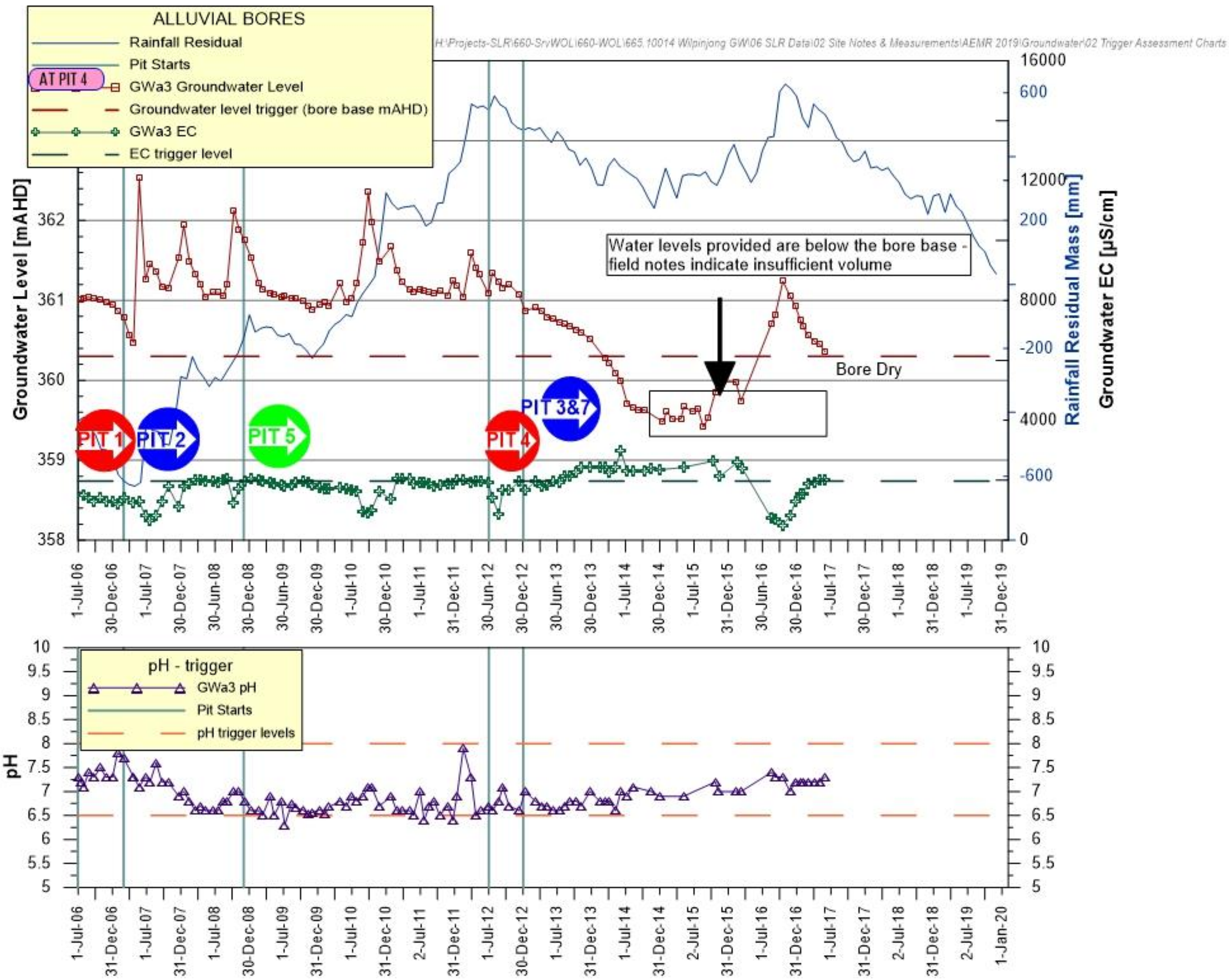


Figure 33 GWa4 trigger assessment chart

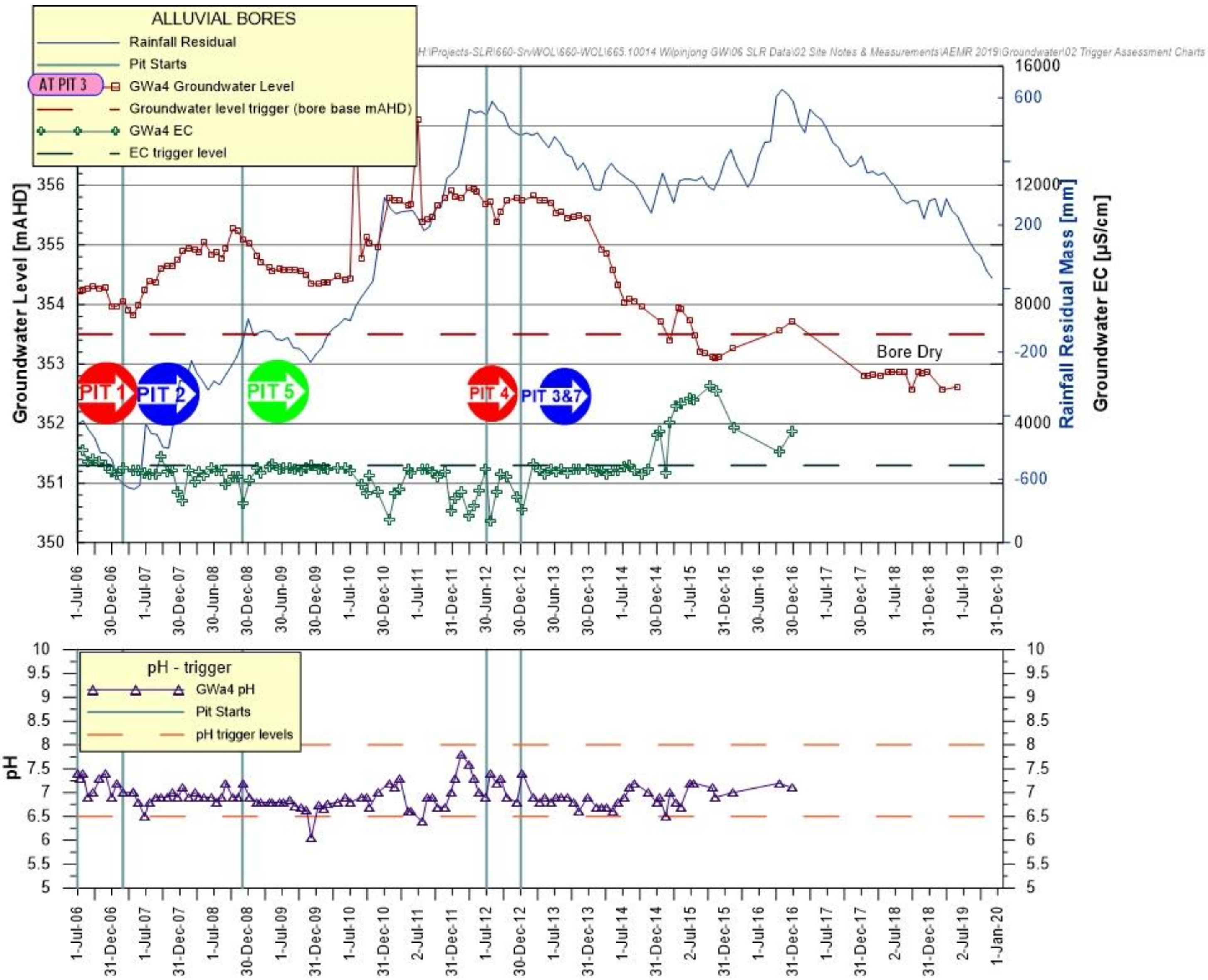


Figure 34 GWa5 trigger assessment chart

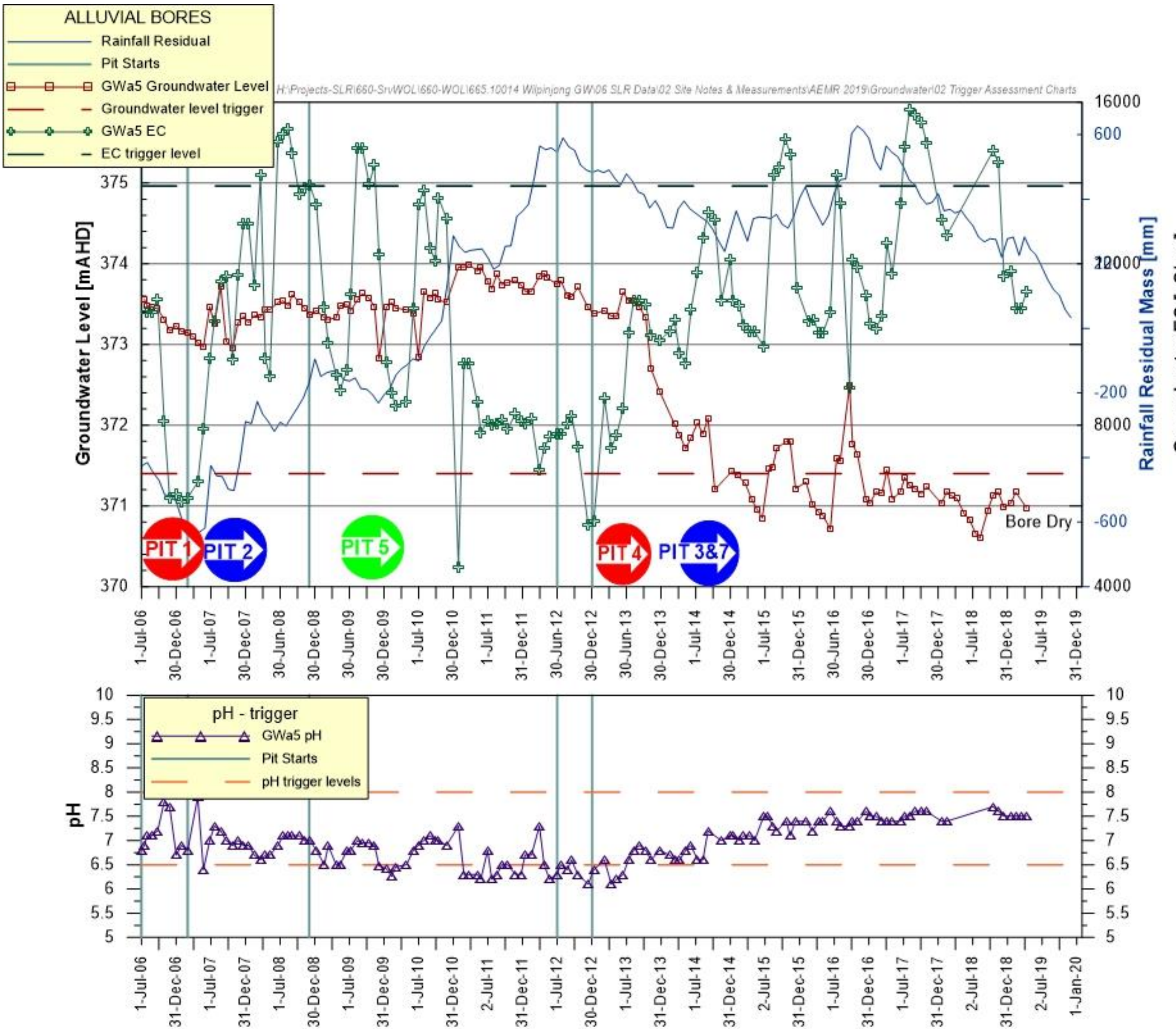


Figure 35 GWa6 trigger assessment chart

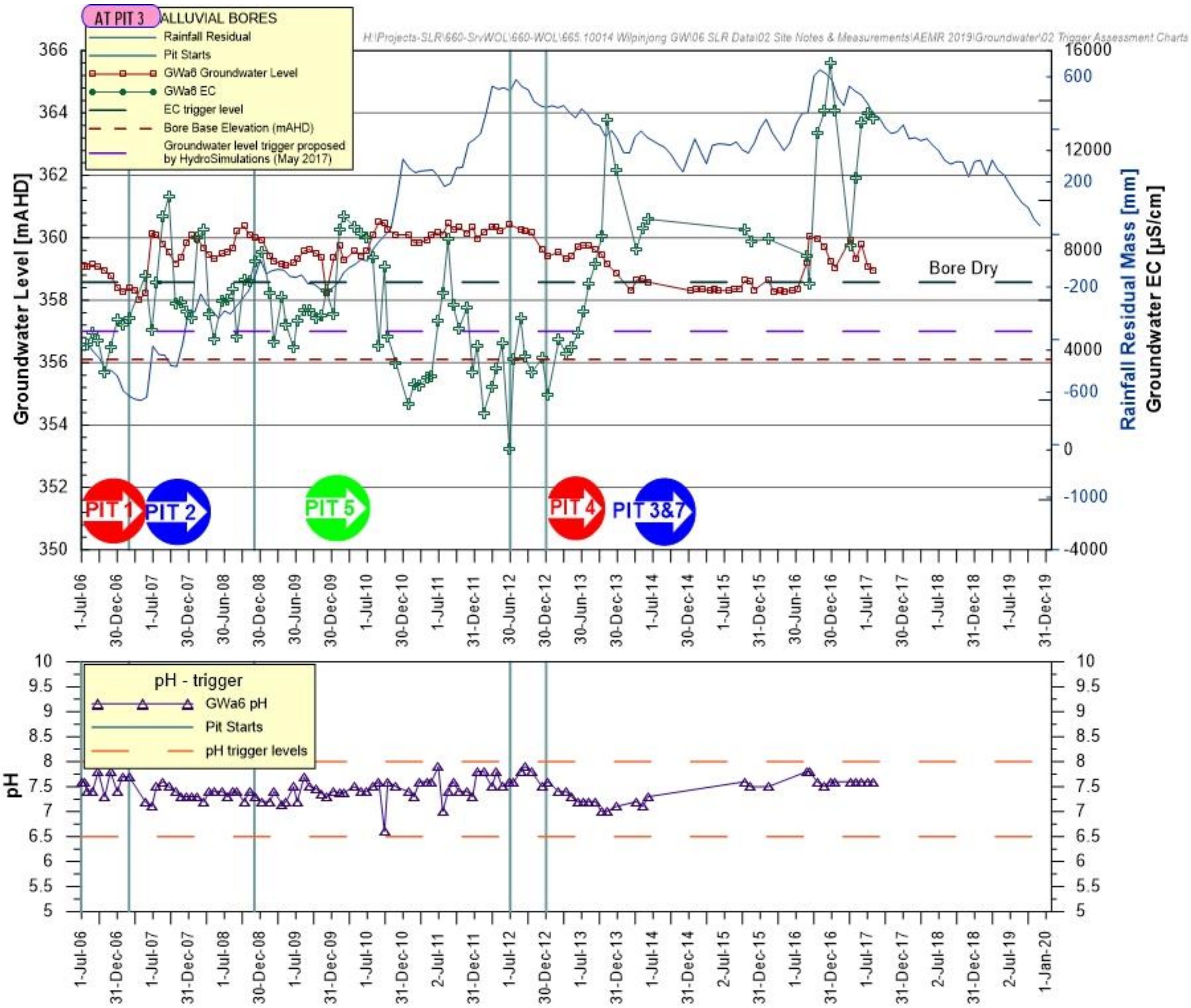


Figure 36 GWa7 trigger assessment chart

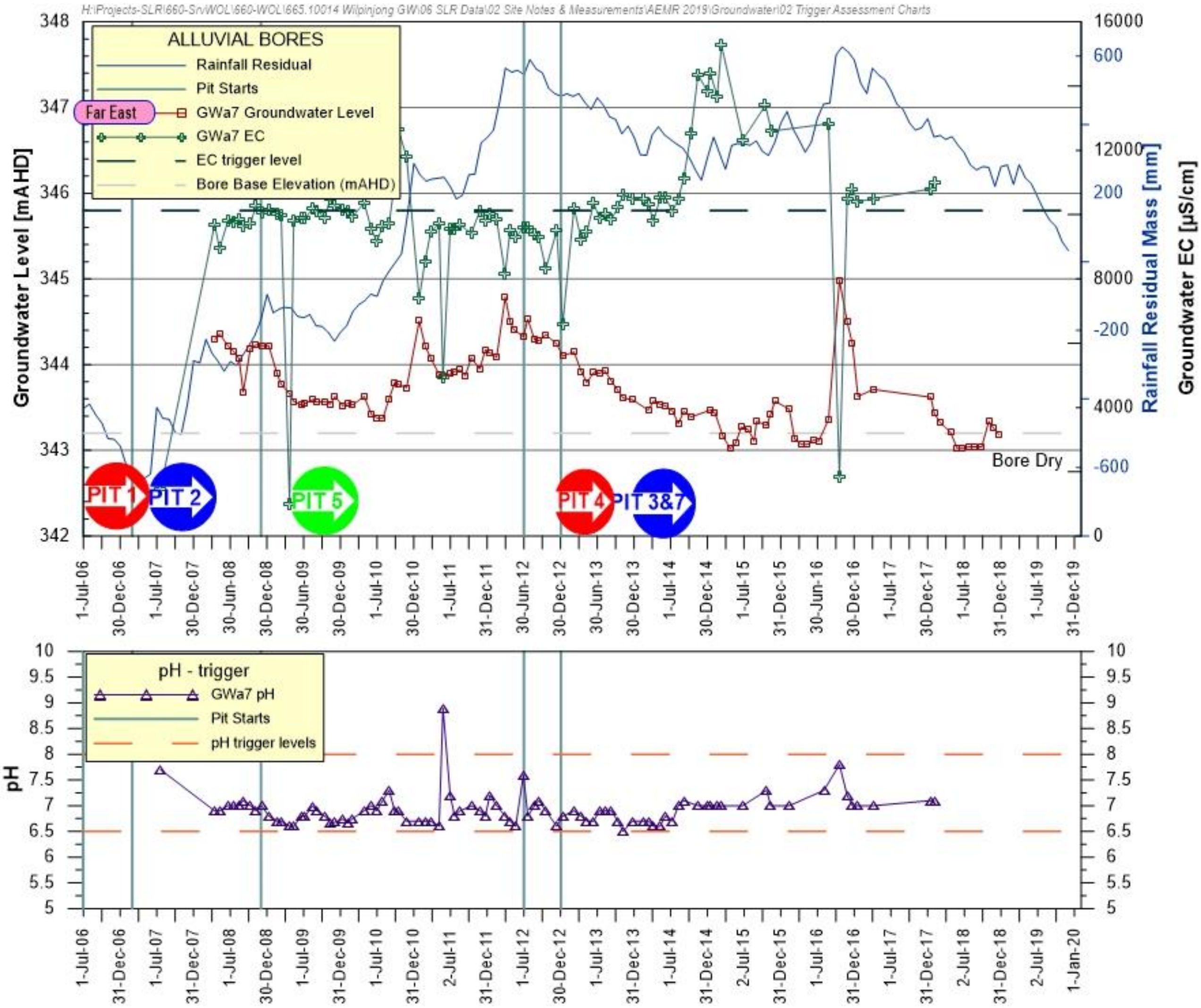
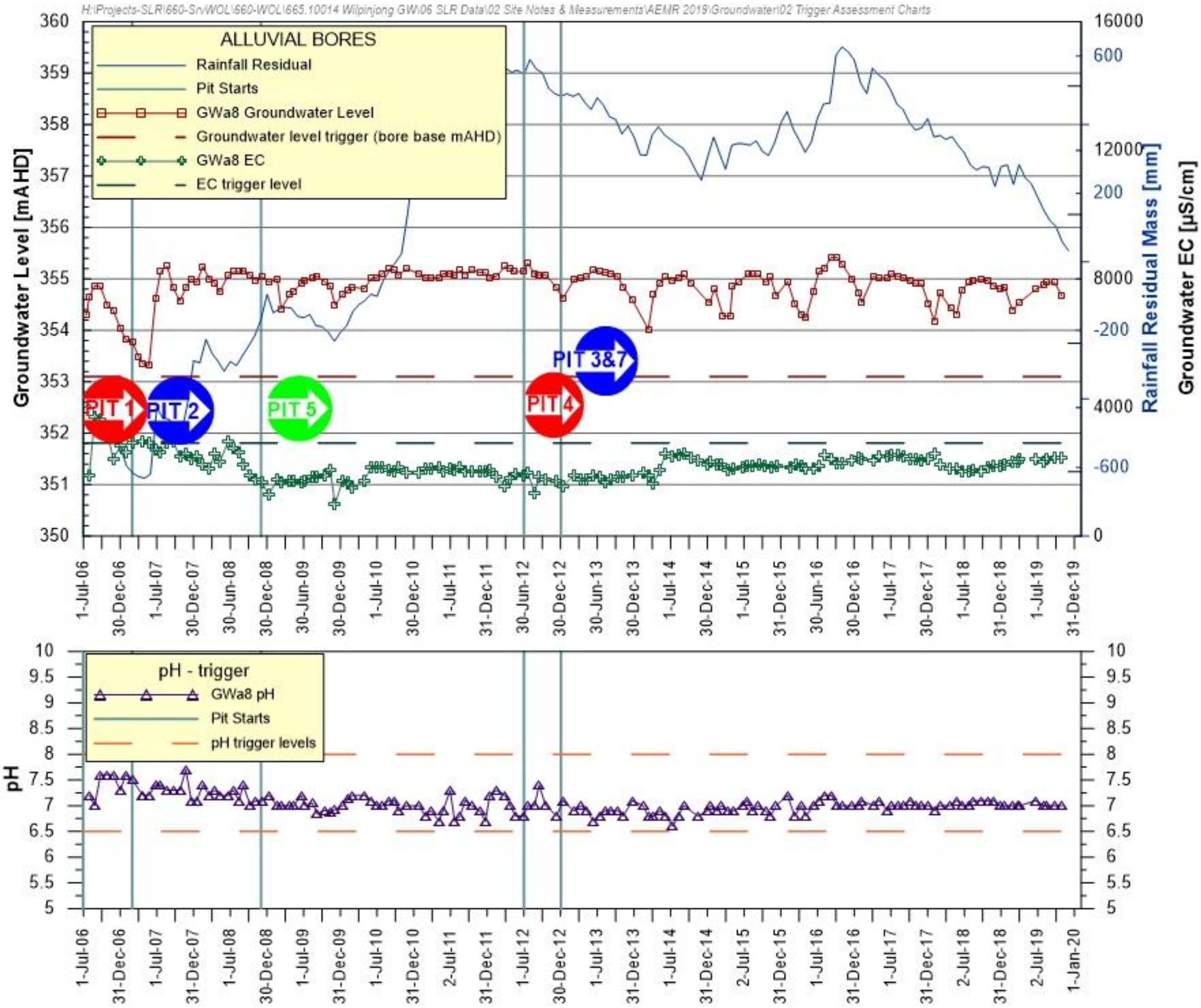


Figure 37 GWa8 trigger assessment chart



SLR

Figure 38   GWa11 trigger assessment chart

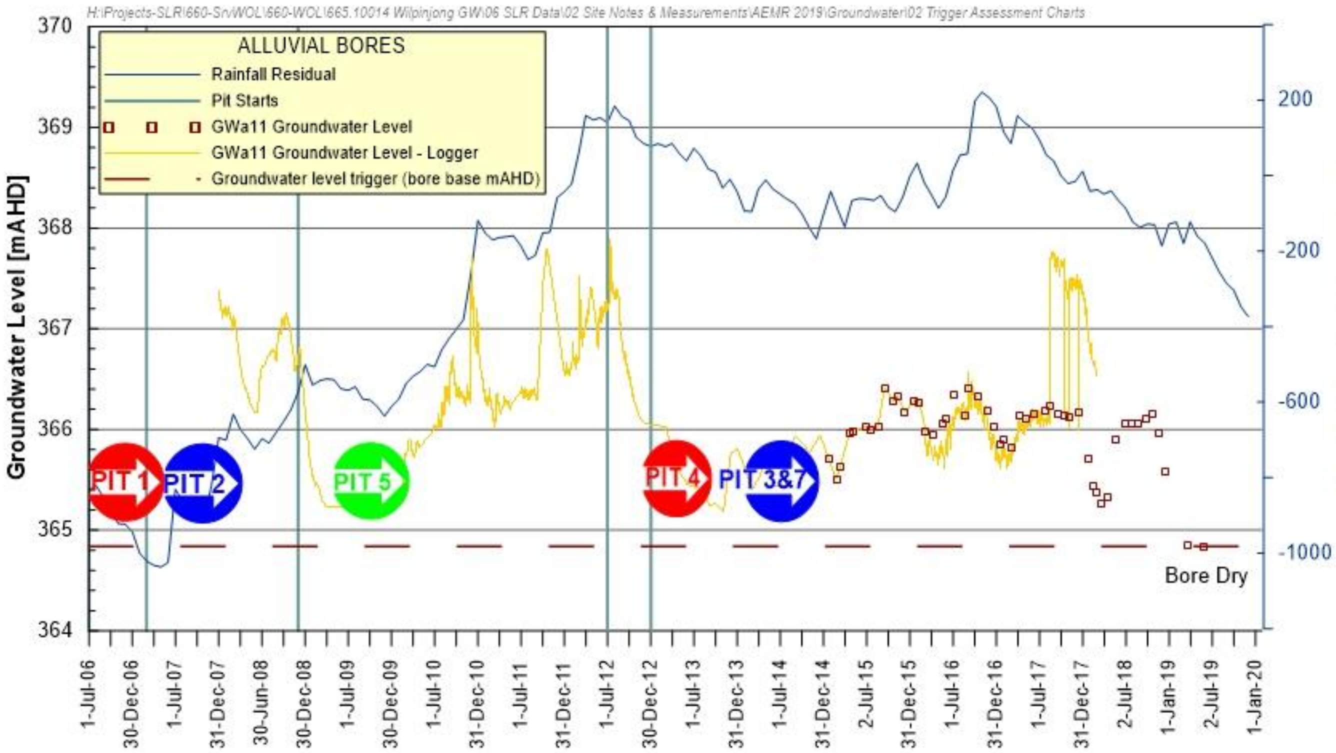


Figure 39 GWa12 trigger assessment chart

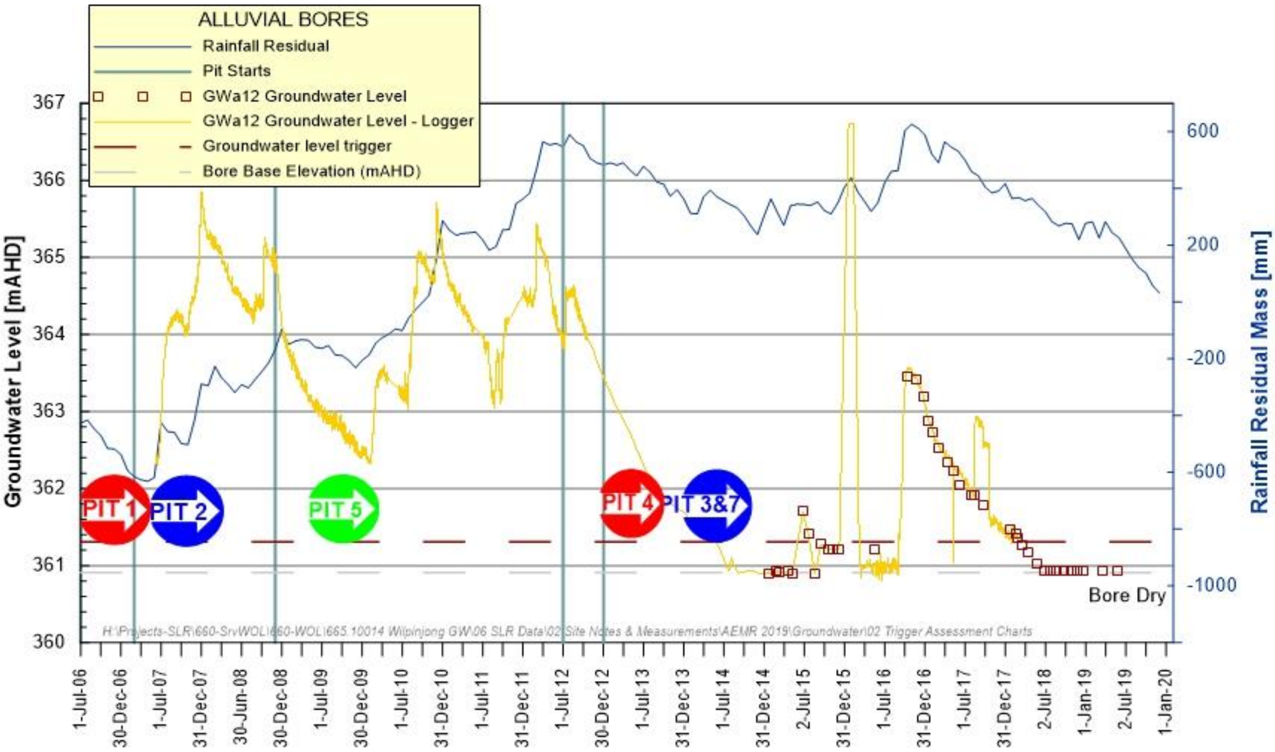


Figure 40 GWa14 trigger assessment chart

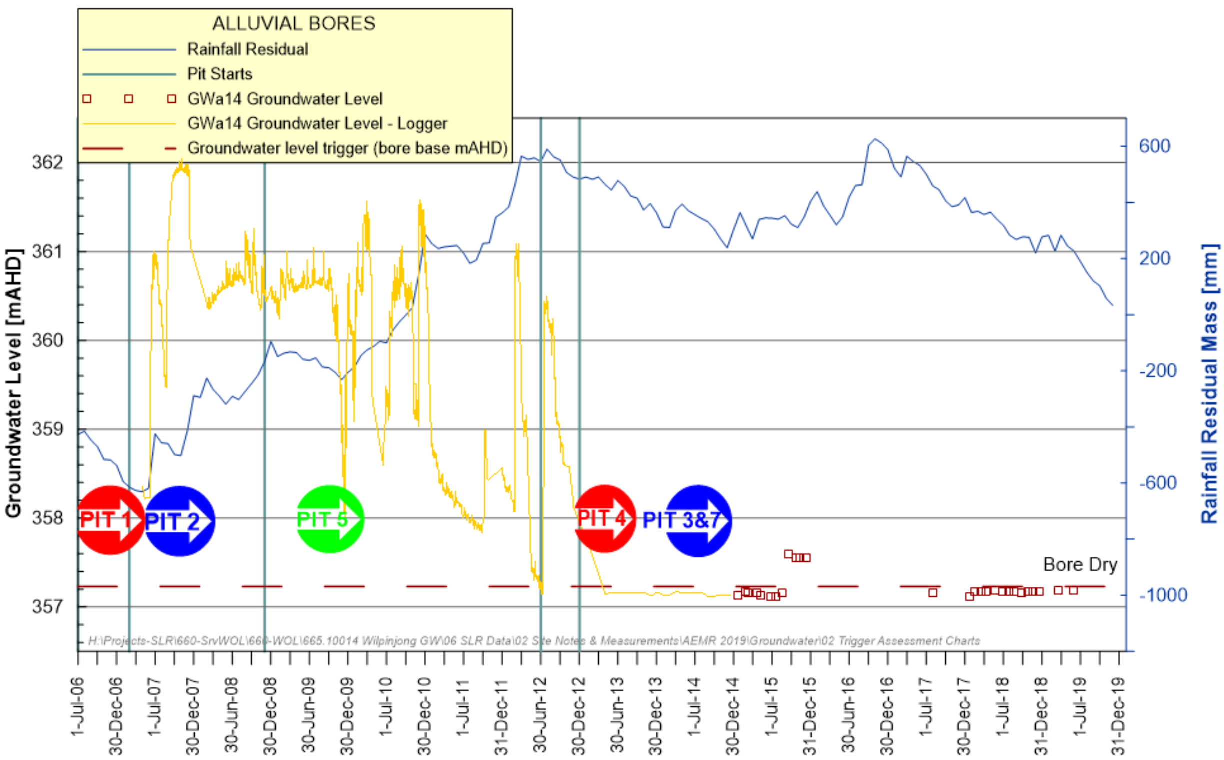


Figure 41 GWa15 trigger assessment chart

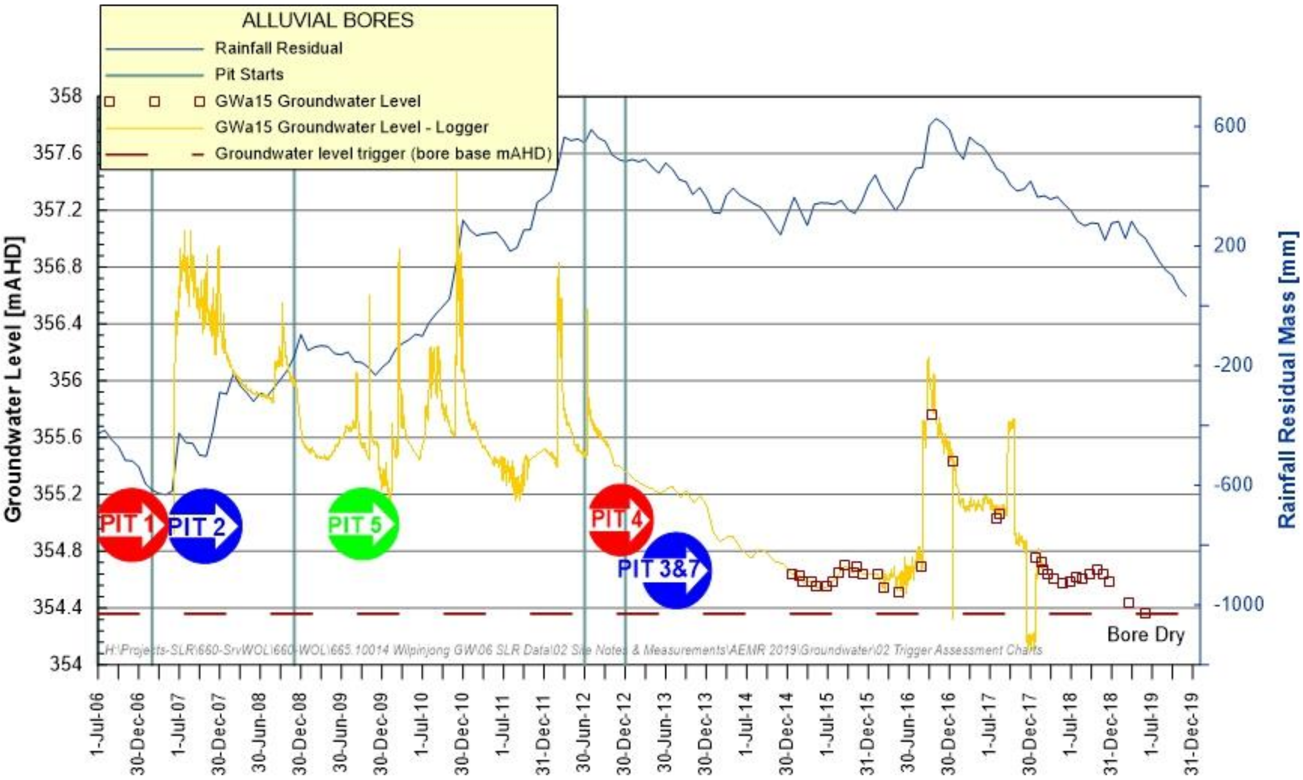


Figure 42 GWc1 trigger assessment chart

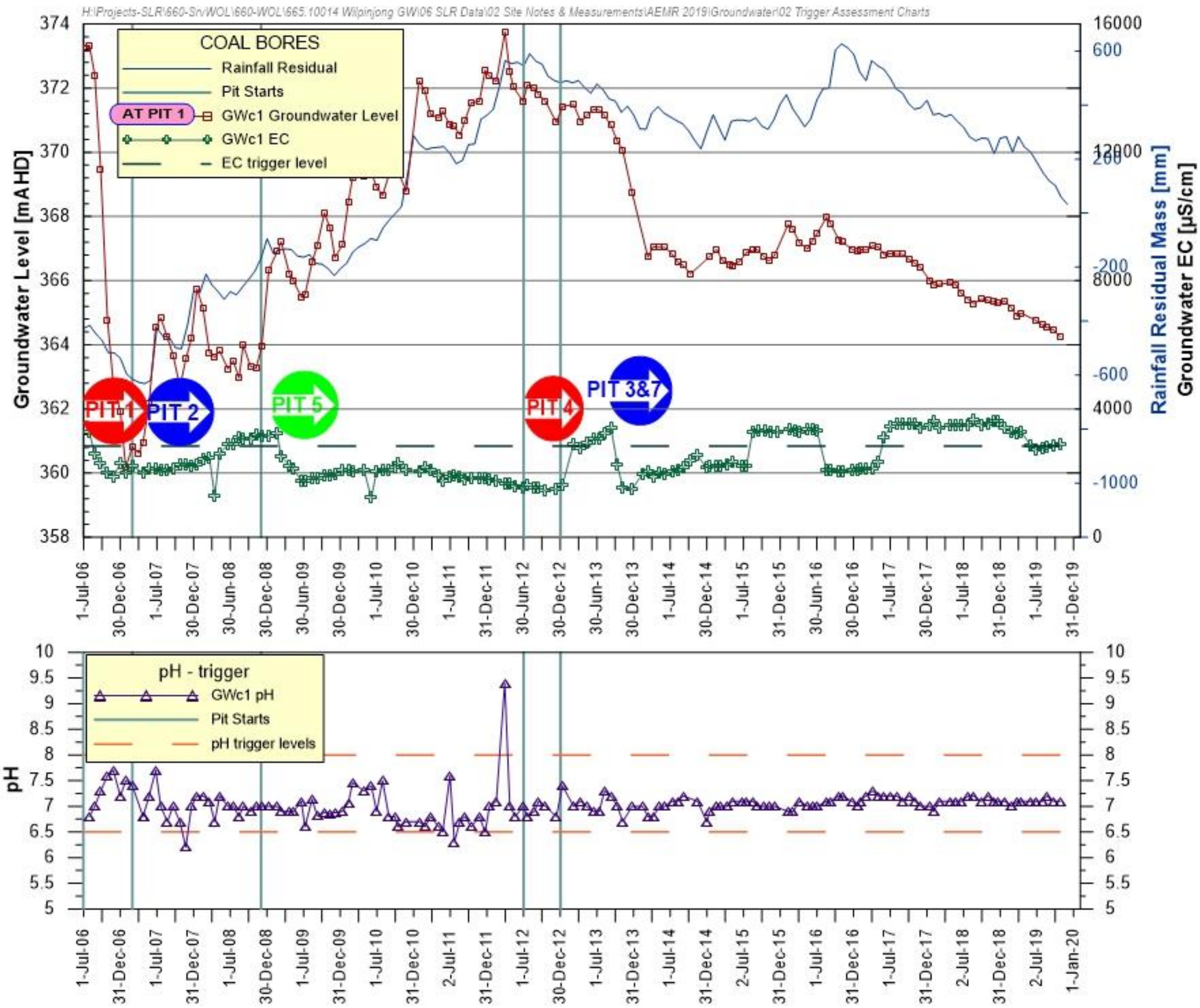


Figure 43 GWc2 trigger assessment chart

Figure 44 GWc3 trigger assessment chart

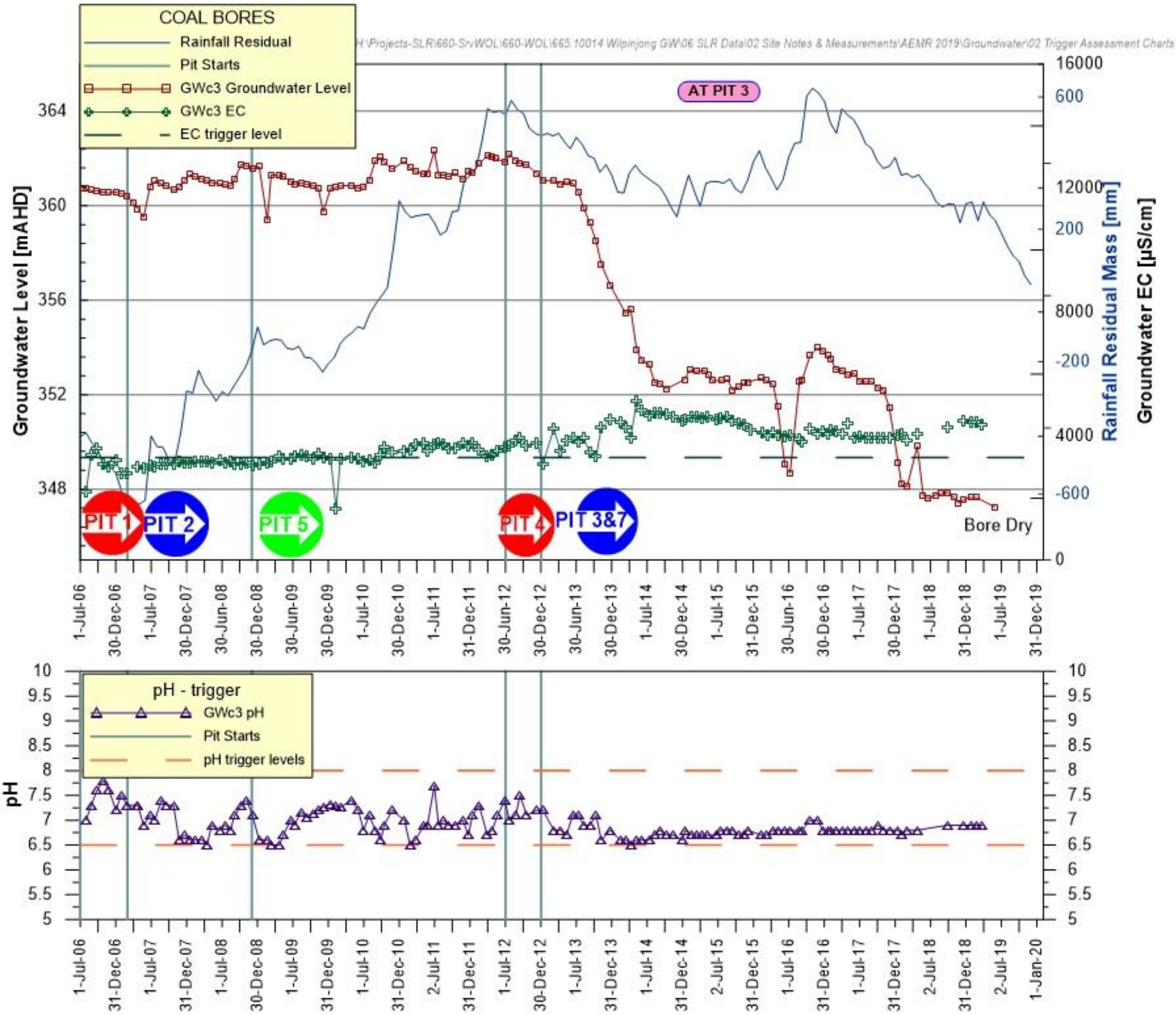


Figure 45 GWc4 trigger assessment chart

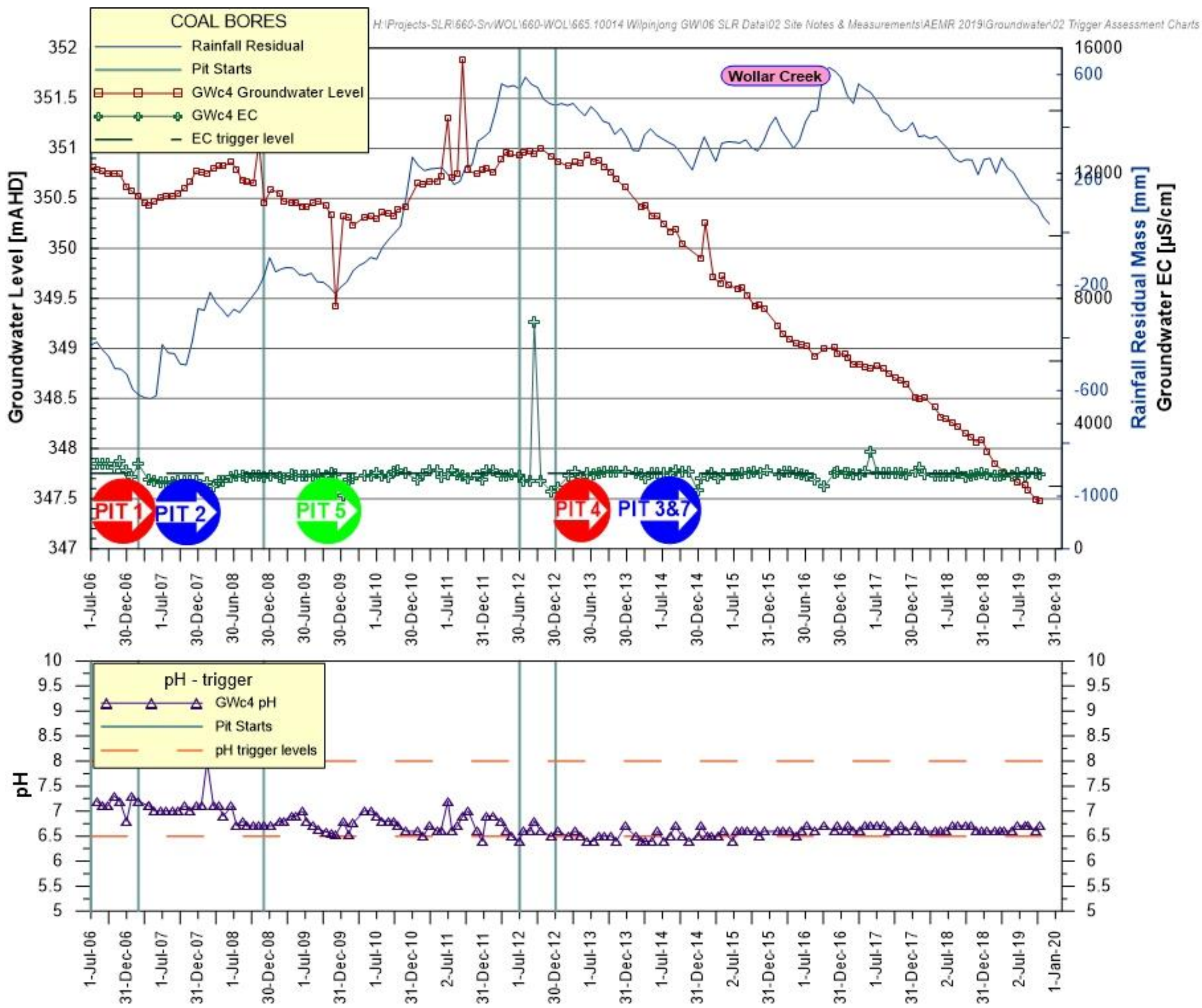
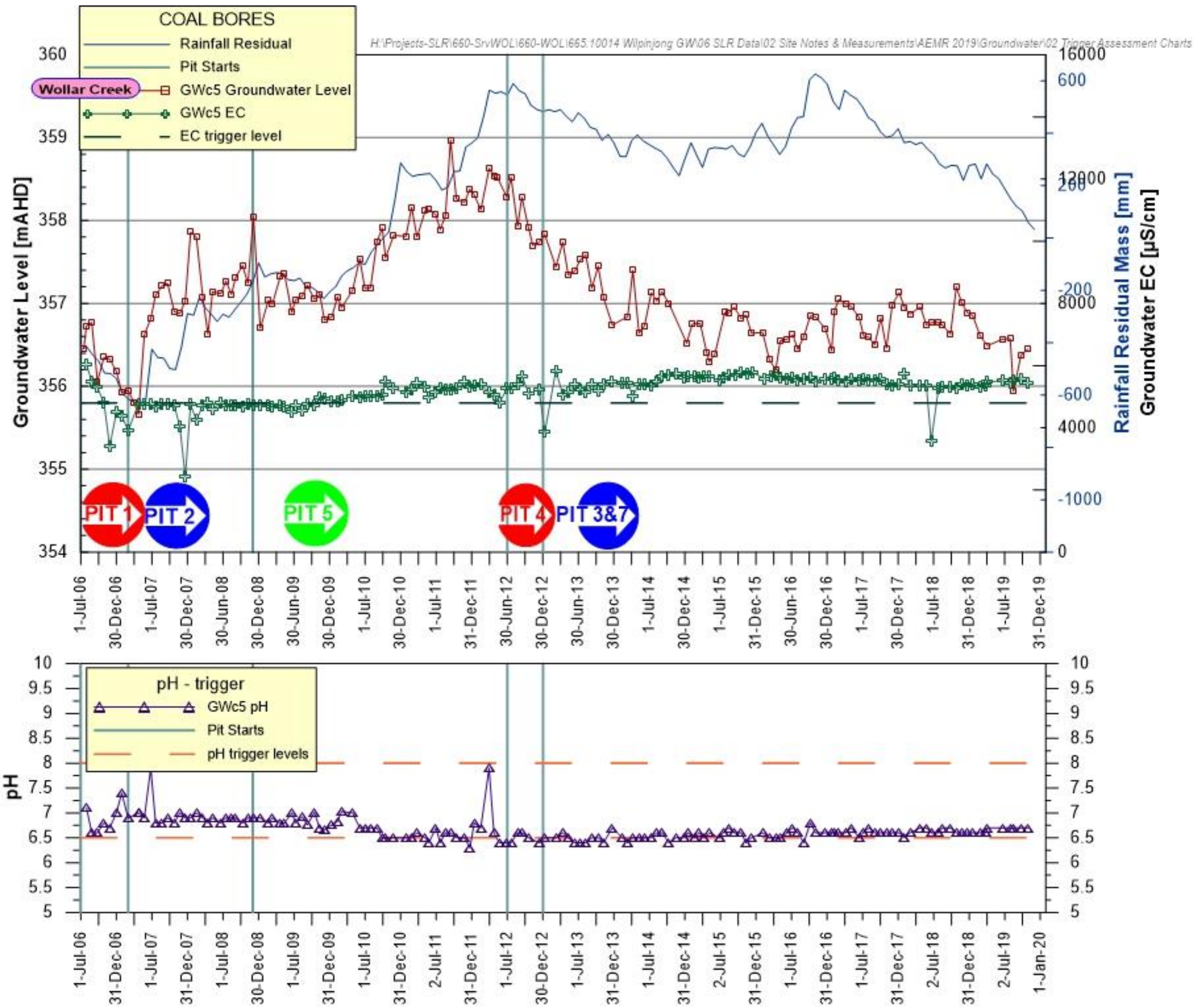


Figure 46 GWc5 trigger assessment chart



APPENDIX C

Modelled vs Observed Groundwater Levels

Figure 47 GWa1 Calibration Hydrographs

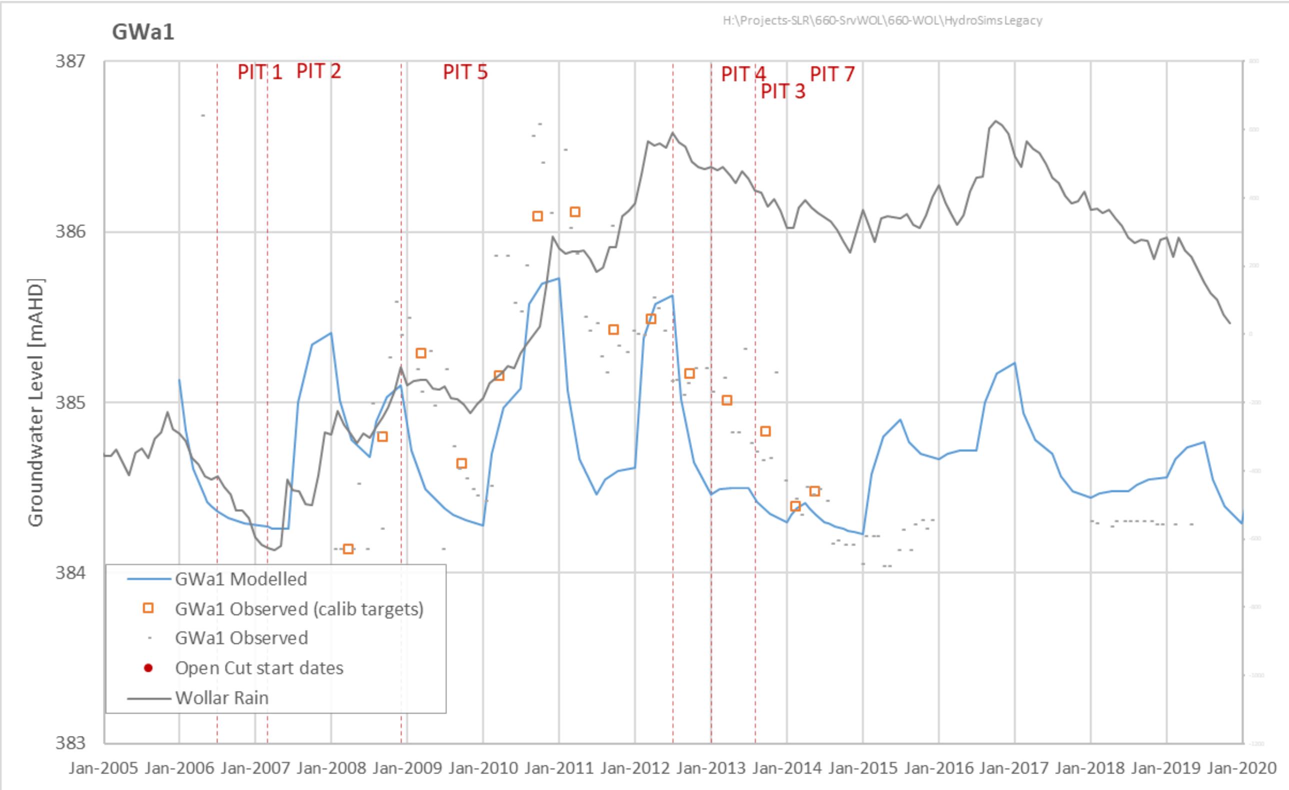


Figure 48 GWa3 Calibration Hydrographs

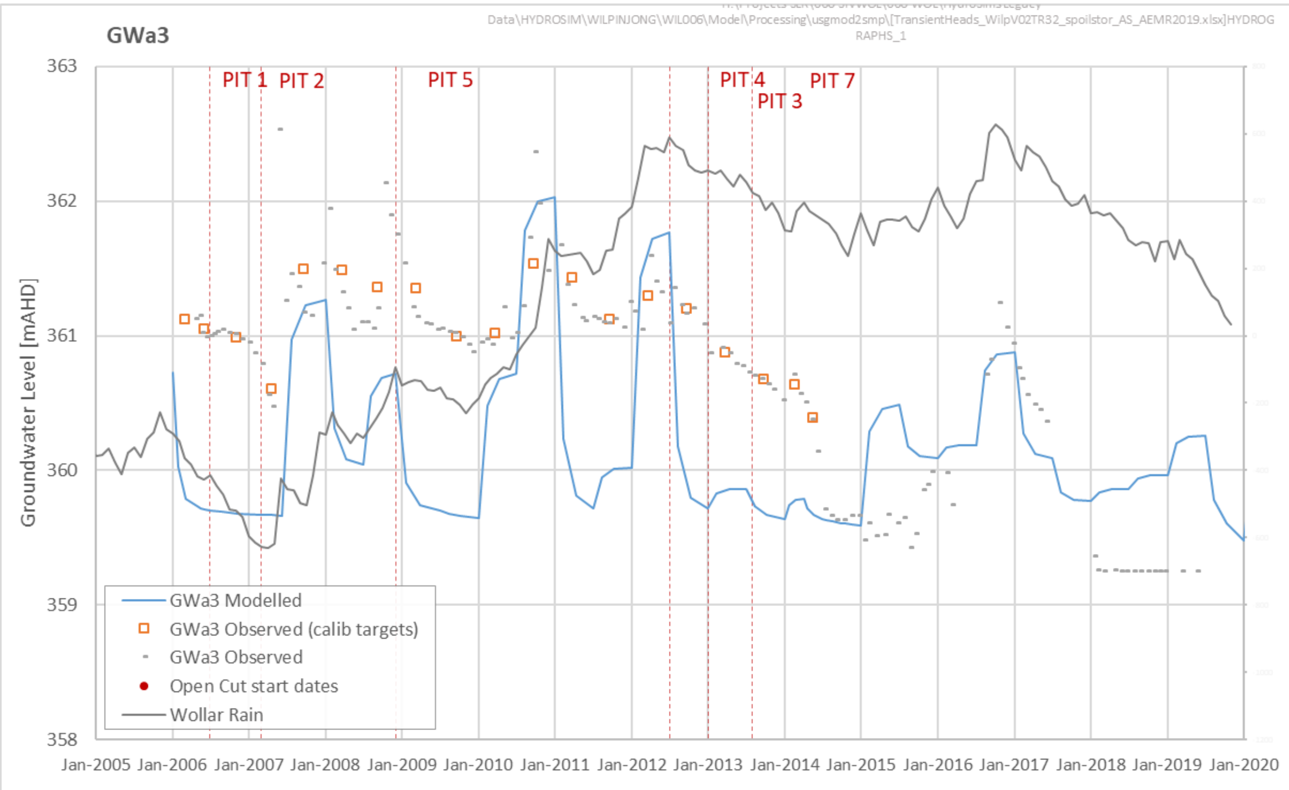


Figure 49 GWa4 Calibration Hydrographs

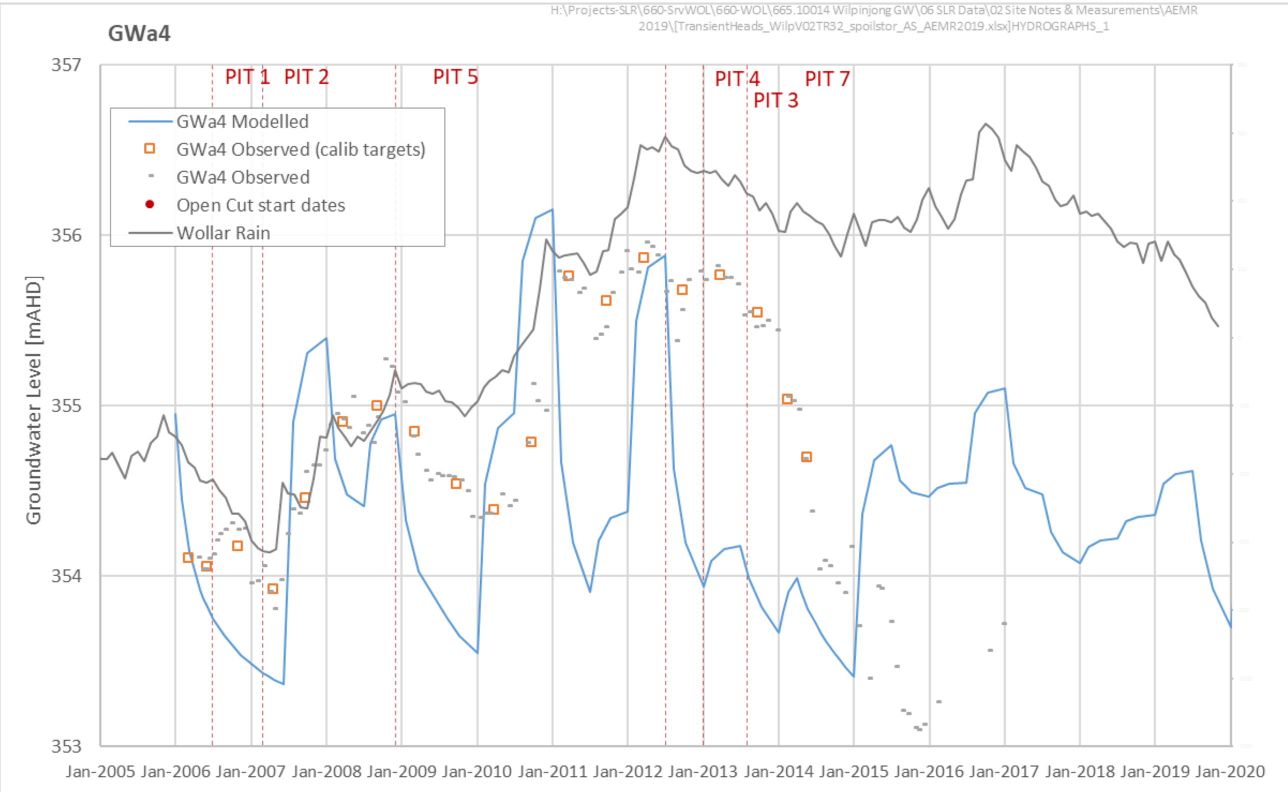


Figure 50 GWa5 Calibration Hydrographs

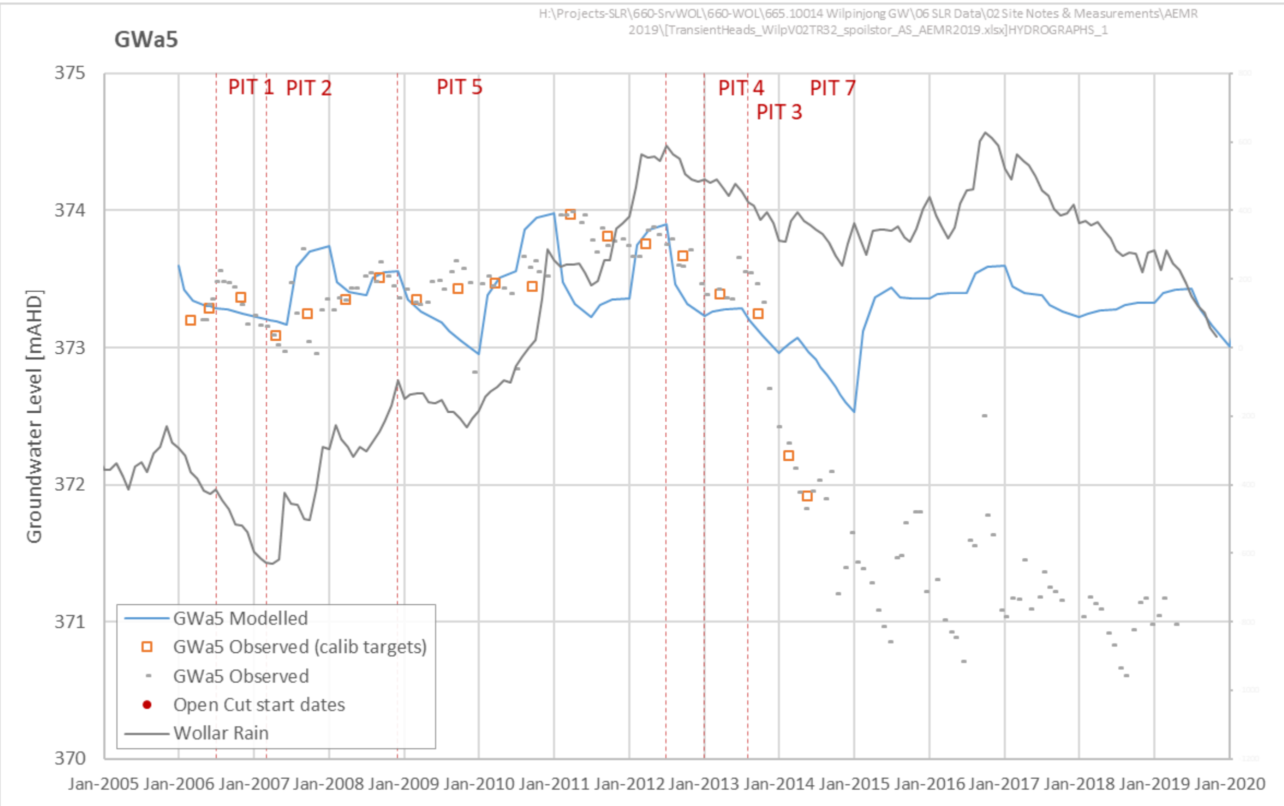


Figure 51 GWa6 Calibration Hydrographs

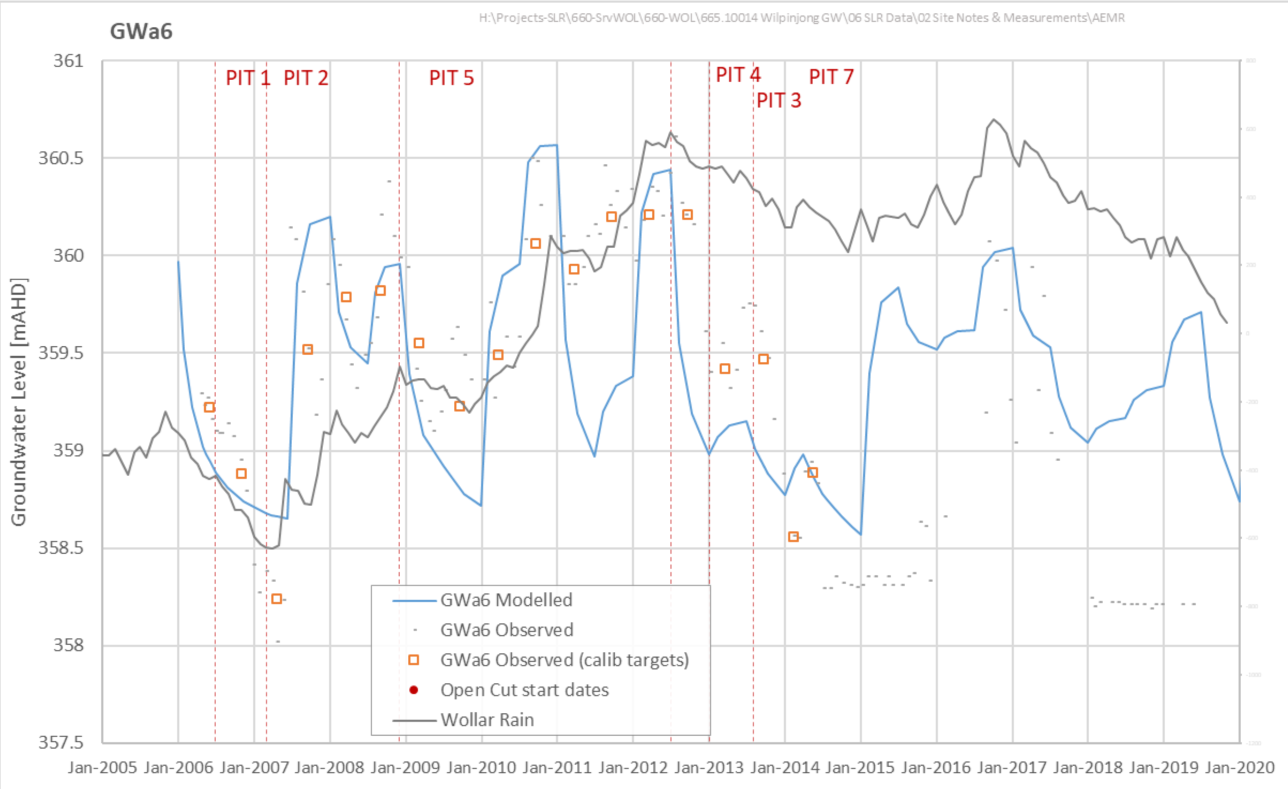


Figure 52 GWa12 Calibration Hydrographs

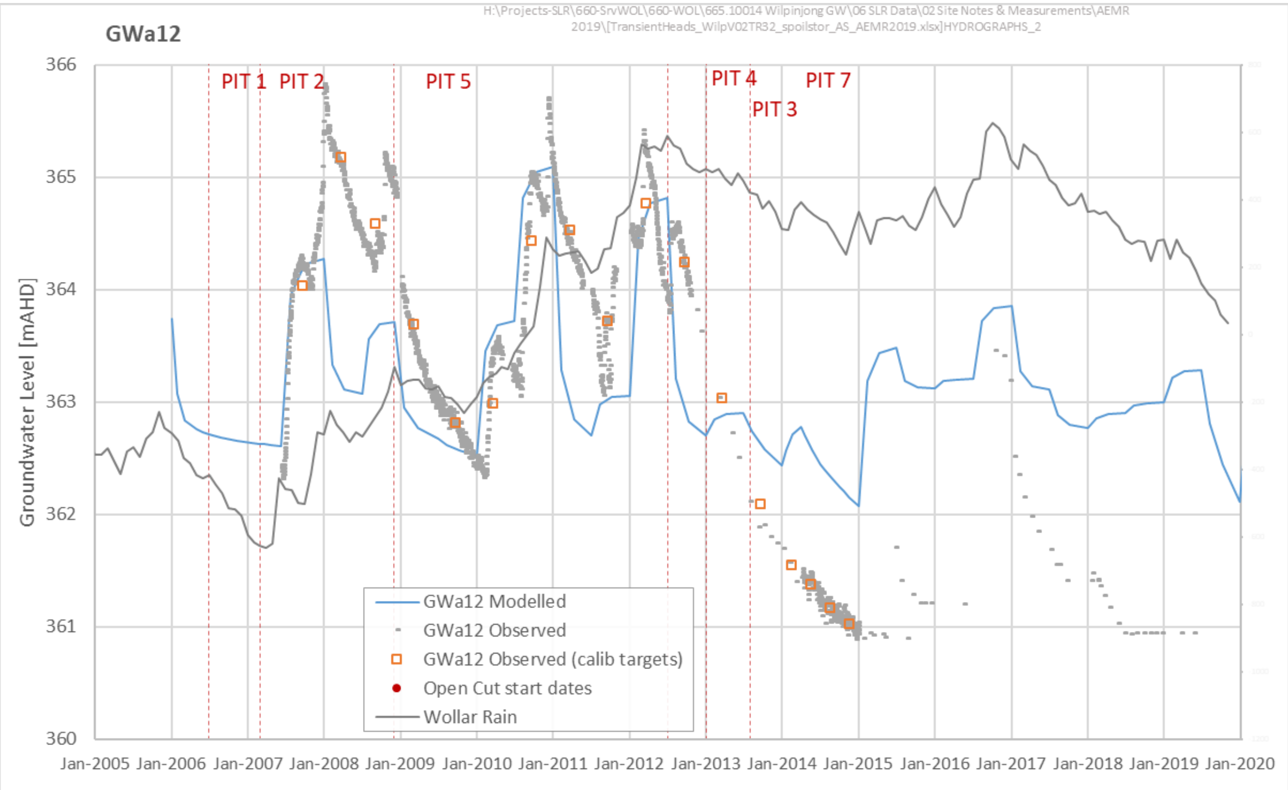


Figure 53 GWa14 Calibration Hydrographs

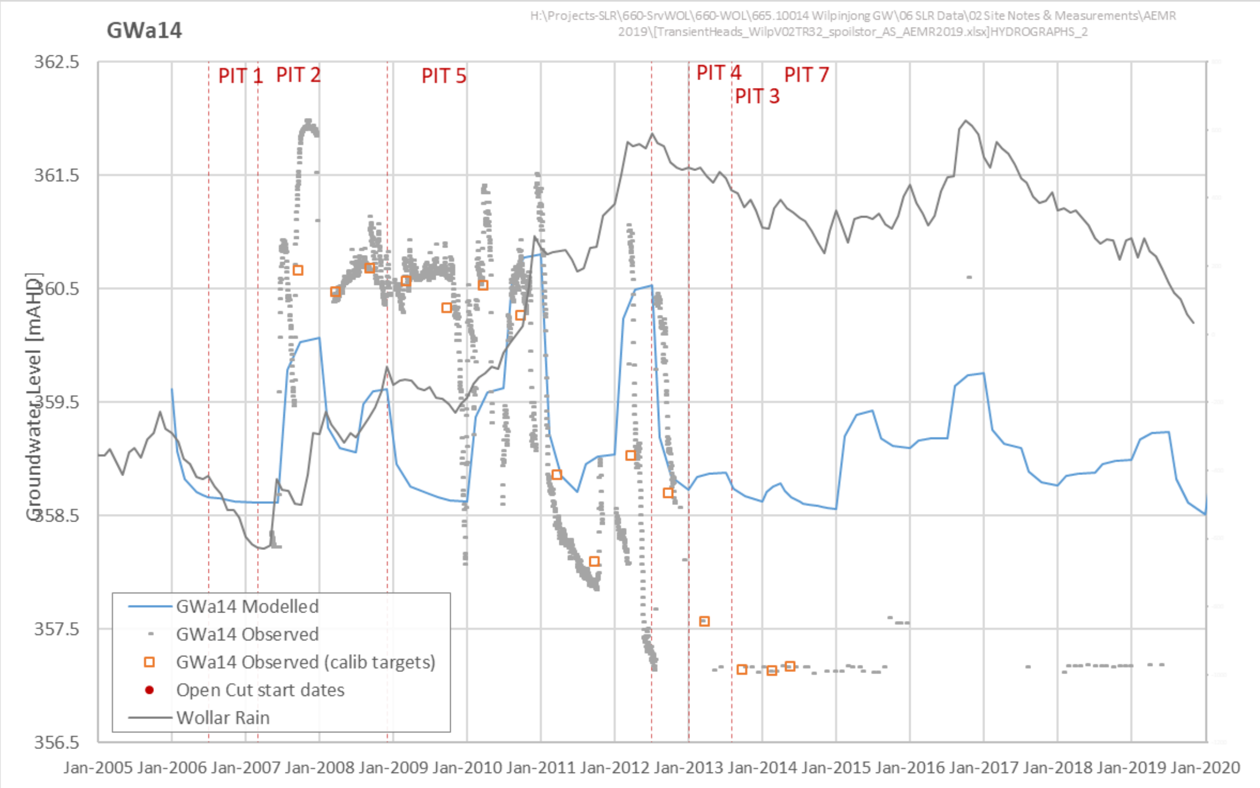


Figure 54 GWa15 Calibration Hydrographs

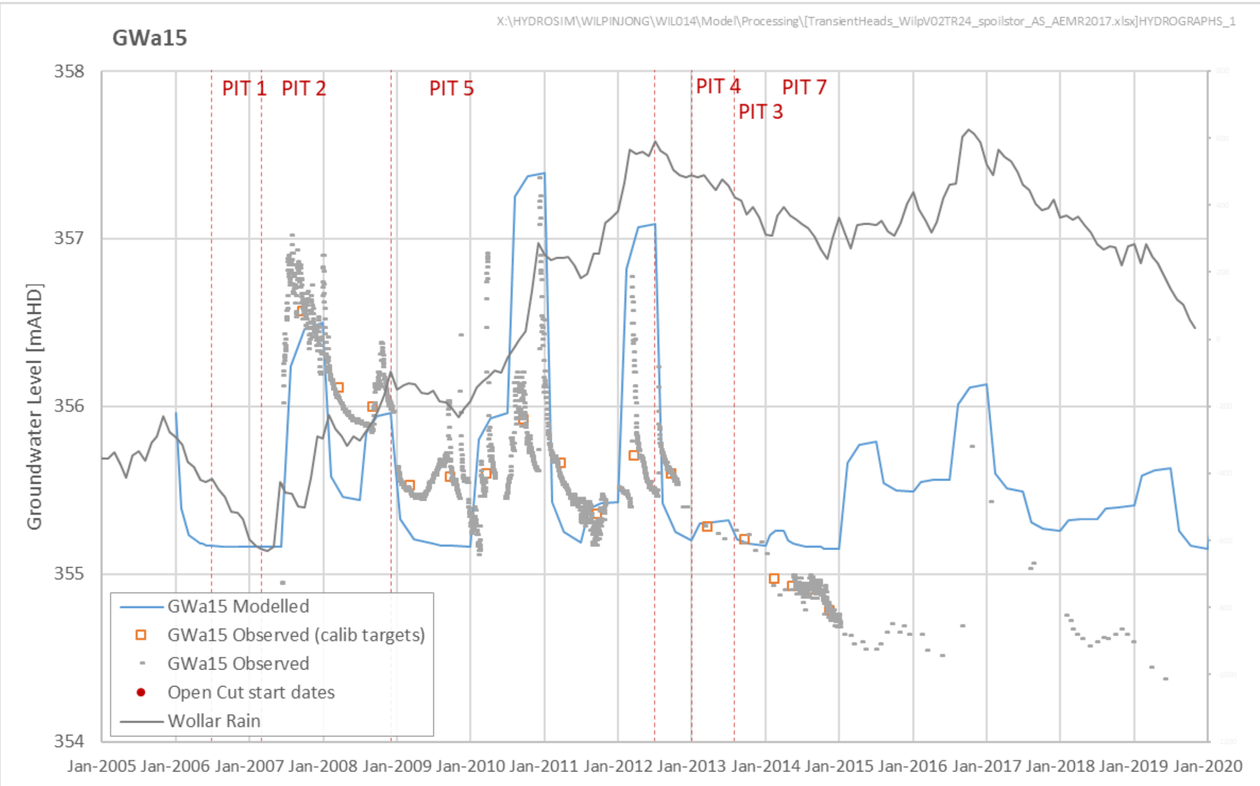


Figure 55 GWc1 Calibration Hydrographs

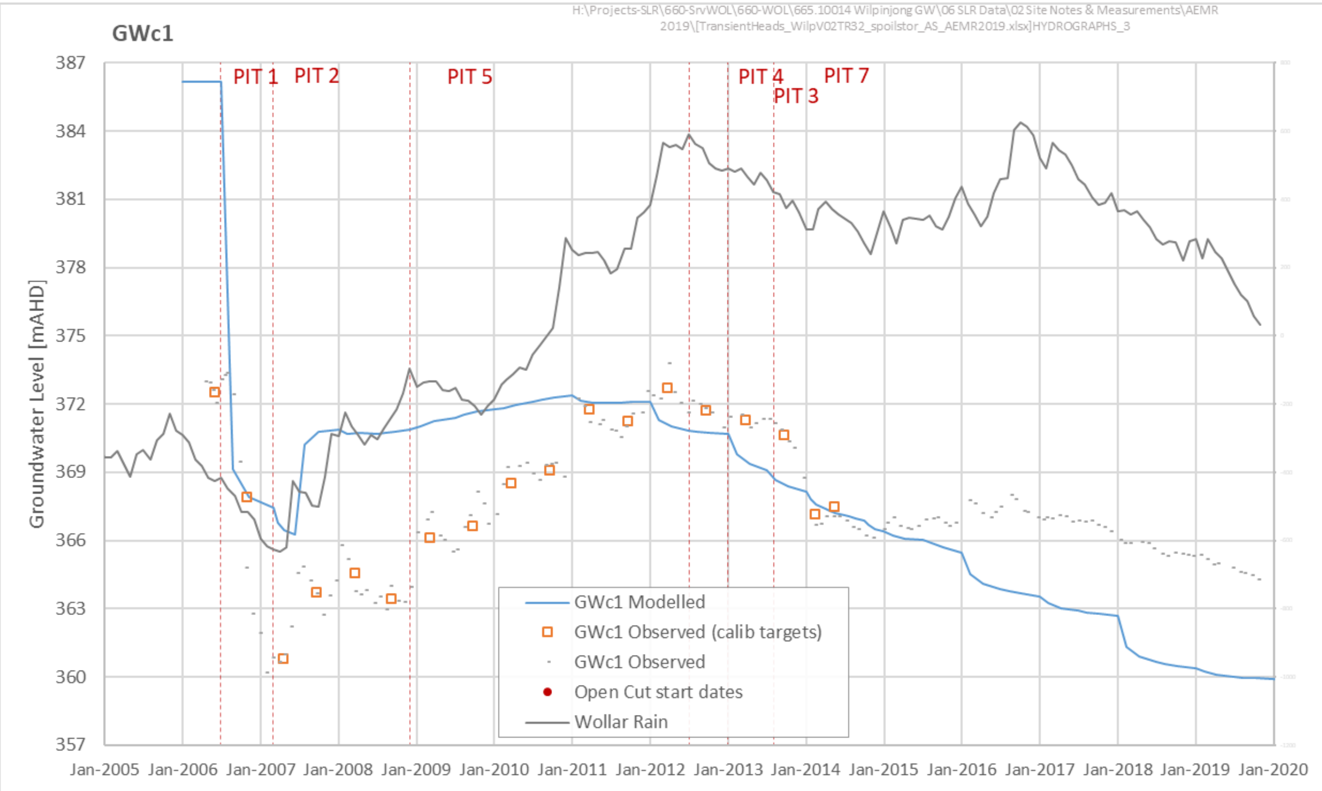


Figure 56 GWc2 Calibration Hydrographs

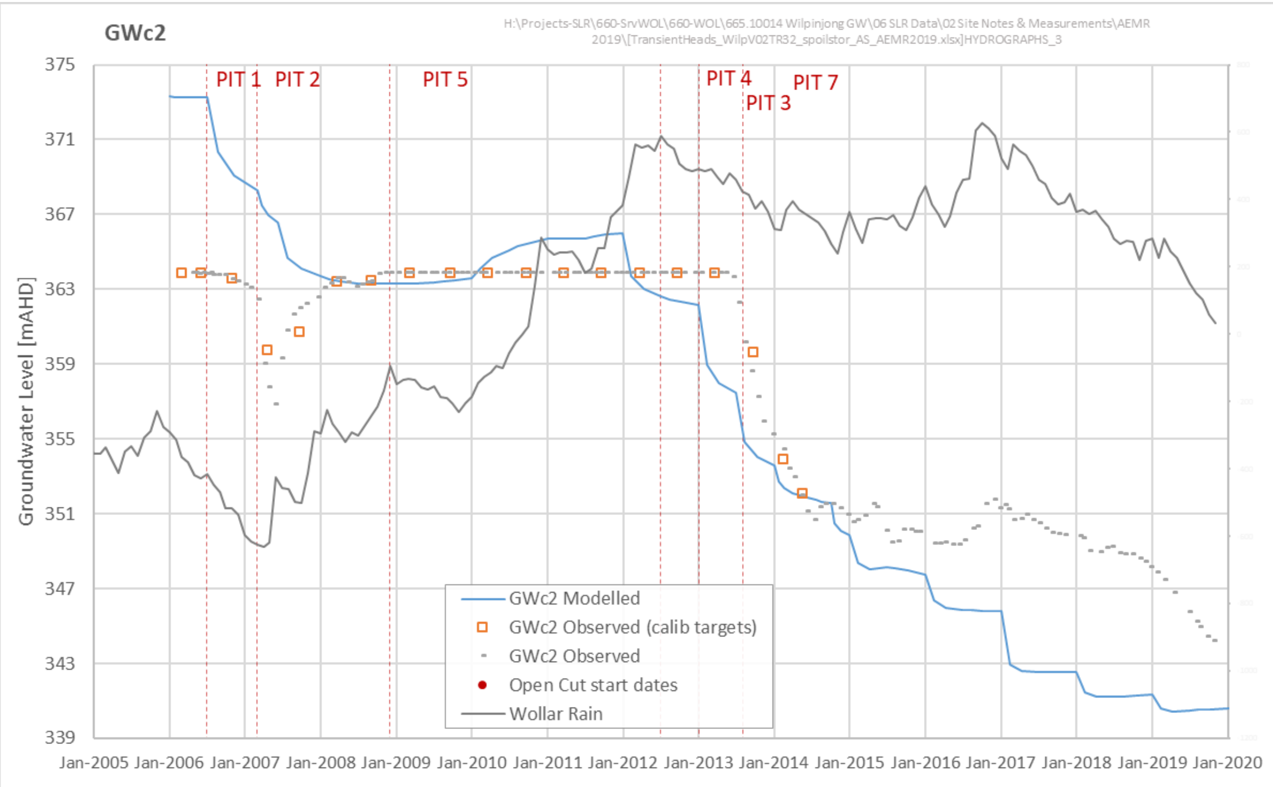


Figure 57 GWc3 Calibration Hydrographs

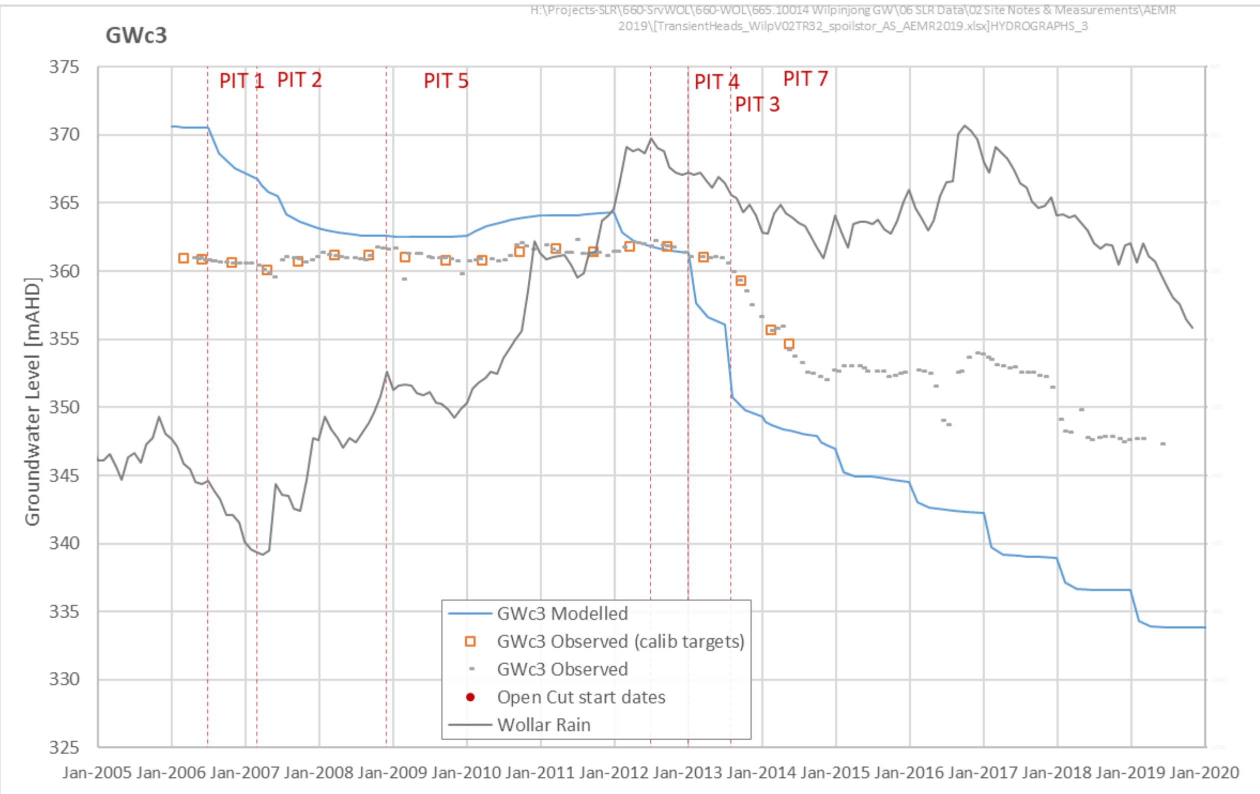


Figure 58 GWc11 Calibration Hydrographs

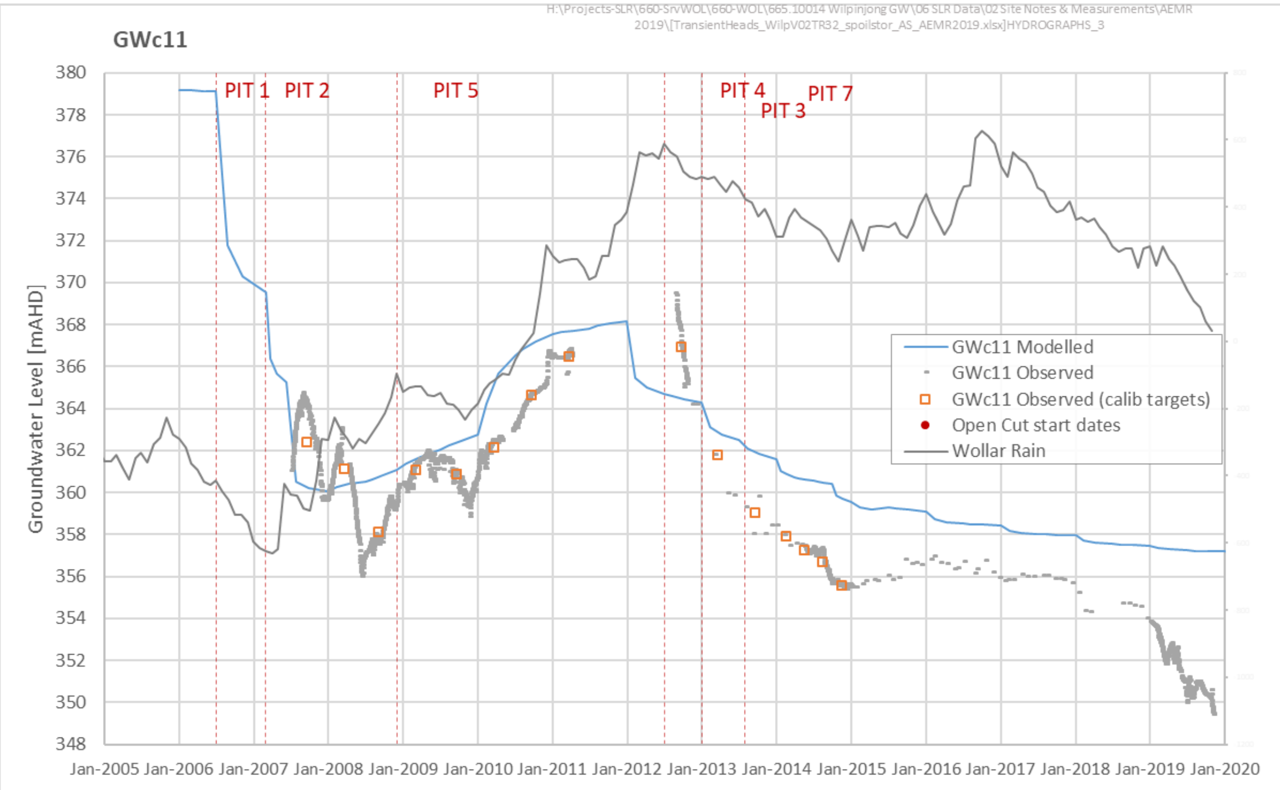


Figure 59 GWc12 Calibration Hydrographs

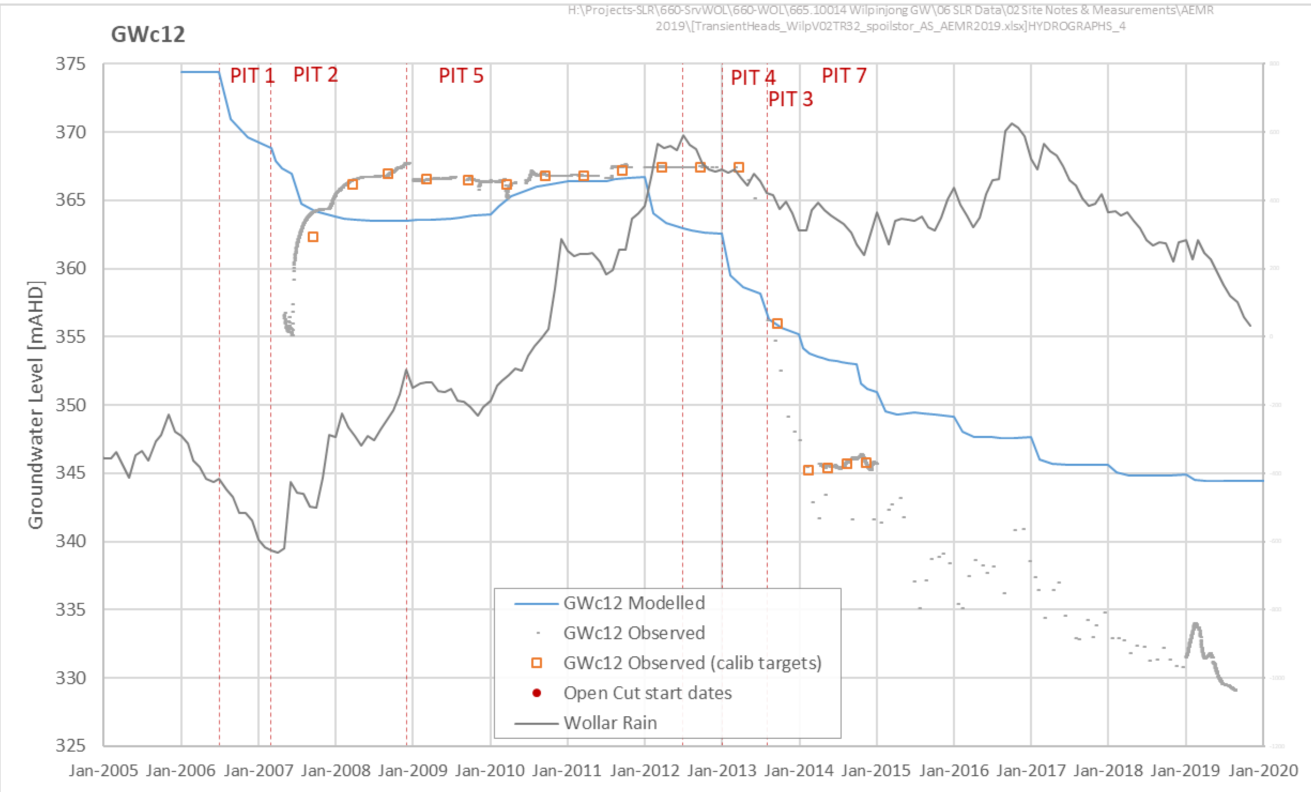


Figure 60 GWc14 Calibration Hydrographs

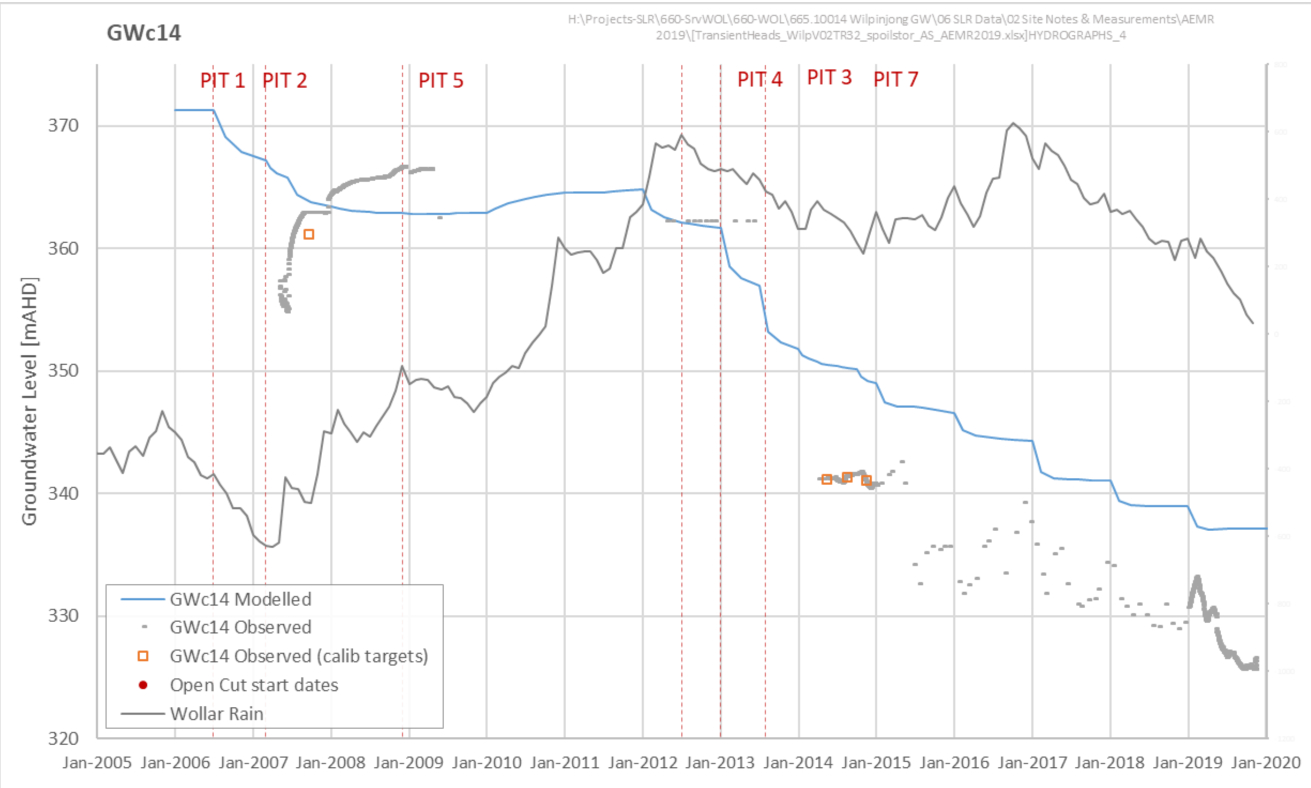


Figure 61 GWc15 Calibration Hydrographs

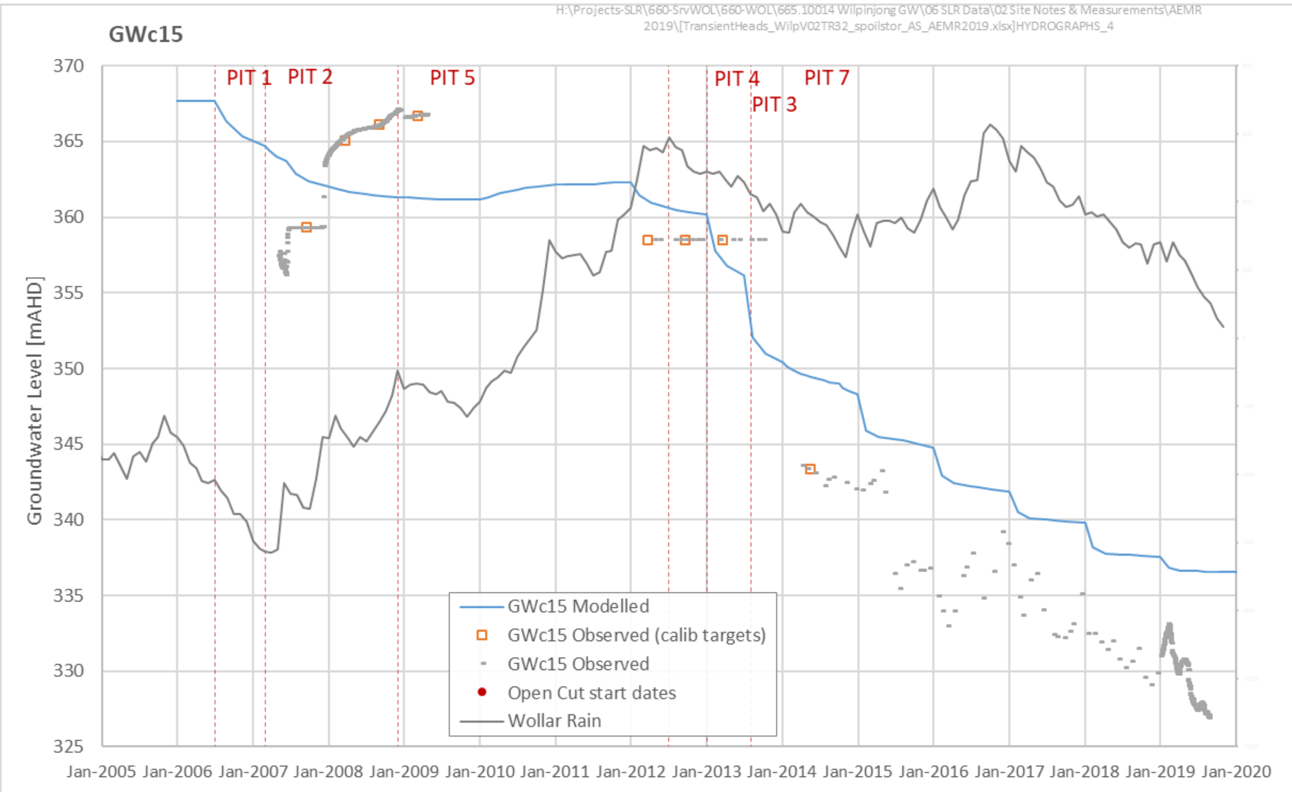


Figure 62 GWc22 Calibration Hydrographs

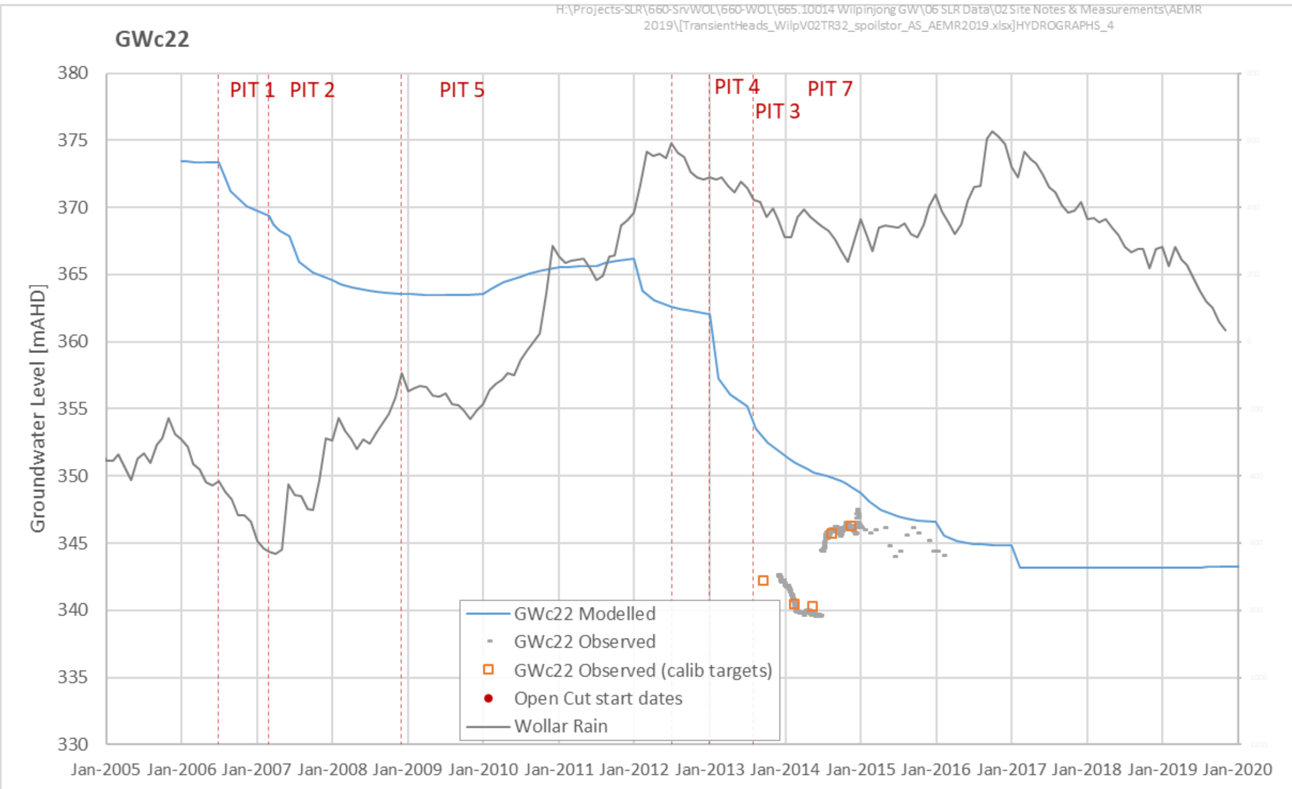


Figure 63 GWc28 Calibration Hydrographs

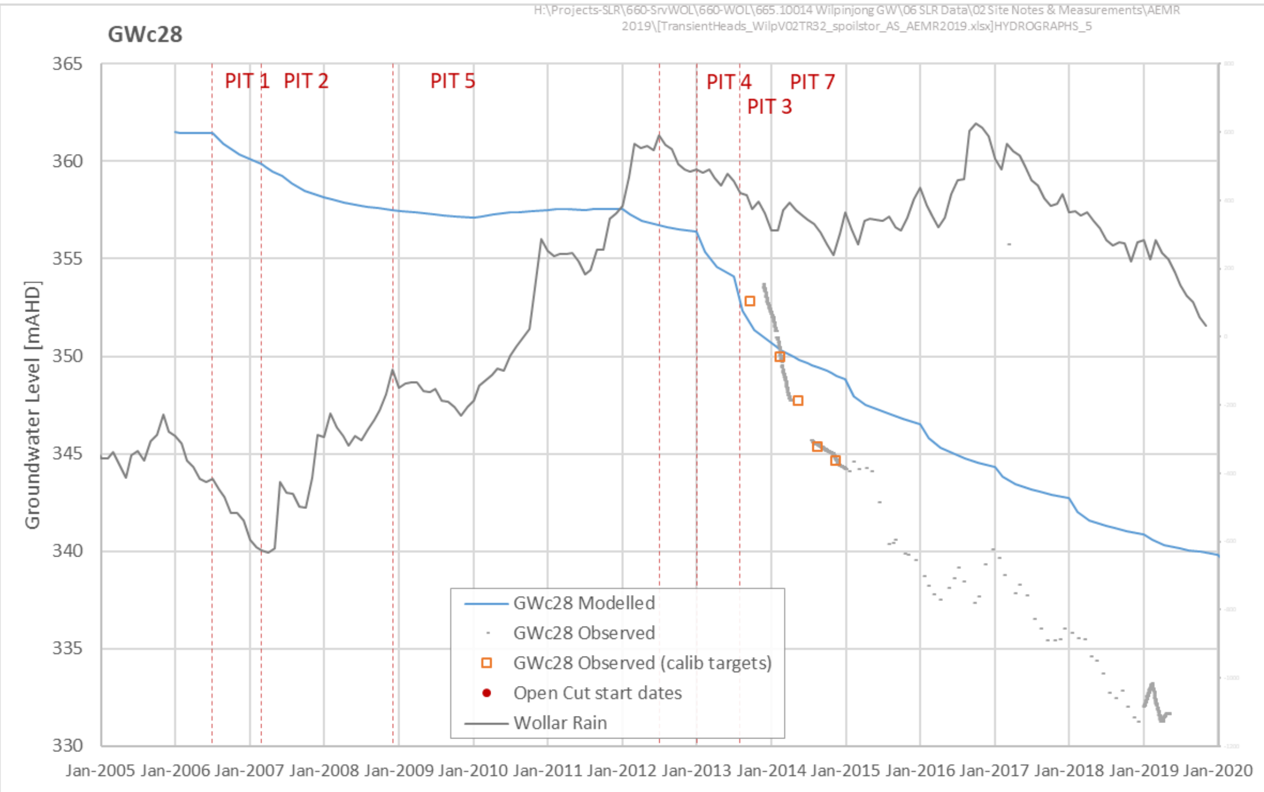
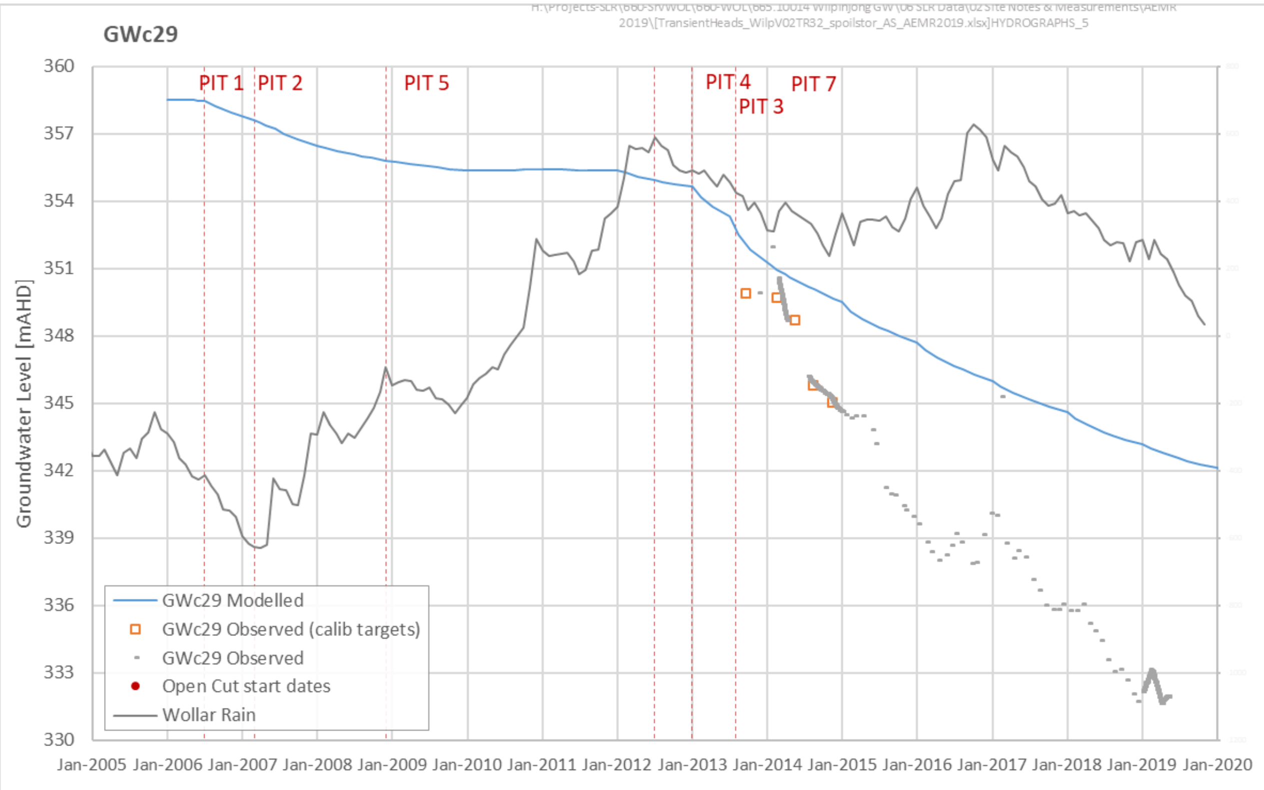


Figure 64 GWc29 Calibration Hydrographs



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