Mount Thorley Warkworth

Monthly Environmental Report

March 2017

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Revision History

Version No.	Person Responsible	Document Status	Date
1.0	**Environmental Graduate**	**Draft**	**27/04/2017**
1.1	**Acting Environmental Specialist**	**Final**	**28/04/2017**

1.0 INTRODUCTION

This report has been compiled to provide a monthly summary of environmental monitoring results for Mount Thorley Warkworth (MTW). This report includes all monitoring data collected for the period 1 March to 31 March 2017.

2.0 AIR QUALITY

2.1 Meteorological Monitoring

Meteorological data is collected at MTW's 'Charlton Ridge' meteorological station (refer to Figure 3: Air Quality Monitoring Locations).

2.1.1 Rainfall

Rainfall for the period is summarised in Table 1, the year-to-date trend and historical trend are shown in Figure 1.

Table 1: Monthly Rainfall MTW

2017	Monthly Rainfall (mm)	Cumulative Rainfall (mm)
March	140	188

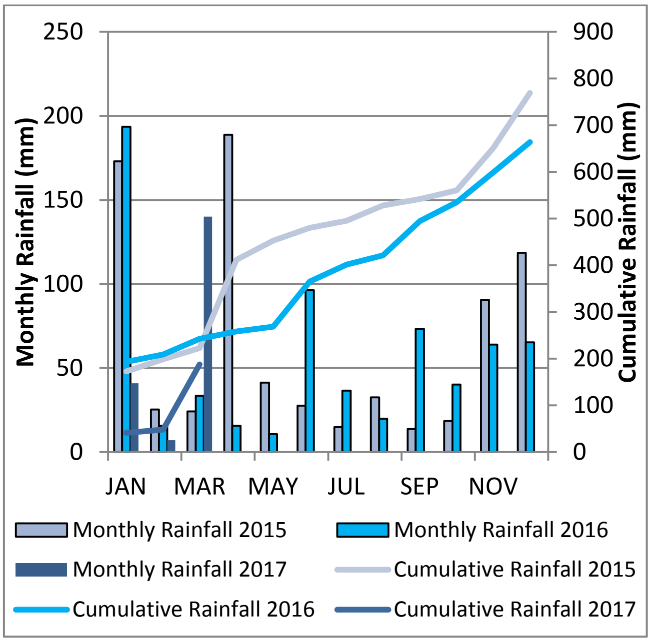

Figure 1: Rainfall Trends YTD

2.1.2 Wind Speed and Direction

Winds from the South were dominant throughout the reporting period as shown in Figure 2.

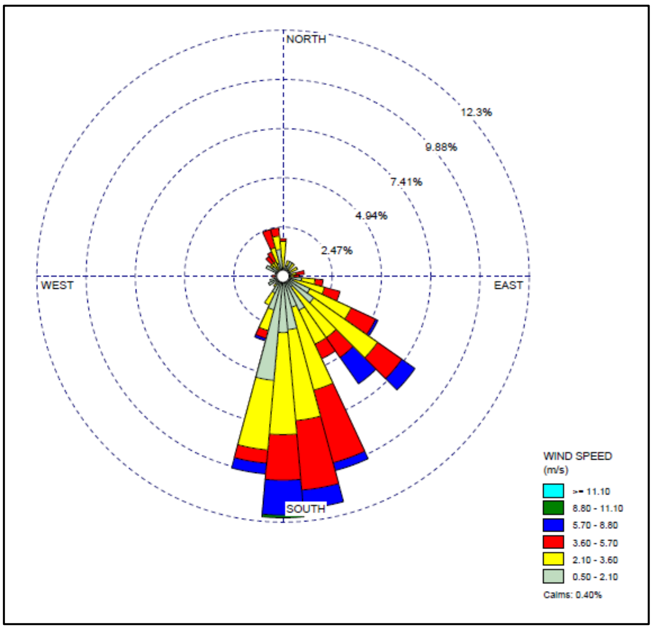

Figure 2: Charlton Ridge Wind Rose – March 2017

Figure 3: Air Quality Monitoring Locations

2.2 Depositional Dust

To monitor regional air quality, MTW operates and maintains a network of nine depositional dust gauges, situated on private and mine owned land surrounding MTW.

Figure 4 displays insoluble solids results from depositional dust gauges during the reporting period compared against the year-to-date average and the annual impact assessment criteria.

During the reporting period the DW14, DW20a and Warkworth monitors recorded monthly results above the long term impact assessment criteria of 4.0 g/m² per month. There is no evidence to suggest that the DW14, DW20a and Warkworth results are contaminated. Accordingly, the results will be included in the annual average calculation.

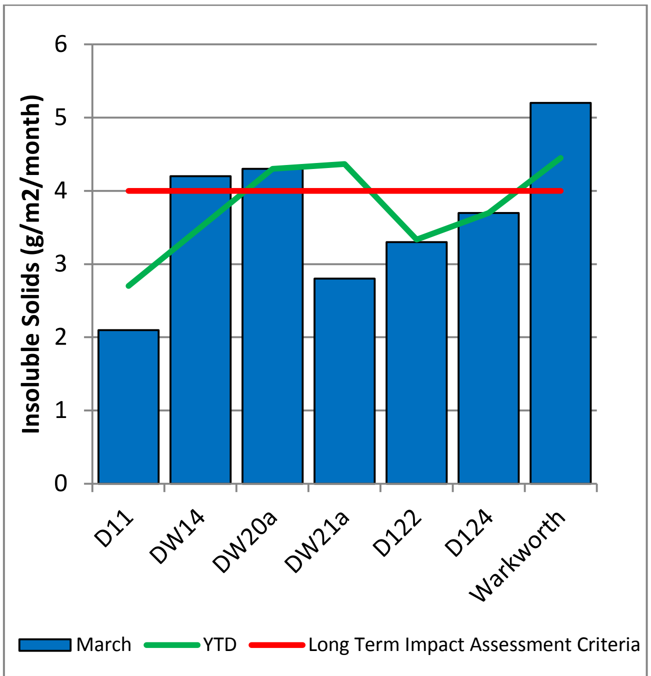

Figure 4: Depositional Dust – March 2017

2.3 Suspended Particulates

Suspended particulates are measured by a network of High Volume Air Samplers (HVAS) measuring Total Suspended Particulates (TSP) and Particulate Matter <10μm (PM_{10}). The location of these monitors can be found in Figure 3. Each HVAS was run for 24 hours on a six-day cycle in accordance with EPA requirements.

2.3.1 HVAS PM_{10} Results

Figure 5 shows the individual PM_{10} results at each monitoring station against the short term impact assessment criteria of 50μg/m³.

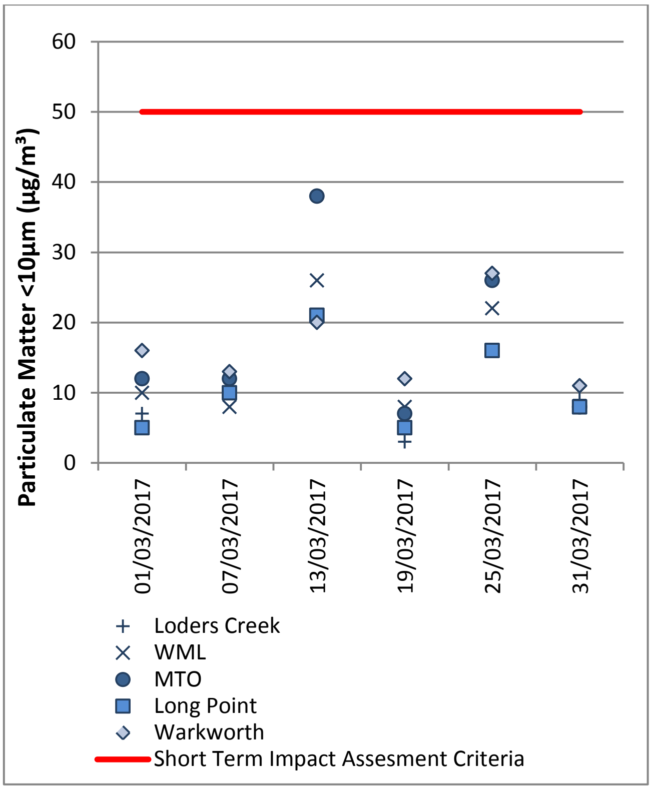

Figure 5: Individual PM_{10} Results – March 2017

Figure 6 shows the annual average PM_{10} results against the long term impact assessment criteria.

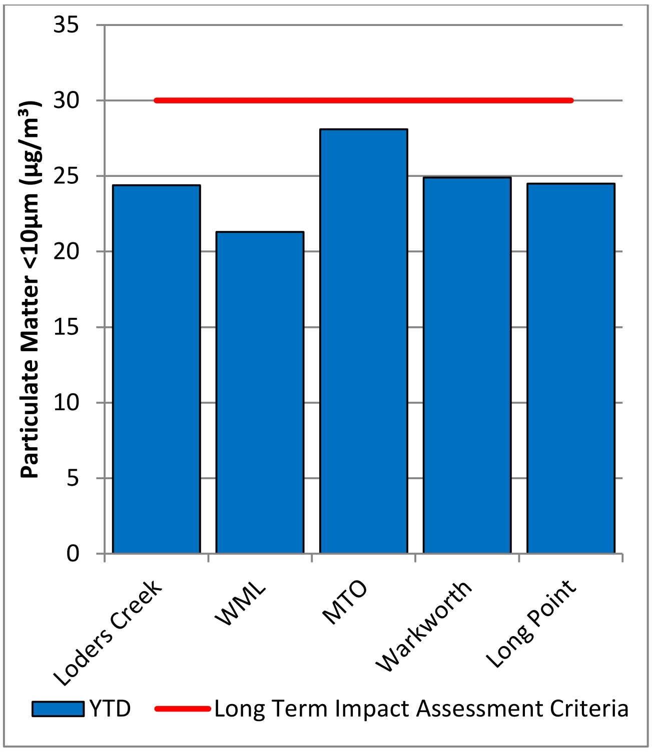

Figure 6: Annual Average PM_{10} – March 2017

2.3.2 TSP Results

Figure 7 shows the annual average TSP results compared against the long term impact assessment criteria of 90µg/m³.

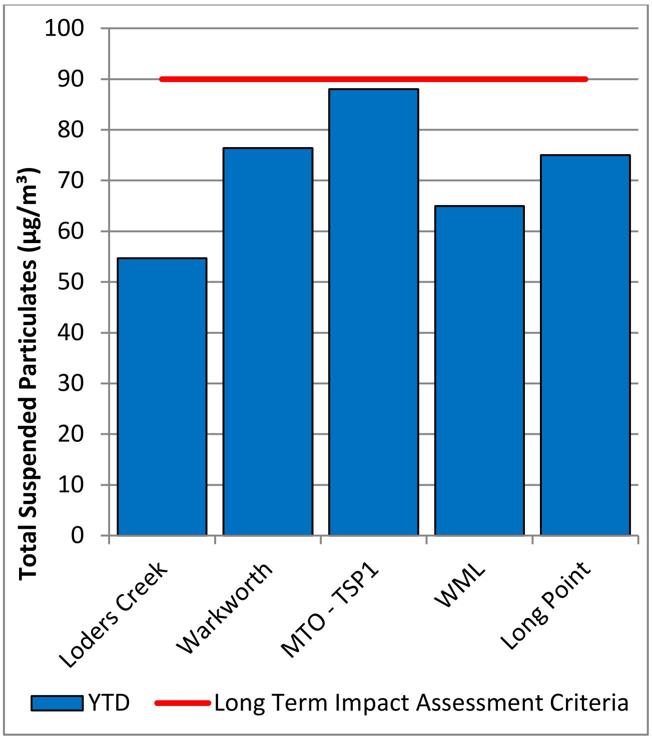

Figure 7: Annual Average Total Suspended Particulates – March 2017

2.3.3 Real Time PM_{10} Results

Mount Thorley Warkworth maintains a network of real time PM_{10} monitors. The real time air quality monitoring stations continuously log information and transmit data to a central database, generating alarms when particulate matter levels exceed internal trigger limits.

Results for real time dust sampling are shown in Figure 8, including the daily 24 hour average PM_{10} result and the annual PM_{10} average.

2.3.4 Real Time Alarms for Air Quality

During March, the real time monitoring system generated 37 automated air quality related alerts, including 5 alerts for adverse meteorological conditions and 32 alerts for elevated dust levels.

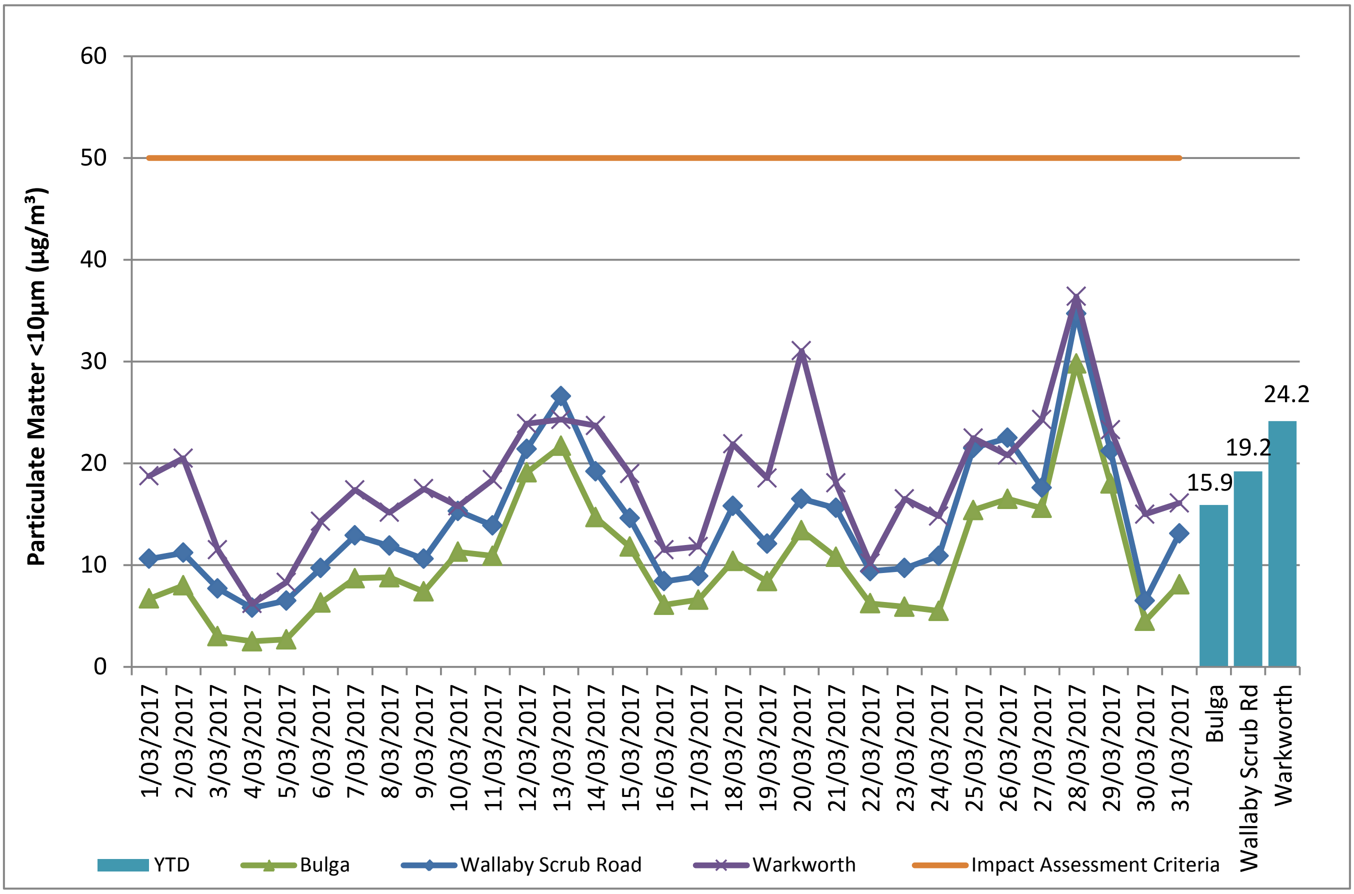

Figure 8: Real Time PM_{10} 24hr average and Year-to-date average – March 2017

3.0 WATER QUALITY

MTW maintains a network of surface water and groundwater monitoring sites.

3.1 Surface Water

Monitoring is conducted at mine site dams and surrounding natural watercourses. The surface water monitoring locations are outlined in Figure 15.

Surface water courses are sampled on a monthly or quarterly sampling regime. Water quality is evaluated through the parameters of pH, Electrical Conductivity (EC) and Total Suspended Solids (TSS). The Hunter River and the Wollombi Brook are sampled both upstream and downstream of mining operations, to monitor the potential impact of mining on the river. Other Hunter River tributaries are also monitored.

3.1.1 Surface Water Monitoring Results

Figure 9 to Figure 11 show the long term surface water trend (2014 – current) within MTW mine dams. Figure 12 to Figure 14 show the long term surface water trend (2014 - current) in surrounding watercourses.

Figure 9: Site Dams Electrical Conductivity Trend 2014 – Current

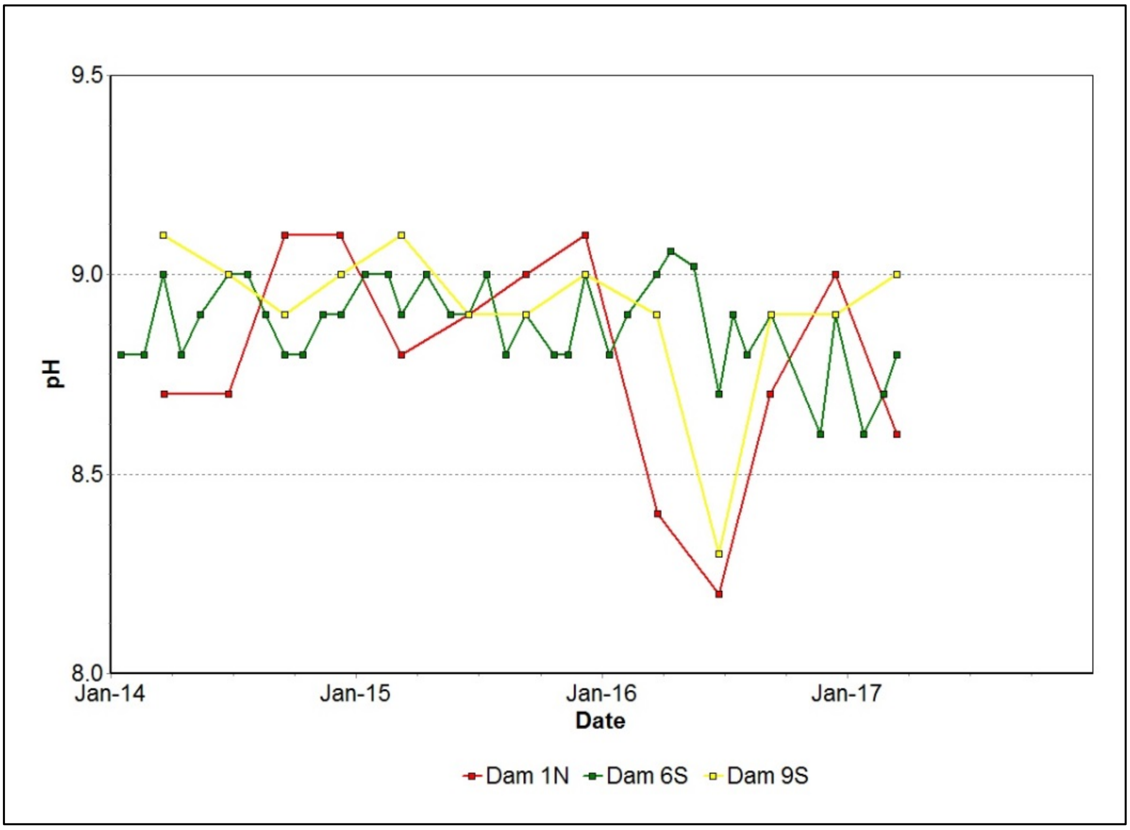

Figure 10: Site Dams pH Trend 2014 - Current

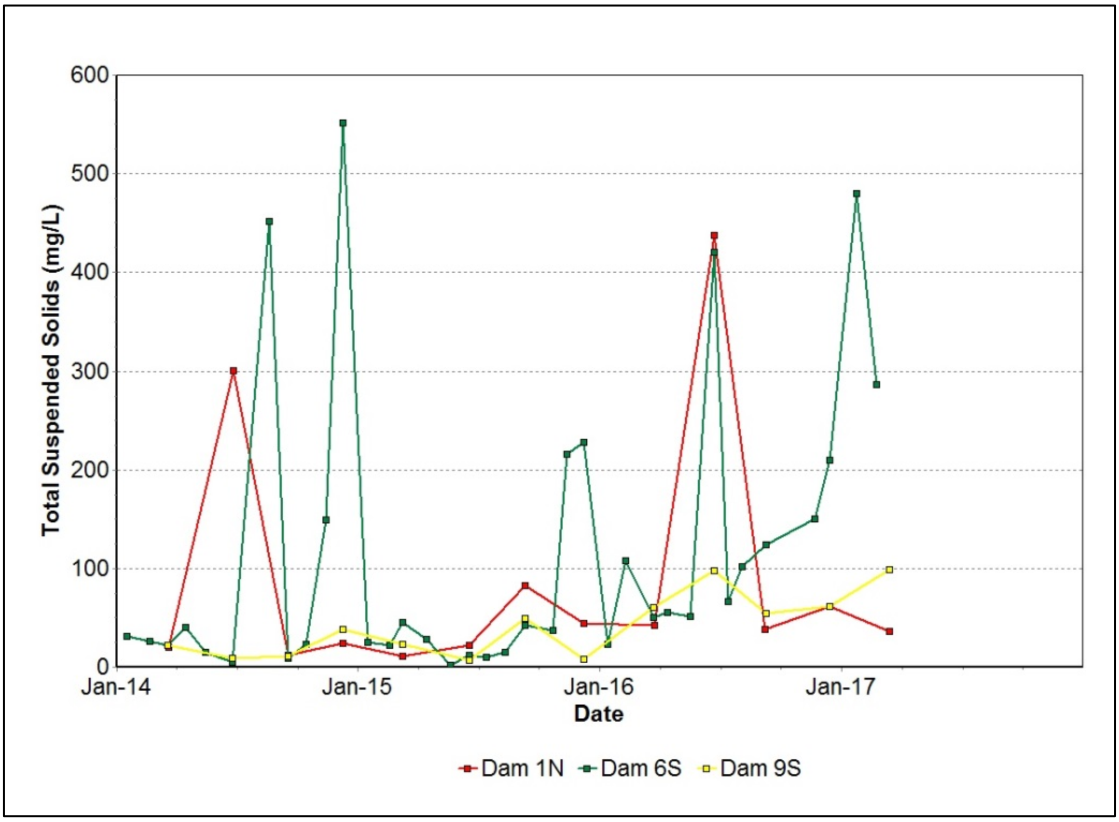

Figure 11: Site Dams Total Suspended Solids Trend 2014 – Current

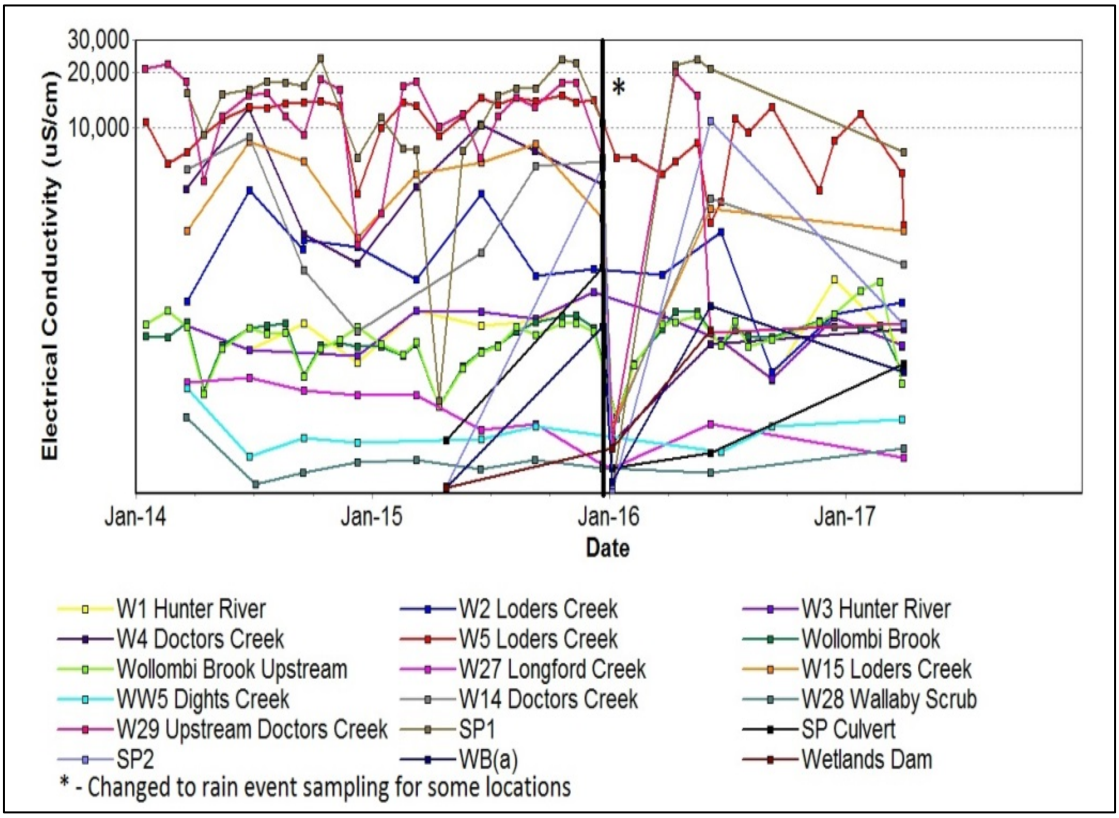

Figure 12: Watercourse Electrical Conductivity Trend 2014 - Current

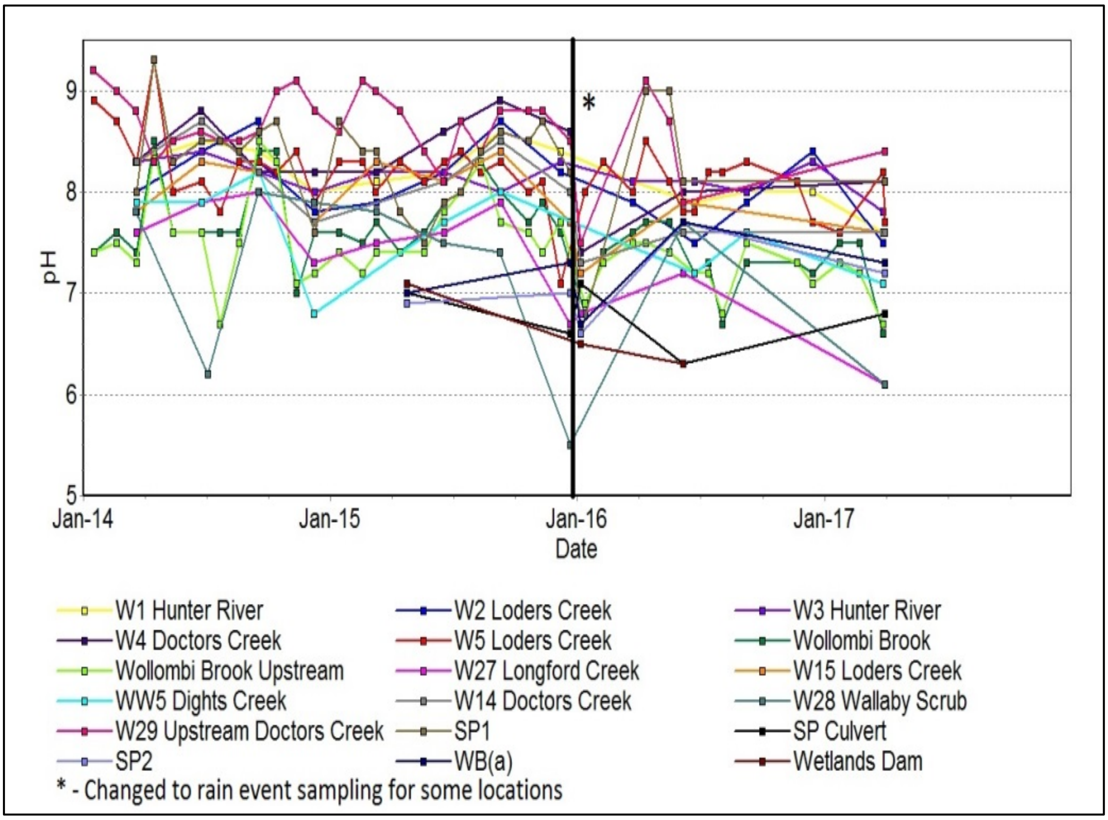

Figure 13: Watercourse pH Trend 2014 – Current

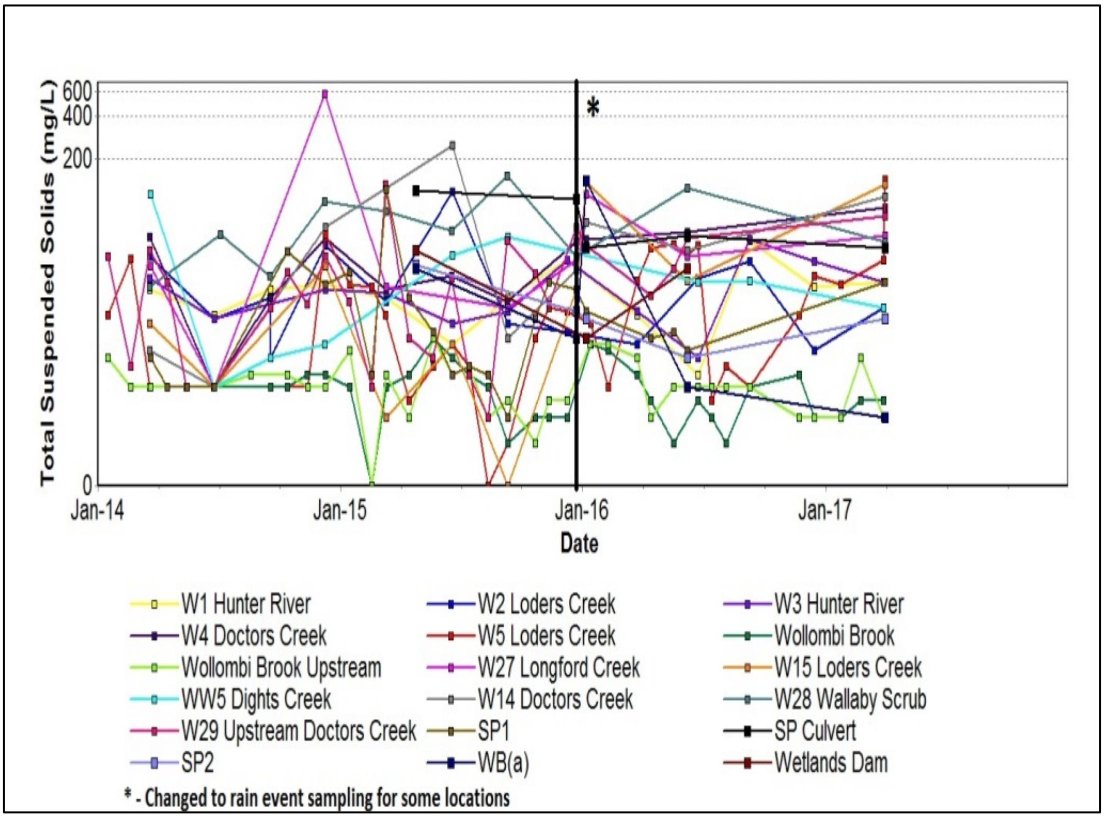

Figure 14: Watercourse Total Suspended Solids Trend 2014 – Current

3.1.2 Surface Water Trigger Tracking

Internal trigger limits have been developed to assess monitoring data on an on-going basis, and to highlight potentially adverse surface water impacts. The process for evaluating monitoring results against the internal triggers and subsequent responses are outlined in the MTW Water Management Plan.

During Q1 2017 14 internal trigger limits were breached, summarised in Table 2.

Table 2: Surface Water Trigger Tracking - March 2017

Site	Date	Trigger Limit Breached	Action Taken in Response
W5	28/03/2017	EC –95th Percentile	Watching Brief*
W1	28/03/2017	EC –95th Percentile	Watching Brief*
W1	28/03/2017	pH –5th Percentile	Watching Brief*
W2	28/03/2017	pH –5th Percentile	Watching Brief*
W4	31/03/2017	pH –5th Percentile	Watching Brief*
W5	28/03/2017	pH –5th Percentile	Watching Brief*
W15	31/03/2017	pH –5th Percentile	Watching Brief*
W27	31/03/2017	pH –5th Percentile	Watching Brief*
W4	31/03/2017	TSS – 50mg/L (ANZECC criteria)	Field investigation did not identify any mining-related sources of sediment. Elevated TSS associated with high-intensity rainfall event. No further action.
W14	31/03/2017	TSS – 50mg/L (ANZECC criteria)	Field investigation did not identify any mining-related sources of sediment. Elevated TSS associated with high-intensity rainfall event. No further action.
W15	31/03/2017	TSS – 50mg/L (ANZECC criteria)	Investigation did not identify any mining-related sources of sediment. Elevated TSS associated with high-intensity rainfall event. No further action.
W27	31/03/2017	TSS – 50mg/L (ANZECC criteria)	Investigation did not identify any mining-related sources of sediment. Elevated TSS associated with high-intensity rainfall event; data consistent with historical range. No

			further action.
W28	31/03/2017	TSS – 50mg/L (ANZECC criteria)	Investigation did not identify any mining-related sources of sediment. Elevated TSS associated with high-intensity rainfall event; data consistent with historical range. No further action.
W29	31/03/2017	TSS – 50mg/L (ANZECC criteria)	Field investigation did not identify any mining-related sources of sediment. Elevated TSS associated with high-intensity rainfall event. No further action.

* = Watching brief established pending outcomes of subsequent monitoring events. No specific actions required.

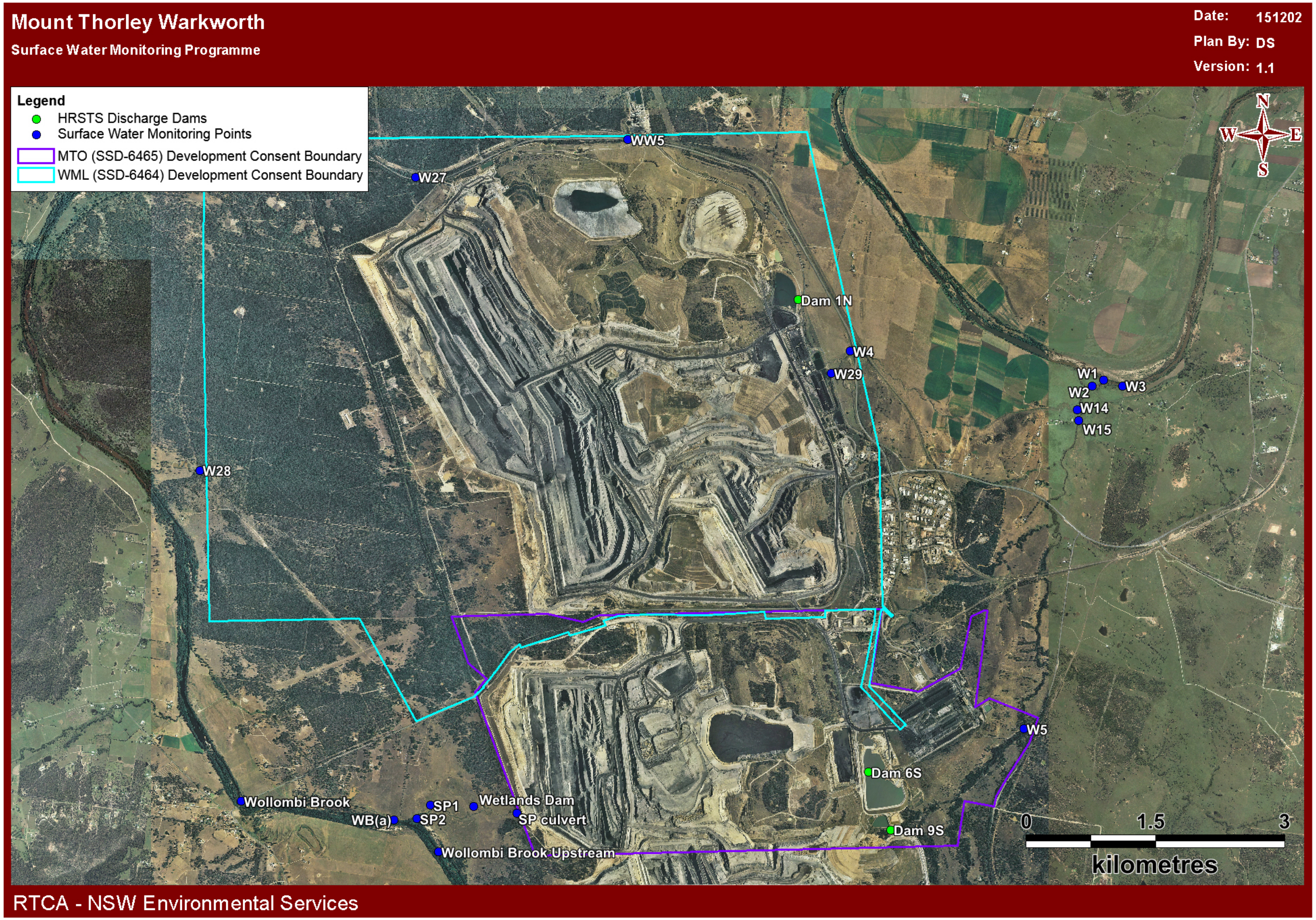

Figure 15: Surface Water Monitoring Location Plan

3.2 Groundwater Monitoring

Groundwater monitoring is undertaken on a quarterly basis in accordance with the MTW Groundwater Monitoring Programme.

Figures 16 to 58 show the long term water quality trends (2014 – current) for groundwater bores monitored at MTW.

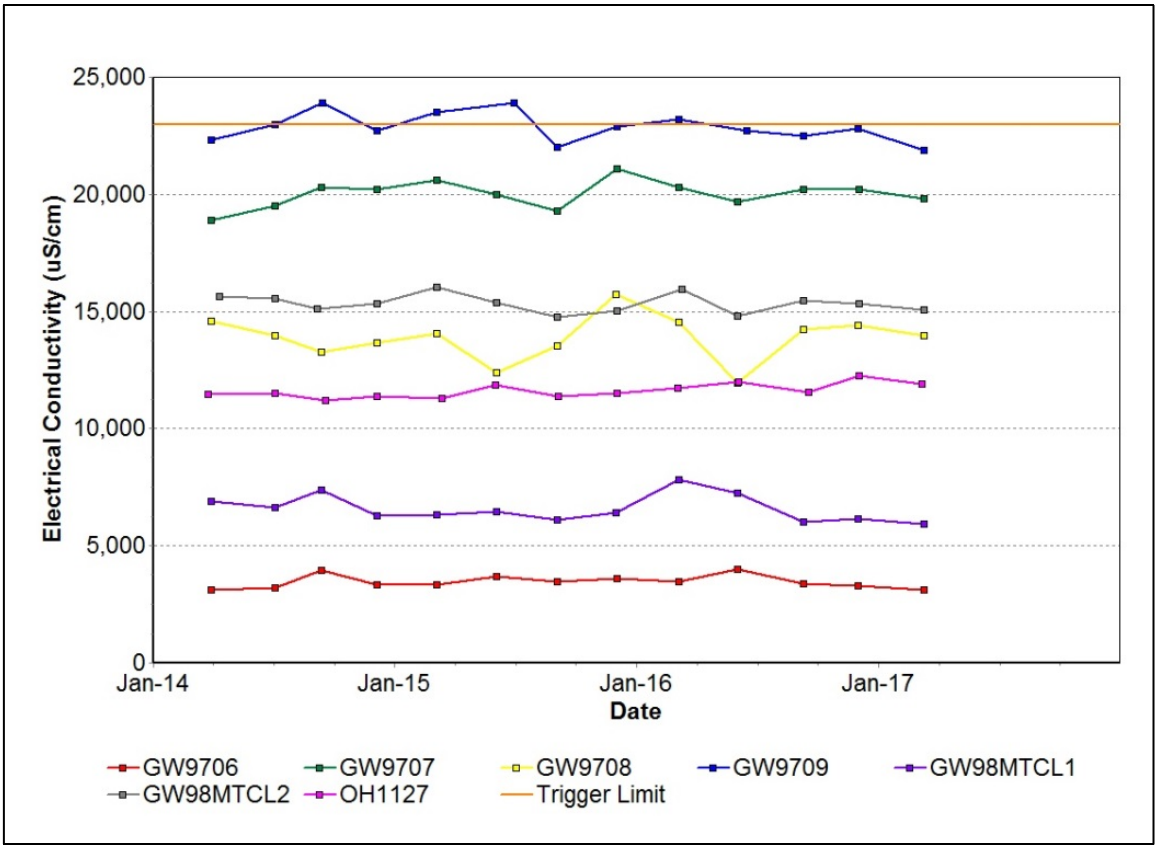

Figure 16: Bayswater Seam Electrical Conductivity Trend – March 2017

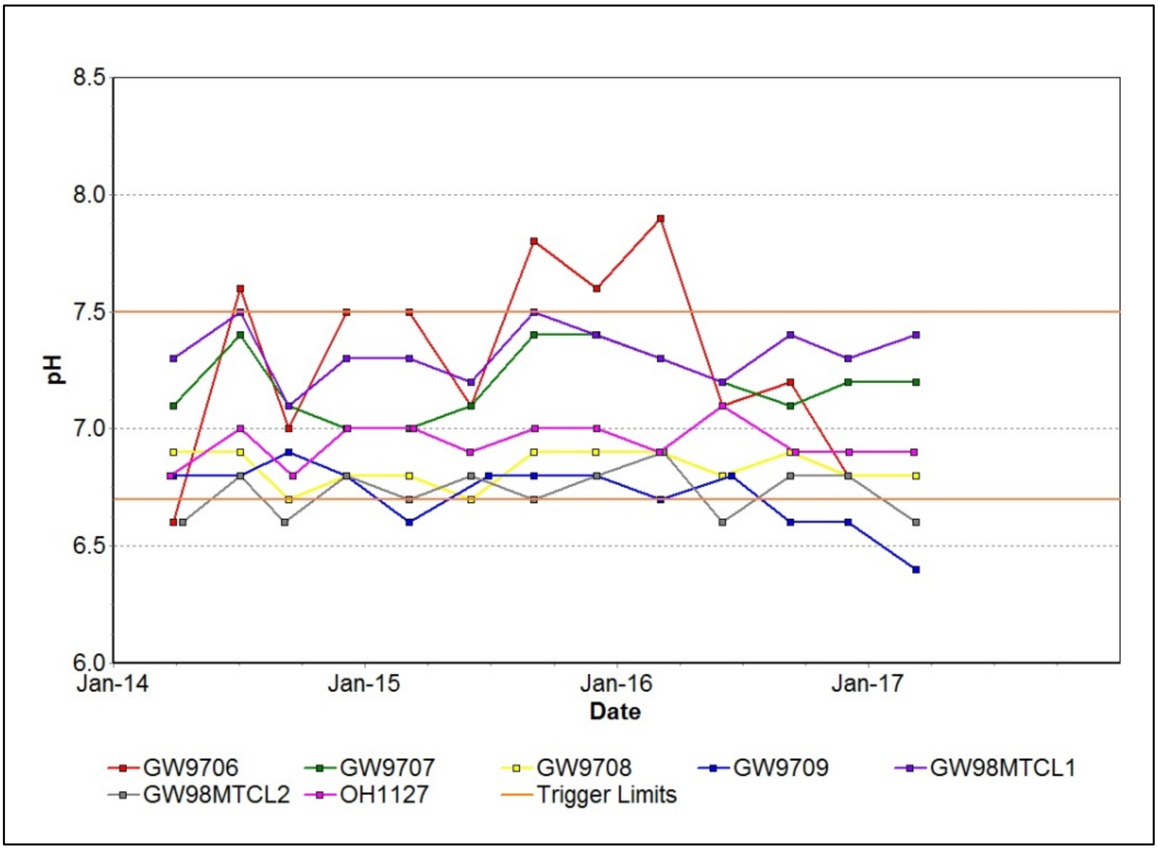

Figure 17: Bayswater Seam pH Trend March 2017

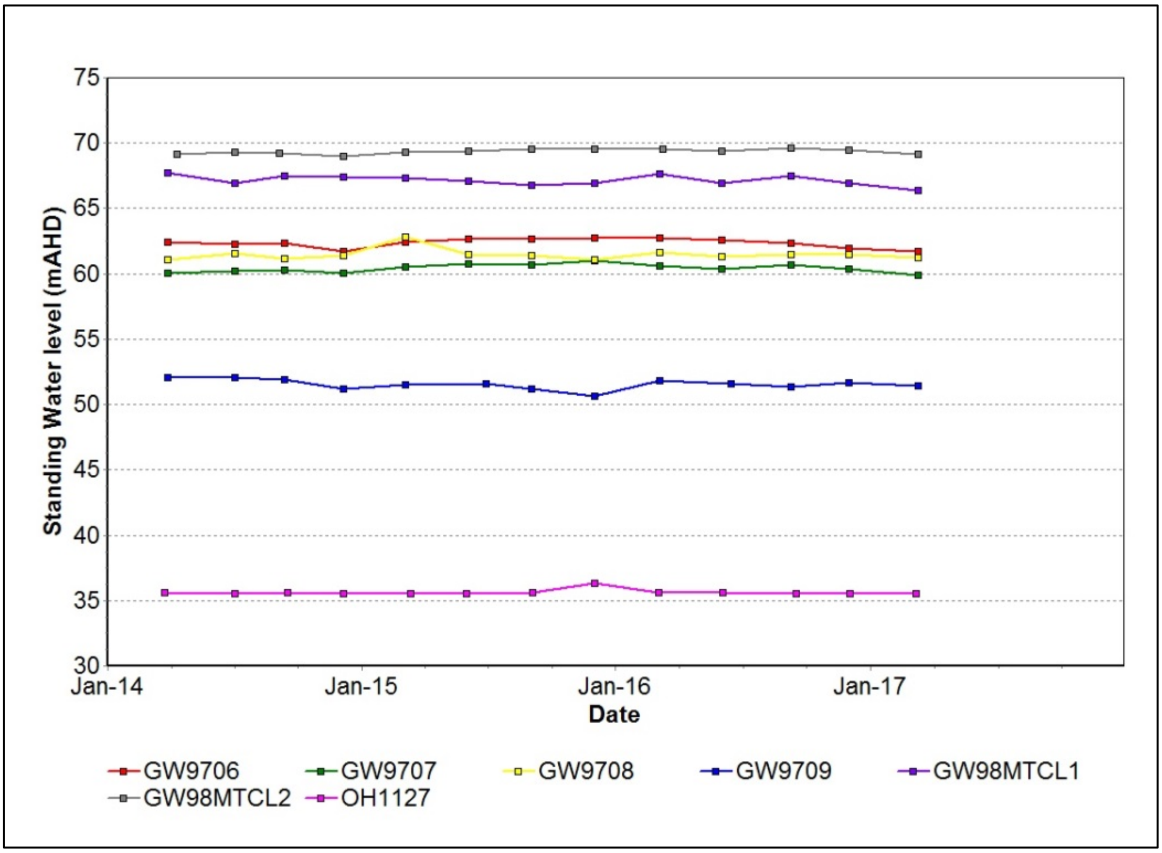

Figure 18: Bayswater Seam Standing Water Level – March 2017

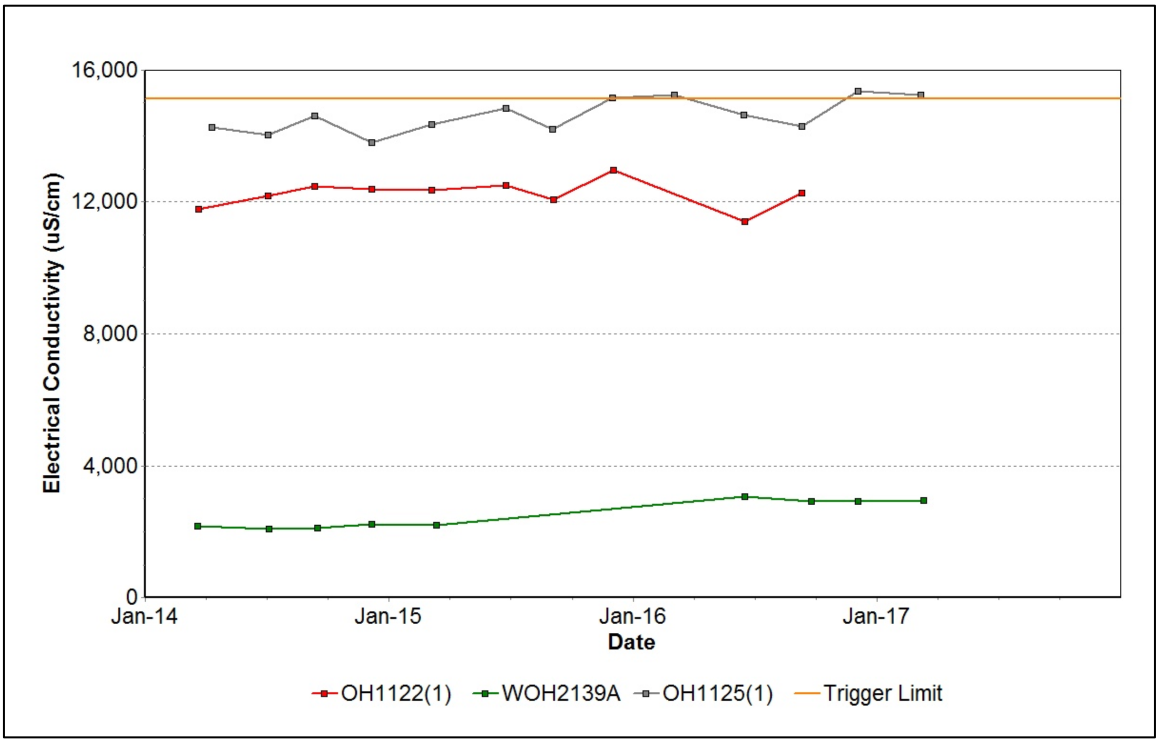

Figure 19: Blakefield Seam Electrical Conductivity Trend - March 2017

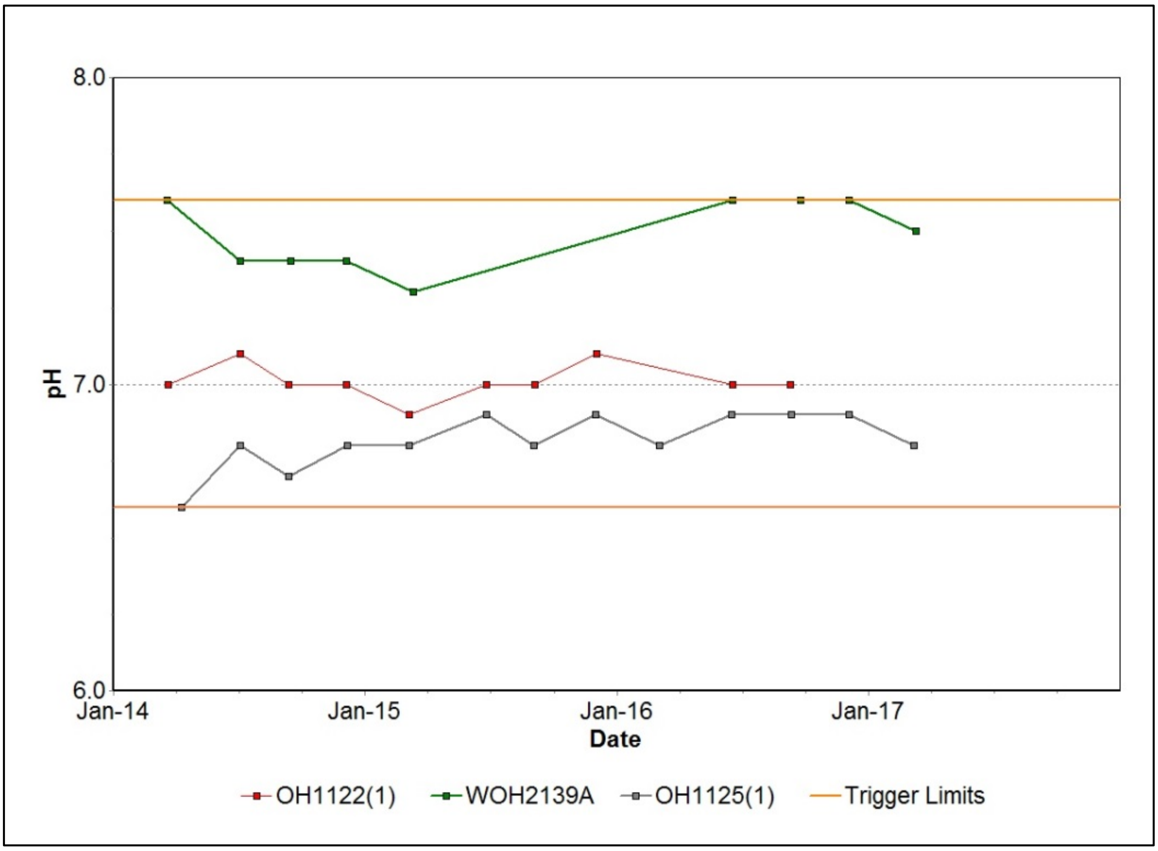

Figure 20: Blakefield Seam pH Trend - March 2017

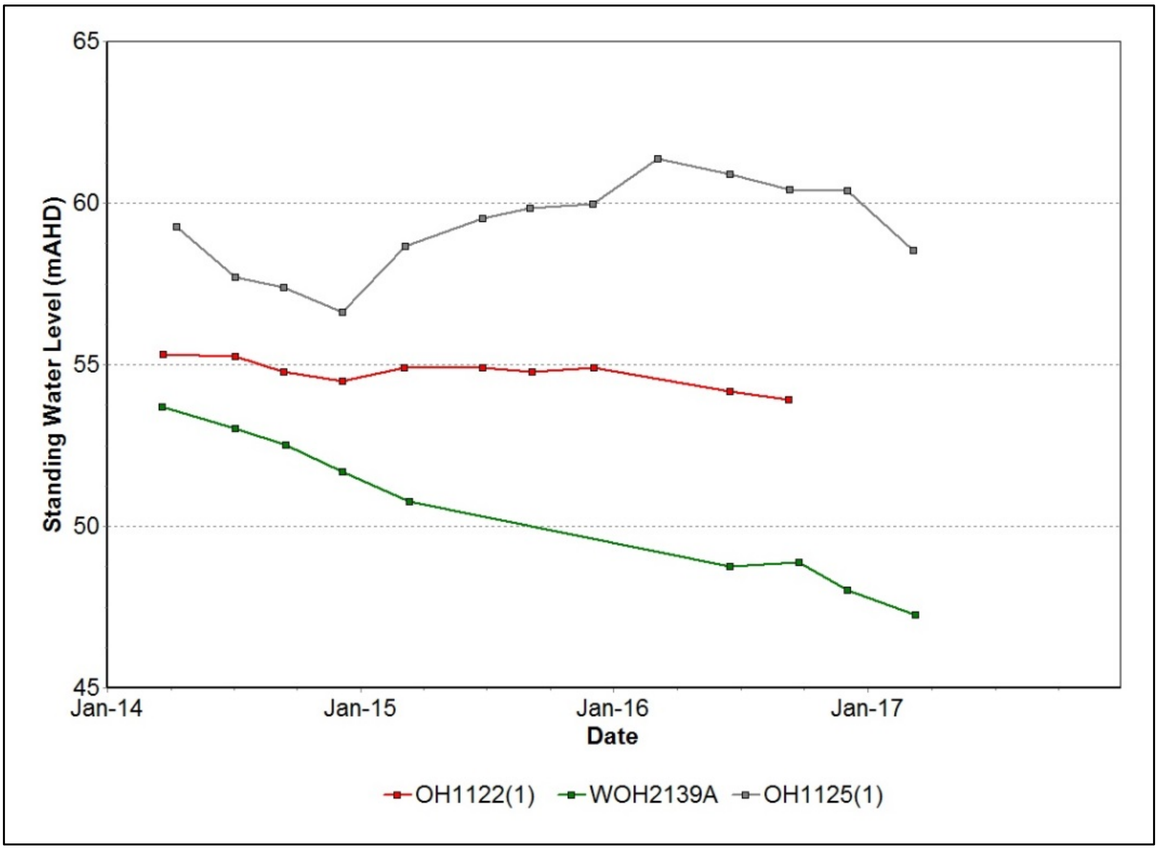

Figure 21: Blakefield Seam Standing Water Level Trend - March 2017

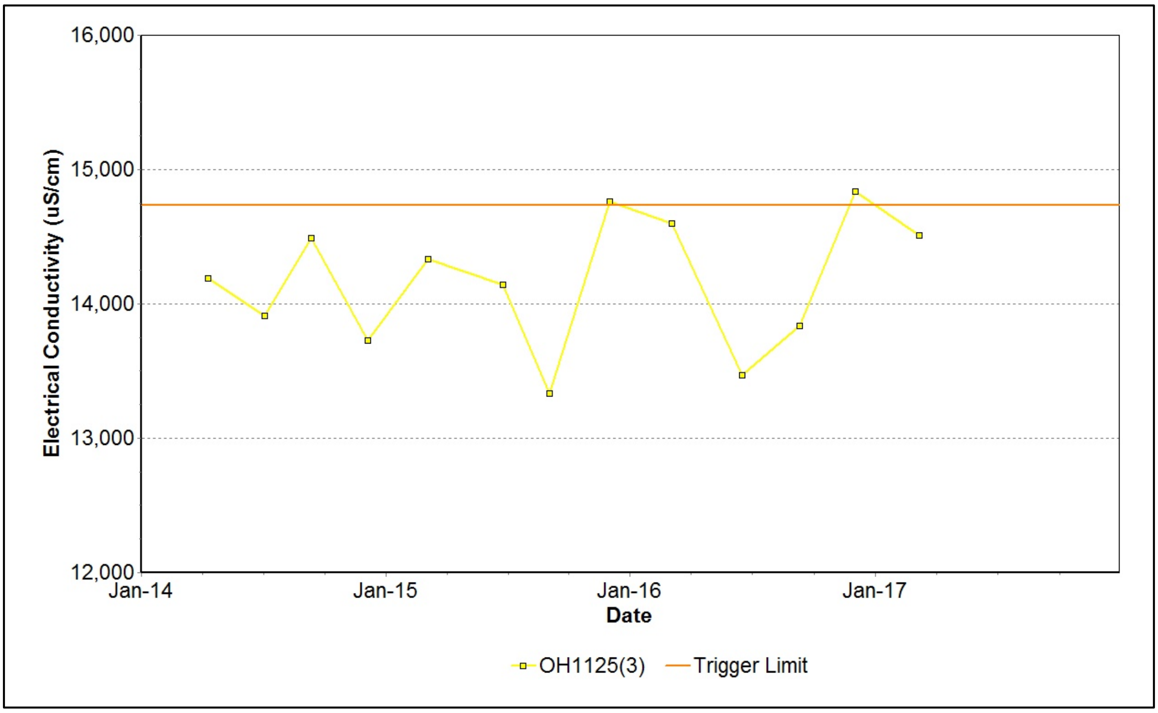

Figure 22: Bowfield Seam Electrical Conductivity Trend - March 2017

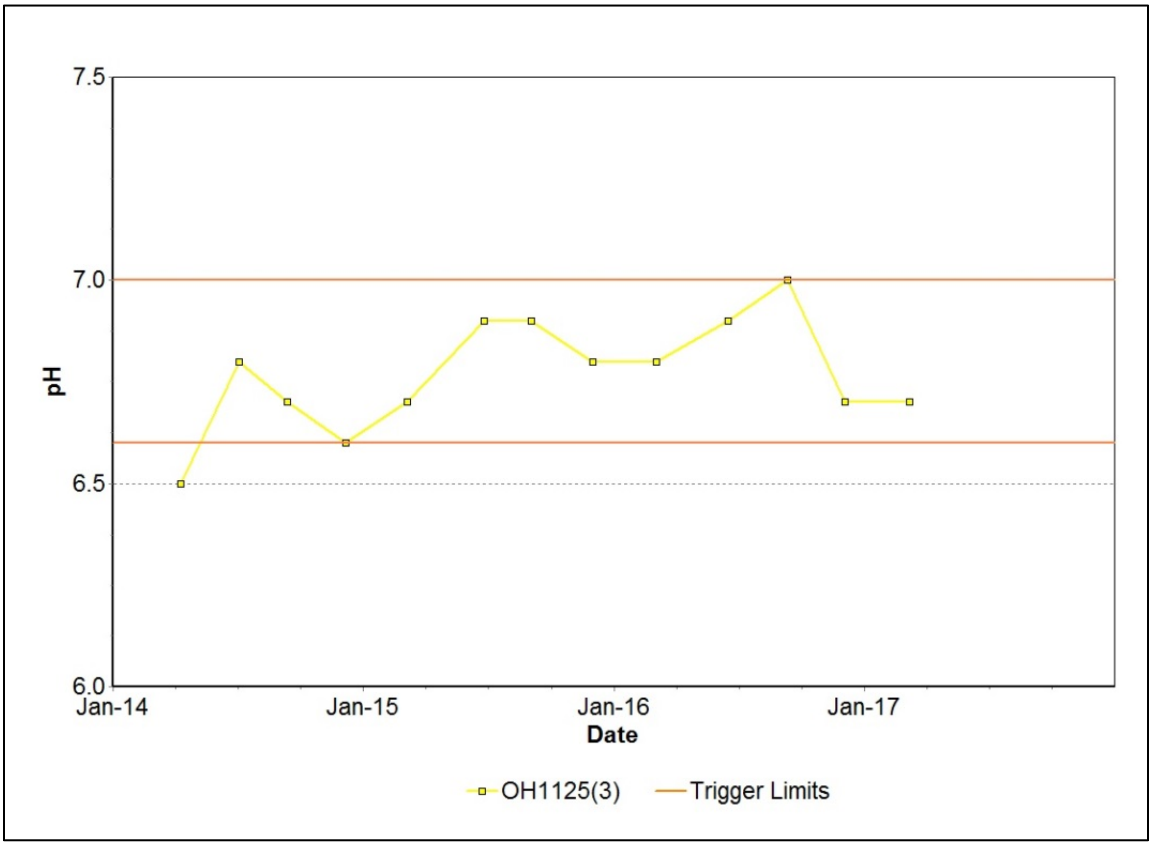

Figure 23: Bowfield Seam pH Trend – March 2017

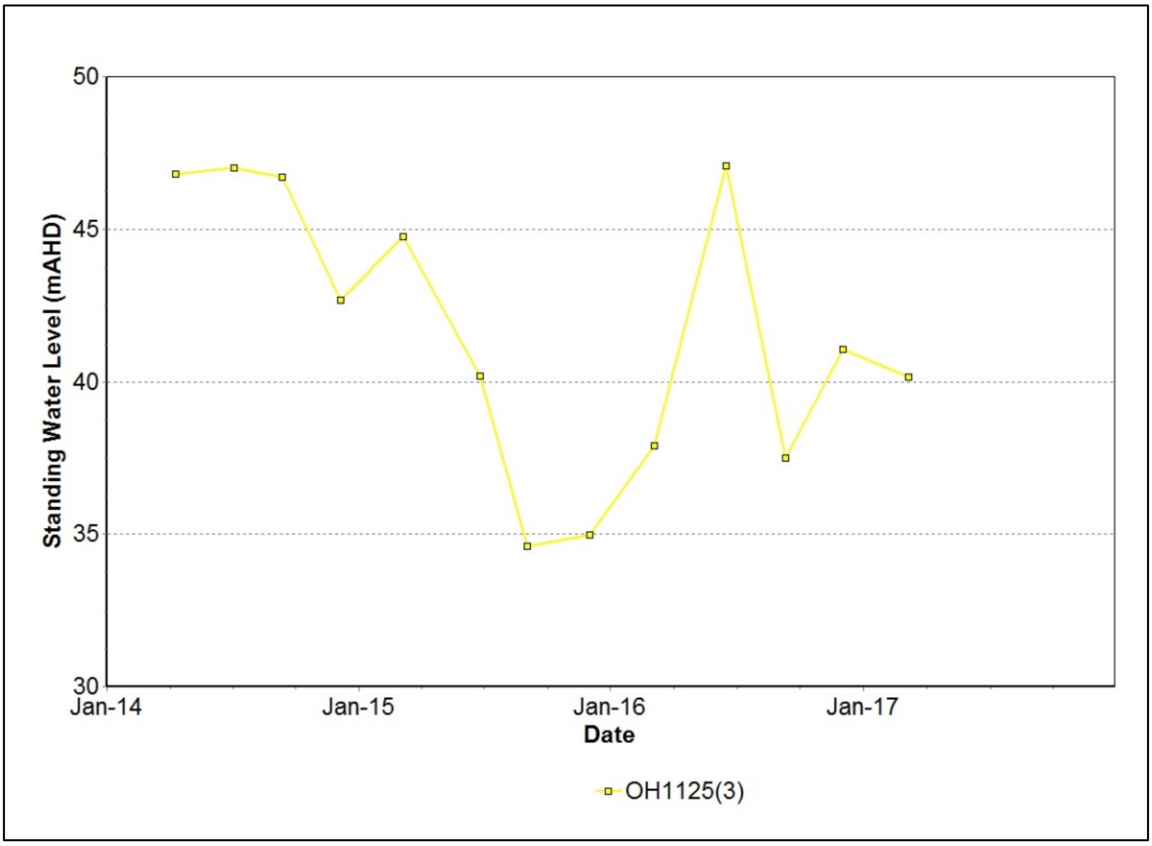

Figure 24: Bowfield Seam Standing Water Level Trend - March 2017

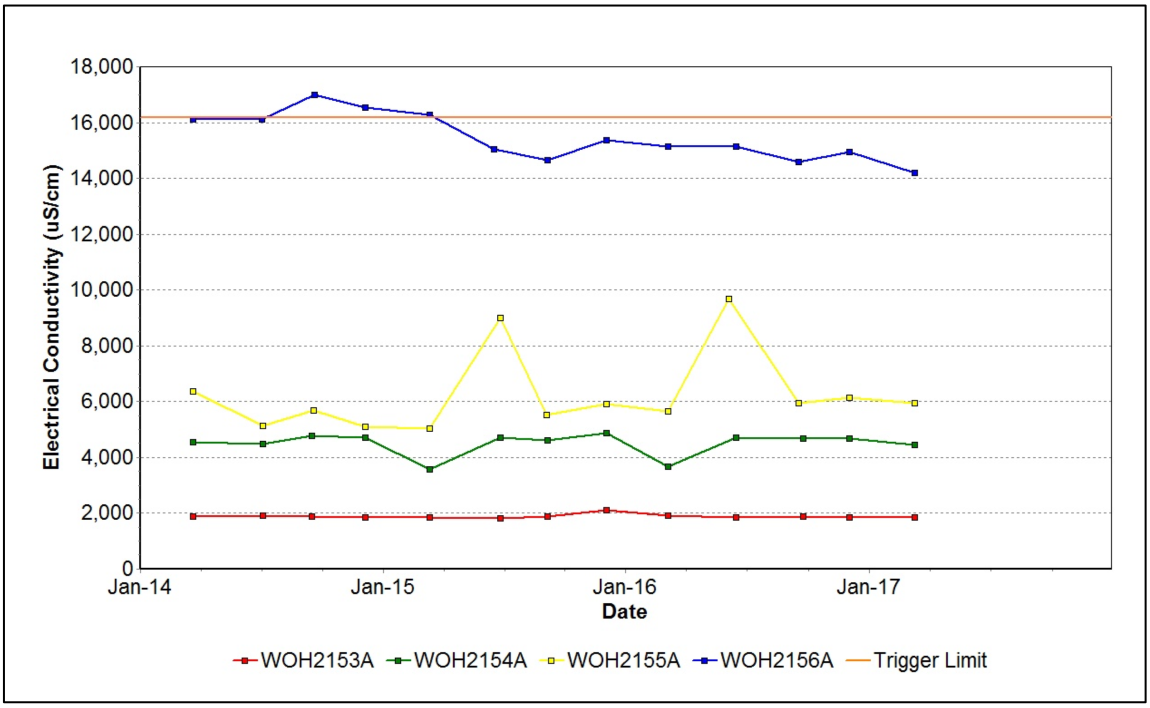

Figure 25: Redbank Seam Electrical Conductivity Trend - March 2017

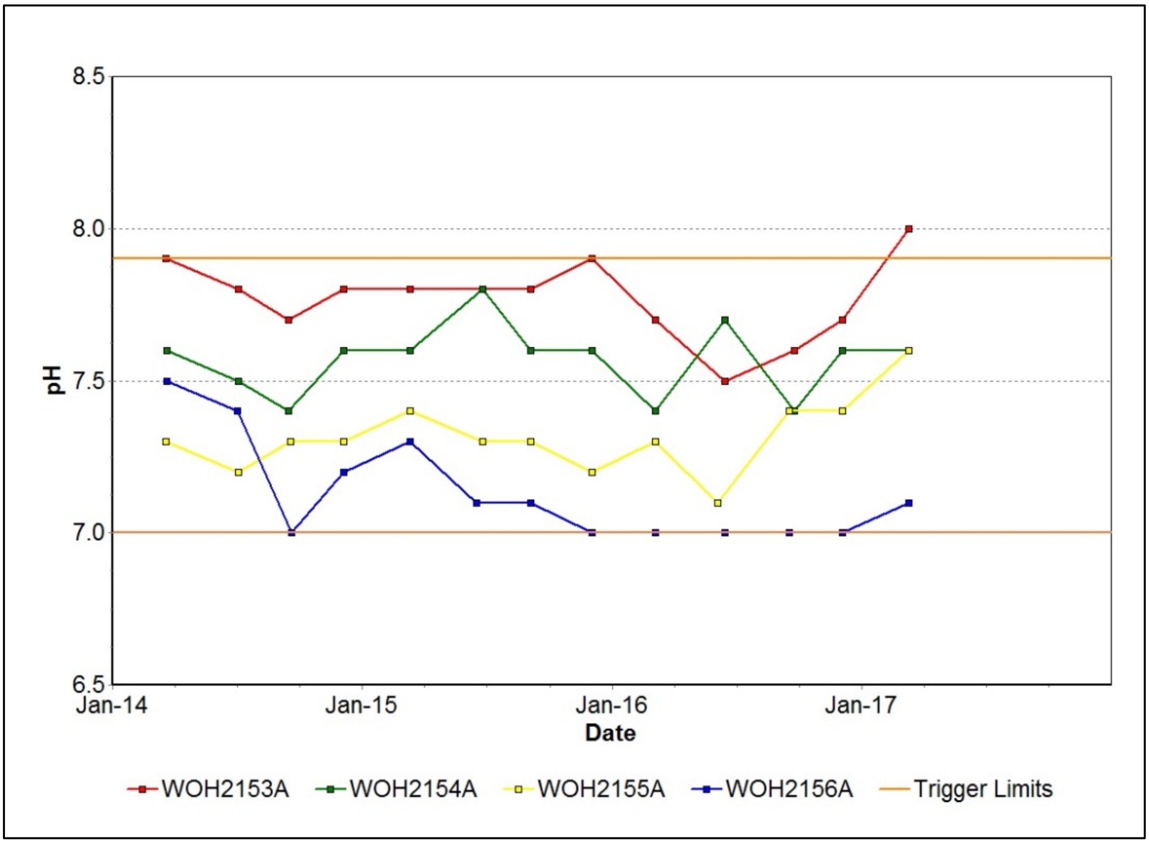

Figure 26: Redbank Seam pH Trend – March 2017

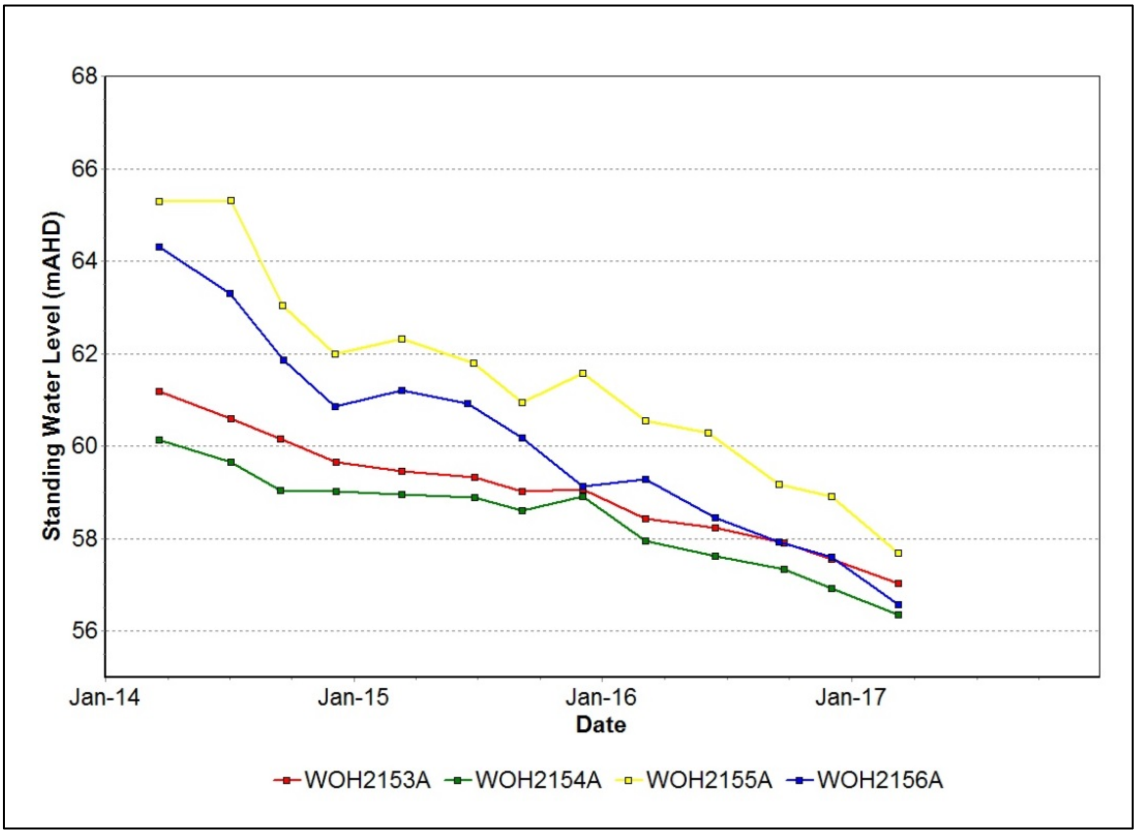

Figure 27: Redbank Seam Standing Water Level - March 2017

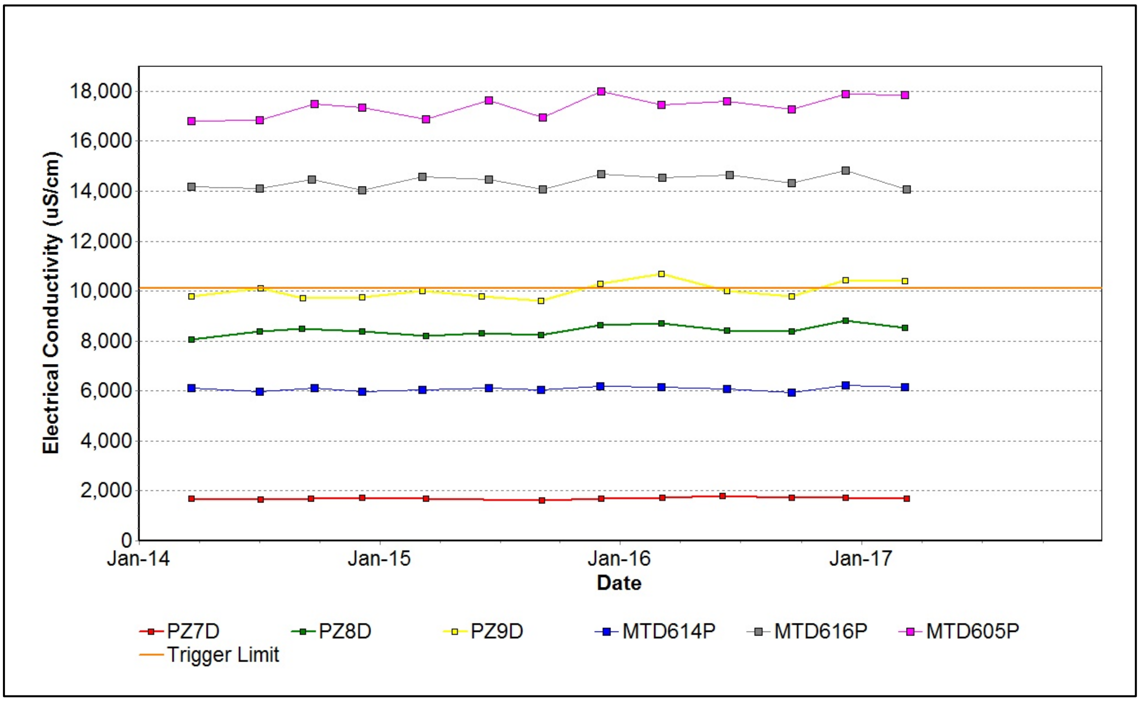

Figure 28: Shallow Overburden Seam Electrical Conductivity Trend - March 2017

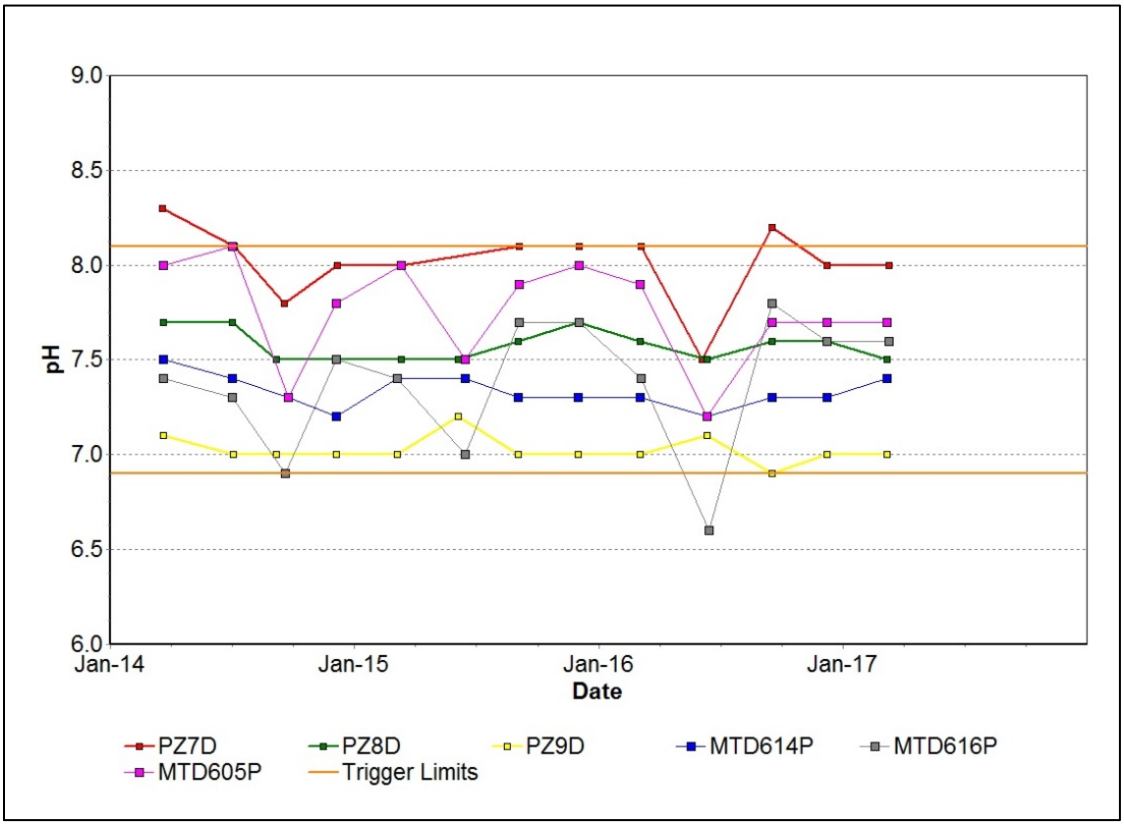

Figure 29: Shallow Overburden Seam pH Trend – March 2017

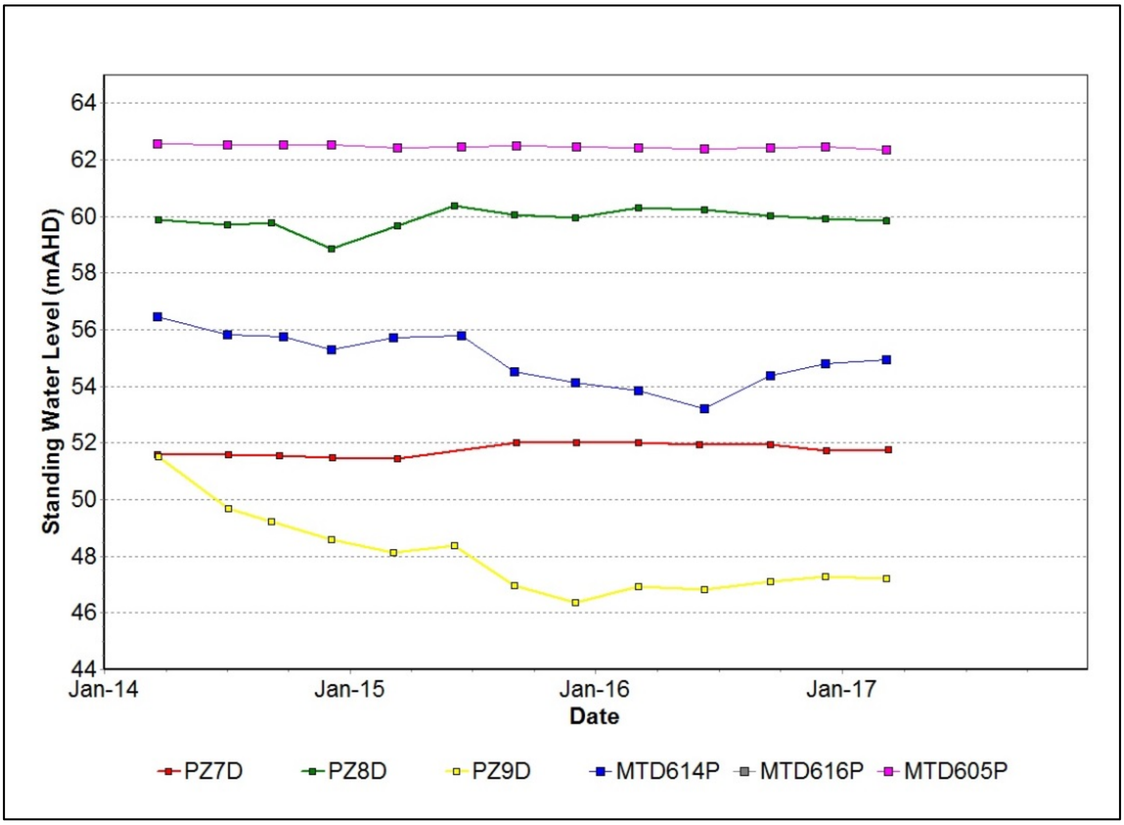

Figure 30: Shallow Overburden Seam Standing Water Level Trend - March 2017

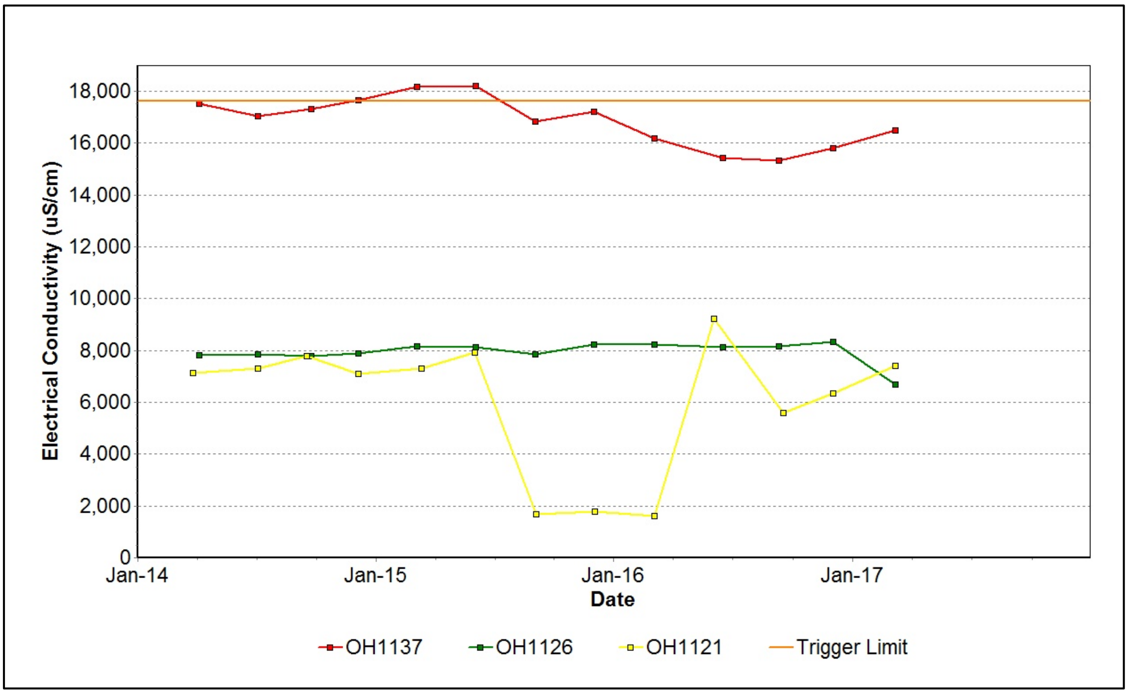

Figure 31: Vaux Seam Electrical Conductivity Trend – March 2017

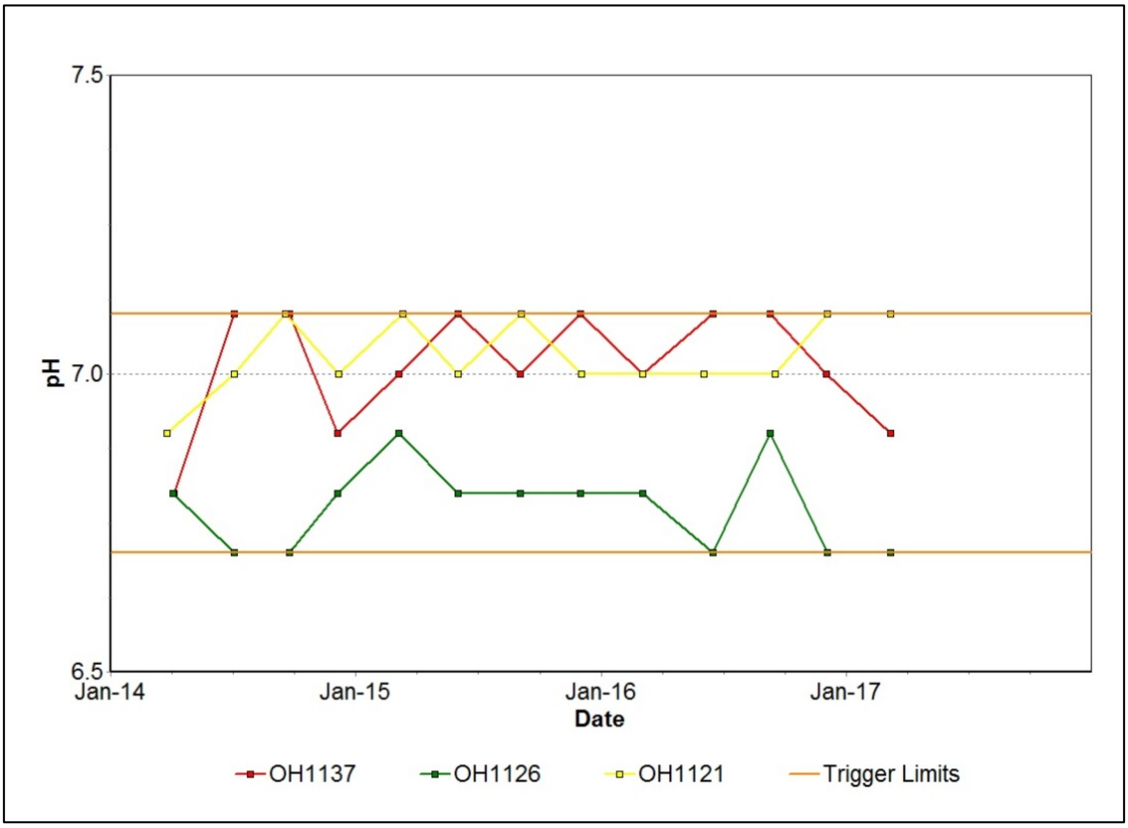

Figure 32: Vaux Seam pH Trend - March 2017

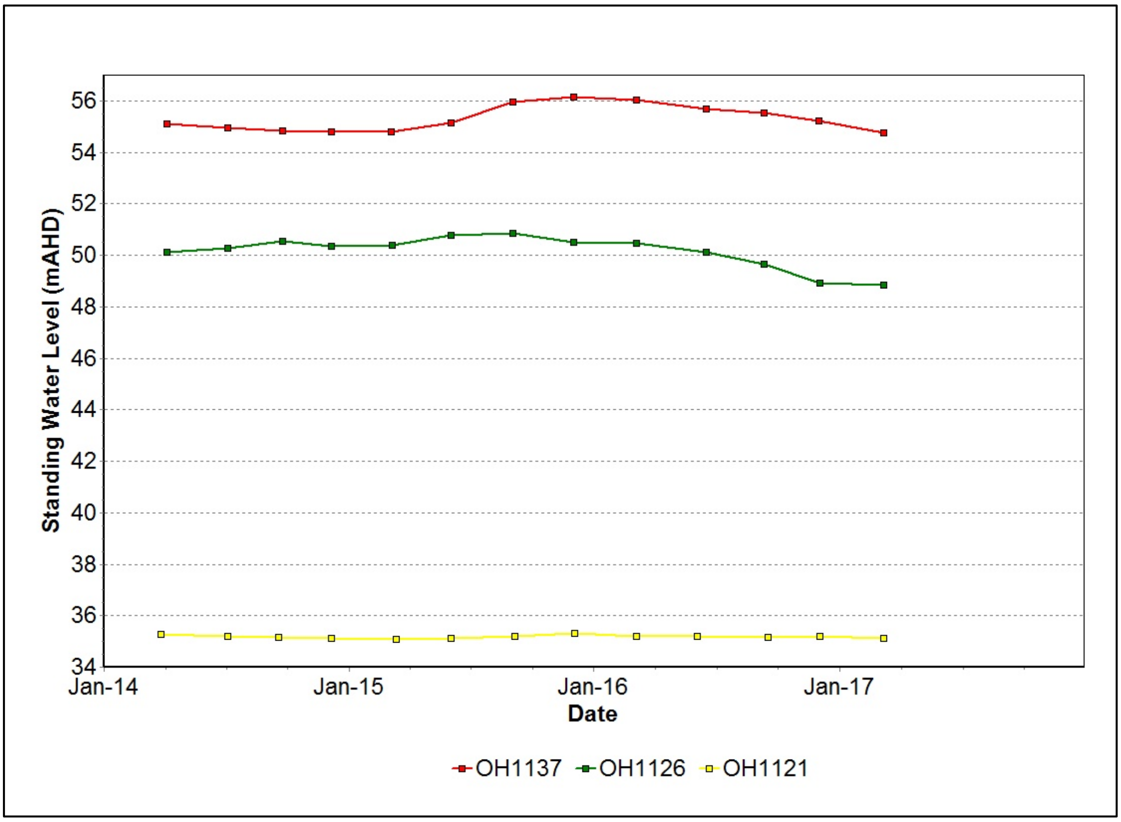

Figure 33: Vaux Seam Standing Water Level Trend - March 2017

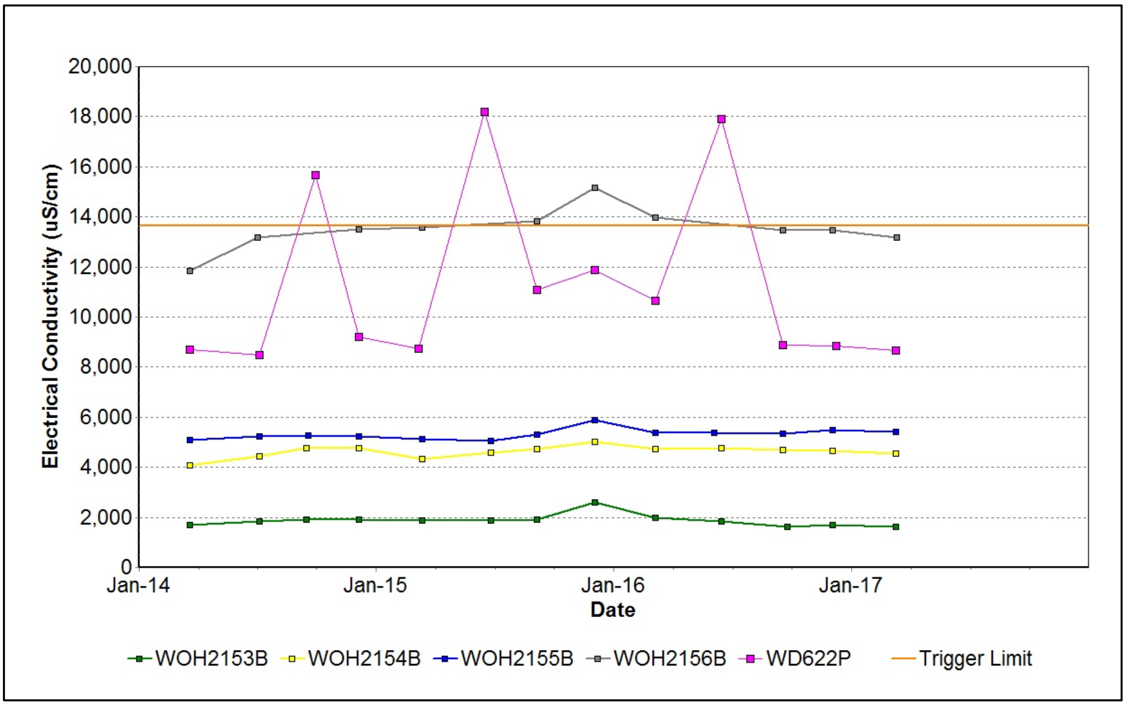

Figure 34: Wambo Seam Electrical Conductivity Trend - March 2017

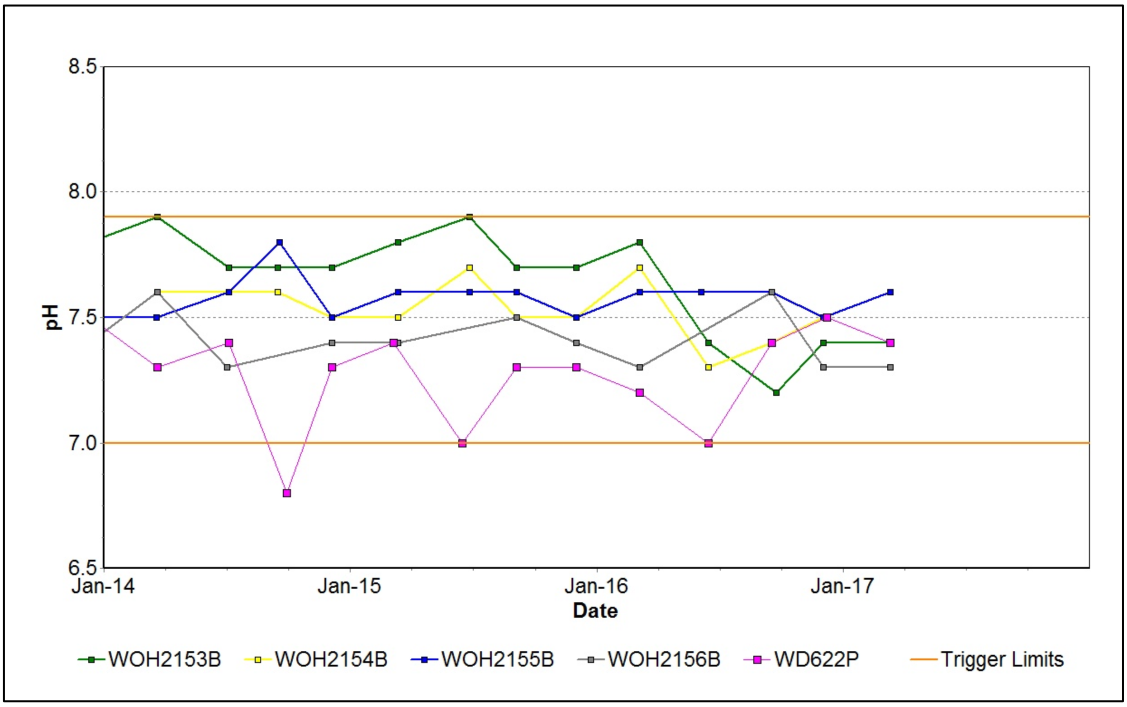

Figure 35: Wambo Seam pH Trend – March 2017

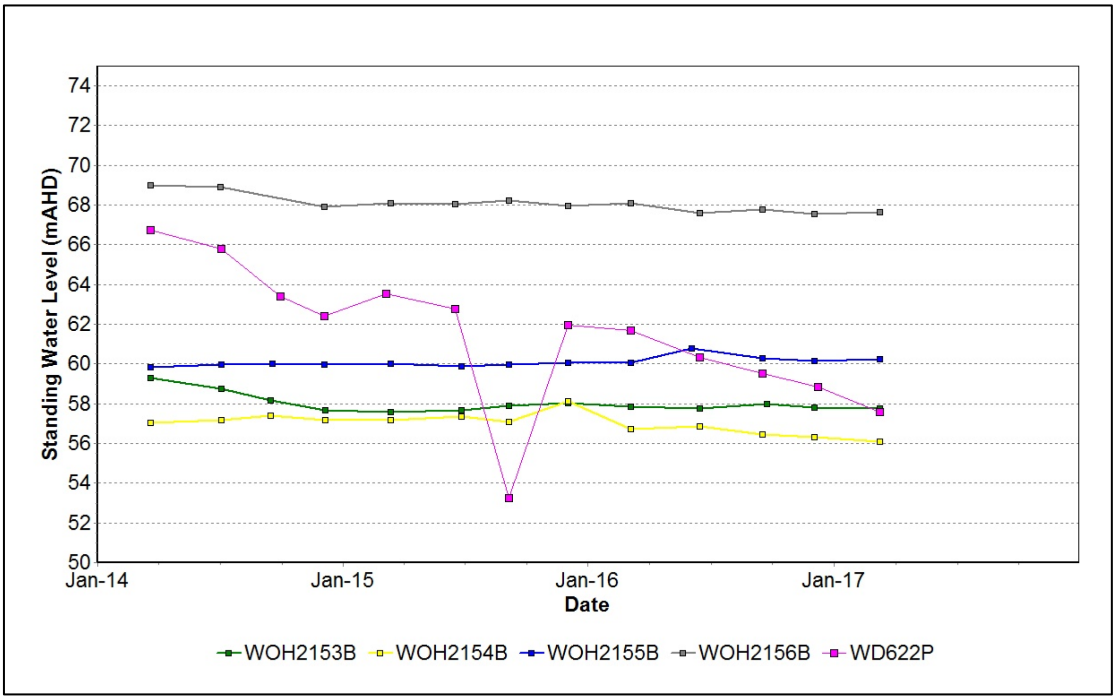

Figure 36: Wambo Seam Standing Water Level Trend - March 2017

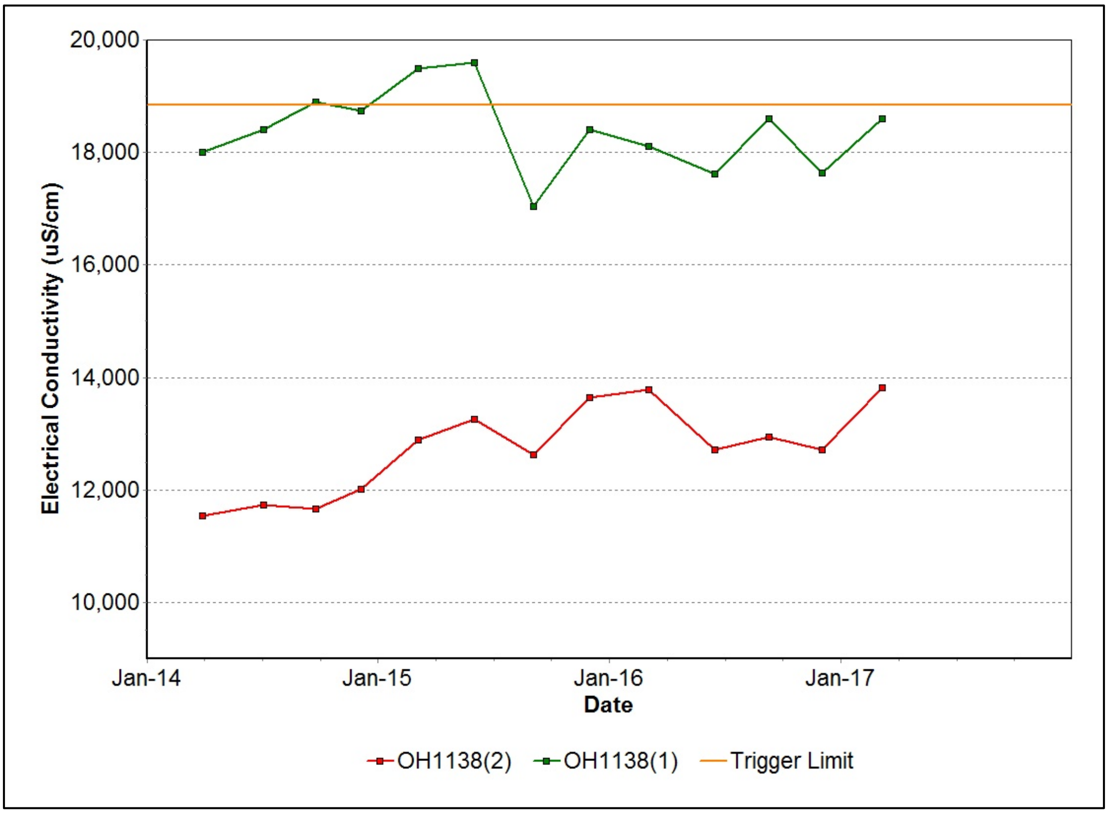

Figure 37: Warkworth Seam Electrical Conductivity Trend – March 2017

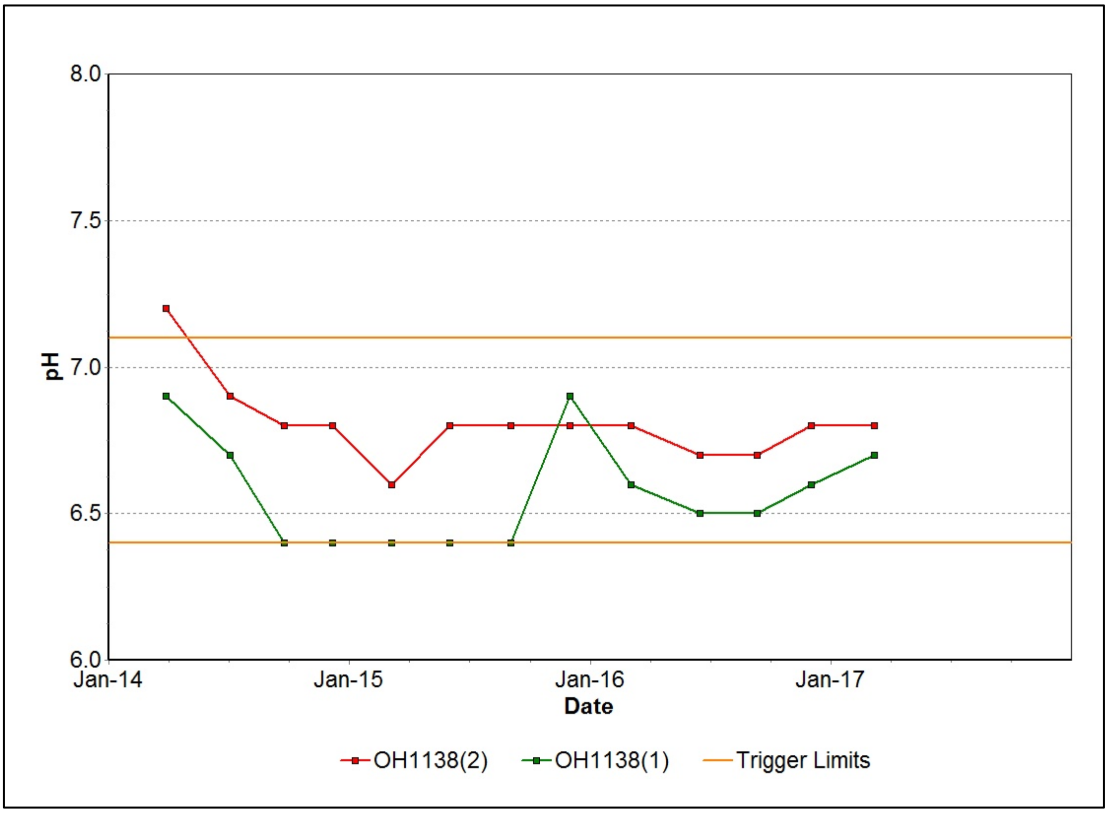

Figure 38: Warkworth Seam pH Trend - March 2017

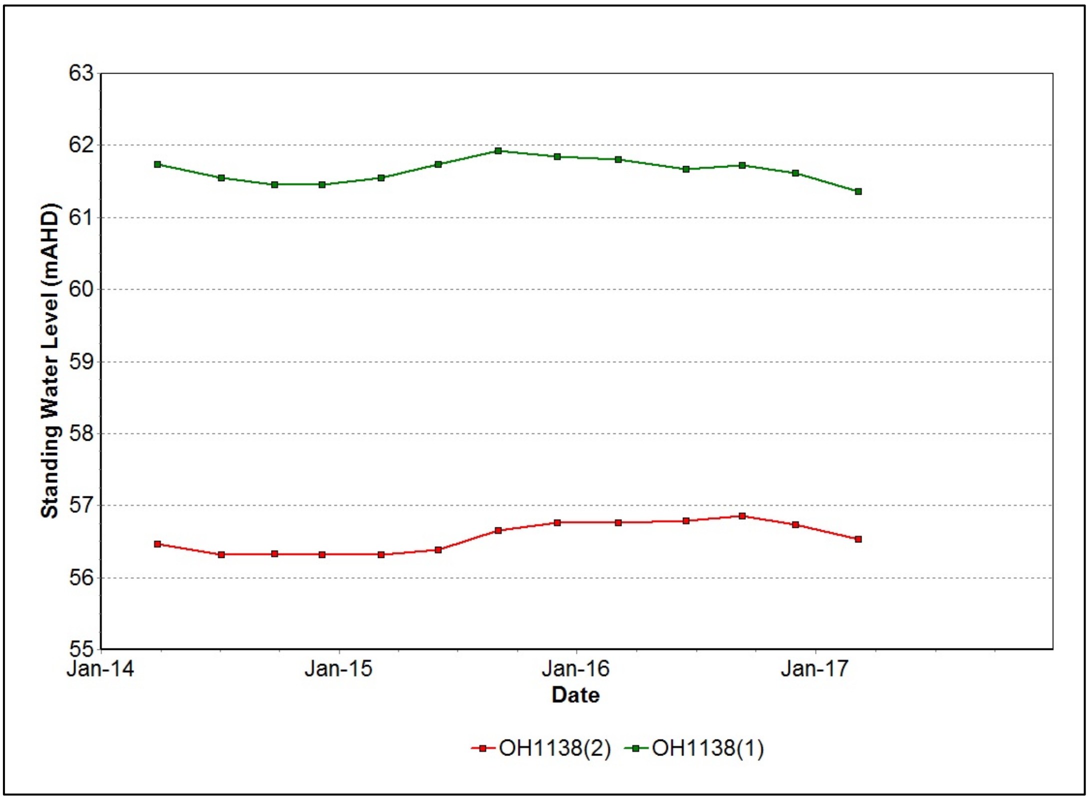

Figure 39: Warkworth Seam Standing Water Level Trend - March 2017

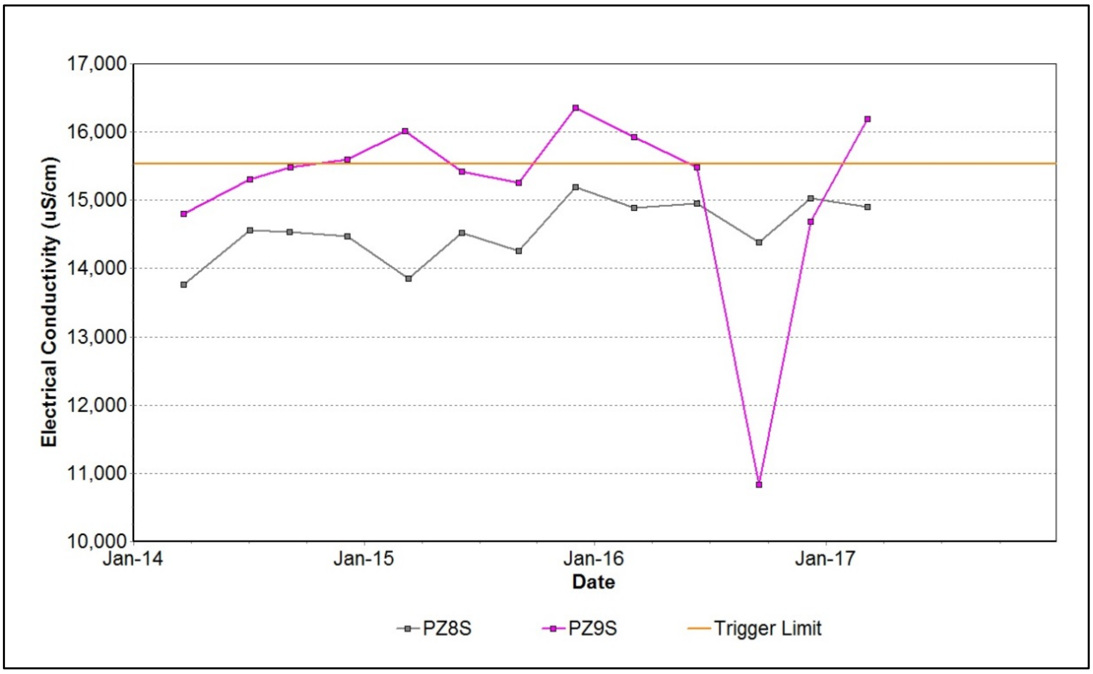

Figure 40: Wollombi Alluvium Electrical Conductivity Trend – March 2017

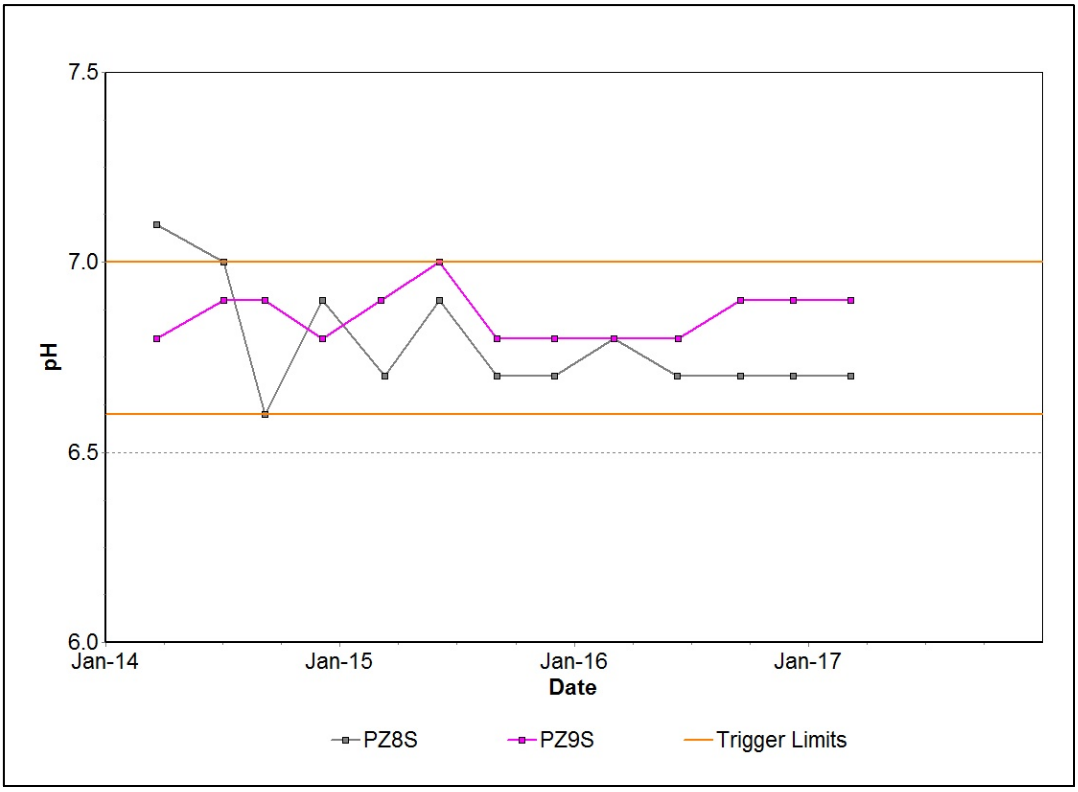

Figure 41: Wollombi Alluvium pH Trend – March 2017

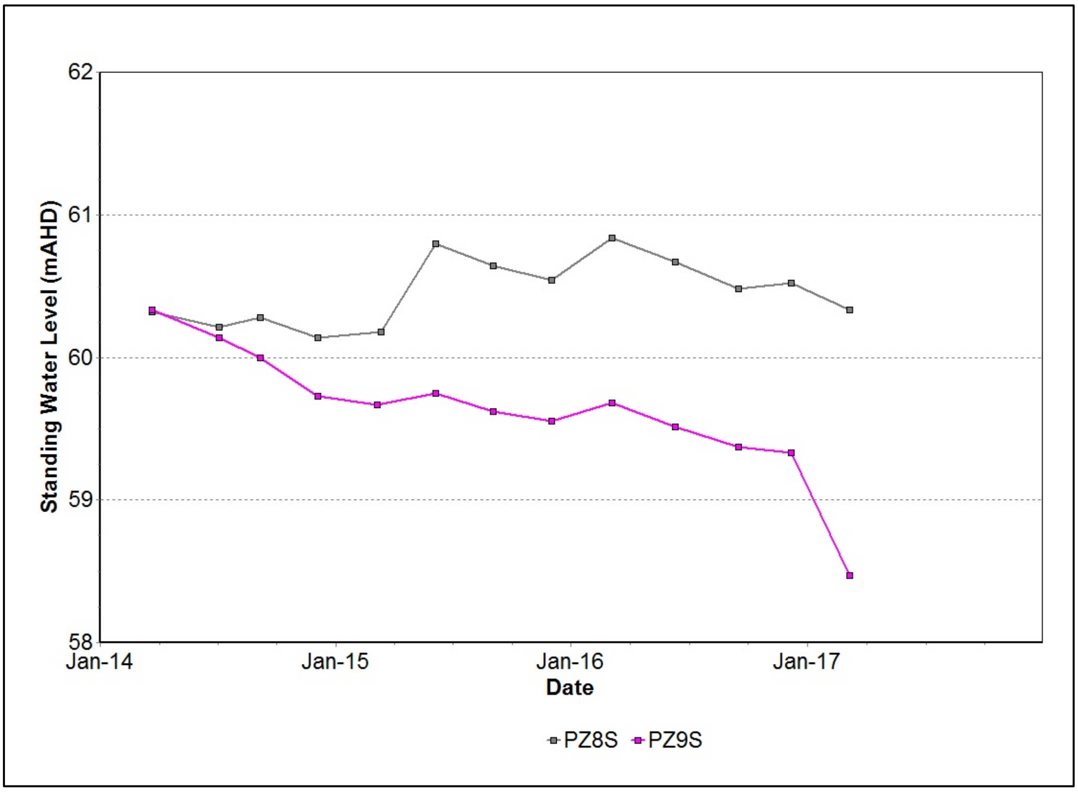

Figure 42: Wollombi Alluvium Standing Water Level Trend - March 2017

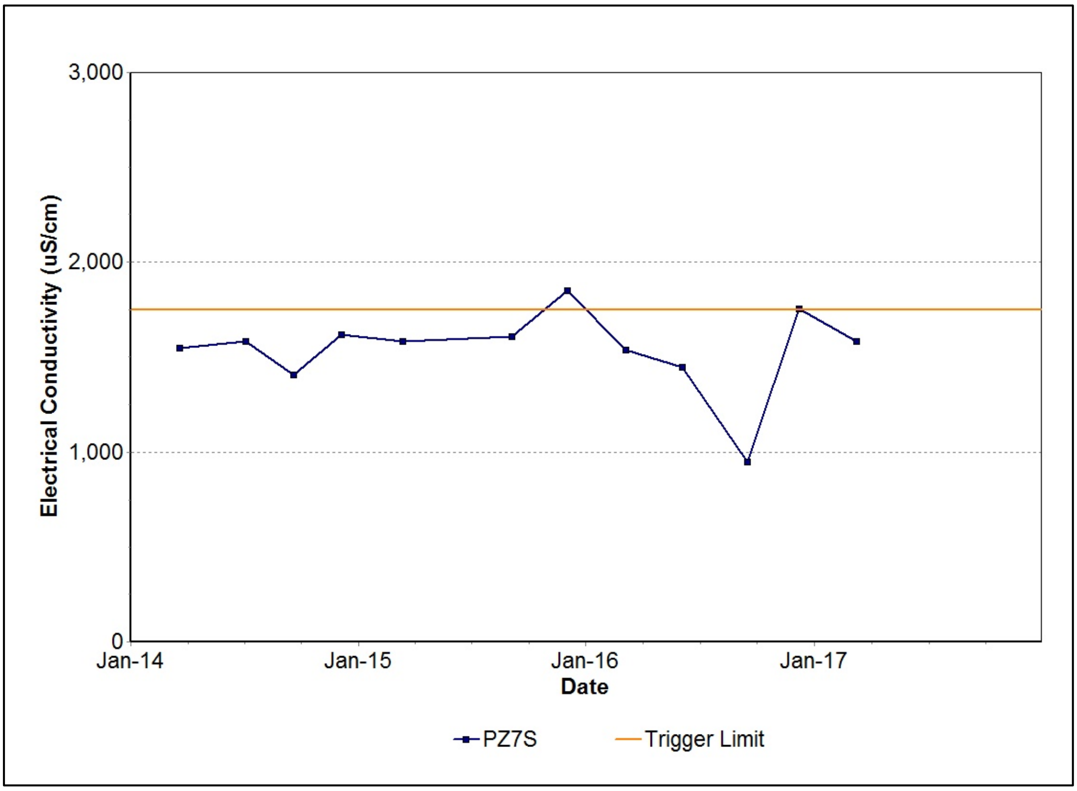

Figure 43: Aeolian Warkworth Sands Electrical Conductivity Trend – March 2017

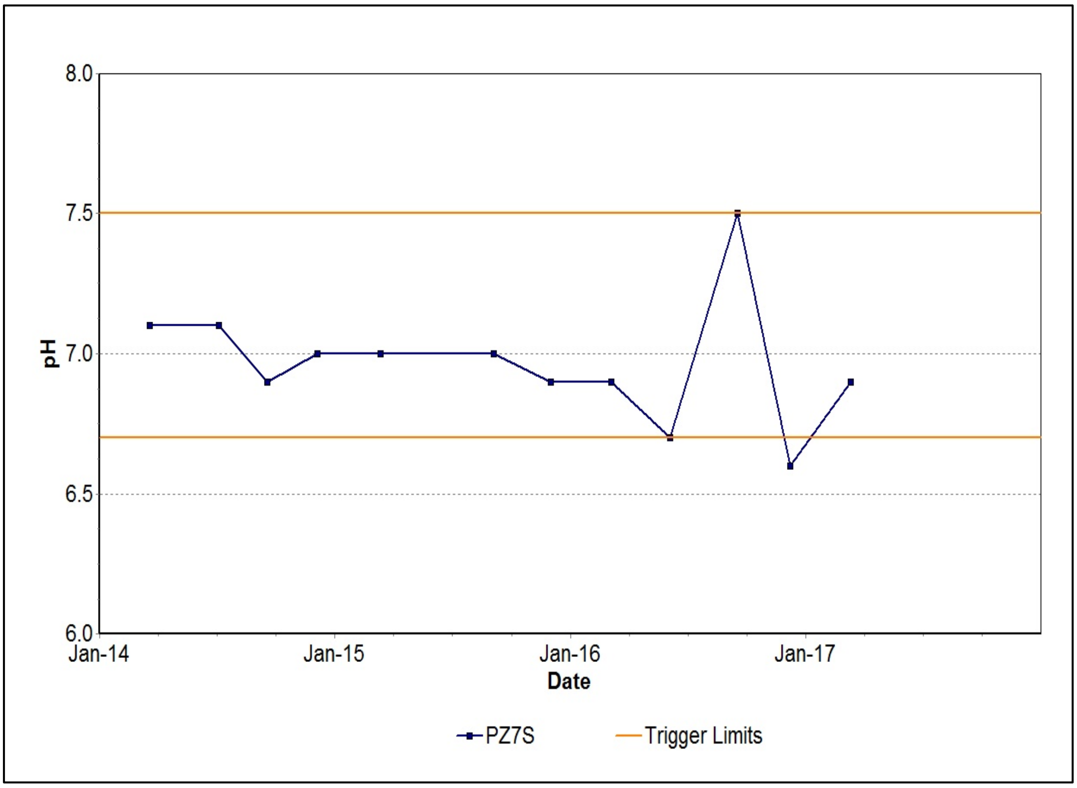

Figure 44: Aeolian Warkworth Sands pH Trend - March 2017

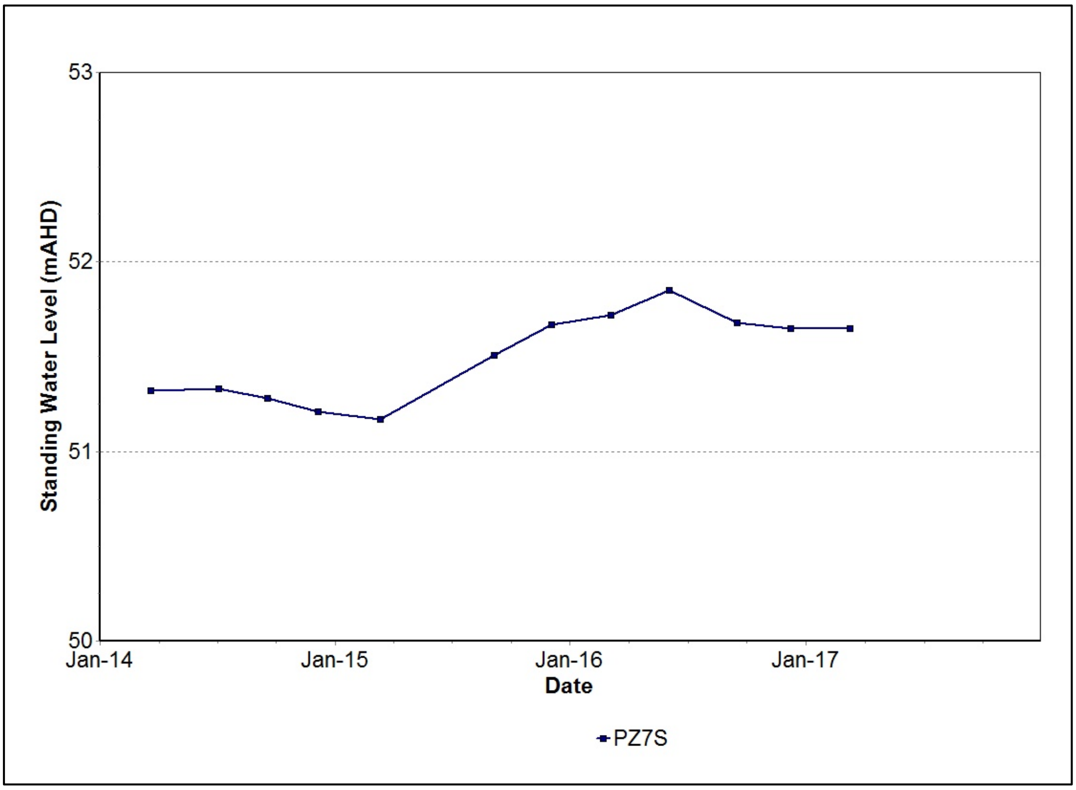

Figure 45: Aeolian Warkworth Sands Standing Water Level Trend - March 2017

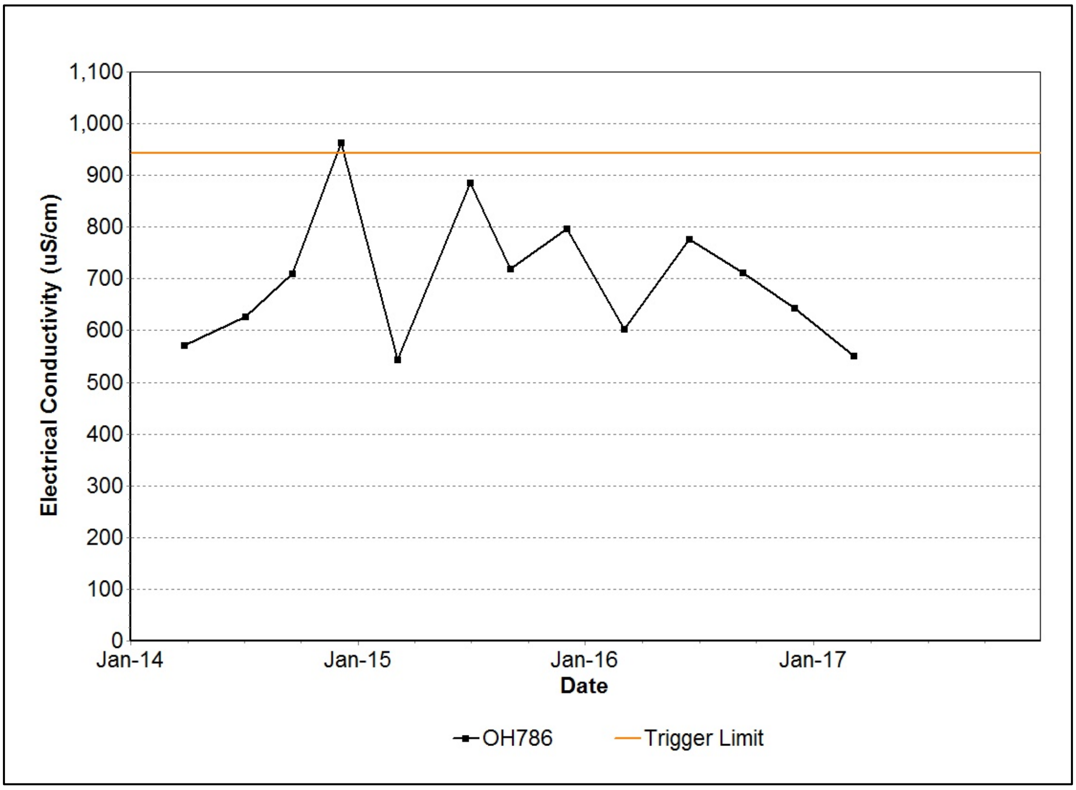

Figure 46: Hunter River Alluvium 1 Seam Electrical Conductivity - March 2017

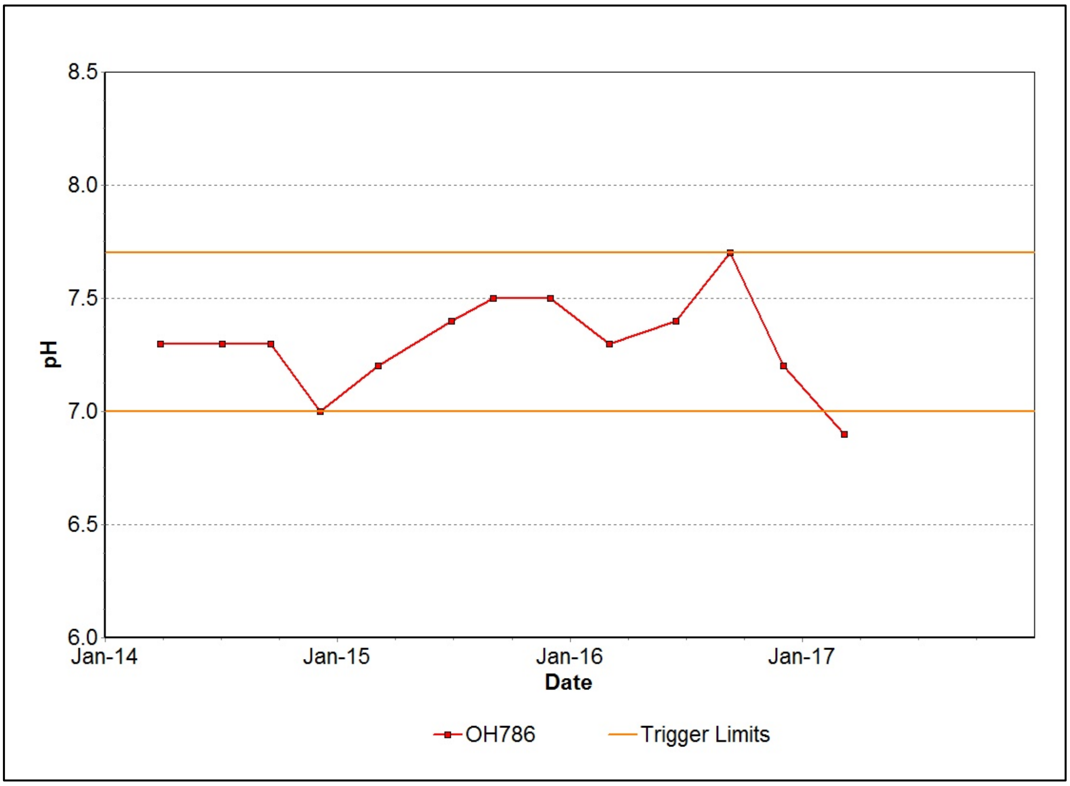

Figure 47: Hunter River Alluvium 1 Seam pH Trend - March 2017

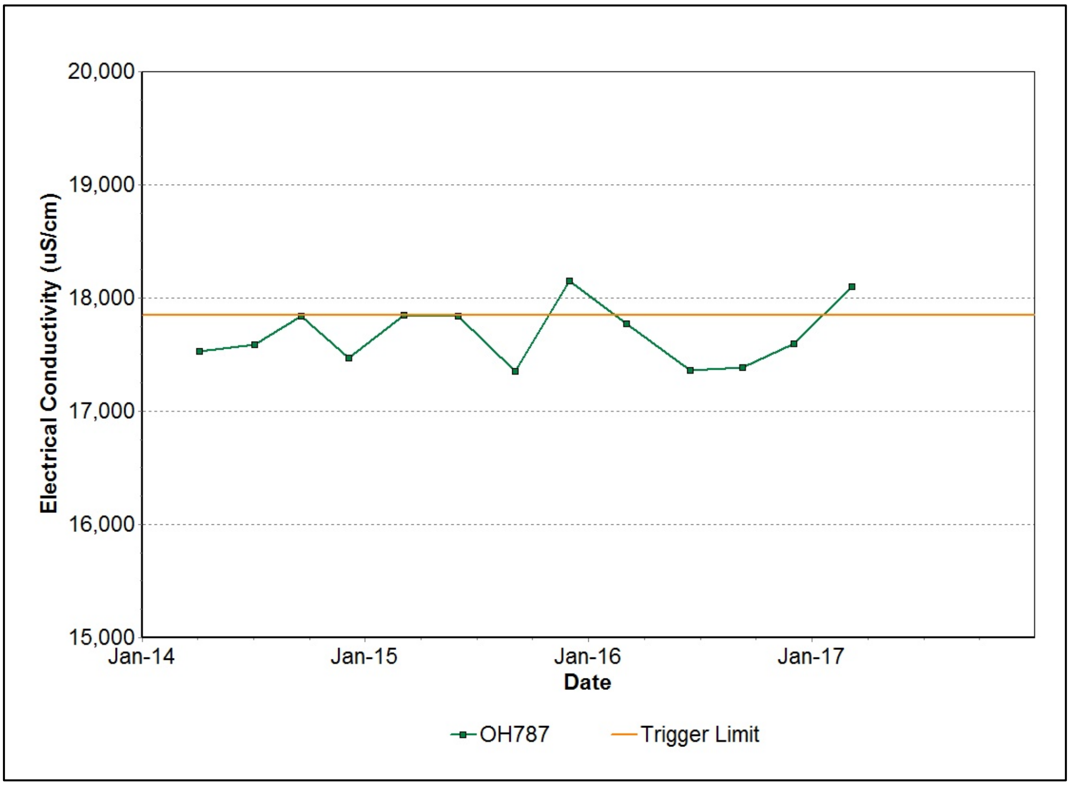

Figure 48: Hunter River Alluvium 2 Seam Electrical Conductivity - March 2017

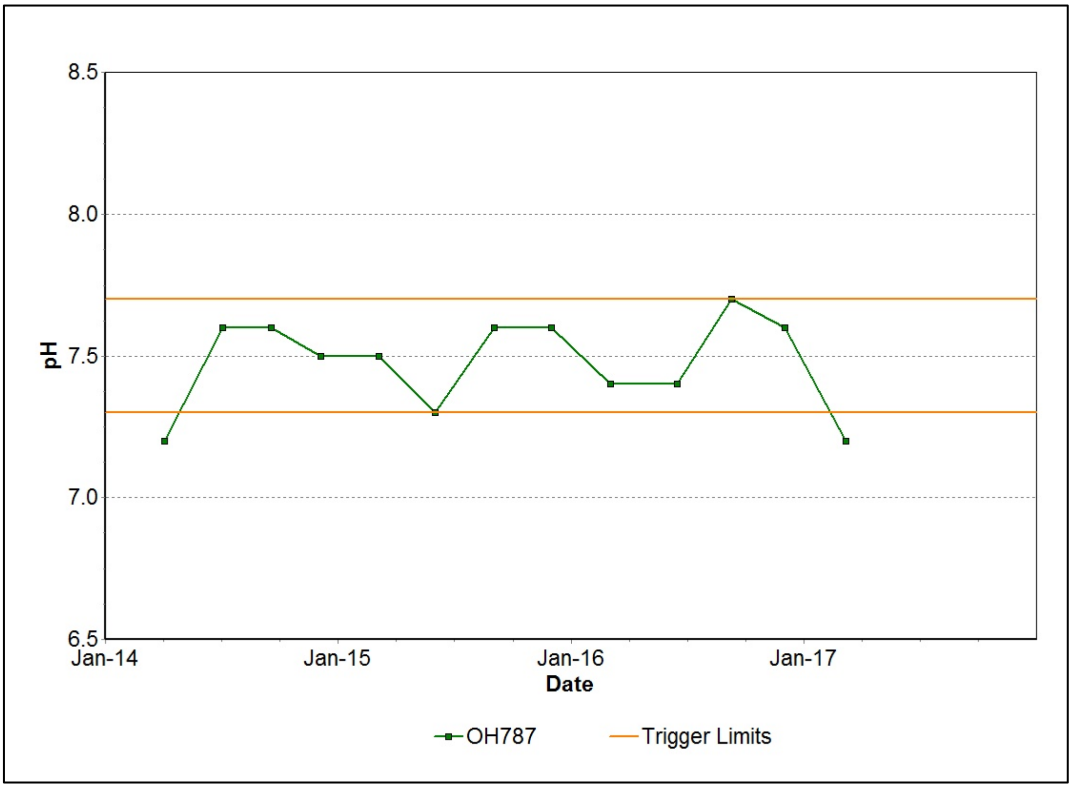

Figure 49: Hunter River Alluvium 2 Seam pH Trend - March 2017

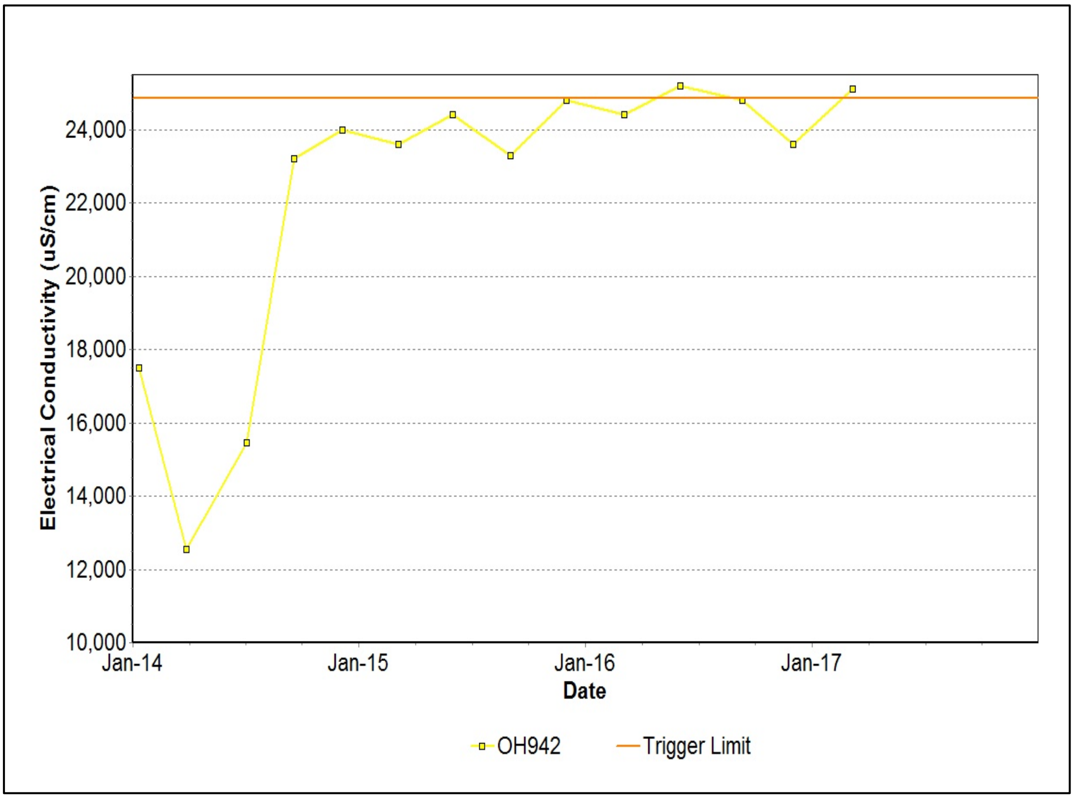

Figure 50: Hunter River Alluvium 3 Seam Electrical Conductivity - March 2017

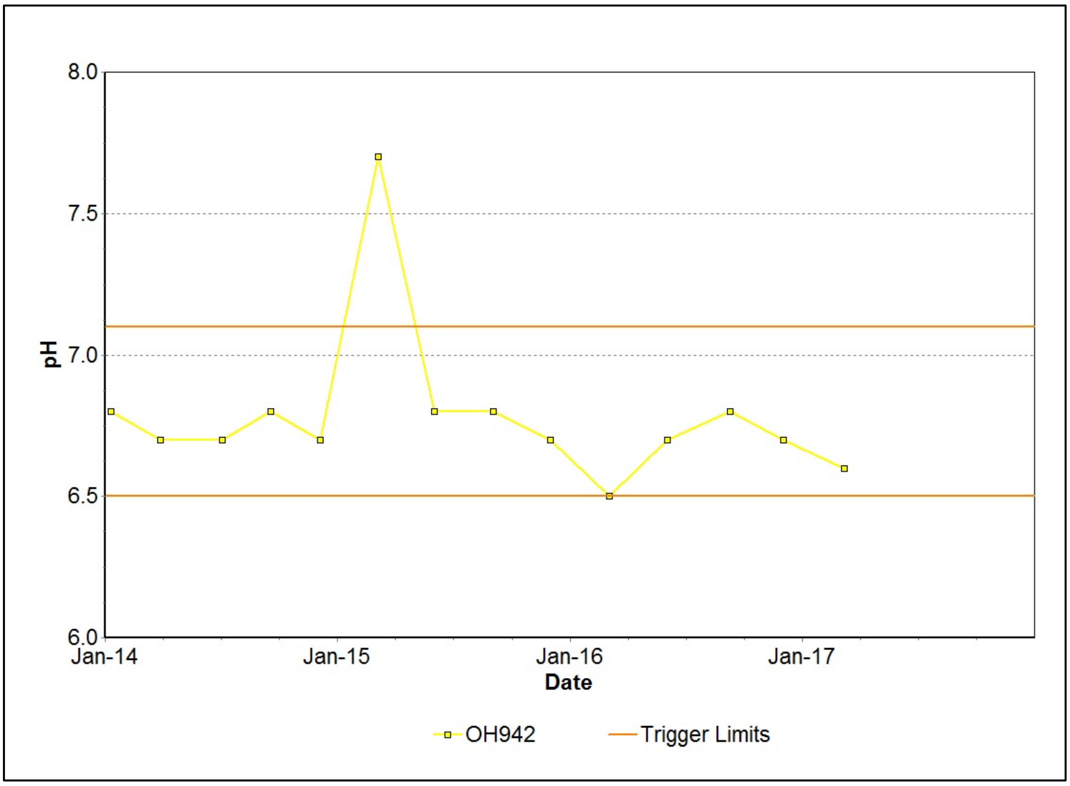

Figure 51: Hunter River Alluvium 3 Seam pH Trend - March 2017

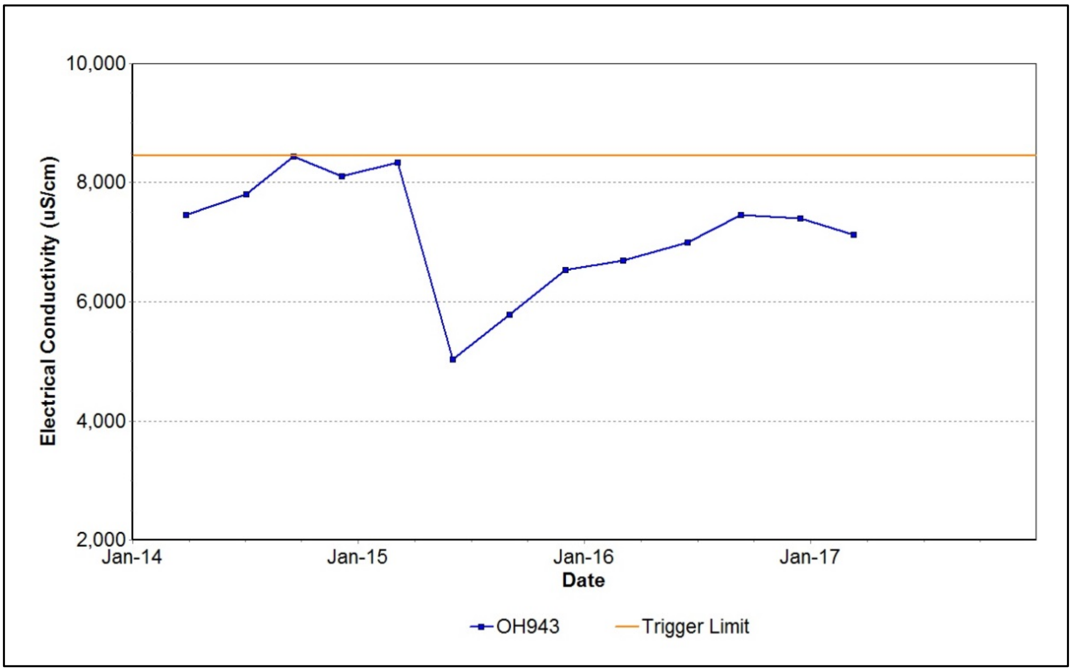

Figure 52: Hunter River Alluvium 4 Seam Electrical Conductivity - March 2017

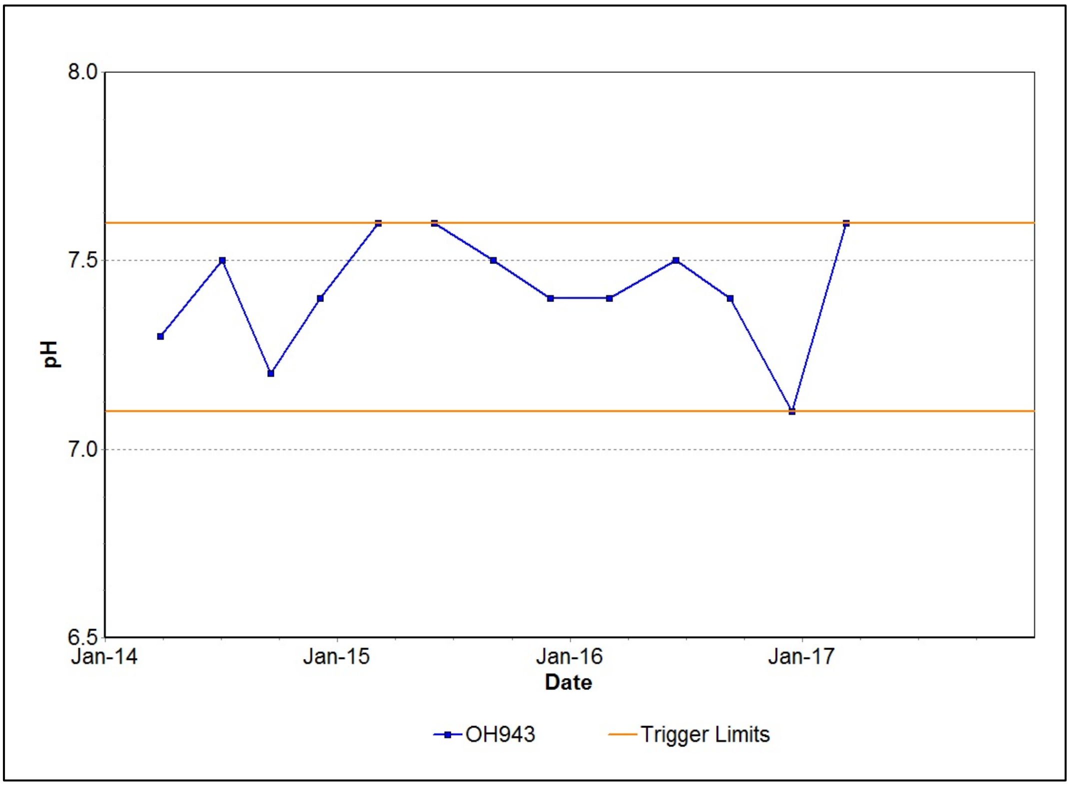

Figure 53: Hunter River Alluvium 4 Seam pH Trend - March 2017

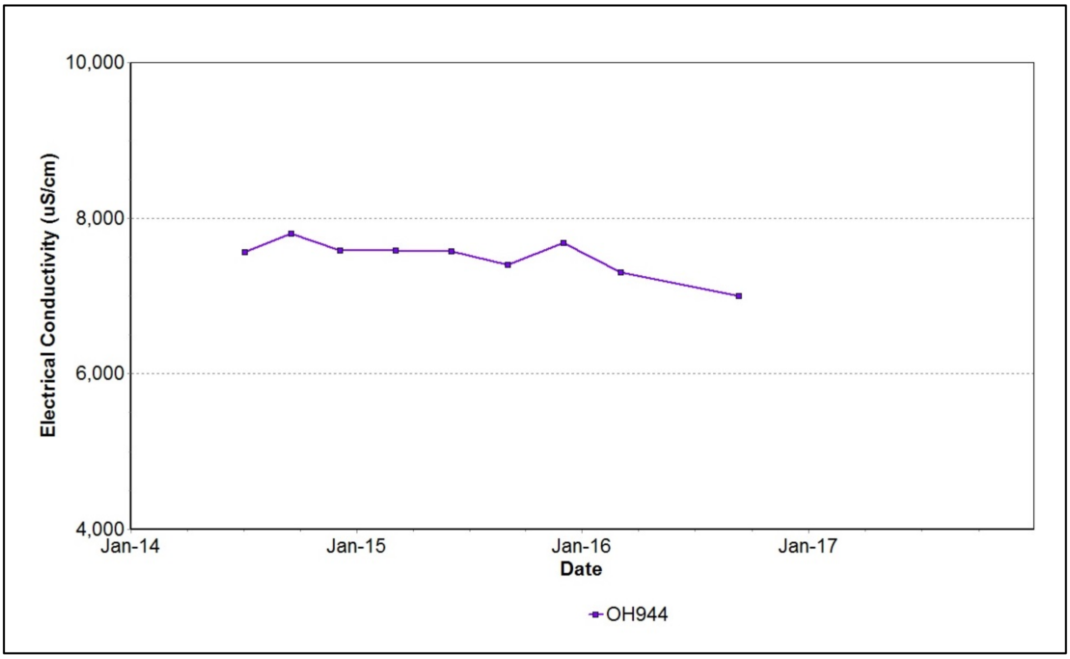

Figure 54: Hunter River Alluvium 5 Seam Electrical Conductivity - March 2017

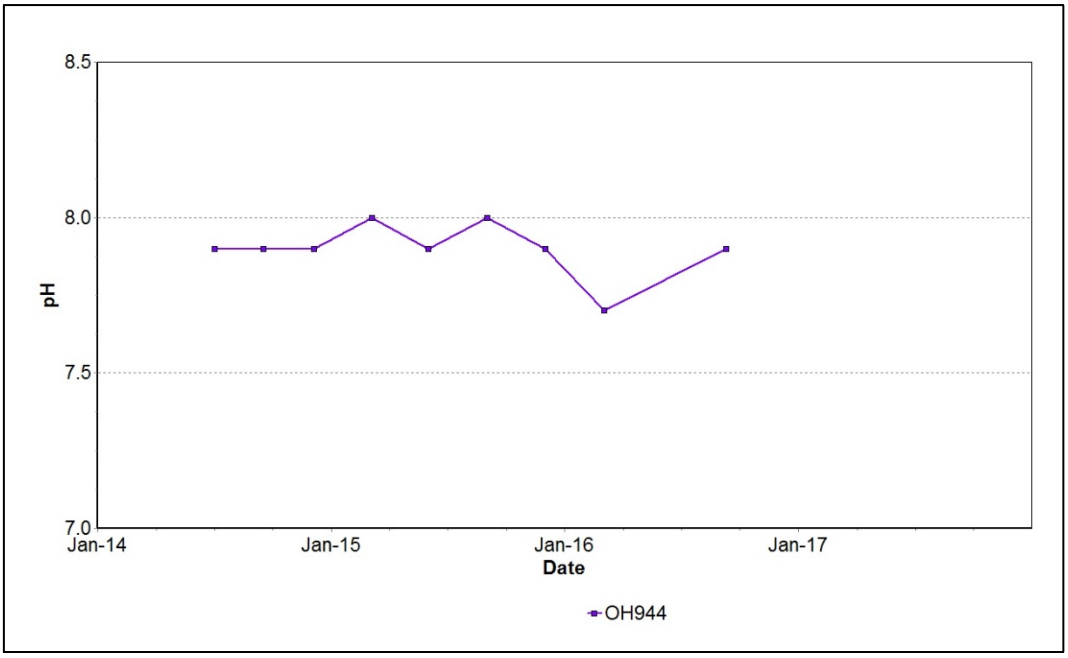

Figure 55: Hunter River Alluvium 5 Seam pH Trend - March 2017

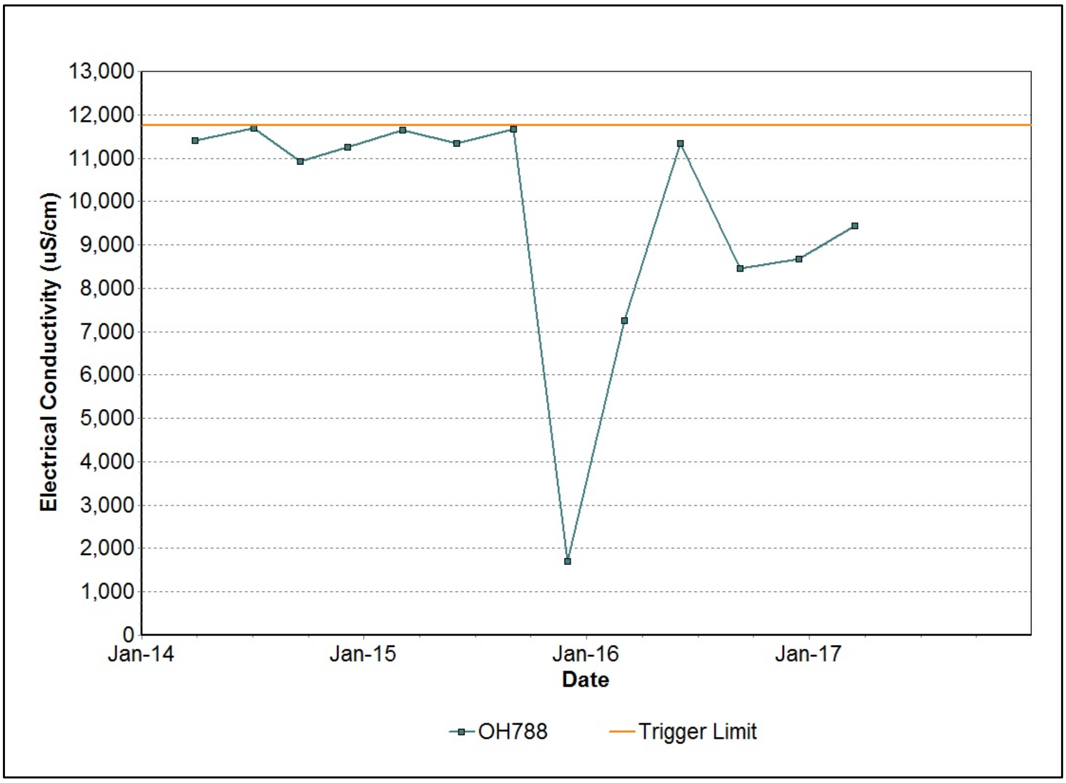

Figure 56: Hunter River Alluvium 6 Seam Electrical Conductivity - March 2017

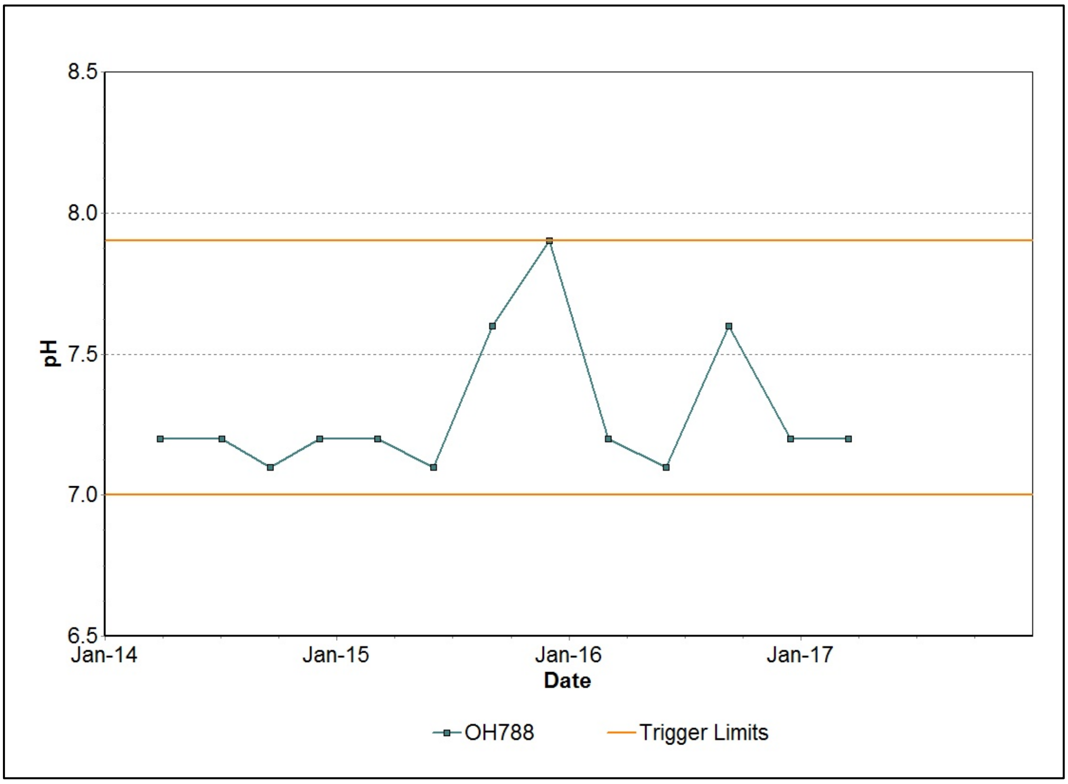

Figure 57: Hunter River Alluvium 6 Seam pH Trend - March 2017

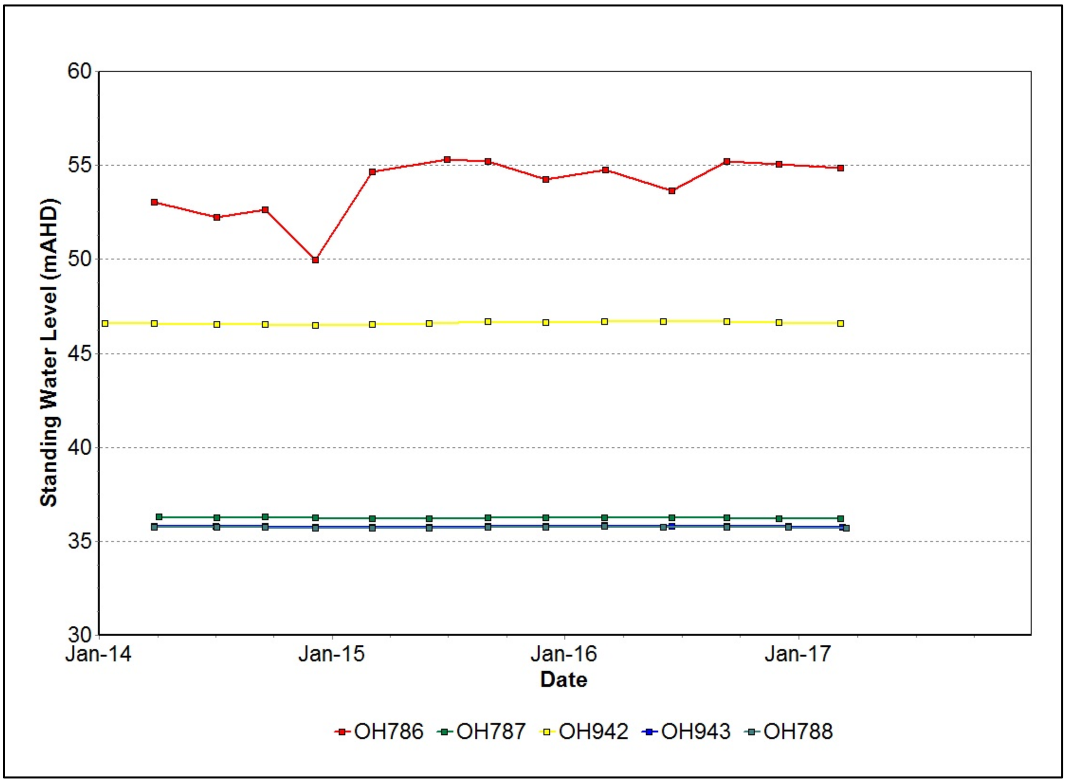

Figure 58: Hunter River Alluvium Standing Water Level Trend - March 2017

3.2.1 Groundwater Trigger Tracking

Internal trigger limits have been developed to assess monitoring data on an on-going basis, and to highlight potentially adverse groundwater impacts. The process for evaluating monitoring results against the internal triggers and subsequent responses are outlined in the MTW Water Management Plan. Locations of groundwater bores are shown in Figure 59.

During Q1 2017 15 trigger limits were breached and investigated, summarised in Table 3.

Table 3: Groundwater Triggers - 2017

Site	Date	Trigger Limit Breached	Action Taken in Response
OH 787	07/03/2017	EC – 95th Percentile	Watching Brief*
OH942	07/03/2017	EC – 95th Percentile	Watching Brief*
PZ9S	07/03/2017	EC – 95th Percentile	Watching Brief*
OH1125(1)	07/03/2017	EC – 95th Percentile	Watching Brief*
MTD616P	10/03/2017	EC – 95th Percentile	Data is stable and consistent with historical trend; significant natural variability in water quality is typical of low-conductivity shallow overburden material. No further action.
MTD605P	07/03/2017	EC – 95th Percentile	Data is stable and consistent with historical trend; significant natural variability in water quality is typical of low-conductivity shallow overburden material. No further action.
PZ9D	07/03/2017	EC – 95th Percentile	Watching Brief*
WOH2156B	10/03/2017	EC – 95th Percentile	Data is stable and consistent with historical trend; no further action.
OH786	07/03/2017	PH –5th Percentile	Watching Brief*
OH787	07/03/2017	PH –5th Percentile	Watching Brief*
PZ8S	07/03/2017	PH –5th Percentile	Watching Brief*
GW9709	10/03/2017	PH –5th Percentile	Data broadly in line with historical range; EC or water level do not show a rising or falling trend. Watching brief to be maintained.
GW98MTCL2	10/03/2017	PH –5th Percentile	Watching Brief*
WOH2153A	10/03/2017	PH –95th Percentile	Watching Brief*

* = Watching brief established pending outcomes of subsequent monitoring events. No specific actions required.

Figure 59: Groundwater Monitoring Location Plan

4.0 BLAST MONITORING

MTW have a network of six blast monitoring units. These are located at nearby privately owned residences and function as regulatory compliance monitors.

The location of these monitors can be found in Figure 66.

4.1 Blast Monitoring Results

During March 2017, 29 blasts were initiated at MTW. Figure 60 to Figure 65 show the blast monitoring results for the reporting period against the impact assessment criteria. The criteria are summarised in Table 4.

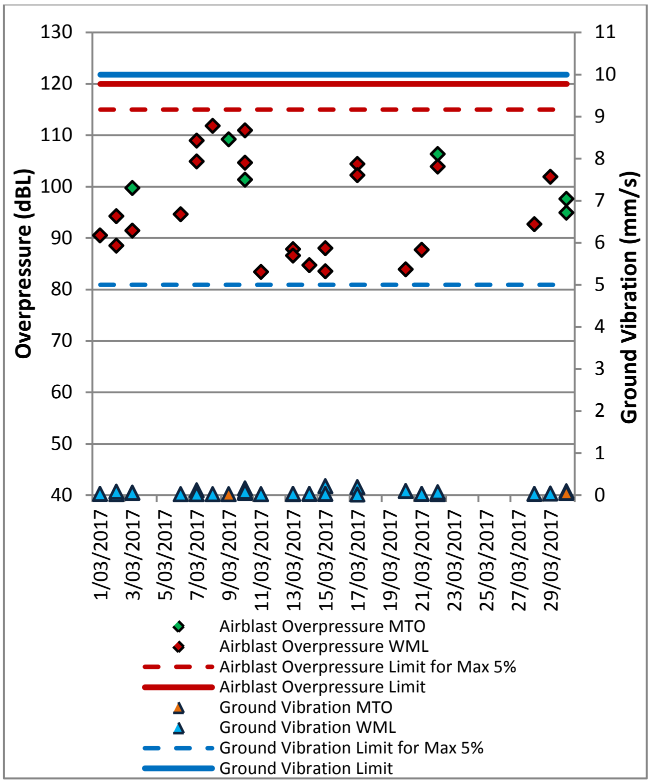

Figure 60:Abbey Green Blast Monitoring Results – March 2017

Table 4: Blasting Limits

Airblast Overpressure (dB(L))	Comments
115	5% of the total number of blasts in a 12 month period
120	0%
Ground Vibration (mm/s)	**Comments**
5	5% of the total number of blasts in a 12 month period
10	0%

During the reporting period no blasts exceeded the 115 dB(L) 5% threshold for airblast overpressure or 5mm/s 5% threshold for ground vibration

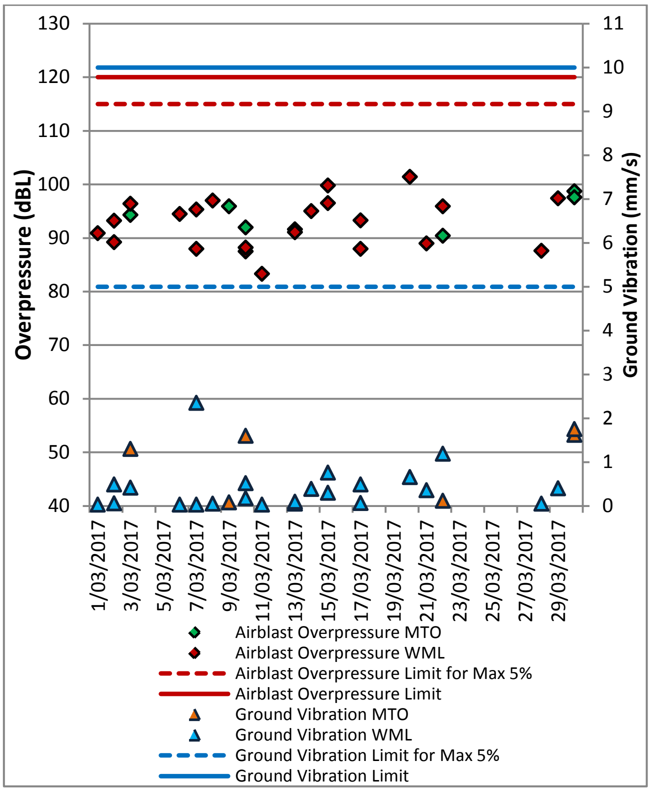

Figure 61: Bulga Village Blast Monitoring Results – March 2017

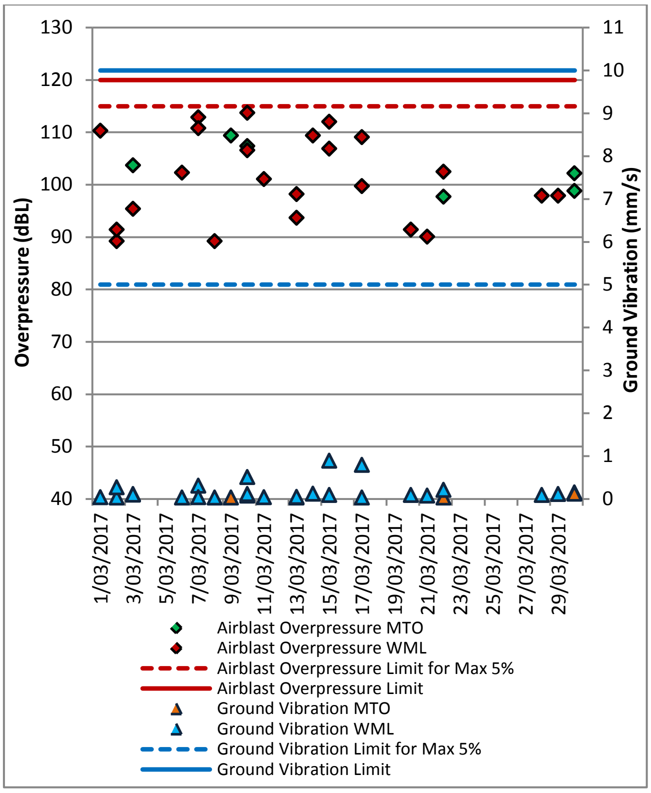

Figure 62: MTIE Blast Monitoring Results – March 2017

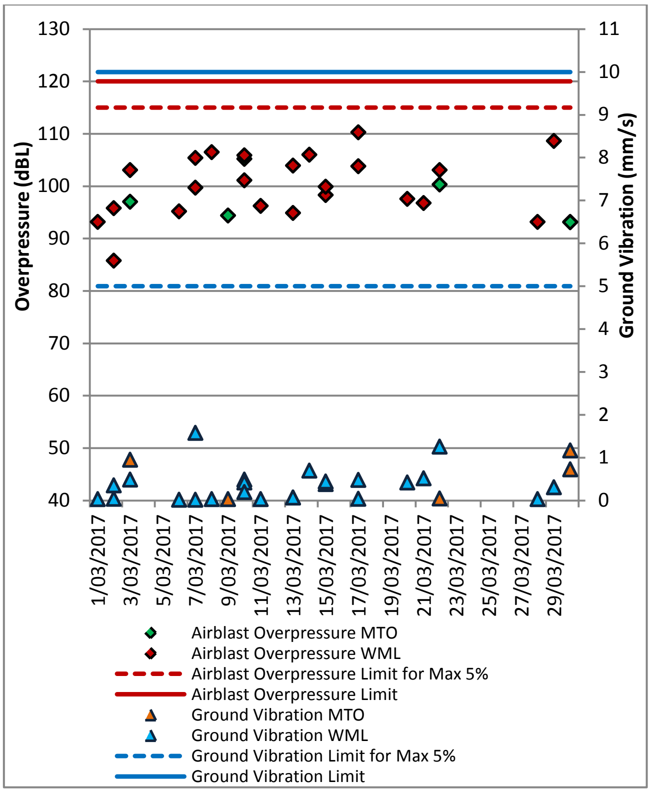

Figure 64: Wambo Road Blast Monitoring Results – March 2017

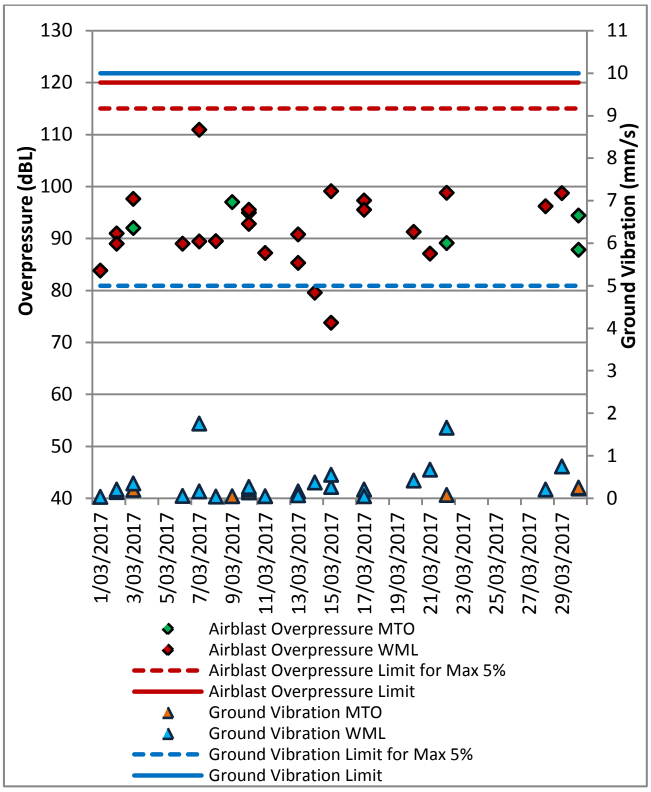

Figure 63: Warkworth Blast Monitoring Results - March 2017

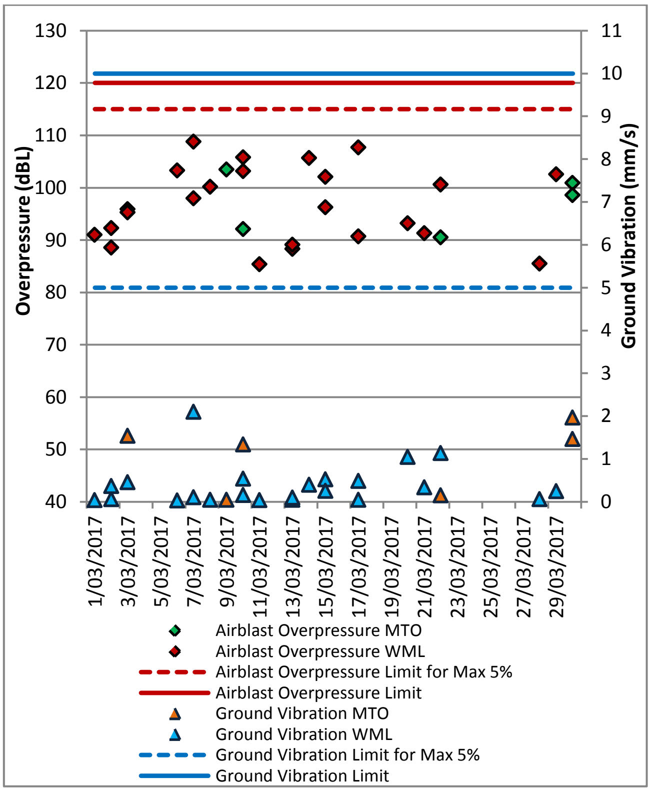

Figure 65: Wollemi Peak Road Blast Monitoring Results - March 2017

Figure 66: Blast and Vibration Monitoring Location Plan

5.0 NOISE

Routine attended noise monitoring is carried out in accordance with the MTW Noise Management Plan. A review against EIS predictions will be reported in the Annual Review. The purpose of the noise surveys is to quantify and describe the acoustic environment around the site and compare results with specified limits. Unattended monitoring (real time noise monitoring) also occurs at seven sites surrounding MTW. The attended noise monitoring locations are displayed in Figure 67.

5.1 Attended Noise Monitoring Results

Attended monitoring was conducted at receiver locations surrounding MTW on the night of 7 March 2017. All measurements complied with the relevant criteria. Results are detailed in Table 5 to Table 8.

5.1.1 WML Noise Assessment

Compliance assessments undertaken against the WML noise criteria are presented in Tables 5 and 6.

Table 5: LAeq, 15 minute Warkworth Impact Assessment Criteria – March 2017

Location	Date and Time	Wind Speed (m/s)[5]	Stability Class	Criterion (dB(A))	Criterion Applies?[1,6]	WML L_{Aeq} dB[2,4]	Exceedance[3]	Total L_{Ceq} – L_{Aeq}	Revised WML L_{Aeq}[5,6]
Bulga RFS	7/03/2017 23:20	3.1	D	37	No	IA	NA	16	IA
Bulga Village	7/03/2017 21:46	3.4	D	38	No	IA	NA	17	IA
Gouldsville	7/03/2017 21:21	3.8	D	38	No	30	NA	20	35
Inlet Rd	7/03/2017 21:25	4.1	D	37	No	IA	NA	20	IA
Inlet Rd West	7/03/2017 21:00	3	D	35	Yes	IA	Nil	20	IA
Long Point	7/03/2017 21:00	3	D	35	Yes	30	Nil	17	35
South Bulga	7/03/2017 23:46	4	D	35	No	IA	NA	22	IA
Wambo Road	7/03/2017 22:34	1.6	F	38	Yes	IA	Nil	7	IA

Table 6: LA1, 1 minute Warkworth – Impact Assessment Criteria – March 2017

Location	Date and Time	Wind Speed (m/s)[5]	Stability Class	Criterion (dB(A))	Criterion Applies?[1,6]	WML L_{Aeq} dB[2,4]	Exceedance[3]
Bulga RFS	7/03/2017 23:20	3.1	D	47	No	IA	NA
Bulga Village	7/03/2017 21:46	3.4	D	48	No	IA	NA
Gouldsville	7/03/2017 21:21	3.8	D	48	No	33	NA
Inlet Rd	7/03/2017 21:25	4.1	D	47	No	IA	NA
Inlet Rd West	7/03/2017 21:00	3	D	45	Yes	IA	Nil
Long Point	7/03/2017 21:00	3	D	45	Yes	33	Nil
South Bulga	7/03/2017 23:46	4	D	45	No	IA	NA
Wambo Road	7/03/2017 22:34	1.6	F	48	Yes	IA	Nil

Notes
1. Noise emission limits apply during all meteorological conditions except the following: during periods of rain or hail; average wind speed at microphone height exceeds 5 m/s; wind speeds greater than 3 m/s measured at 10 metres above ground level; stability category F temperature inversion conditions and wind speeds greater than 2m/s at 10m above ground level; or stability category G temperature inversion conditions;
2. Estimated or measured LA1,1minute attributed to Warkworth mine (WML);
3. NA in exceedance column means atmospheric conditions outside conditions specified in project approval and so criterion is not applicable. NA (not applicable) in criterion column means criterion not specified for this location;
4. Bolded results in red are possible exceedances of relevant criteria; and
5. Criterion may or may not apply due to rounding of meteorological data values.

5.1.2 MTO Noise Assessment

Compliance assessments undertaken against the MTO noise criteria are presented in Tables 7 and 8.

Table 7: LAeq, 15minute Mount Thorley - Impact Assessment Criteria – March 2017

Location	Date and Time	Wind Speed (m/s)[5]	Stability Class	Criterion dB	Criterion Applies?[1,6]	MTO L_{Aeq} dB[2,4]	Exceedance[3]	Total L_{Ceq} – L_{Aeq}[7]	Revised MTO L_{Aeq}[5,6]
Bulga RFS	7/03/2017 23:20	3.1	D	37	No	IA	NA	16	IA
Bulga Village	7/03/2017 21:46	3.4	D	38	No	IA	NA	17	IA
Gouldsville	7/03/2017 21:21	3.8	D	35	No	NM	NA	20	NM
Inlet Rd	7/03/2017 21:25	4.1	D	37	No	IA	NA	20	IA
Inlet Rd West	7/03/2017 21:00	3	D	35	Yes	IA	Nil	20	IA
Long Point	7/03/2017 21:00	3	D	35	Yes	NM	Nil	17	NM
South Bulga	7/03/2017 23:46	4	D	36	No	IA	NA	22	IA
Wambo Road	7/03/2017 22:34	1.6	F	38	Yes	IA	Nil	7	IA

Table 8: LA1, 1Minute Mount Thorley - Impact Assessment Criteria – March 2017

Location	Date and Time	Wind Speed (m/s)[5]	Stability Class	Criterion dB	Criterion Applies?[1,6]	MTO $L_{A1, 1min}$ dB[2,4]	Exceedance[3]
Bulga RFS	7/03/2017 23:20	3.1	D	47	No	IA	NA
Bulga Village	7/03/2017 21:46	3.4	D	48	No	IA	NA
Gouldsville	7/03/2017 21:21	3.8	D	45	No	NM	NA
Inlet Rd	7/03/2017 21:25	4.1	D	47	No	IA	NA
Inlet Rd West	7/03/2017 21:00	3	D	45	Yes	IA	Nil
Long Point	7/03/2017 21:00	3	D	45	Yes	NM	Nil
South Bulga	7/03/2017 23:46	4	D	46	No	IA	NA
Wambo Road	7/03/2017 22:34	1.6	F	48	Yes	IA	Nil

Notes
1. Noise emission limits apply during all meteorological conditions except the following: during periods of rain or hail; average wind speed at microphone height exceeds 5 m/s; wind speeds greater than 3 m/s measured at 10 metres above ground level; stability category F temperature inversion conditions and wind speeds greater than 2m/s at 10m above ground level; or stability category G temperature inversion conditions;
2. Estimated or measured LA1,1minute attributed to Mt Thorley Operations (MTO);
3. NA in exceedance column means atmospheric conditions outside conditions specified in project approval and so criterion is not applicable. NA (not applicable) in criterion column means criterion not specified for this location;
4. Bolded results in red are possible exceedances of relevant criteria; and
5. Criterion may or may not apply due to rounding of meteorological data values

5.1.3 INP Low Frequency Assessment

In accordance with the requirements of the Industrial Noise Policy, the low frequency modification factor has been applied where appropriate. It should be noted that the Industrial Noise Policy does not give guidance on the application of the penalty where more than one target source is audible. The L_{Ceq} levels reported above are "Total", or "Total mine noise" at best, and cannot be attributed accurately to a single mine. Accordingly, where the INP criteria for the application of the Low Frequency penalty is triggered, the penalty has been applied to the dominant mine noise source (either of WML or MTO). There were no exceedances of noise criteria following application of the INP Low Frequency modification factor during March 2017.

Figure 67: Noise Monitoring Location Plan

5.2 Noise Management Measures

A program of targeted supplementary attended noise monitoring is in place at MTW, supported by the real-time directional monitoring network and ensuring the highest level of noise management is maintained. The supplementary program is undertaken by MTW personnel and involves:

- Routine inspections from both inside and outside the mine boundary;
- Routine and as-required handheld noise assessments (undertaken in response to noise alarm and/or community complaint), comparing measured levels against consent noise limits; and
- Validation monitoring following operational modifications to assess the adequacy of the modifications.

Where a noise assessment identifies noise emissions which are exceeding the relevant noise limit(s) for any particular residence, modifications will be made so as to ensure that the noise event is resolved within 75 minutes of identification. The actions taken are commensurate with the nature and severity of the noise event, but can include:

- Replacement of non-attenuated equipment with sound attenuated equipment;
- Changing the haul route to a less noise sensitive haul;
- Changing dump locations (in-pit or less exposed dump option)
- Reducing equipment numbers;
- Shut down of task; or
- Site shut down.
- A summary of these assessments undertaken during March are provided in Table 9.

Table 9: Supplementary Attended Noise Monitoring Data –March 2017

No. of assessments	No. of assessments > trigger	No. of nights where assessments > trigger	% greater than trigger
462	4	2	0.87

Note: Measurements are taken under all meteorological conditions, including conditions under which the consent noise criteria do not apply.

6.0 OPERATIONAL DOWNTIME

During March a total of 45.4 hours of equipment downtime was logged in response to environmental events such as dust, noise and elevated wind impacts. Operational downtime by equipment type is shown in Figure 68.

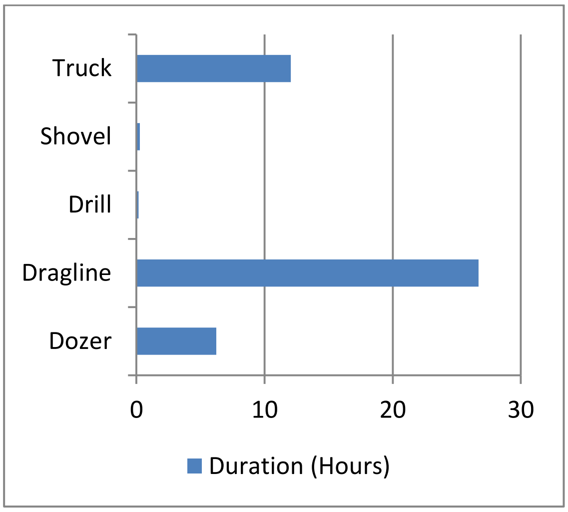

Figure 68: Operational Downtime by Equipment Type – March 2017

7.0 REHABILITATION

During March, 8.0 Ha of land was released, 10.3Ha was bulk shaped, 17.3Ha was composted and 0.1Ha was rehabilitated. Year-to-date progress can be viewed in Figure 69.

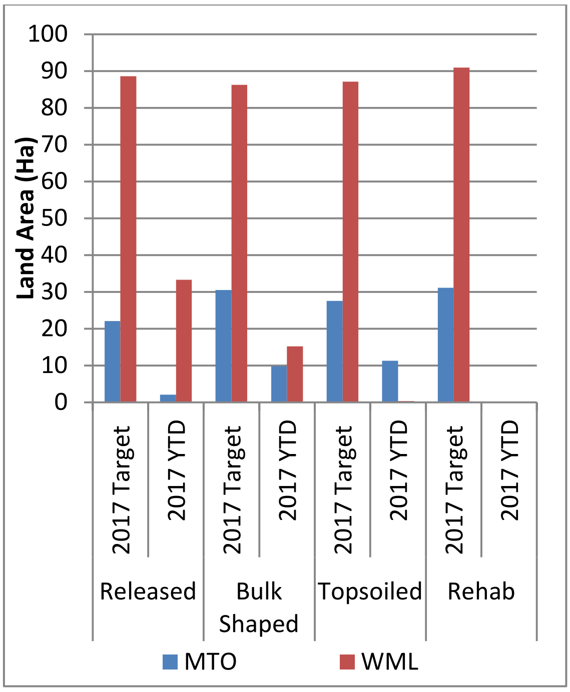

Figure 69: Rehabilitation YTD - March 2017

8.0 ENVIRONMENTAL INCIDENTS

During the reporting period MTW there were no reportable environmental incidents.

9.0 COMPLAINTS

During the reporting period 18 complaints were received, details of these complaints are displayed in Figure 70 below.

	Noise	Dust	Blast	Lighting	Other	Total
January	5	6	3	1	0	15
February	25	3	10	3	0	41
March	14	1	1	2	0	18
April	-	-	-	-	-	-
May	-	-	-	-	-	-
June	-	-	-	-	-	-
July	-	-	-	-	-	-
August	-	-	-	-	-	-
September	-	-	-	-	-	-
October	-	-	-	-	-	-
November	-	-	-	-	-	-
December	-	-	-	-	-	-
Total	44	10	14	6	0	74

Figure 70: Complaints Summary - YTD March 2017

Appendix A: Meteorological Data

Table 10: Meteorological Data – Charlton Ridge Meteorological Station – March 2017

Date	Air Temperature Maximum (°C)	Air Temperature Minimum (°C)	Relative Humidity Maximum (%)	Relative Humidity Minimum (%)	Solar Radiation Maximum (W/Sq. M)	Wind Direction Average (°)	Wind Speed Average (m/sec)	Rainfall(mm)
1/03/2017	28.8	17.5	94.5	46.4	1237	144.5	2.9	3.6
2/03/2017	31.0	17.2	91.6	38.1	1236	151.6	2.6	0.0
3/03/2017	29.4	15.6	91.9	46.6	1289	169.4	3.0	3.0
4/03/2017	25.5	16.3	95.4	63.3	580	196.6	2.5	13.2
5/03/2017	25.3	15.5	96.4	60.1	1151	258.9	1.6	15.6
6/03/2017	27.6	14.5	90.6	39.5	1322	184.2	3.3	0.0
7/03/2017	26.1	13.9	81.4	41.4	1251	172.8	4.0	0.0
8/03/2017	23.8	12.4	88.1	47.0	1253	166.8	3.6	0.4
9/03/2017	26.3	13.5	93.9	37.2	1409	167.6	3.2	0.6
10/03/2017	27.9	13.4	81.0	32.6	1308	166.6	3.0	0.0
11/03/2017	28.8	11.8	89.6	24.4	1035	165.2	2.0	0.0
12/03/2017	34.3	11.3	91.3	13.7	904	162.0	2.1	0.0
13/03/2017	32.7	17.0	76.6	24.4	1148	133.6	2.5	0.0
14/03/2017	31.1	17.6	89.4	41.1	1164	125.1	4.1	0.0
15/03/2017	25.7	19.2	95.5	60.7	322	116.0	3.5	4.6
16/03/2017	32.5	19.1	97.1	37.3	306	177.0	2.3	2.8
17/03/2017	23.5	17.6	88.6	66.9	152	177.3	5.7	0.0
18/03/2017	27.2	15.0	95.9	58.6	273	148.4	5.8	15.2
19/03/2017	30.5	19.4	96.5	55.1	291	129.7	3.4	1.2
20/03/2017	29.8	19.5	92.5	54.4	106	143.4	1.6	0.0
21/03/2017	33.0	18.4	95.2	41.8	695	175.1	1.9	12.4
22/03/2017	31.2	17.3	96.4	53.2	201	259.0	3.1	13.2
23/03/2017	24.2	15.7	96.5	67.0	325	170.7	2.6	0.0
24/03/2017	24.3	14.9	97.1	62.5	284	144.2	2.4	6.2
25/03/2017	26.9	14.6	92.7	51.7	93	154.0	1.6	0.0
26/03/2017	30.2	17.2	91.3	44.2	110	159.0	1.9	0.0
27/03/2017	29.8	15.0	95.1	36.9	230	164.3	1.6	0.0
28/03/2017	31.5	17.8	93.5	50.6	87	143.3	2.2	0.0
29/03/2017	34.6	18.4	97.0	42.4	183	192.6	2.1	0.2
30/03/2017	27.2	13.6	97.0	50.4	277	232.1	3.9	47.8
31/03/2017	23.2	12.8	79.2	43.2	32	172.2	3.6	0.0