Monthly Environmental Monitoring Report

Yancoal Mount Thorley Warkworth

June 2025

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Revision History

Version No.	Version Details	Date
1.0	Final	24/10/2025

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 June to 30 June 2025.

2.0 AIR QUALITY

2.1 Meteorological Monitoring

Meteorological data is collected at MTW's 'Charlton Ridge' meteorological station (refer to **Figure 3**).

2.1.1 Rainfall

Rainfall for the reporting period is summarised in **Table 1**. The year-to-date monthly rainfall totals, 2025 monthly rainfall totals and historical average monthly rainfall trend are shown in **Figure 1**.

Table 1: Monthly Rainfall MTW

2025	Monthly Rainfall (mm)	Cumulative Rainfall (mm)
June	16.4	394.0

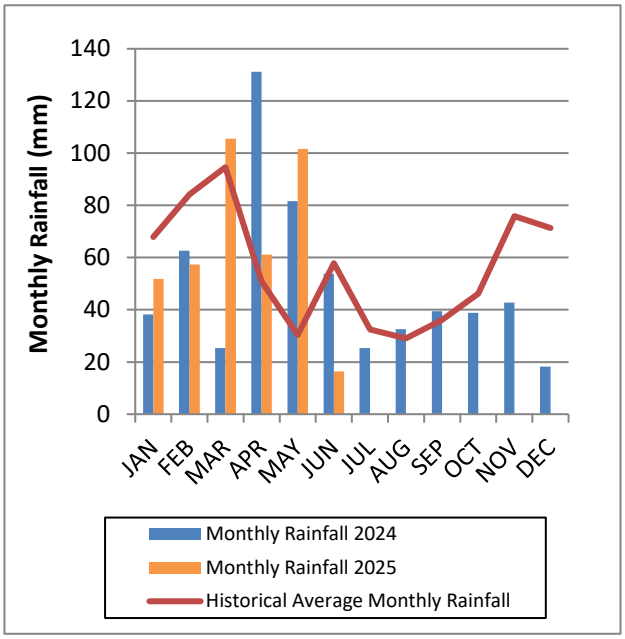

Figure 1: Rainfall Trend YTD

Note: The historical average monthly rainfall is calculated from 2007 to 2025 monthly totals

2.1.2 Wind Speed and Direction

Winds from the West were dominant during the reporting period as shown in **Figure 2.**

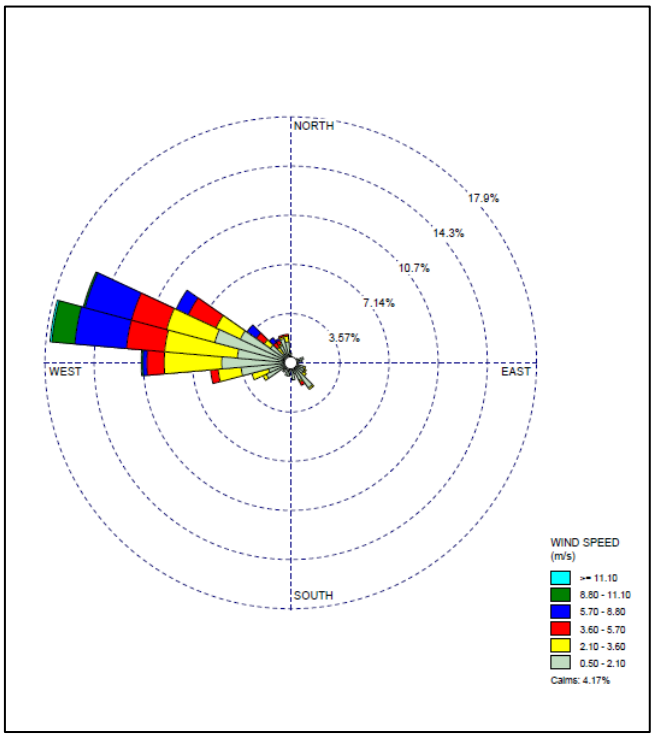

Figure 2: Charlton Ridge Wind Rose – June 2025

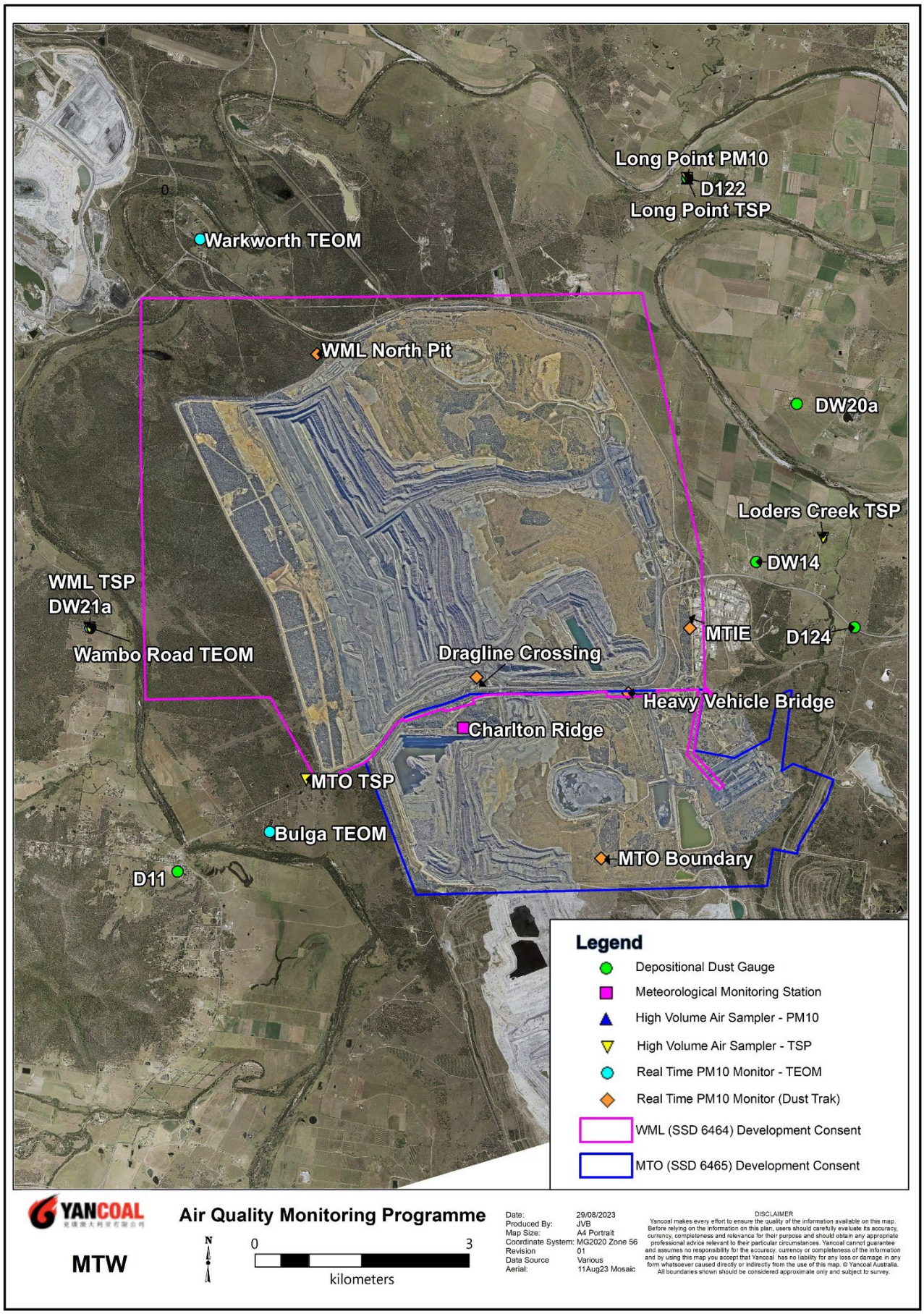

Figure 3: Air Quality Monitoring Locations

2.2 Depositional Dust

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

During the reporting period the Warkworth monitor recorded a monthly result above the long-term impact assessment criteria of 4.0 g/m2 per month. There is no evidence to suggest that the result is contaminated. Accordingly, the result will be included in the annual average calculation.

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.

An annual assessment of MTW's compliance with the Long-Term Impact Assessment Criteria will be provided in the 2025 Annual Review Report.

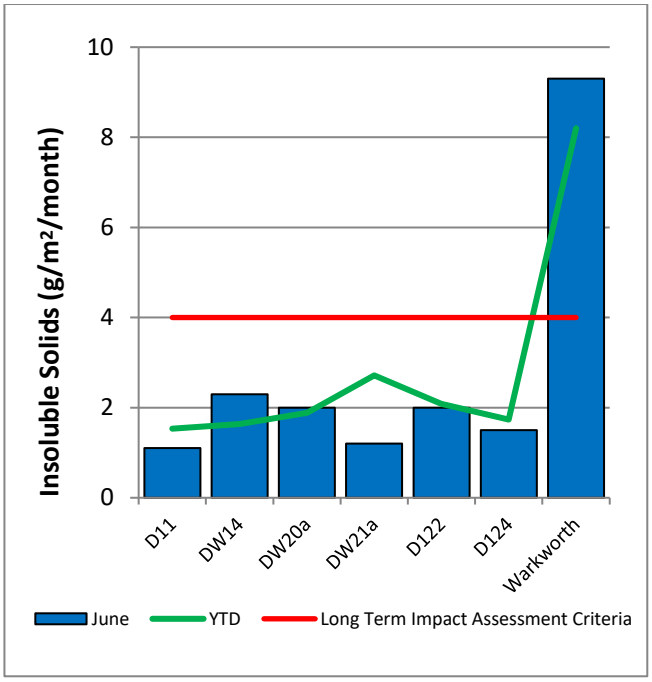

Figure 4: Depositional Dust – June 2025

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.

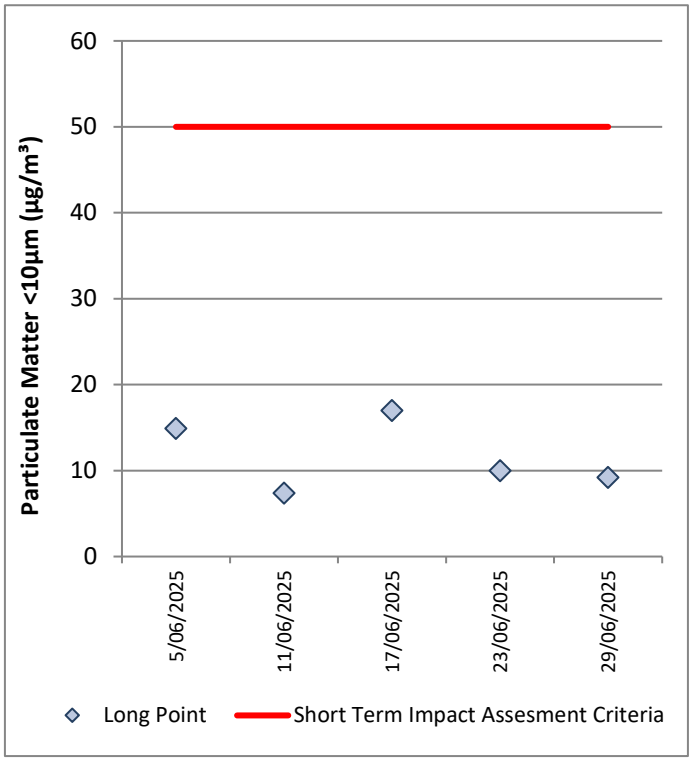

Figure 5: Individual PM10 Results – June 2025

Figure 6 shows the annual average PM10 result against the long-term impact assessment criteria.

An assessment of MTW's compliance with the Long-Term Impact Assessment Criteria will be provided in the 2025 Annual Review Report.

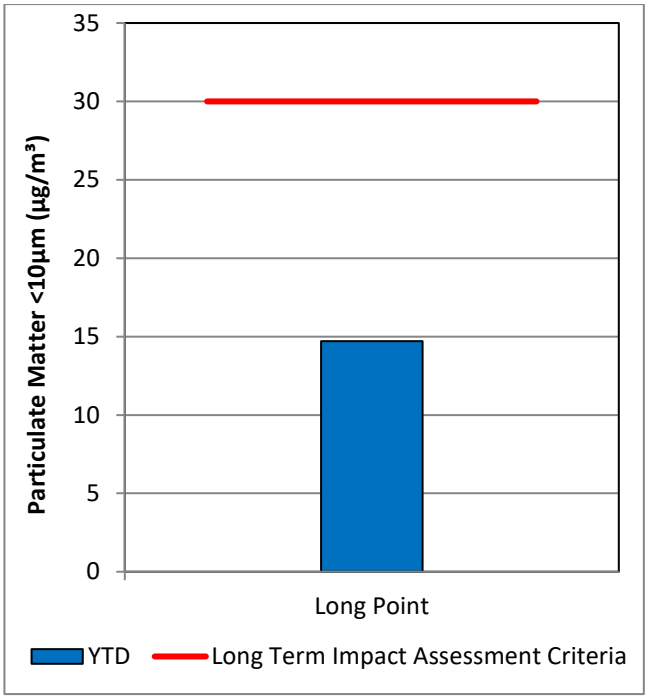

Figure 6: Annual Average PM_{10} – June 2025

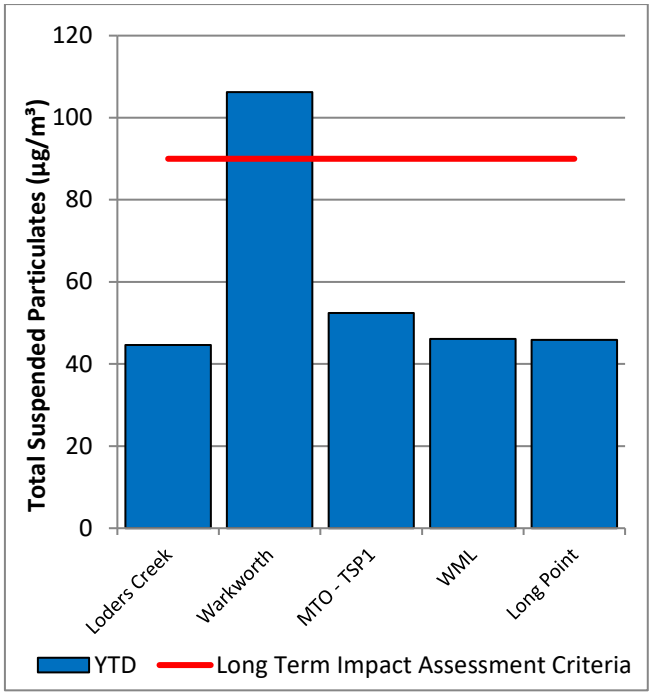

Figure 7: Annual Average Total Suspended Particulates – June 2025

2.3.2 TSP Results

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

An assessment of MTW's compliance with the Long-Term Impact Assessment Criteria will be provided in the 2025 Annual Review Report.

2.3.3 Real Time PM_{10} Results

MTW 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 internal alerts 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.

Data from the Warkworth monitor was not available on 2 or 3 June due to equipment issues.

2.3.4 Real Time Alarms for Air Quality

During June, the real time monitoring system generated 137 automated air quality related alerts, including 14 alerts for adverse meteorological conditions and 123 alerts for elevated PM_{10} levels.

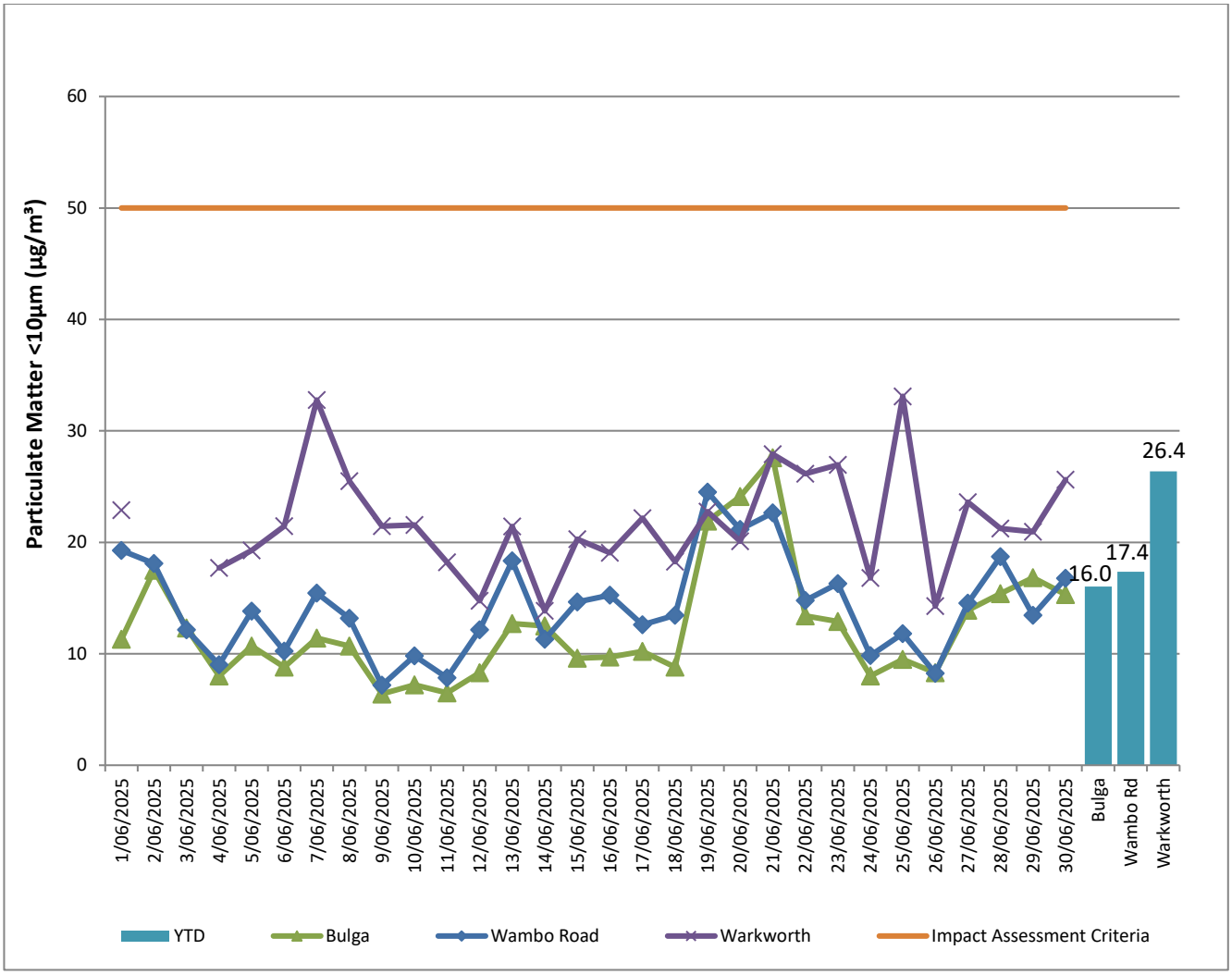

Figure 8: Real Time PM_{10} daily 24hr average (line graphs) and YTD annual average (column graphs) – June 2025

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 record background water quality and to monitor the potential impact of mining on the river system. Other Hunter River tributaries are also monitored.

3.1.1 Surface Water Monitoring results

Figure 9 to **Figure 11** show the long-term surface waste trend (2022 – current) within MTW mine dams. **Figure 12** to **Figure 14** show the long-term surface water trend (2022 – current) in surrounding watercourses.

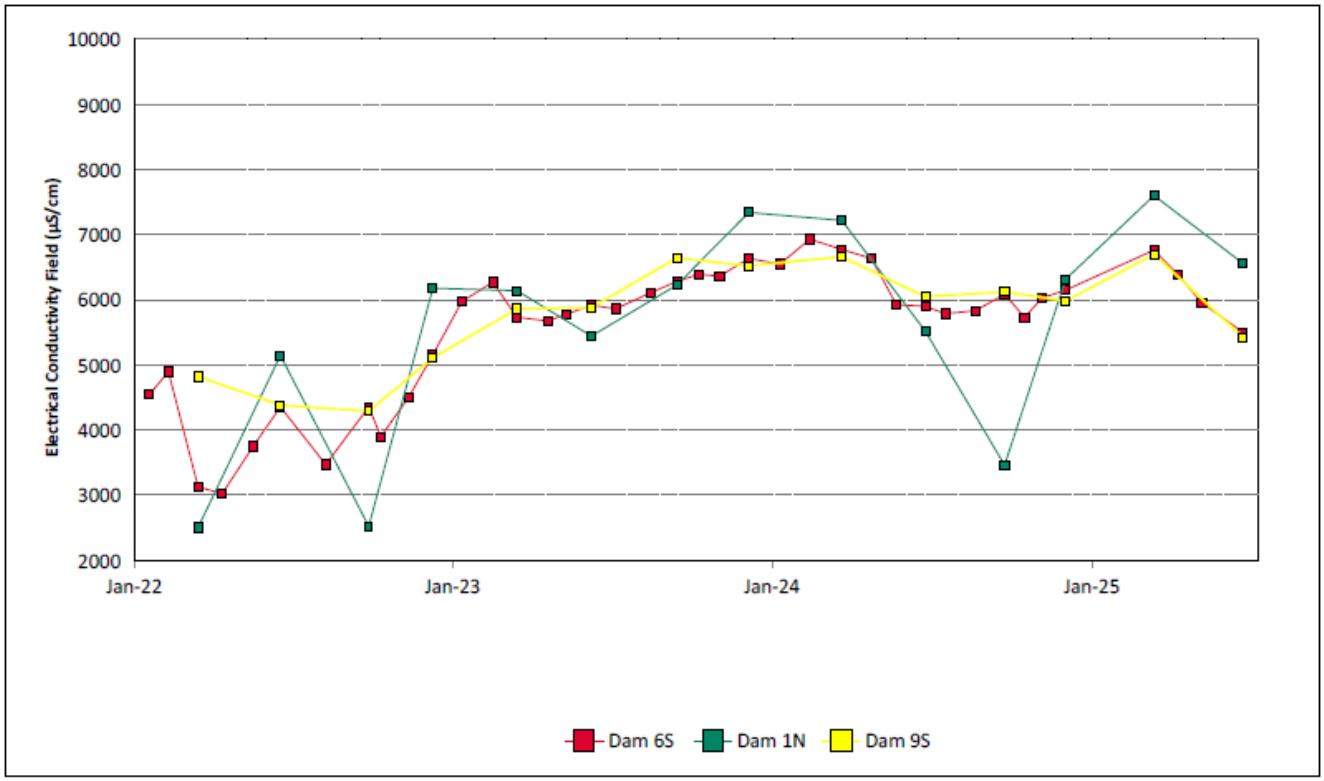

Figure 9: Site Dams Electrical Conductivity Field Trend – June 2025

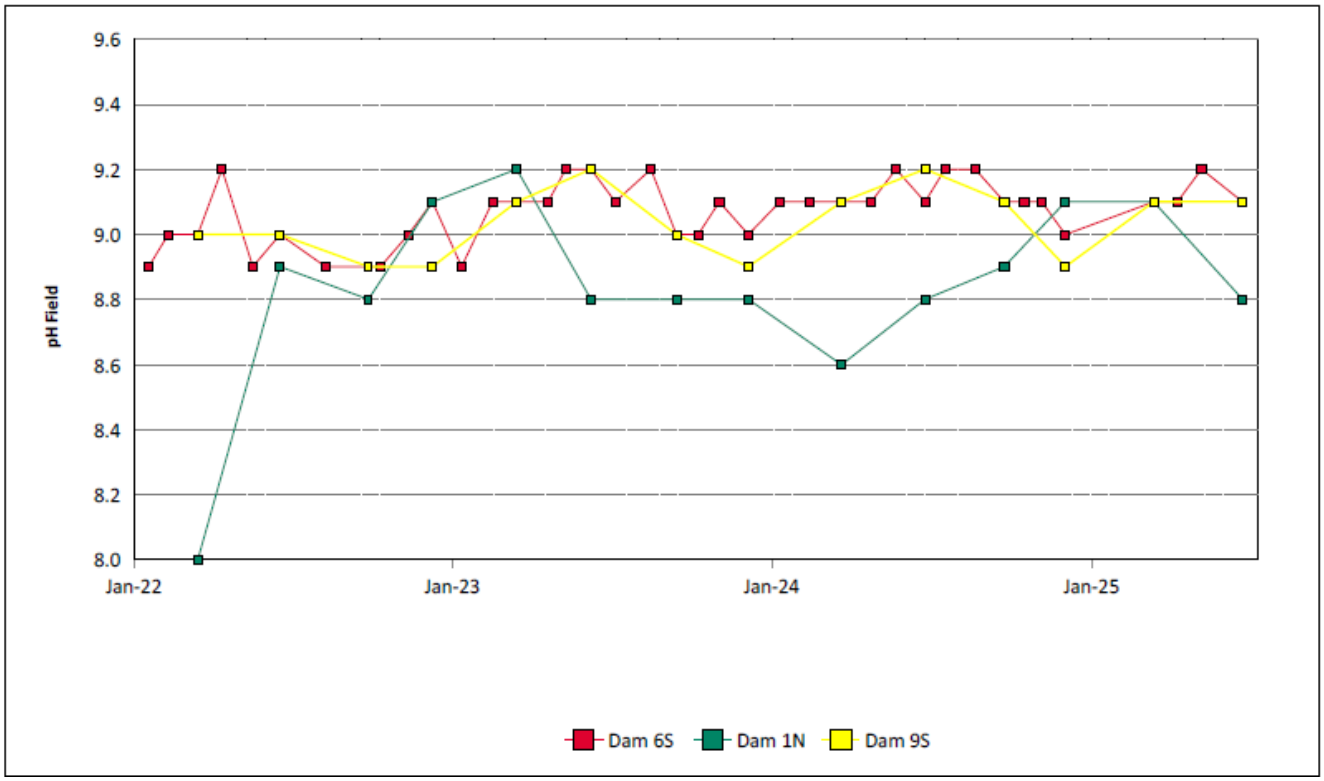

Figure 10: Site Dams pH Field Trend – June 2025

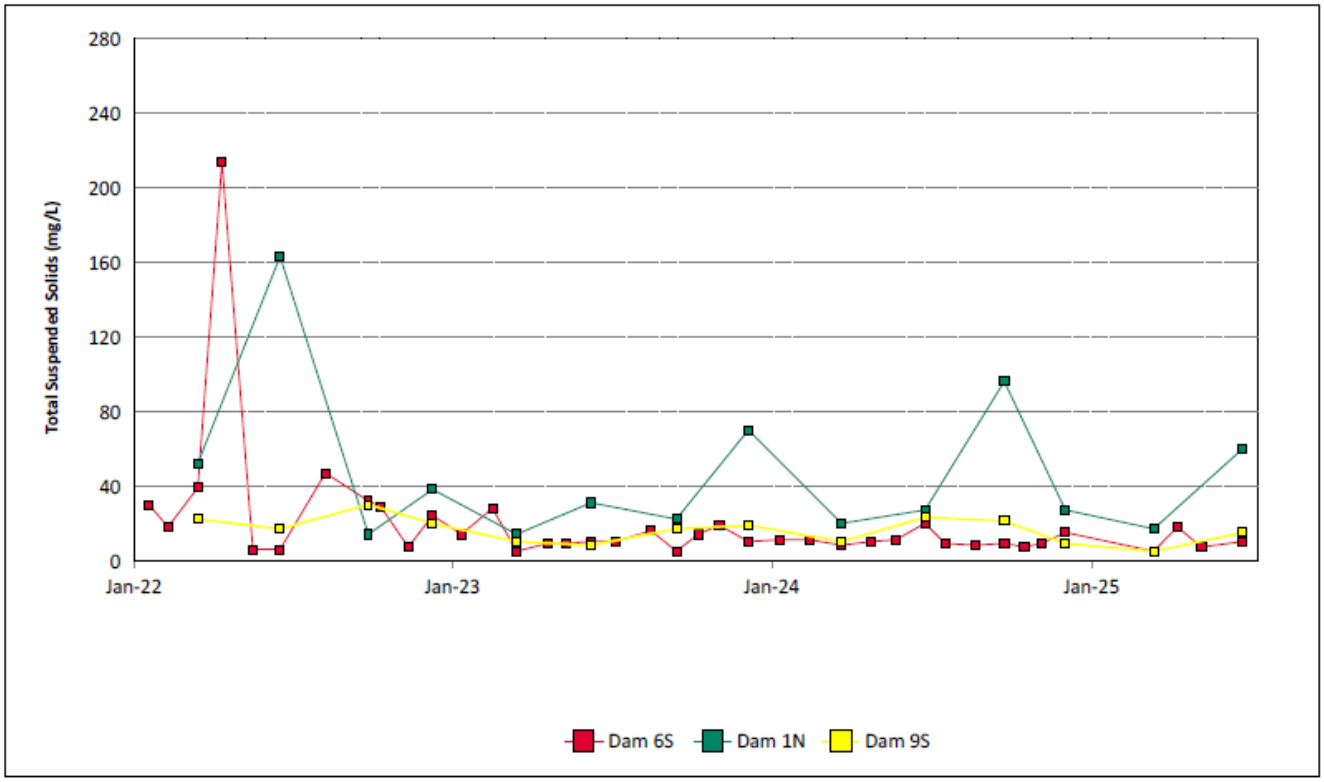

Figure 11: Site Dams Total Suspended Solids Trend – June 2025

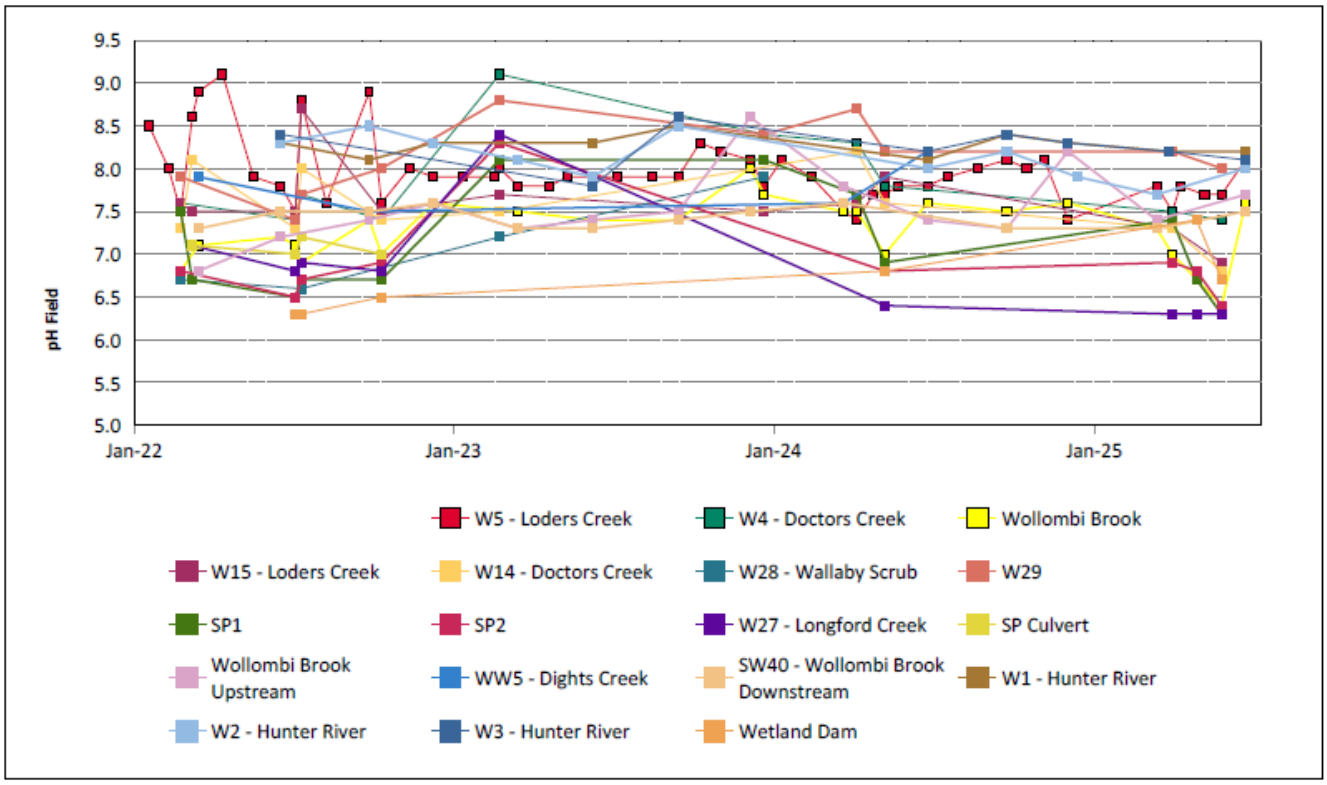

Figure 12: Watercourse pH Field Trend – June 2025

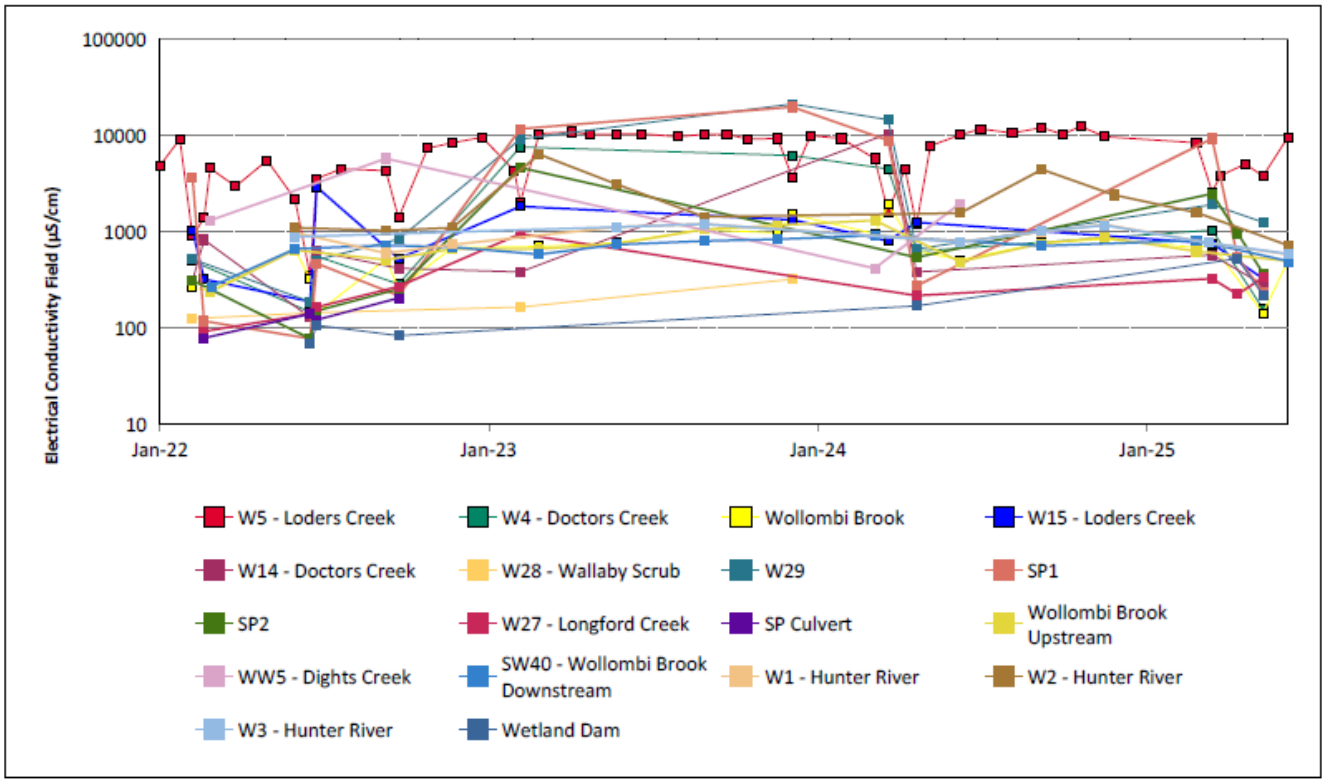

Figure 13: Watercourse Electrical Conductivity Field Trend – June 2025

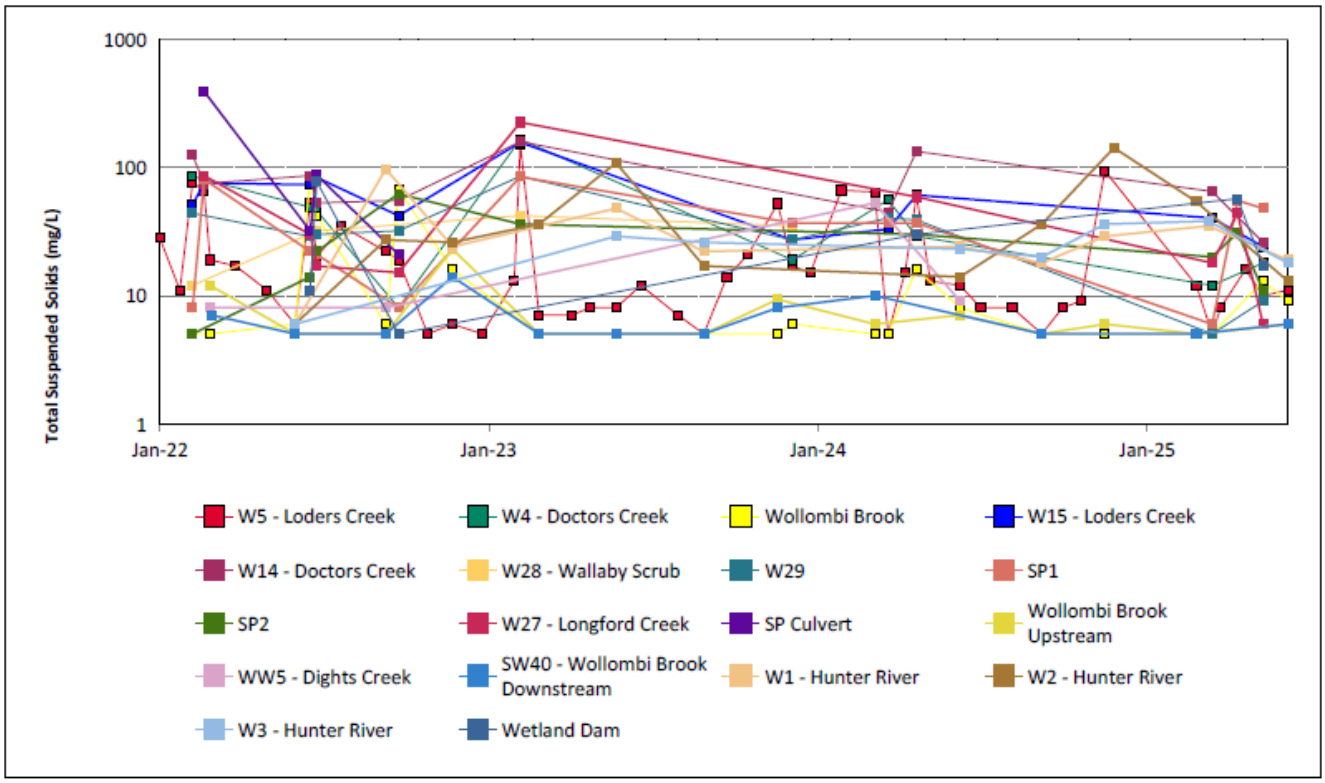

Figure 14: Watercourse Total Suspended Solids Trend – June 2025

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.

Current internal surface water trigger limit breaches are summarised in **Table 2**.

Table 2: Surface Water Trigger Tracking – June 2025

Site	Date	Trigger Limit Breached	Action Taken in Response
W5	8/01/2025	TSS – 50mg/L (ANZECC criteria)	Unlikely to be associated with MTW mining related impacts. Elevated TSS results most likely attributable to sampling from water with no flow (pool of water) and not considered to be a valid representation given that there was no flow at the time of sampling. TSS returned to within trigger level for subsequent sampling on 13/2/25, 13/3/25 and 31/3/25.
W2	13/03/2025	TSS – 50mg/L (ANZECC criteria)	No MTW site sources of sediment identified. TSS returned to within trigger level for subsequent sampling on 23/06/25.
W14	31/03/2025, 28/04/2025	TSS – 50mg/L (ANZECC criteria)	No MTW site sources of sediment identified. TSS returned to within trigger level for subsequent sampling on 26/05/25.
SP1	28/04/2025	TSS – 50mg/L (ANZECC criteria)	No MTW site sources of sediment identified. TSS returned to within trigger level for subsequent sampling on 26/05/25.
Wetlands Dam	28/04/2025	TSS – 50mg/L (ANZECC criteria)	No MTW site sources of sediment identified. TSS returned to within trigger level for subsequent sampling on 26/05/25.

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

3.2 HRSTS Discharge

MTW participates in the Hunter River Salinity Trading Scheme (HRSTS), allowing discharge from licensed discharge points located at Dam 1N and Dam 9S. Discharges can only take place subject to HRSTS regulations.

MTW did undertake HRSTS discharges. In June MTW discharged 13.94 ML from Dam 9S during the reporting period.

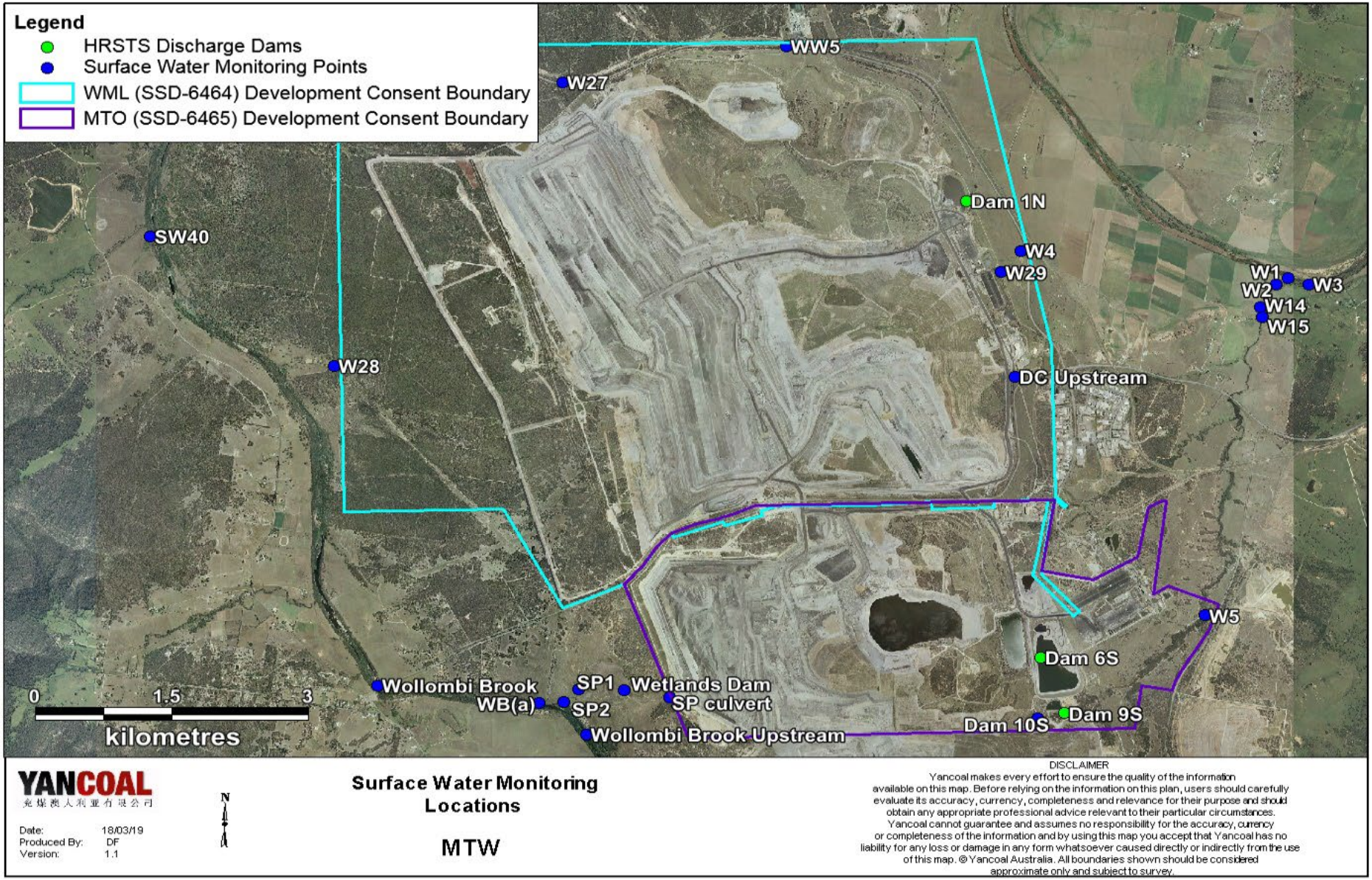

Figure 15: Surface Water Monitoring Location Plan

3.3 Groundwater Monitoring

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

Figure 16 to **Figure 64** show the long-term water quality trends (2022 - current) for groundwater bores monitored at MTW.

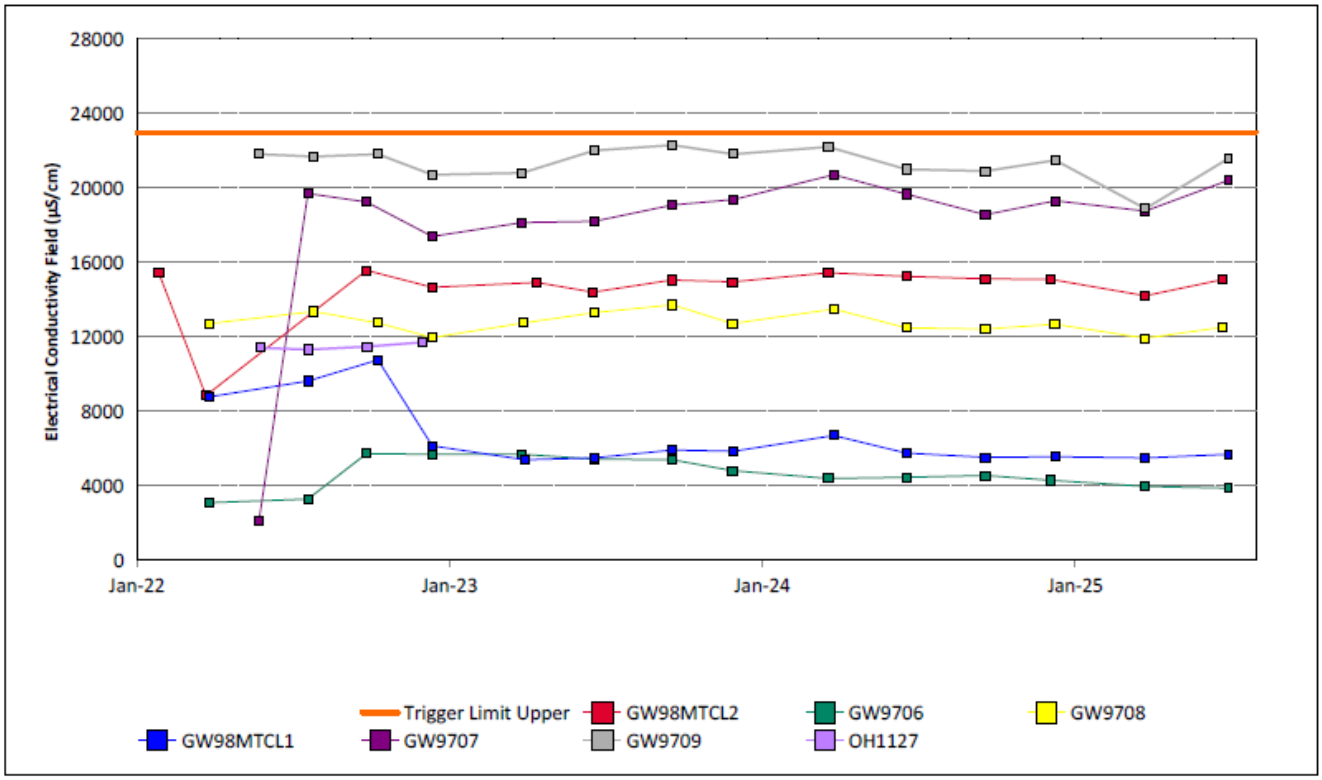

Figure 16: Bayswater Seam Electrical Conductivity Field Trend – June 2025

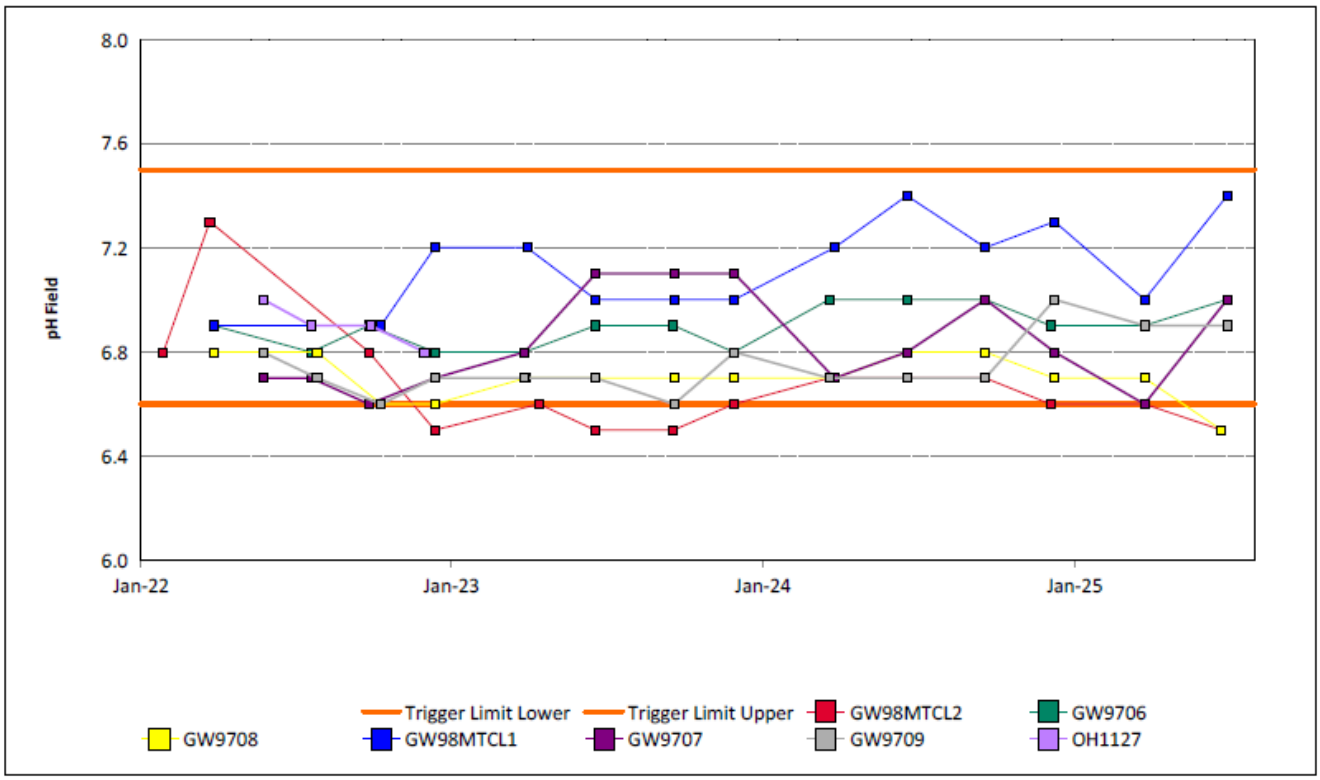

Figure 17: Bayswater Seam pH Field Trend – June 2025

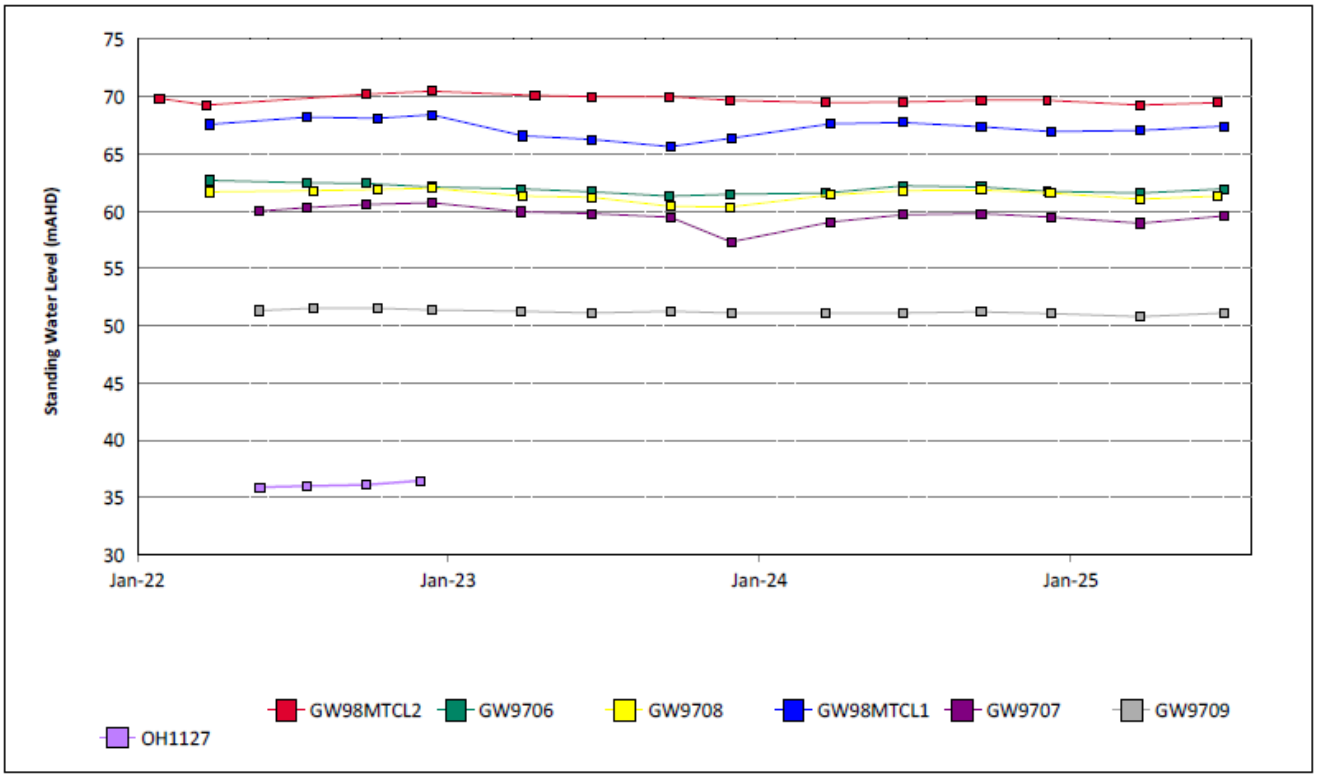

Figure 18: Bayswater Seam Standing Water Level Trend – June 2025

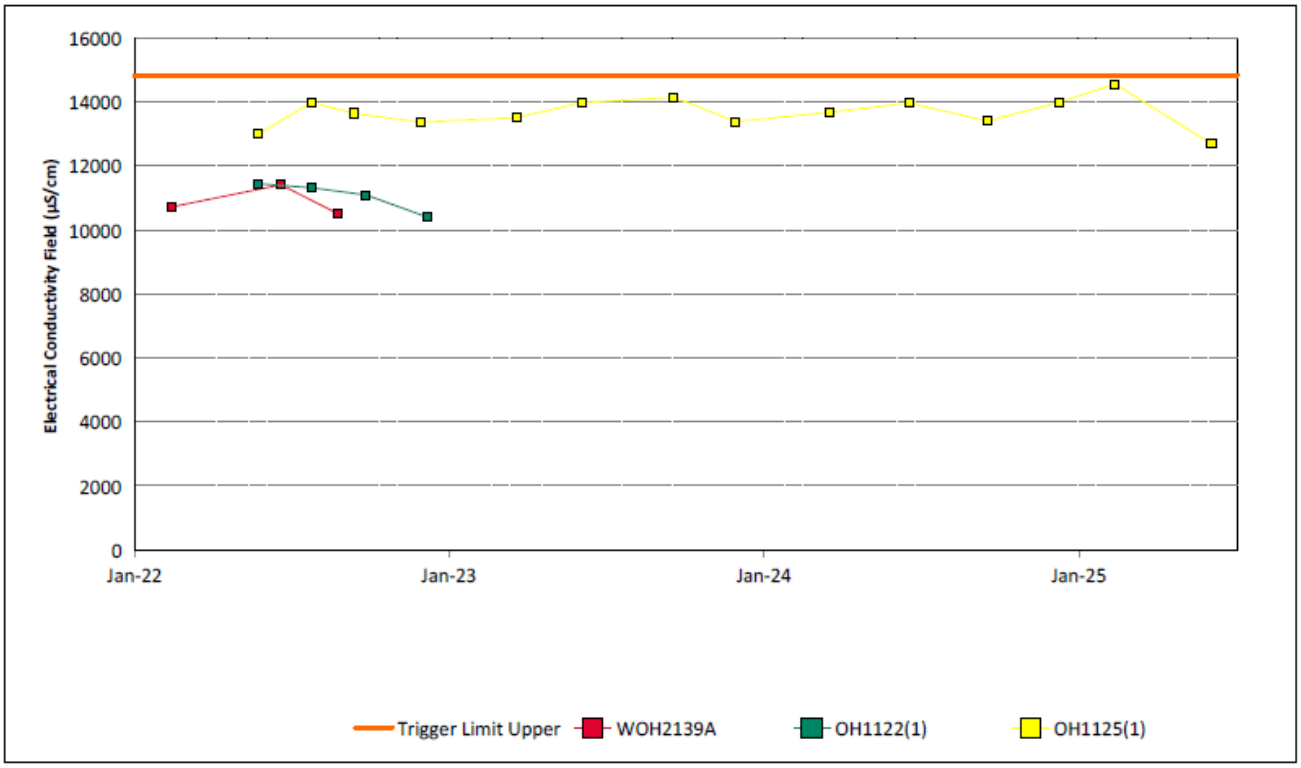

Figure 19: Blakefield Seam Electrical Conductivity Field Trend – June 2025

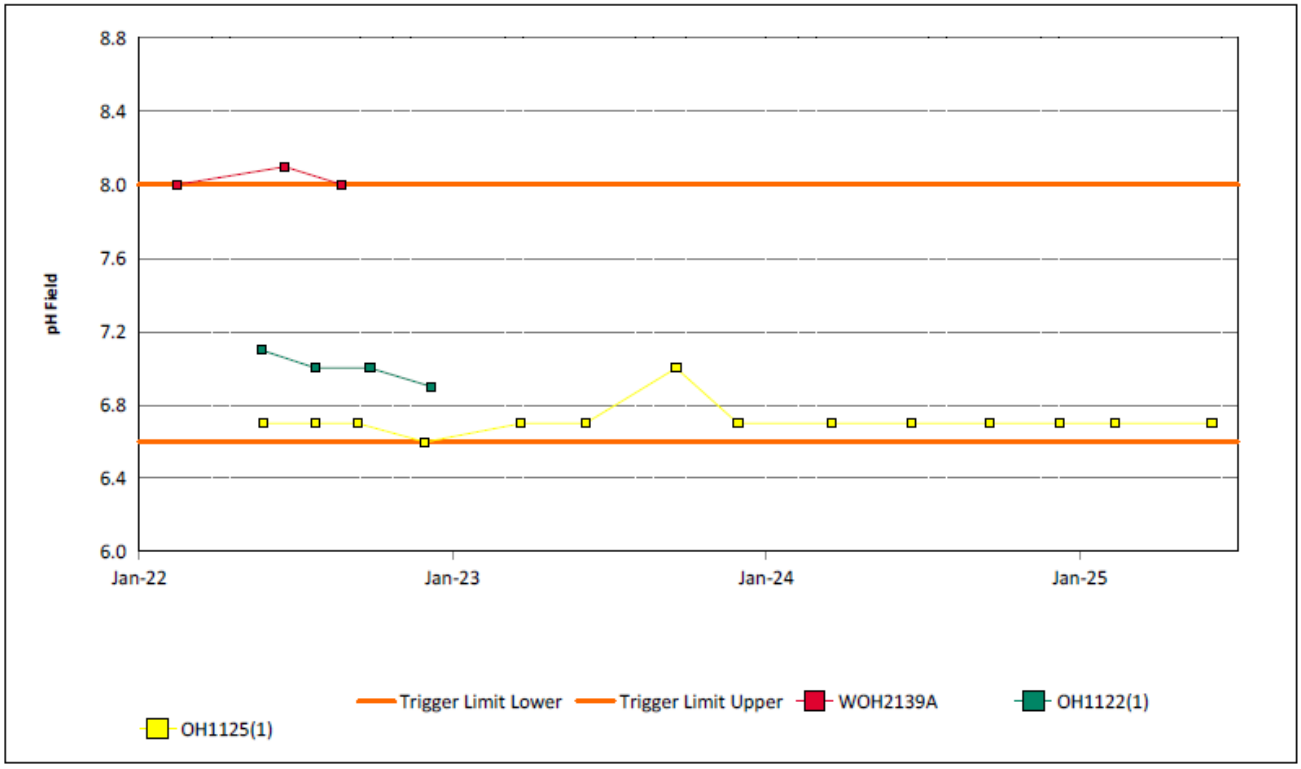

Figure 20: Blakefield Seam pH Field Trend – June 2025

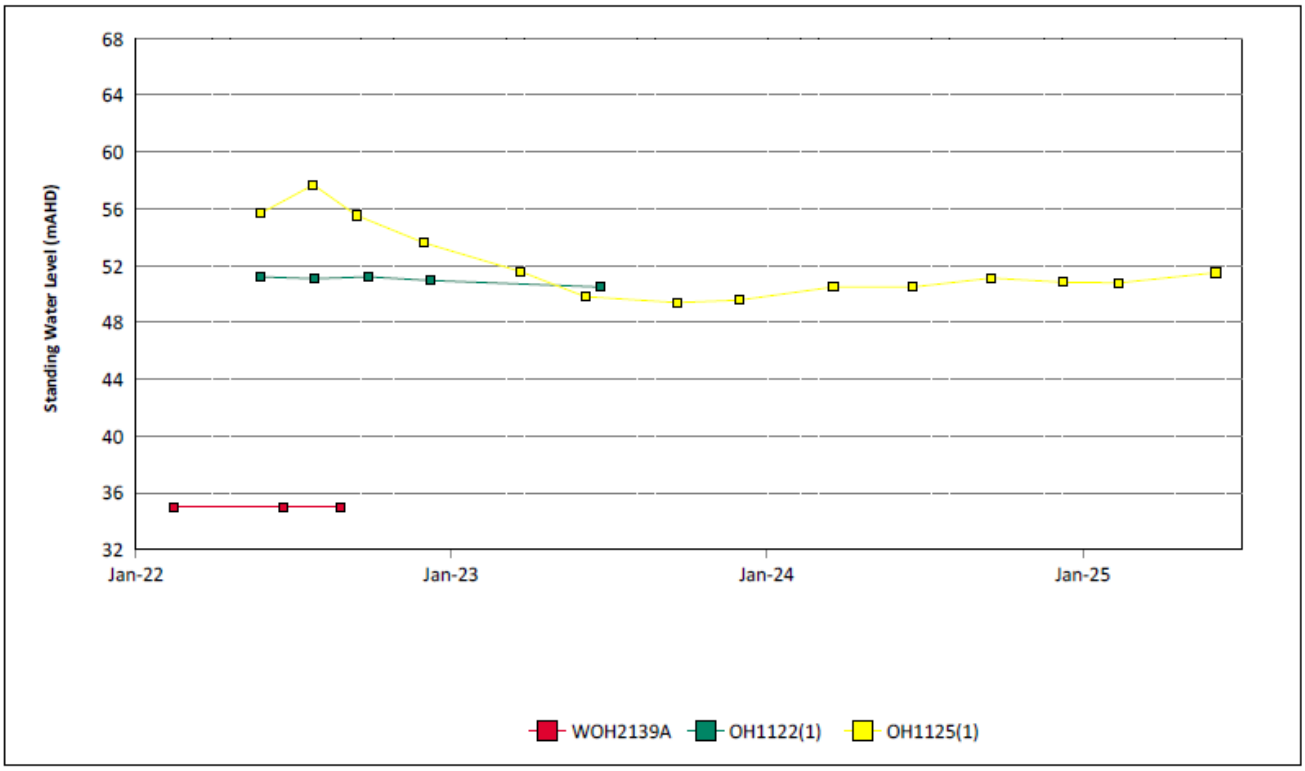

Figure 21: Blakefield Seam Standing Water Level Trend – June 2025

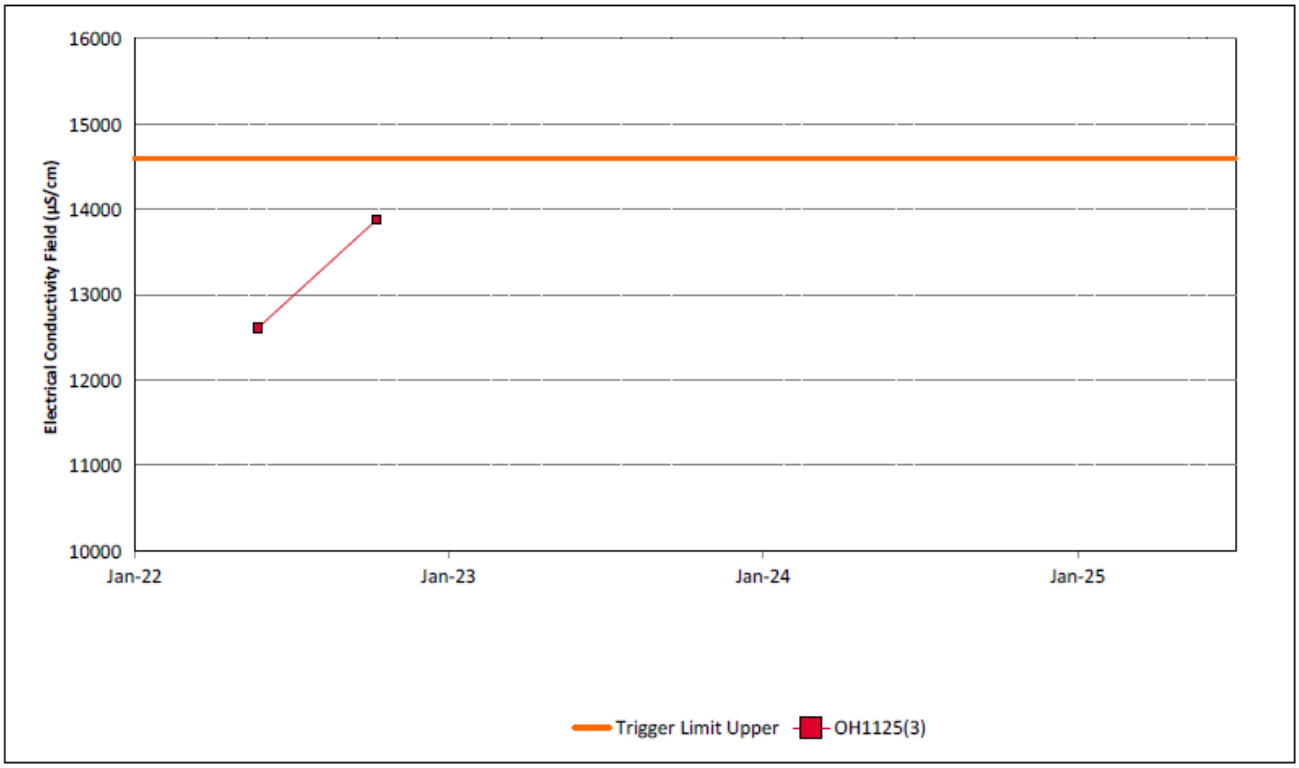

Figure 22: Bowfield Seam Electrical Conductivity Field Trend – June 2025

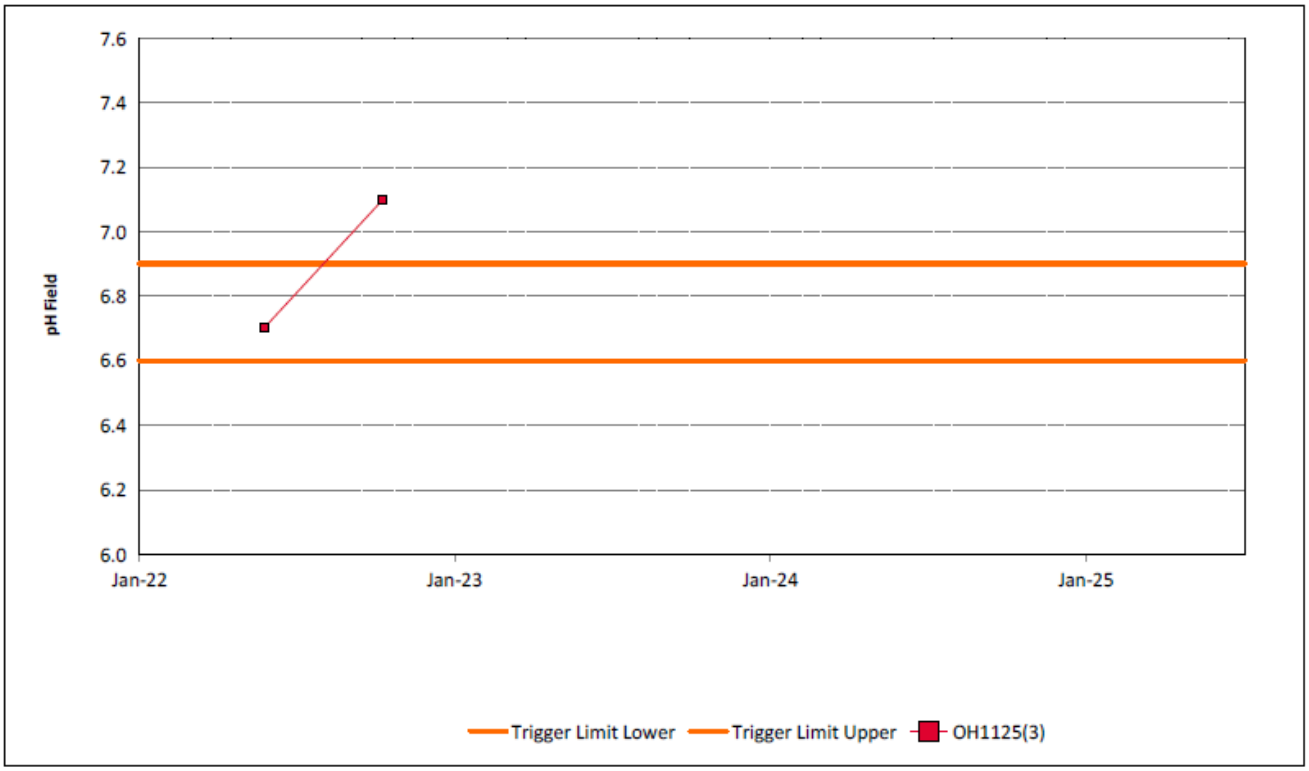

Figure 23: Bowfield Seam pH Field Trend - June 2025

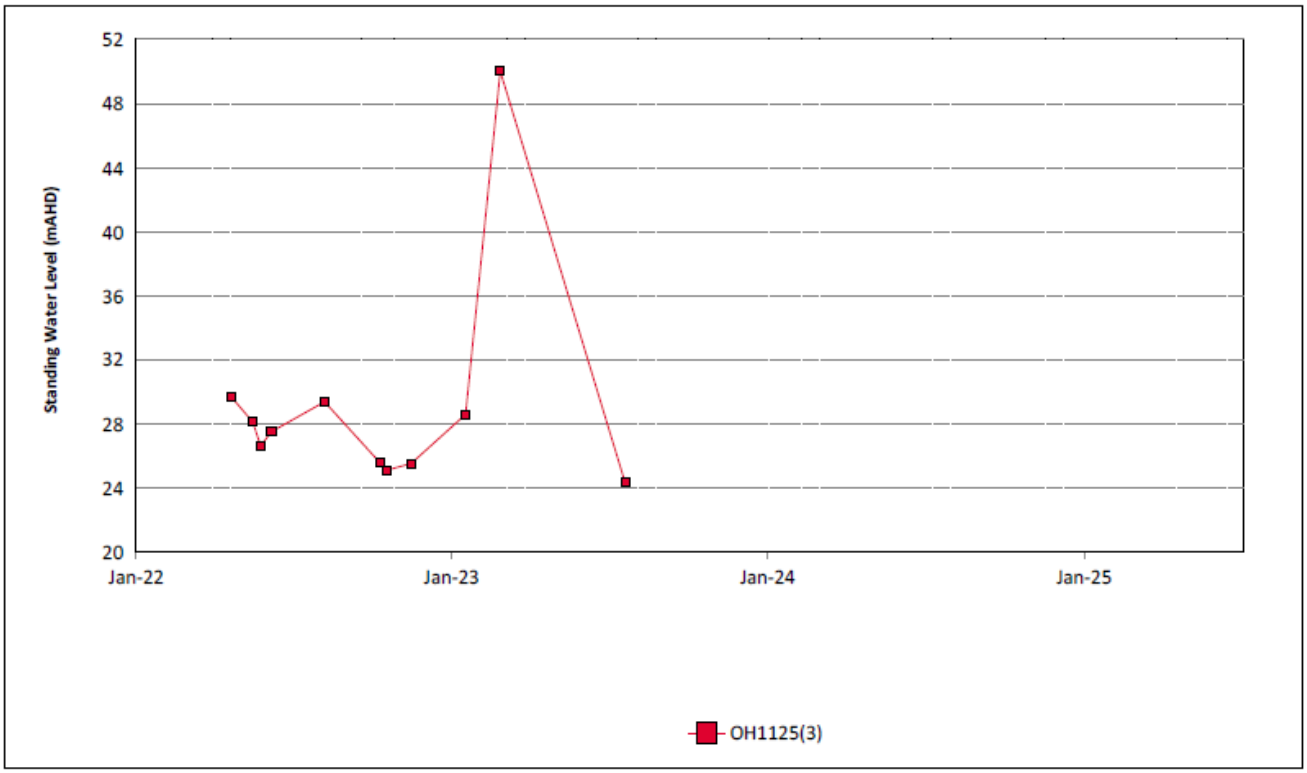

Figure 24: Bowfield Seam Standing Water Level Trend – June 2025

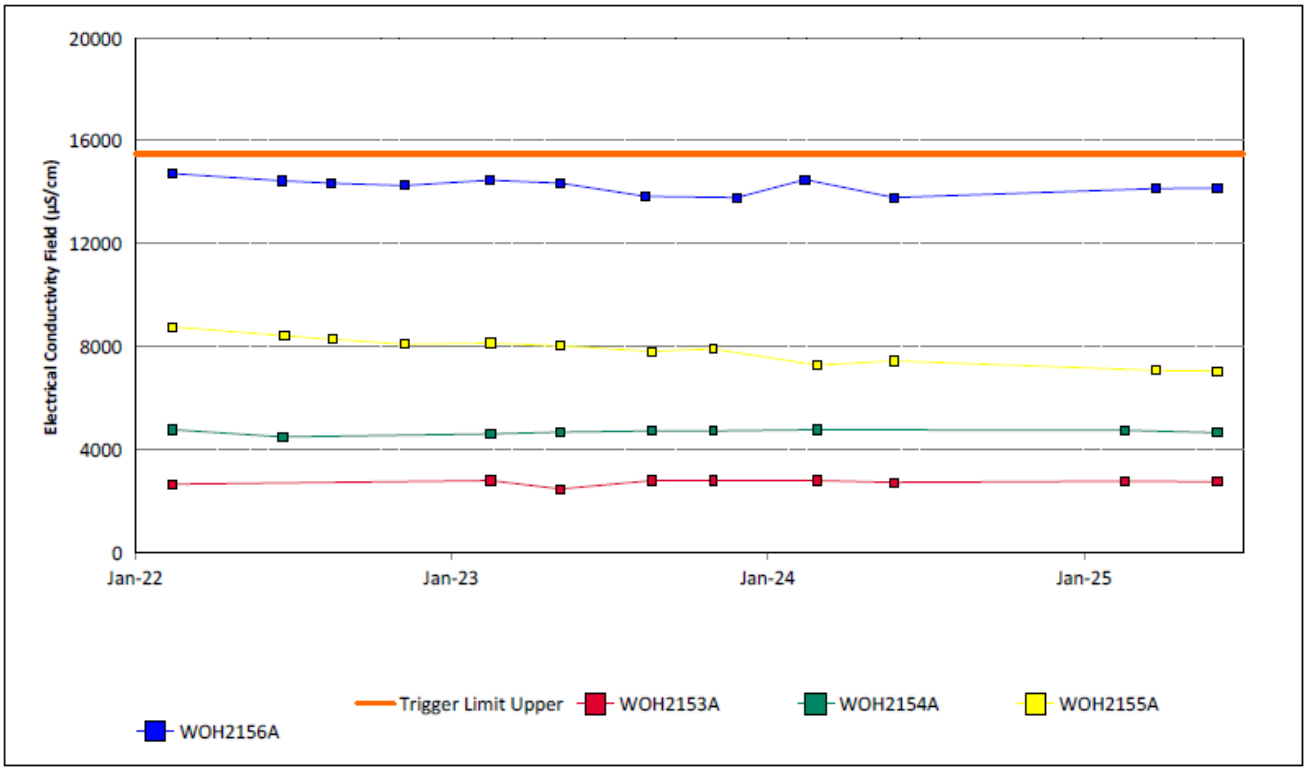

Figure 25: Redbank Seam Electrical Conductivity Field Trend – June 2025

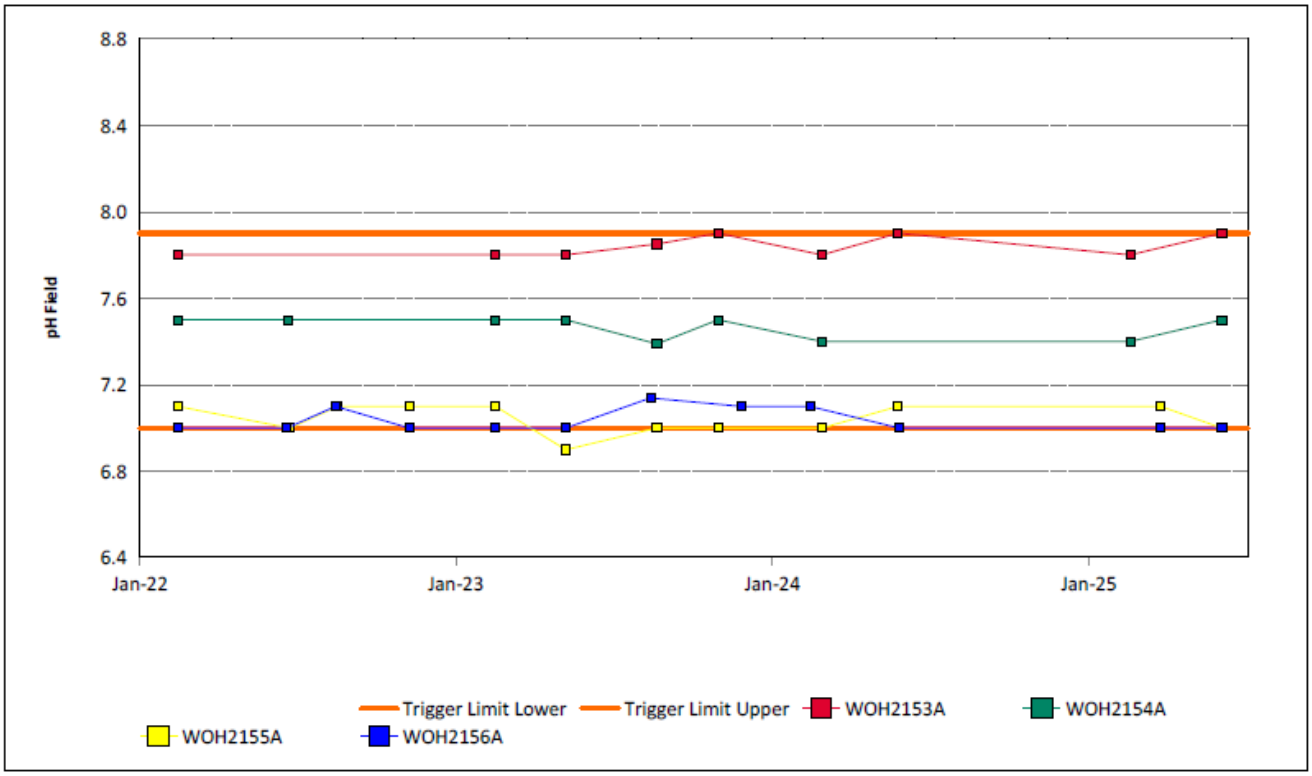

Figure 26: Redbank Seam pH Field Trend – June 2025

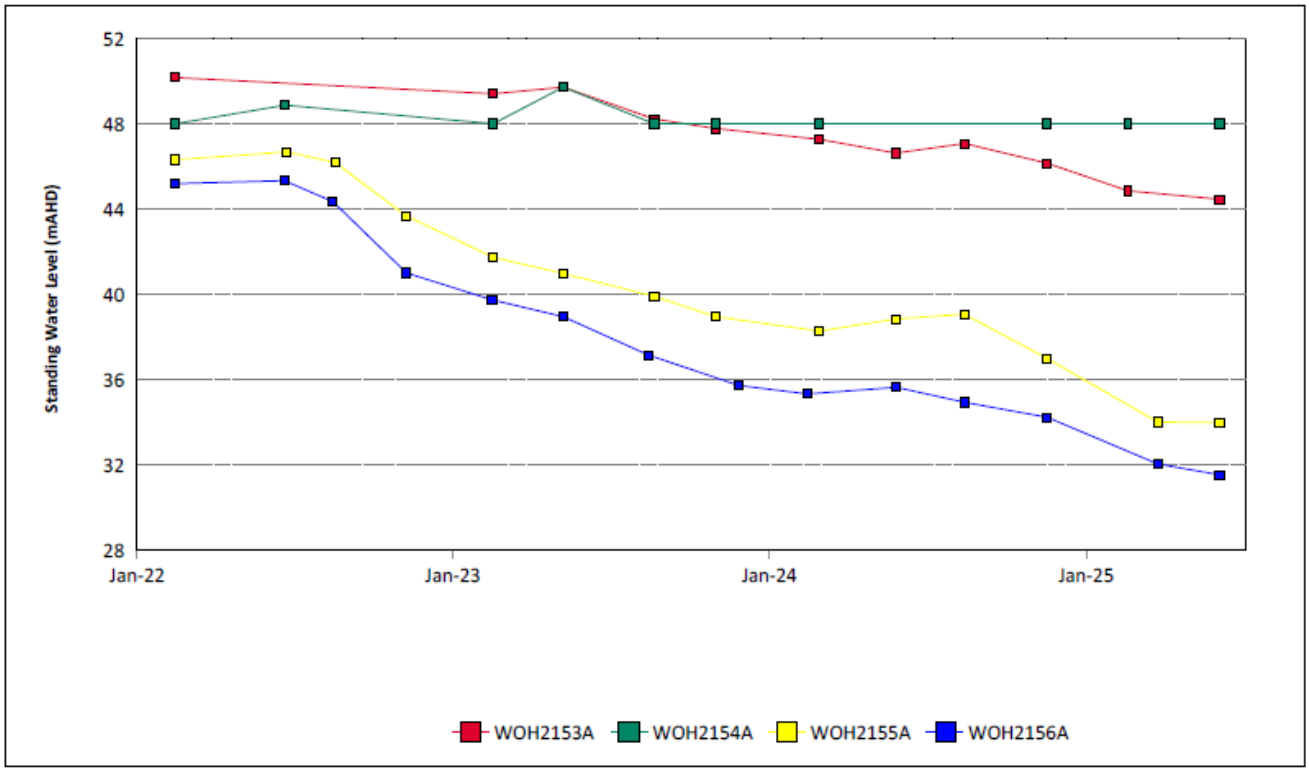

Figure 27: Redbank Seam Standing Water Level Trend – June 2025

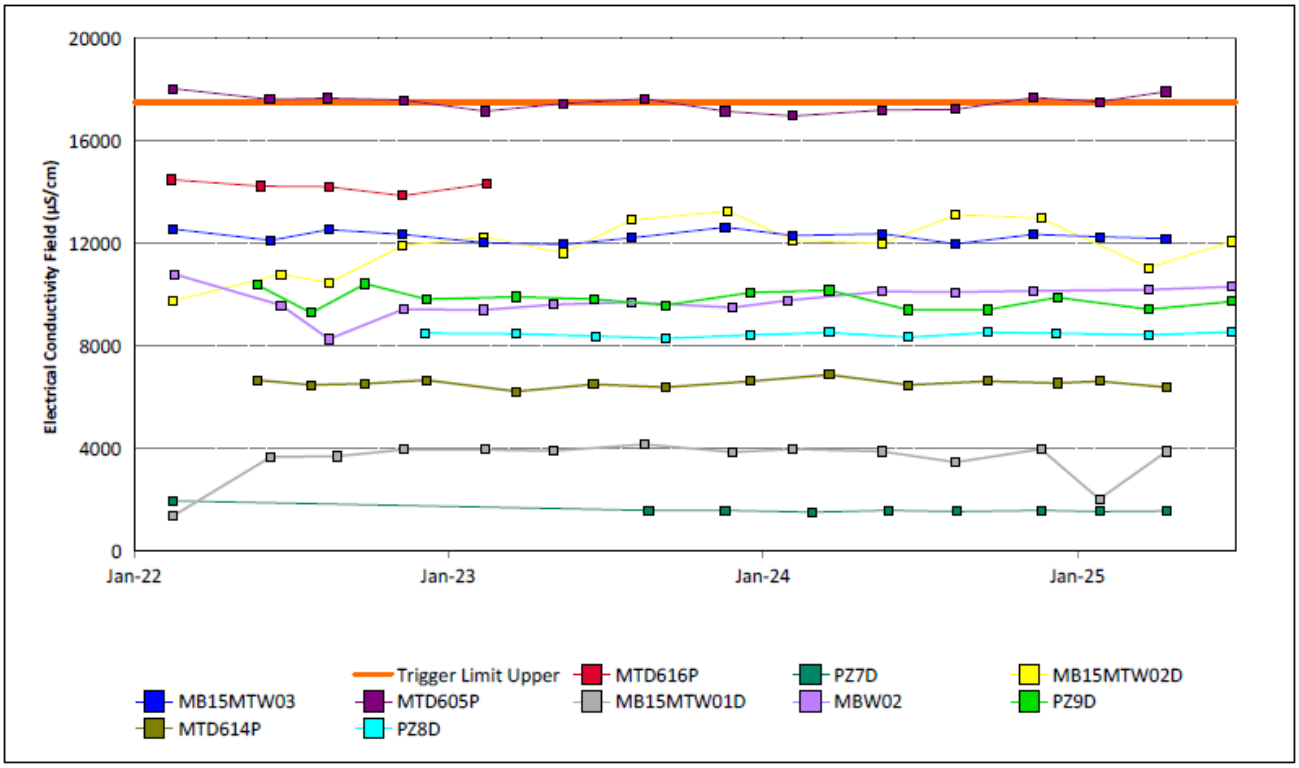

Figure 28: Shallow Overburden Electrical Conductivity Field Trend – June 2025

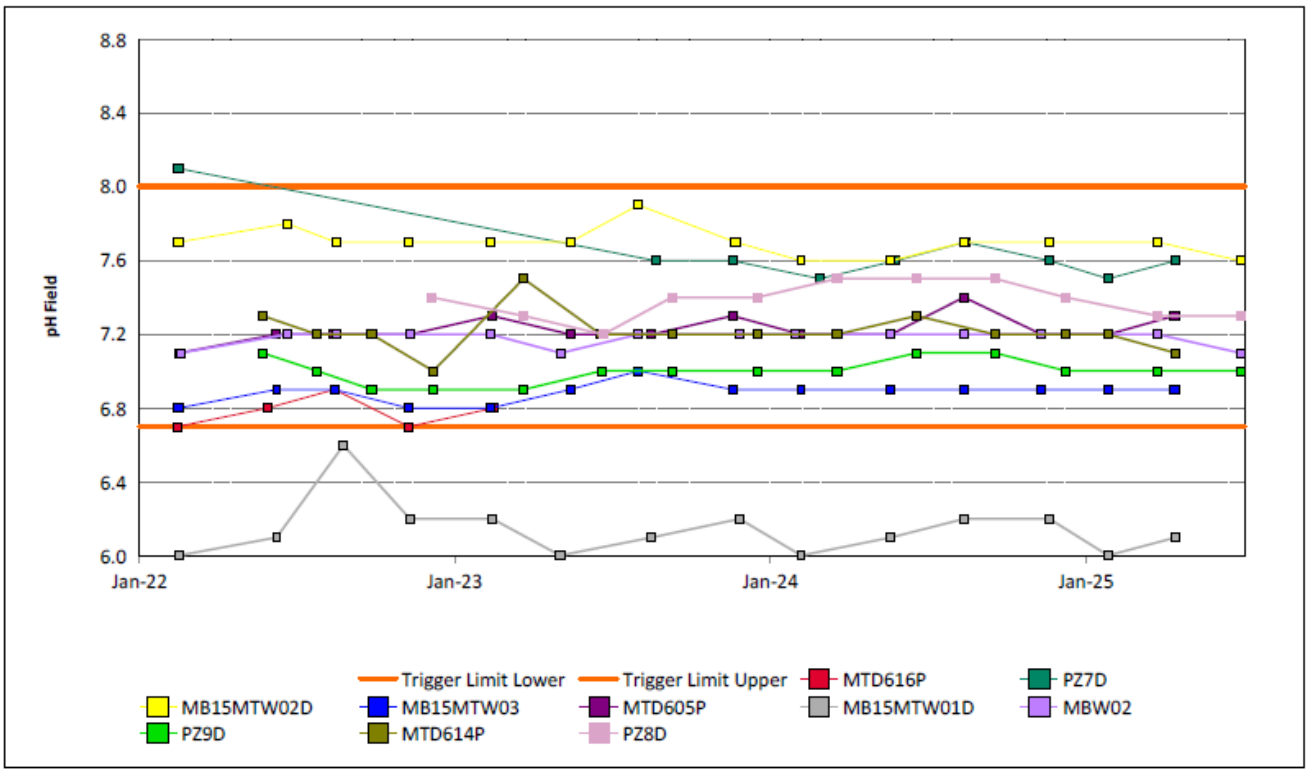

Figure 29: Shallow Overburden pH Field Trend – June 2025

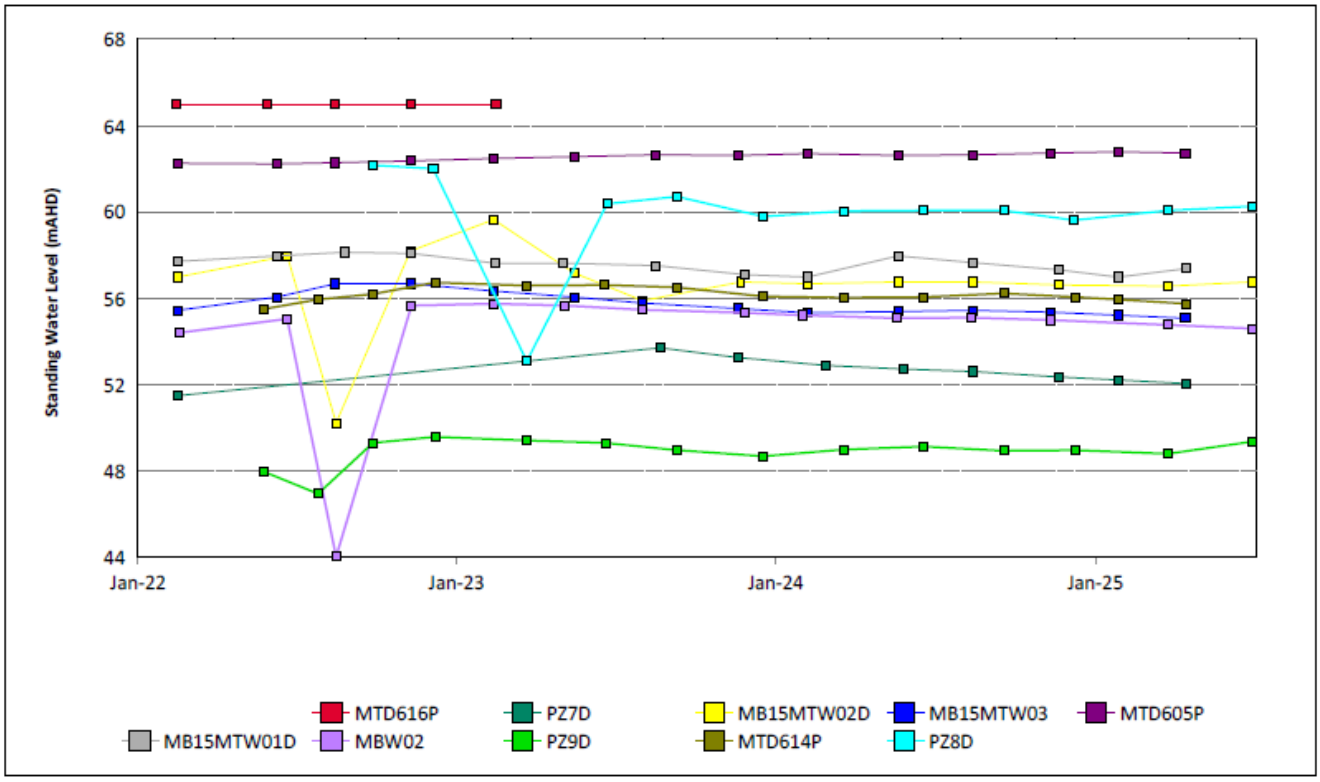

Figure 30: Shallow Overburden Standing Water Level Trend – June 2025

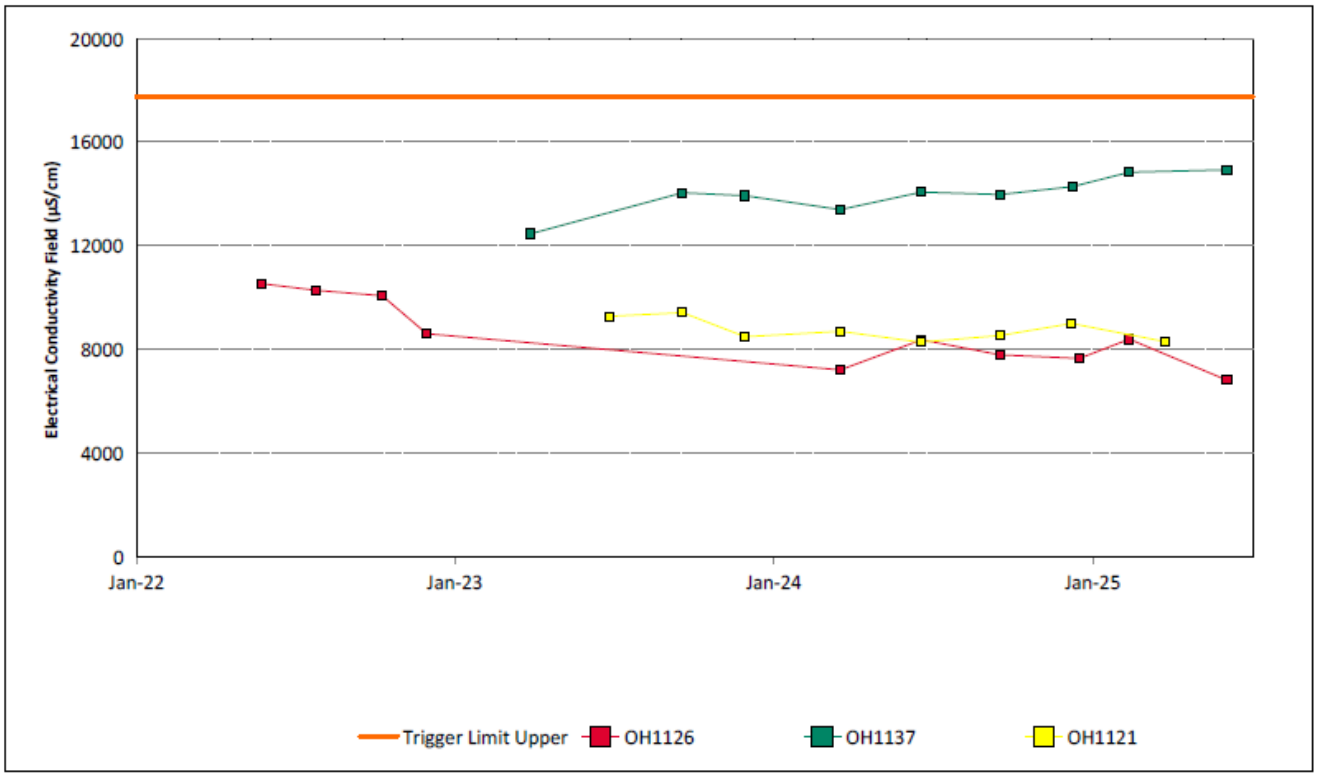

Figure 31: Vaux Seam Electrical Conductivity Field Trend – June 2025

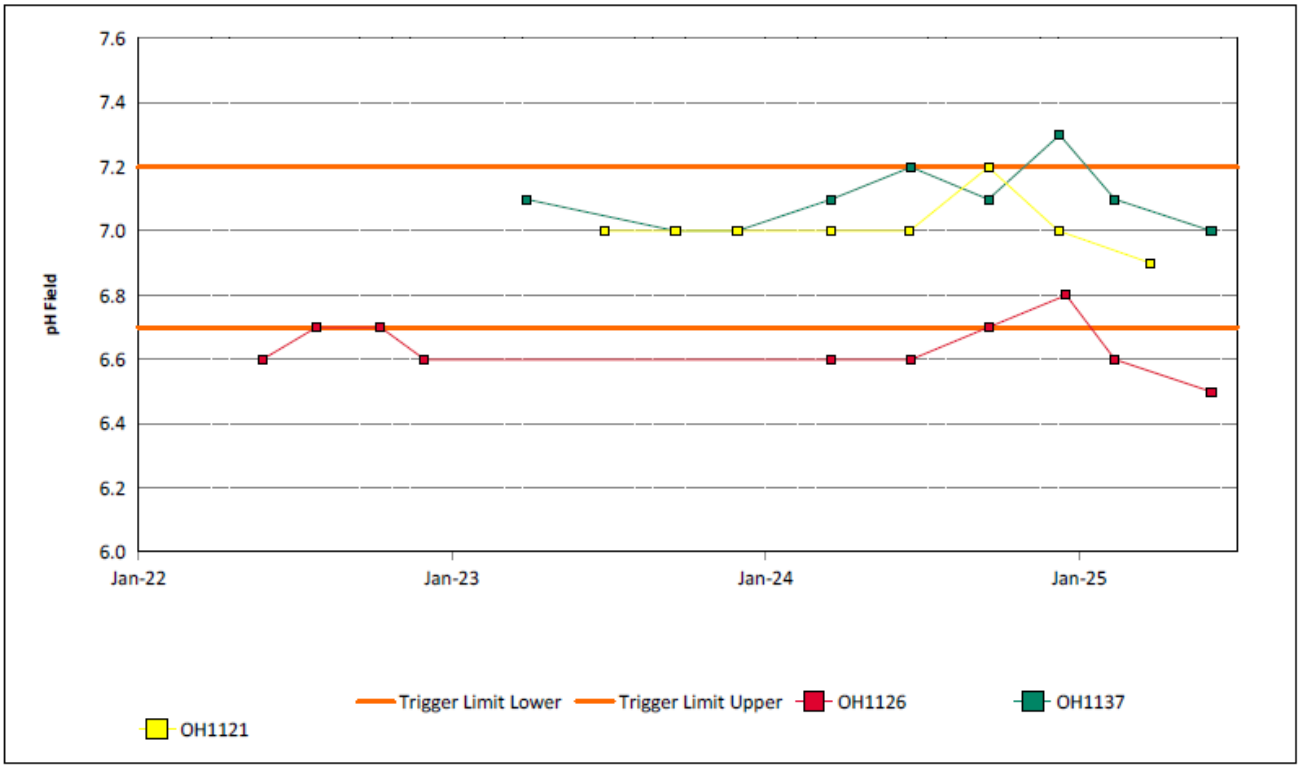

Figure 32: Vaux Seam pH Field Trend – June 2025

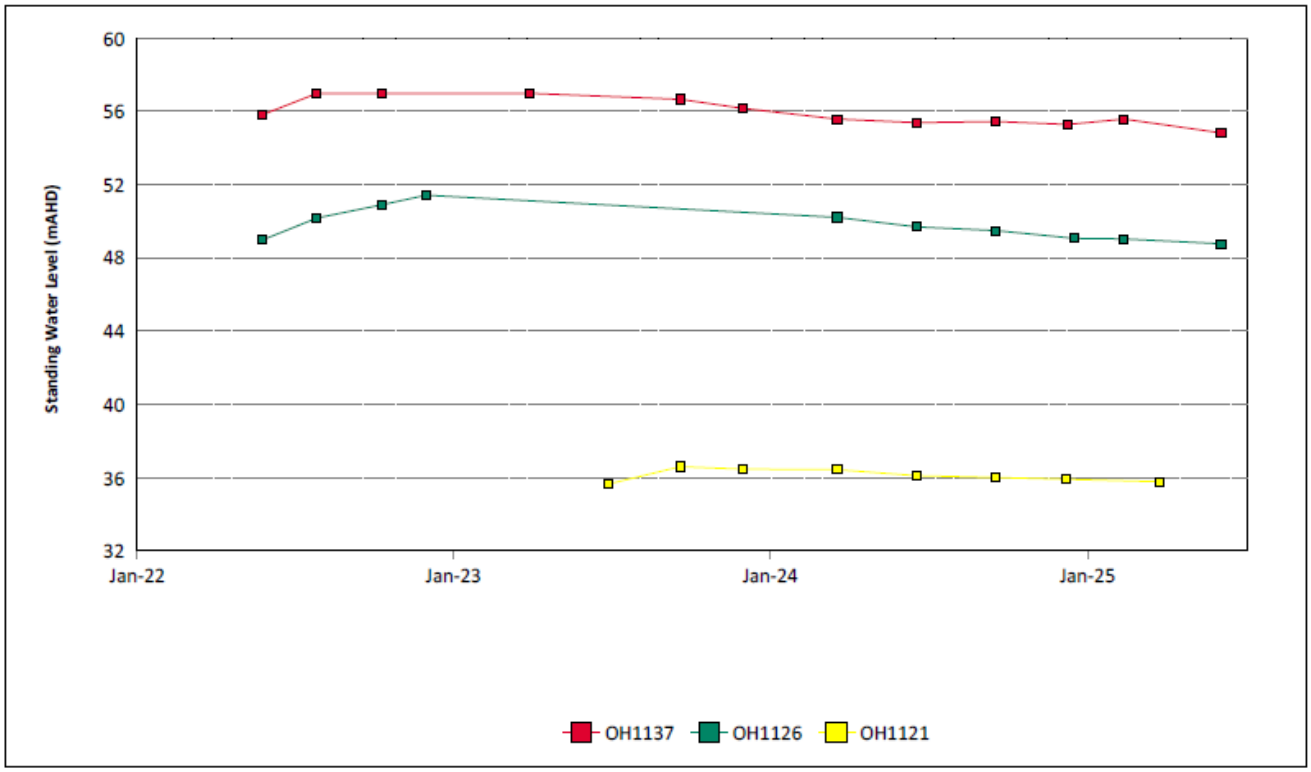

Figure 33: Vaux Seam Standing Water Level Trend – June 2025

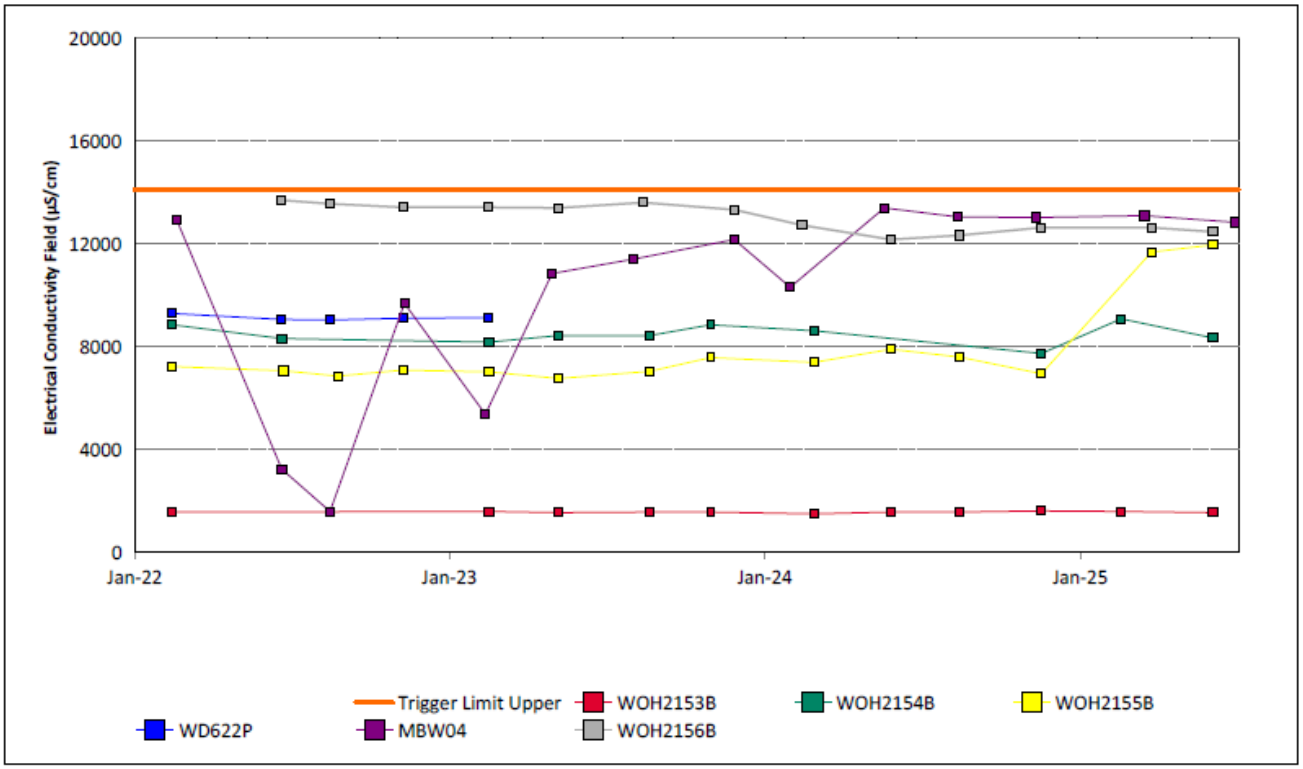

Figure 34: Wambo Seam Electrical Conductivity Field Trend – June 2025

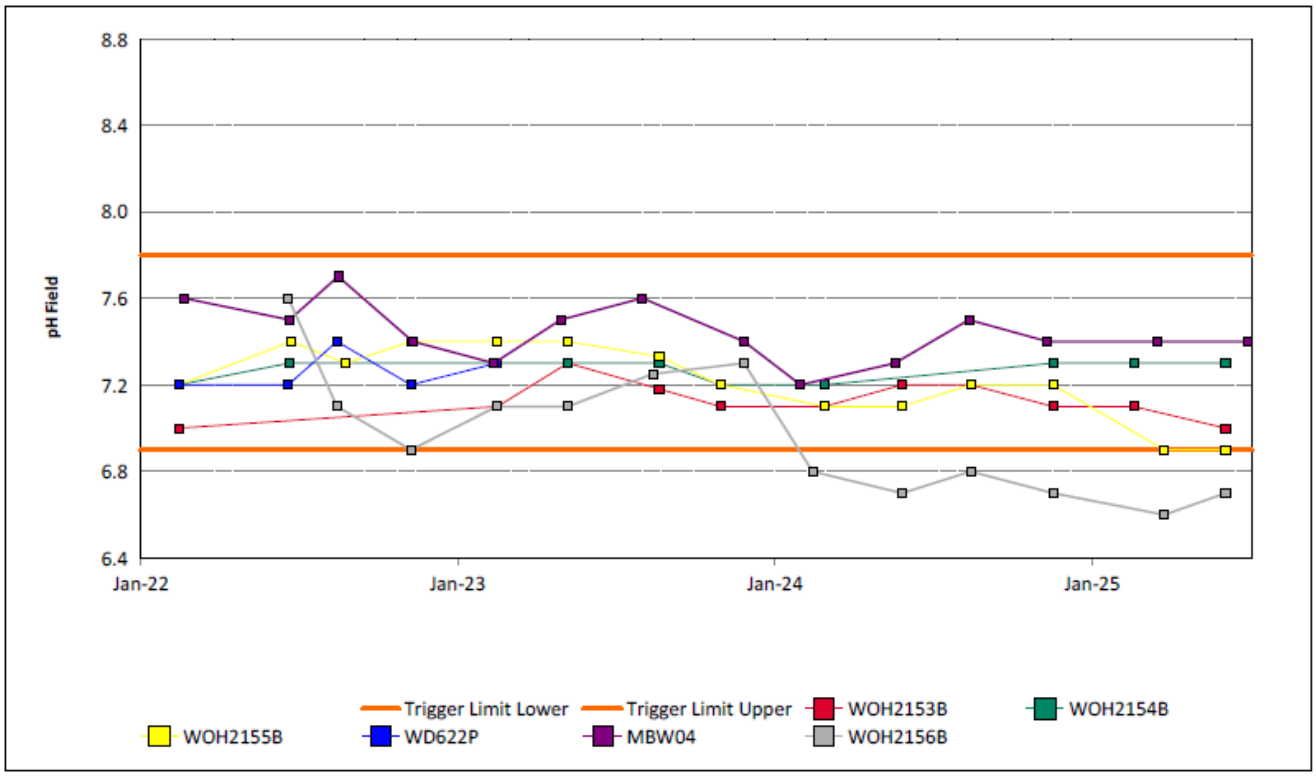

Figure 35: Wambo Seam pH Field Trend – June 2025

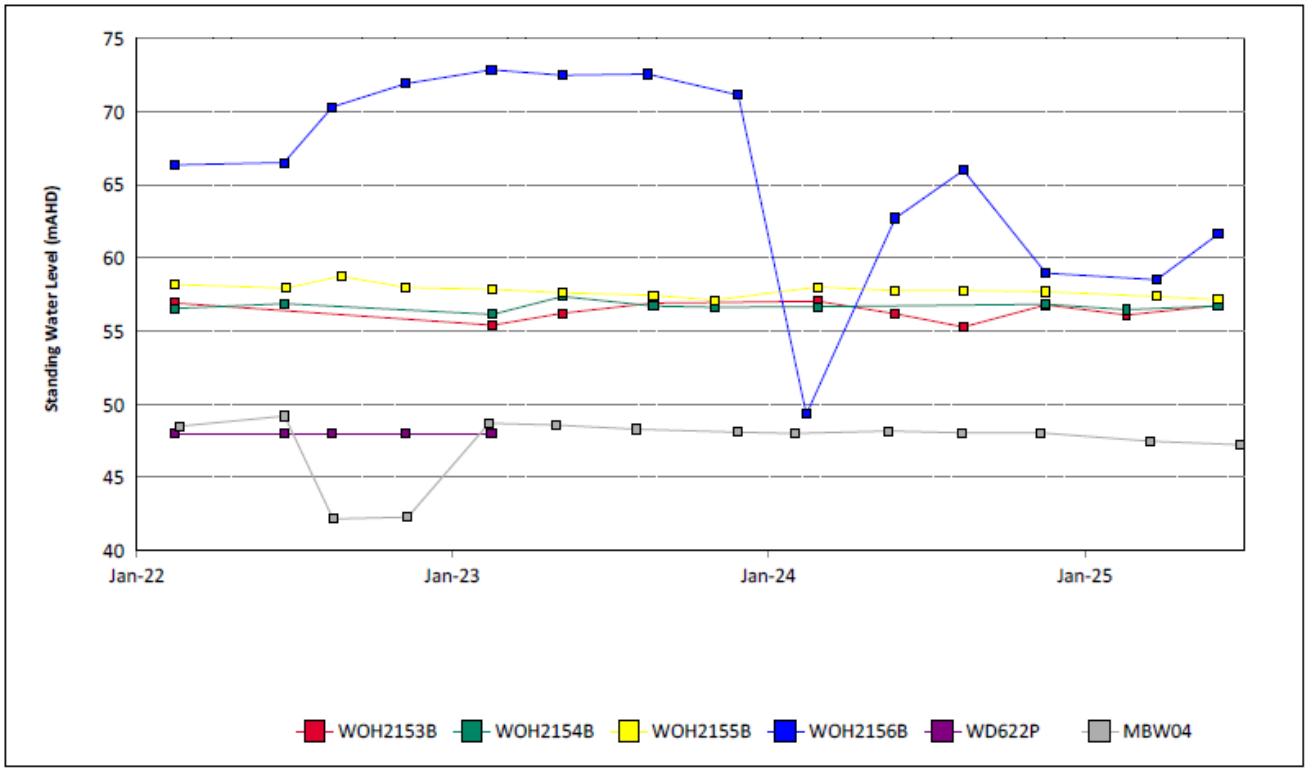

Figure 36: Wambo Seam Standing Water Level Trend – June 2025

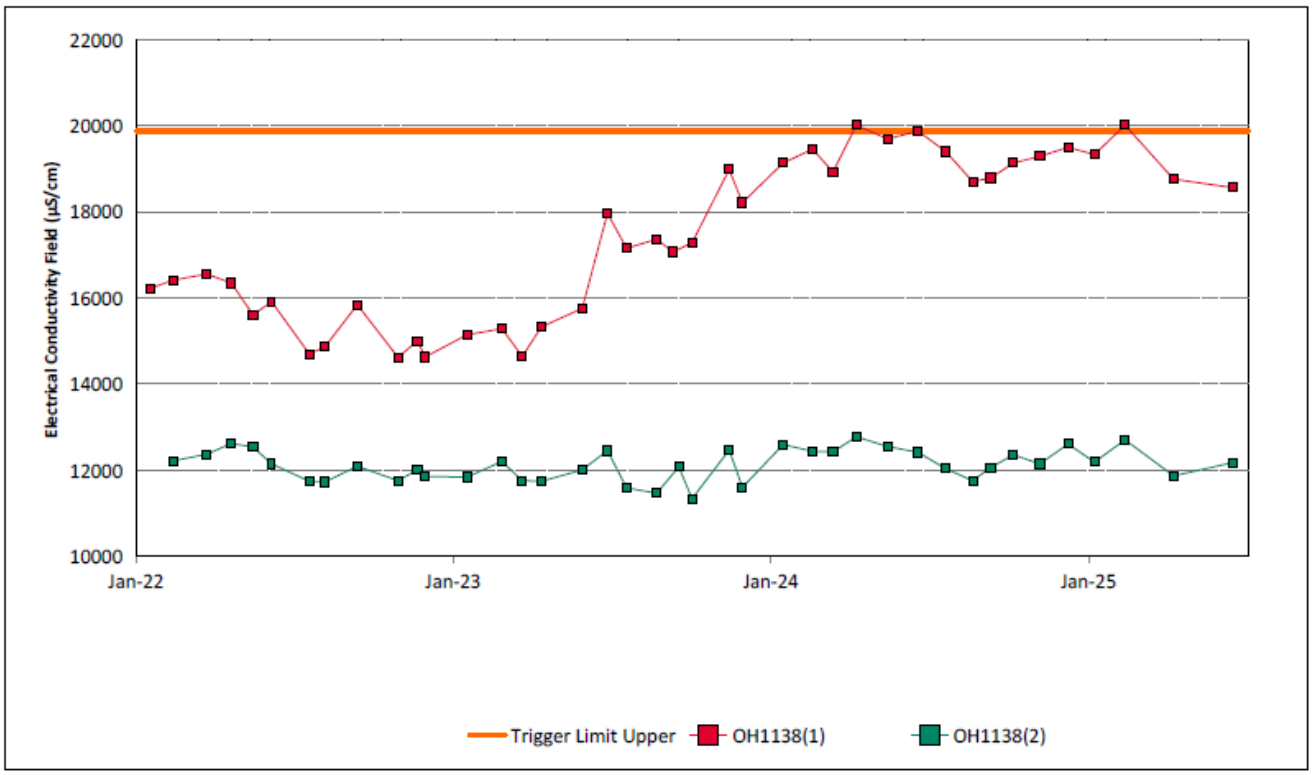

Figure 37: Warkworth Seam Electrical Conductivity Field Trend – June 2025

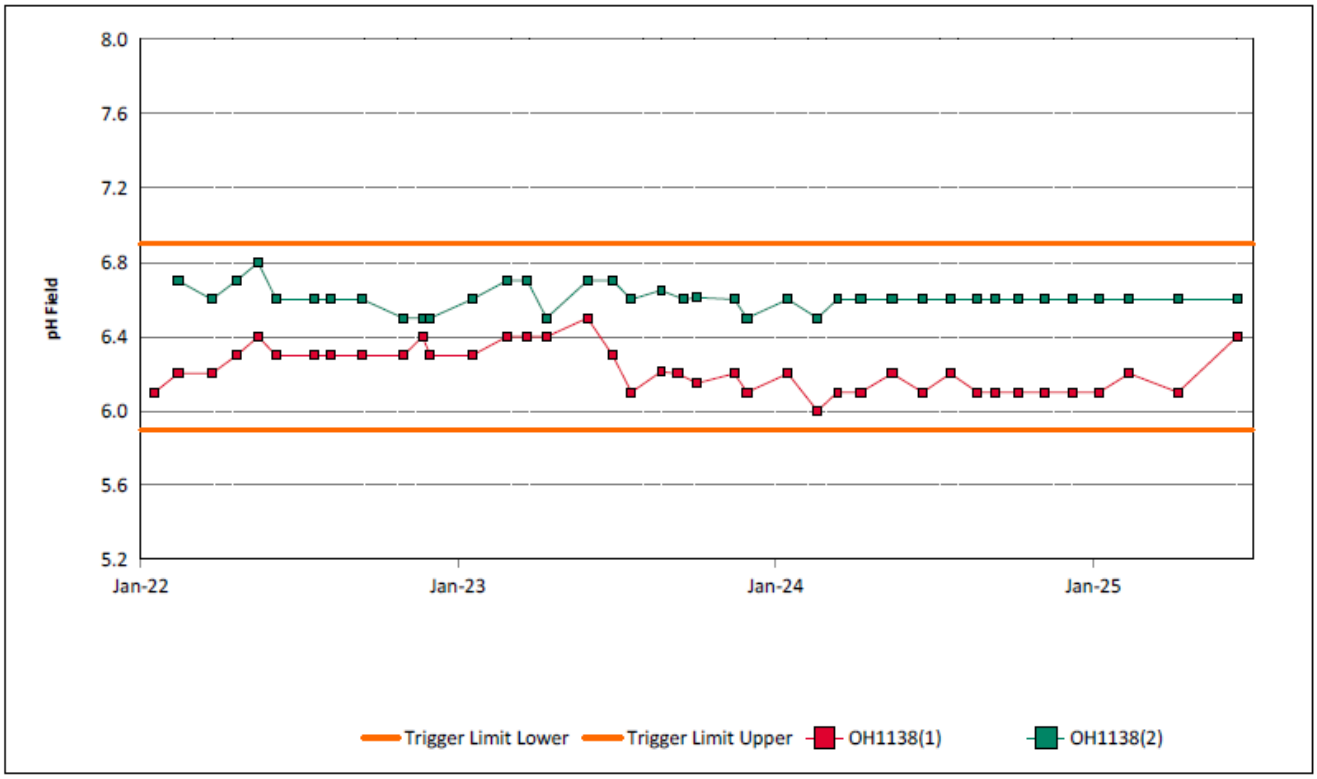

Figure 38: Warkworth Seam pH Field Trend – June 2025

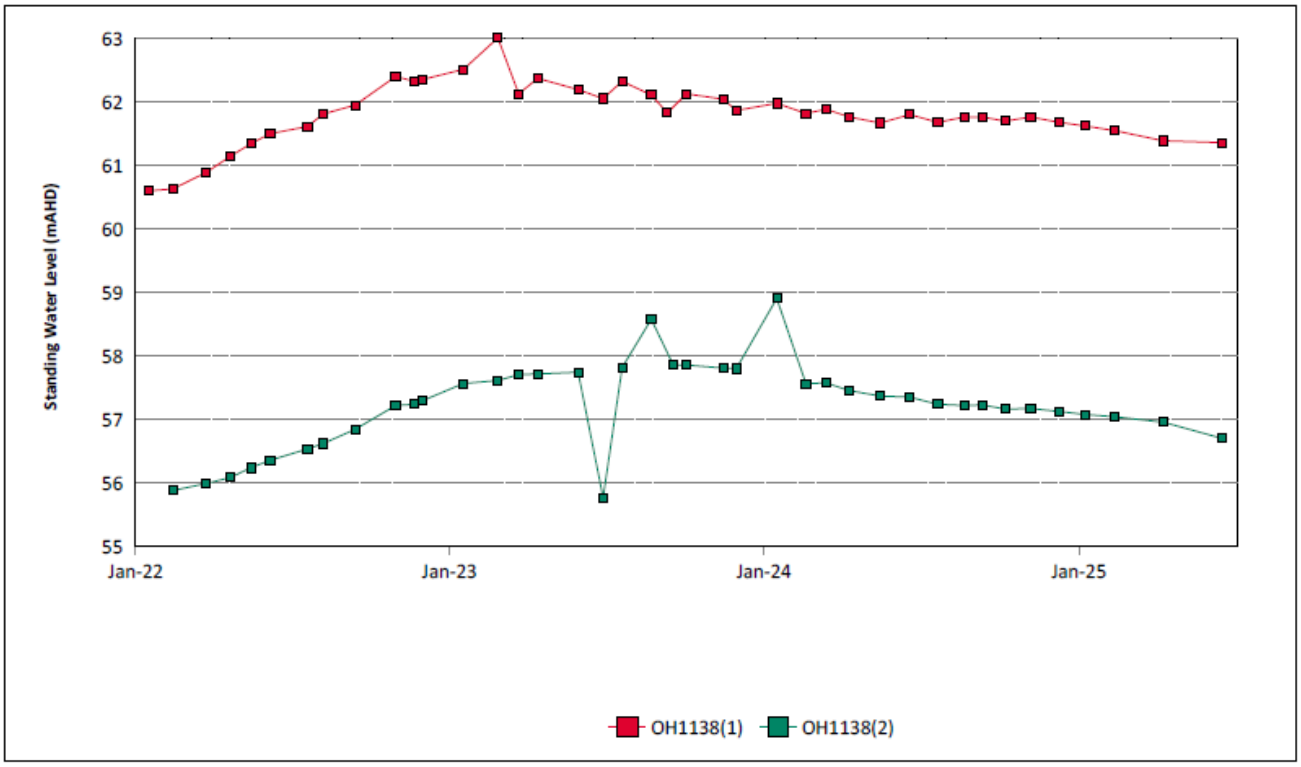

Figure 39: Warkworth Seam Standing Water Level Trend – June 2025

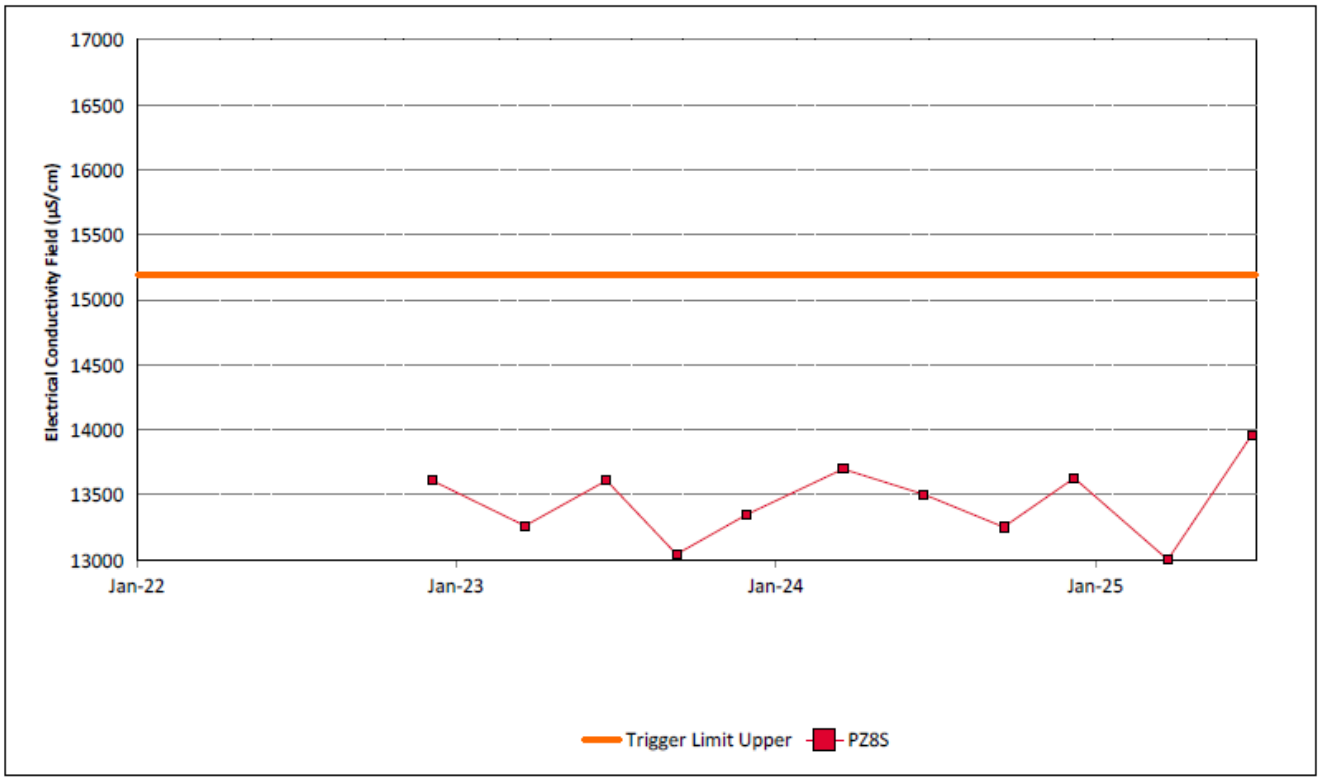

Figure 40: Wollombi Alluvium 1 Electrical Conductivity Field Trend – June 2025

Figure 41: Wollombi Alluvium 1 pH Field Trend – June 2025

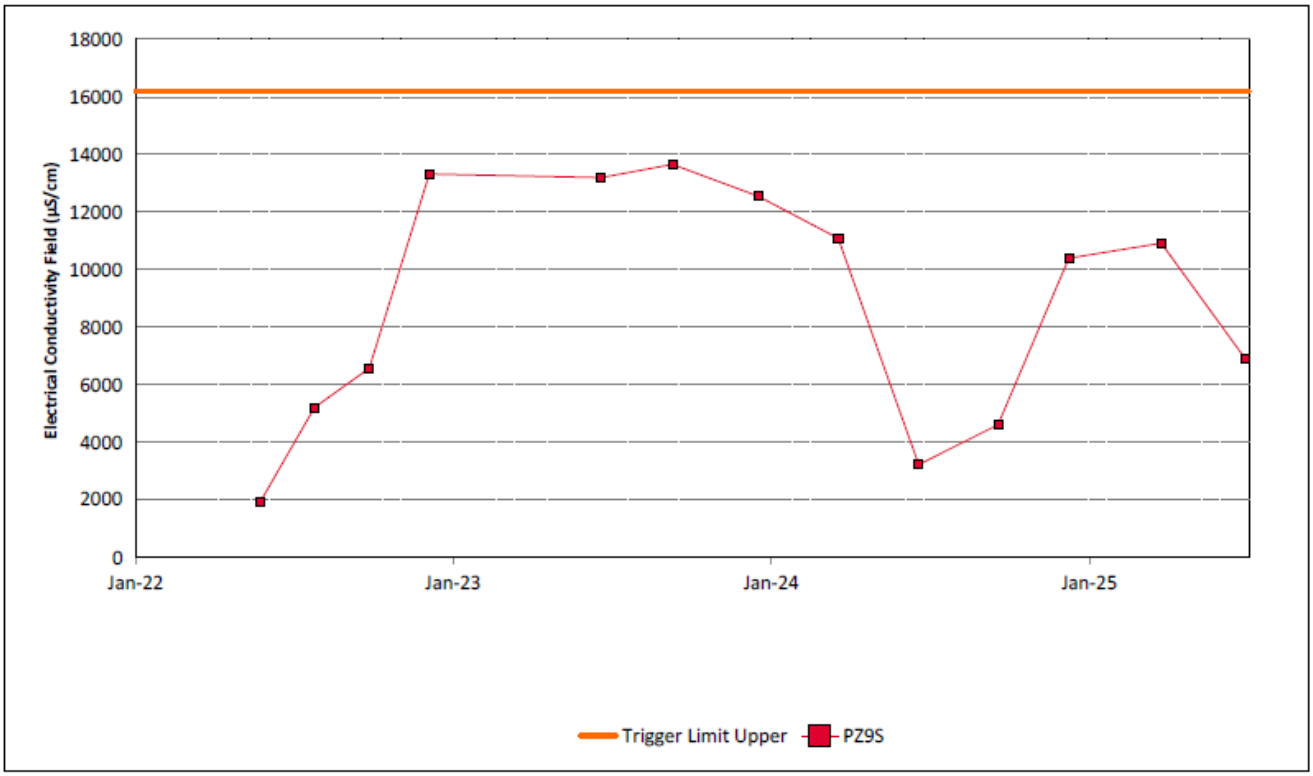

Figure 42: Colombia Alluvium 2 Electrical Conductivity Field Trend – June 2025

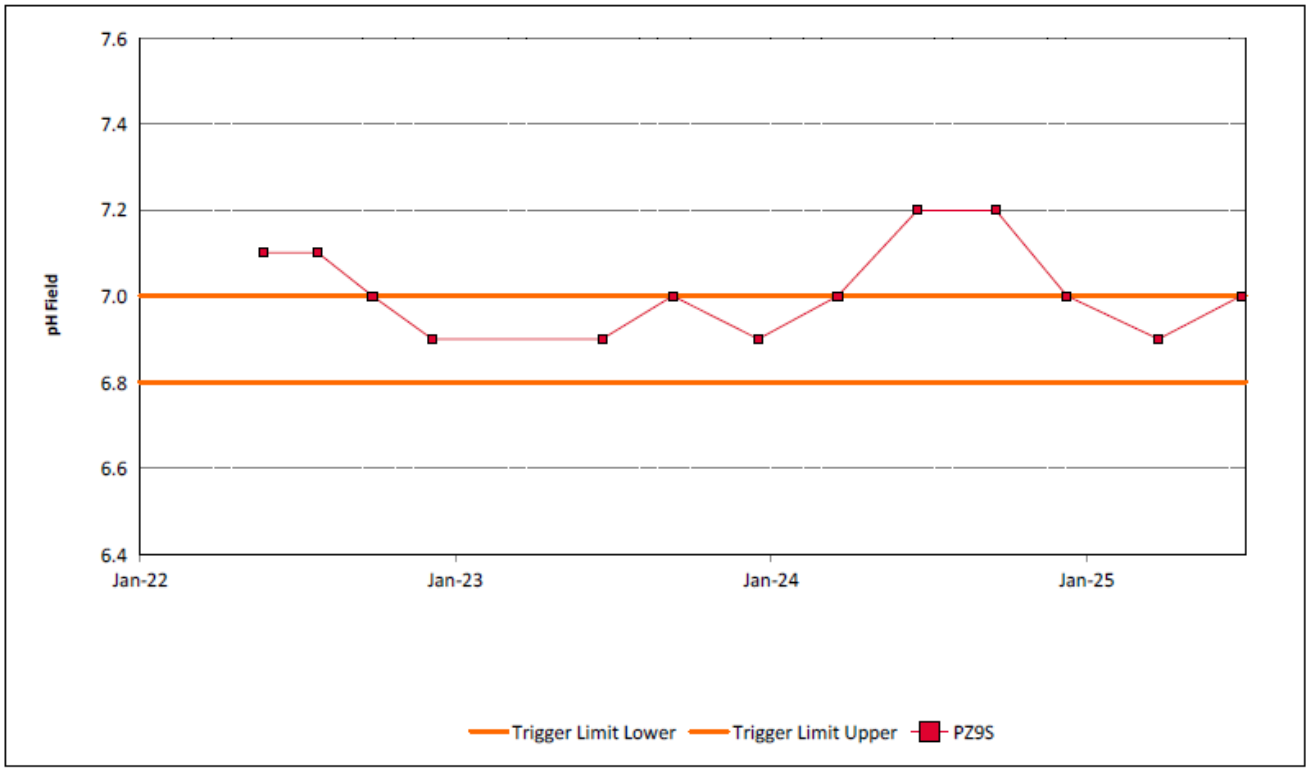

Figure 43: Wollombi Alluvium 2 pH Field Trend – June 2025

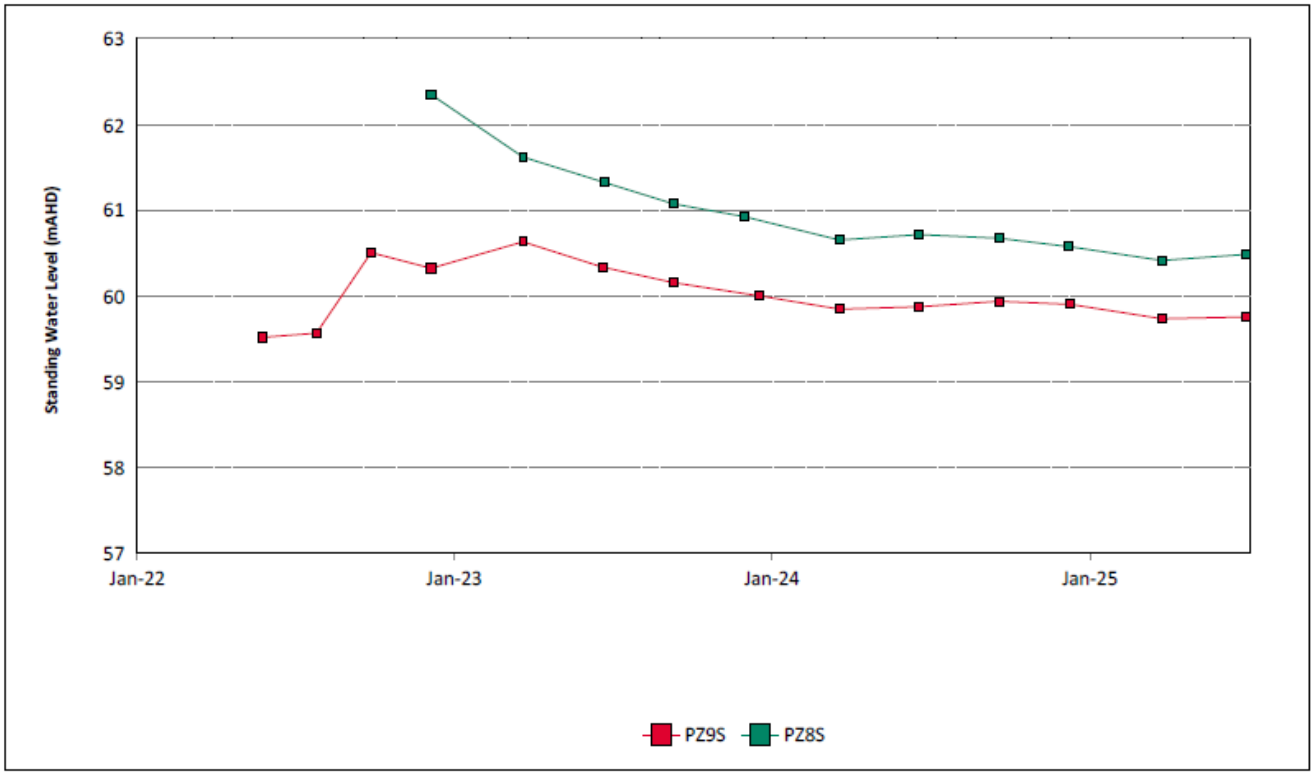

Figure 44: Wollombi Alluvium Standing Water Level Trend – June 2025

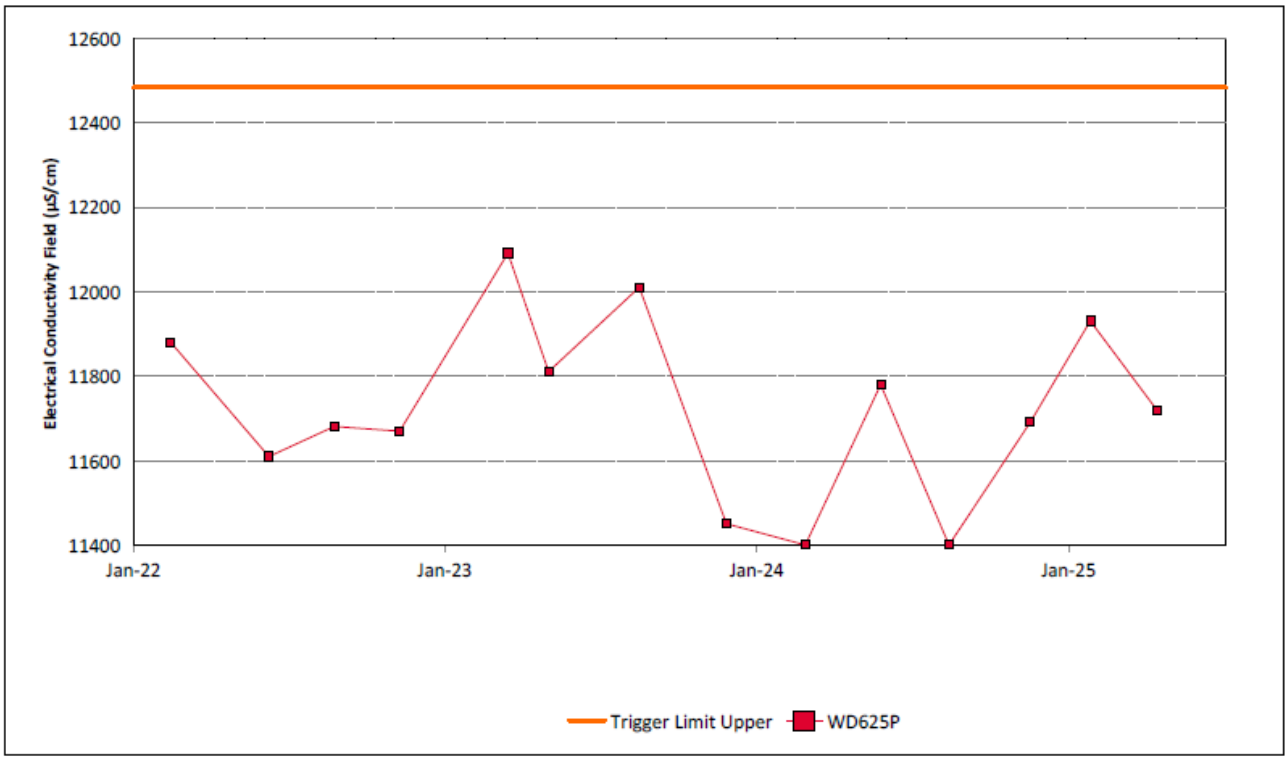

Figure 45: Woodlands Hill Seam Electrical Conductivity Field Trend – June 2025

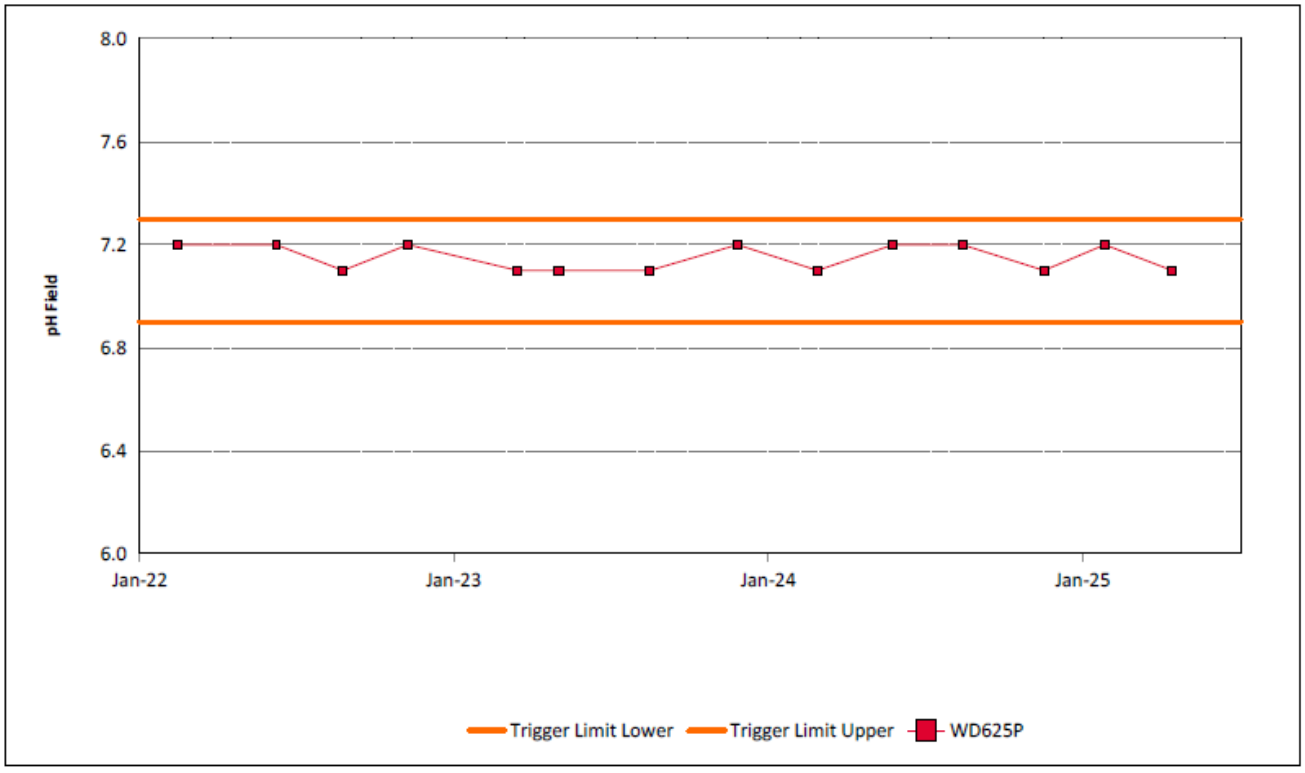

Figure 46: Woodlands Hill Seam pH Field Trend – June 2025

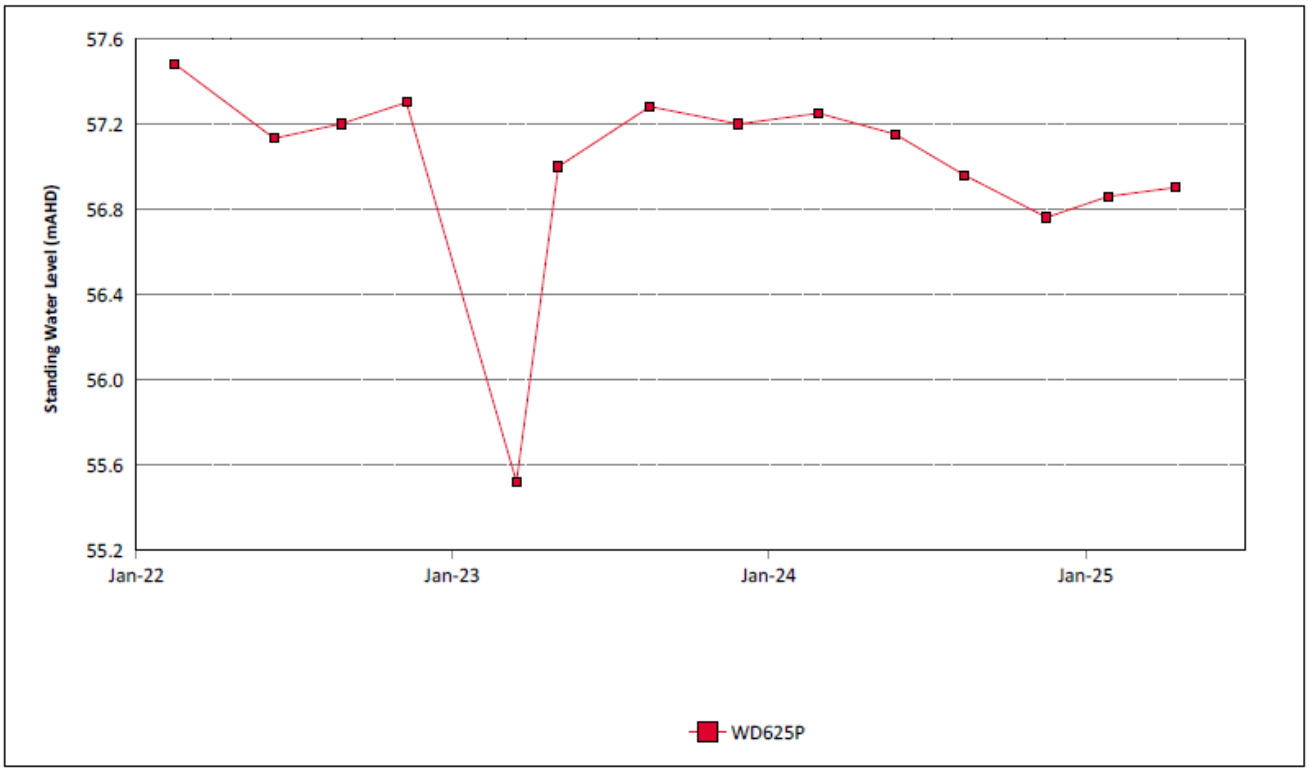

Figure 47: Woodlands Hill Seam Standing Water Level Trend - June 2025

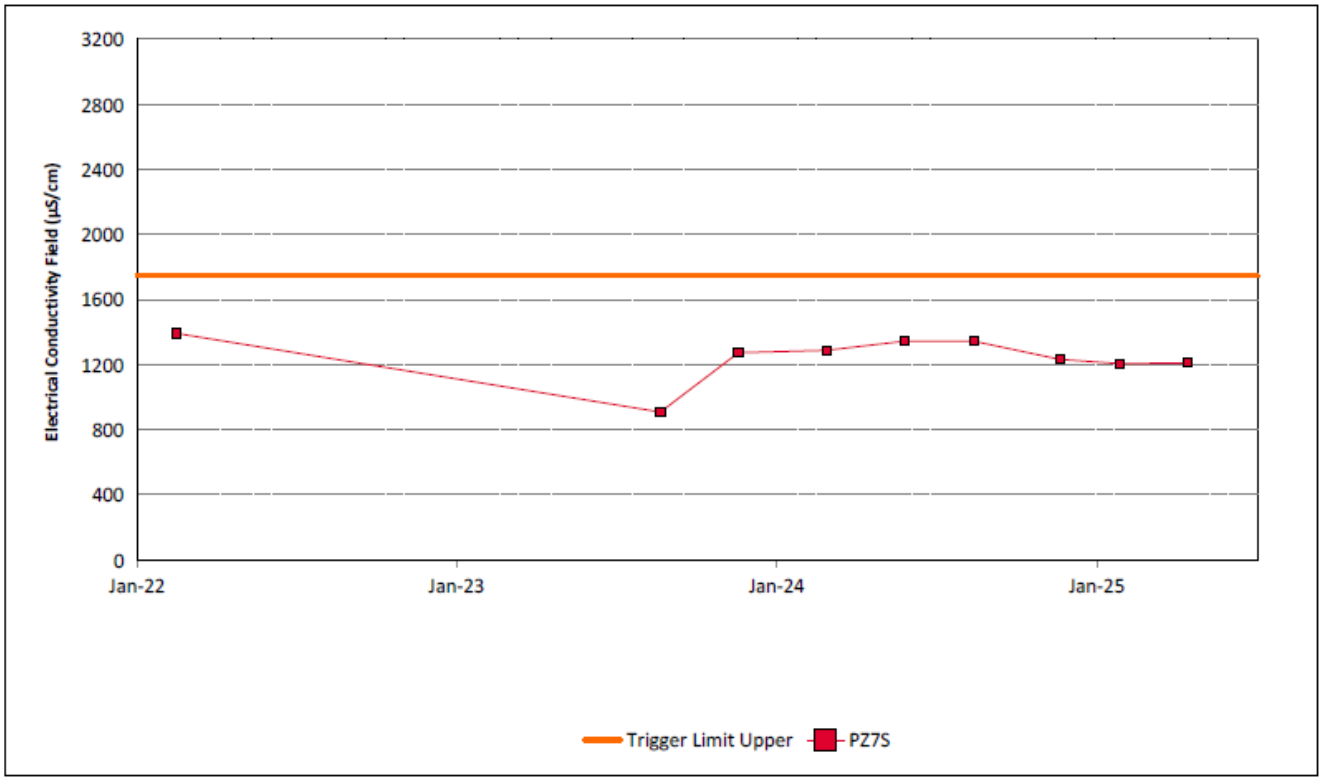

Figure 48: Aeolian Warkworth Sands Electrical Conductivity Field Trend – June 2025

Figure 49: Aeolian Warkworth Sands pH Field Trend - June 2025

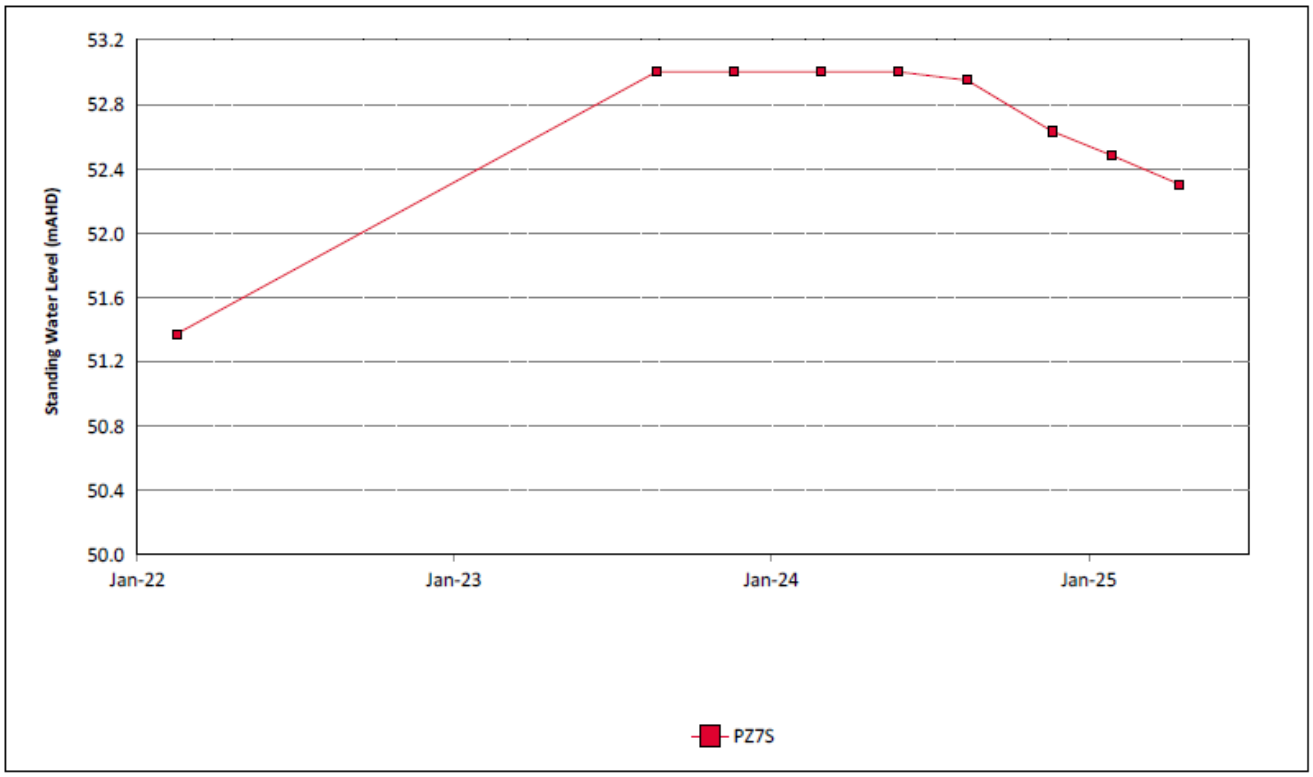

Figure 50: Aeolian Warkworth Sands Standing Water Level Trend – June 2025

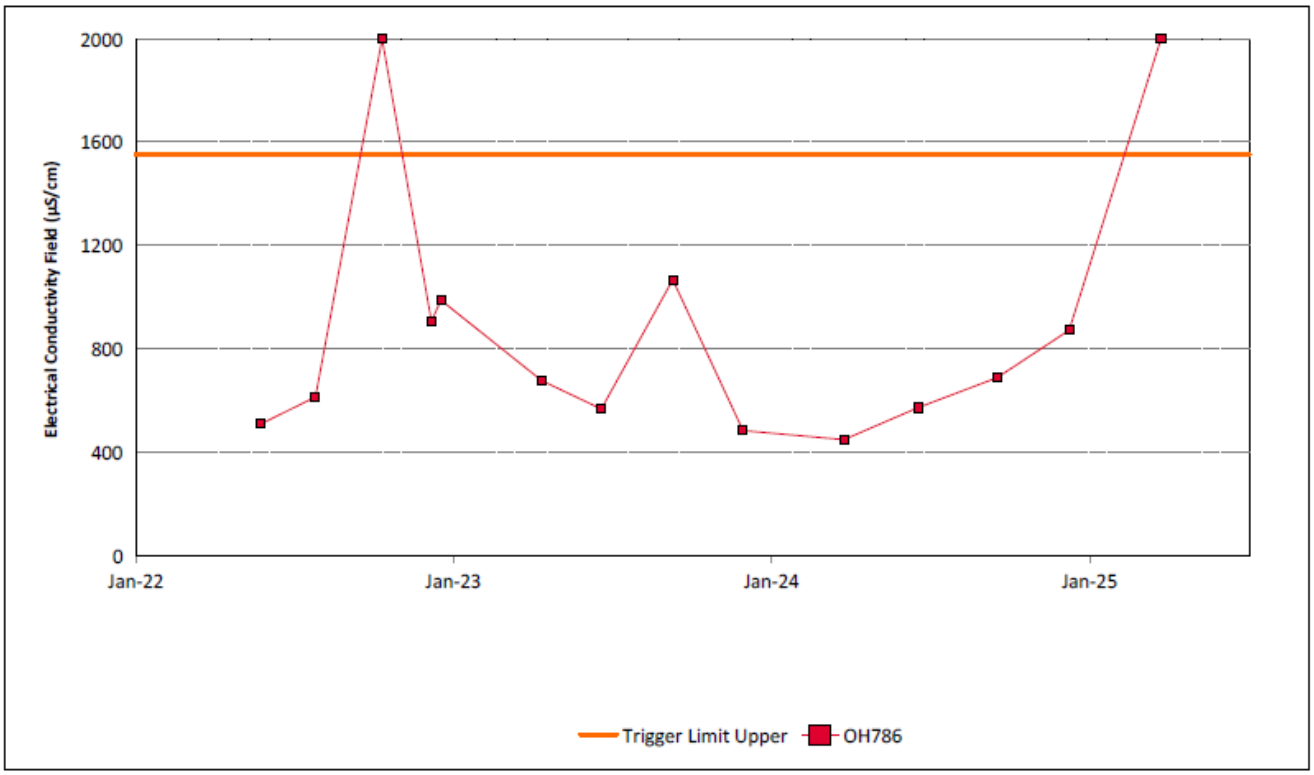

Figure 51: Hunter River Alluvium 1 Electrical Conductivity Field Trend – June 2025

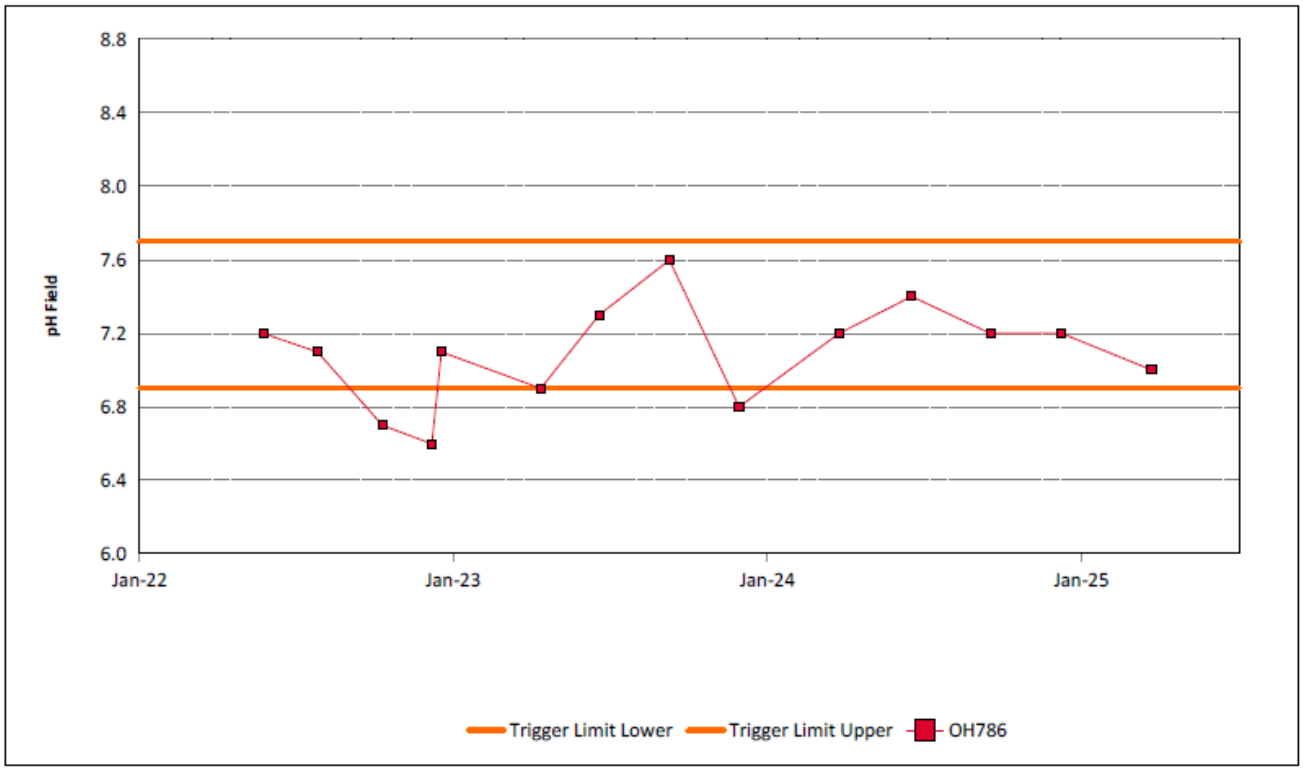

Figure 52: Hunter River Alluvium 1 pH Field Trend – June 2025

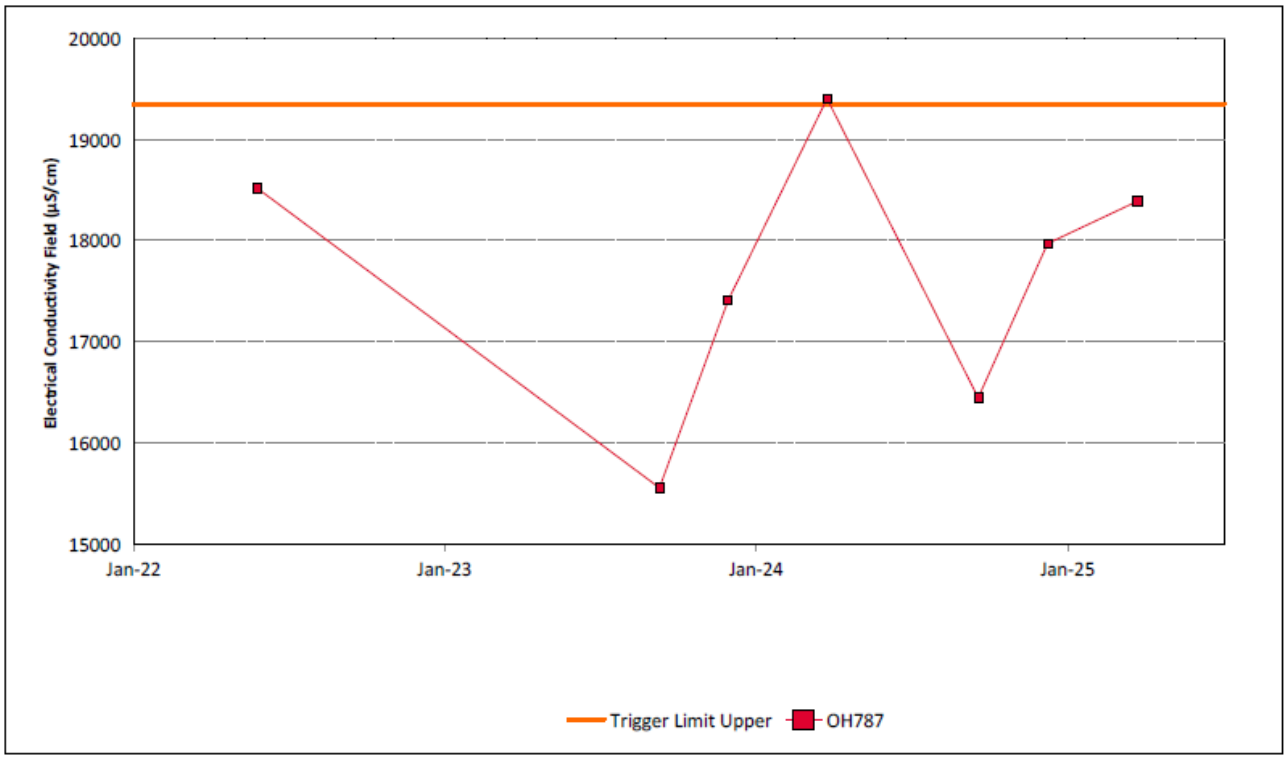

Figure 53: Hunter River Alluvium 2 Electrical Conductivity Field Trend - June 2025

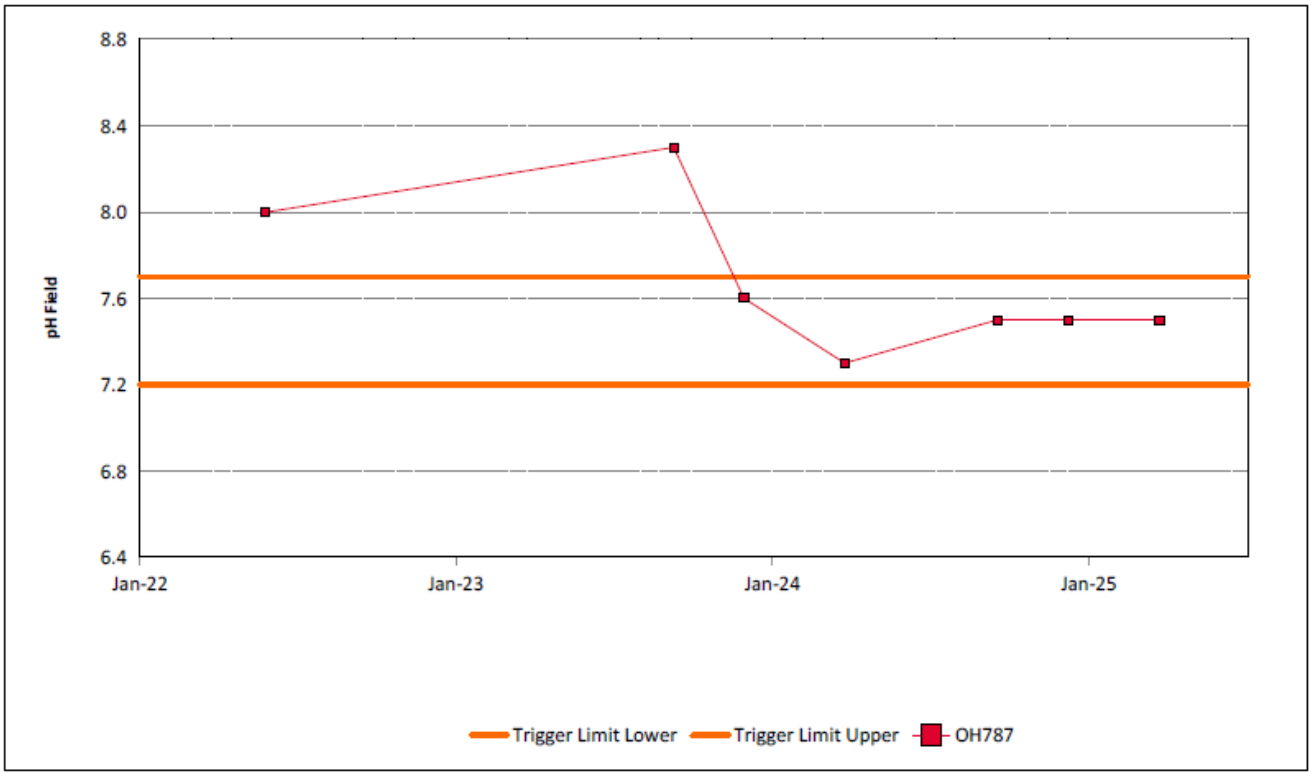

Figure 54: Hunter River Alluvium 2 pH Field Trend – June 2025

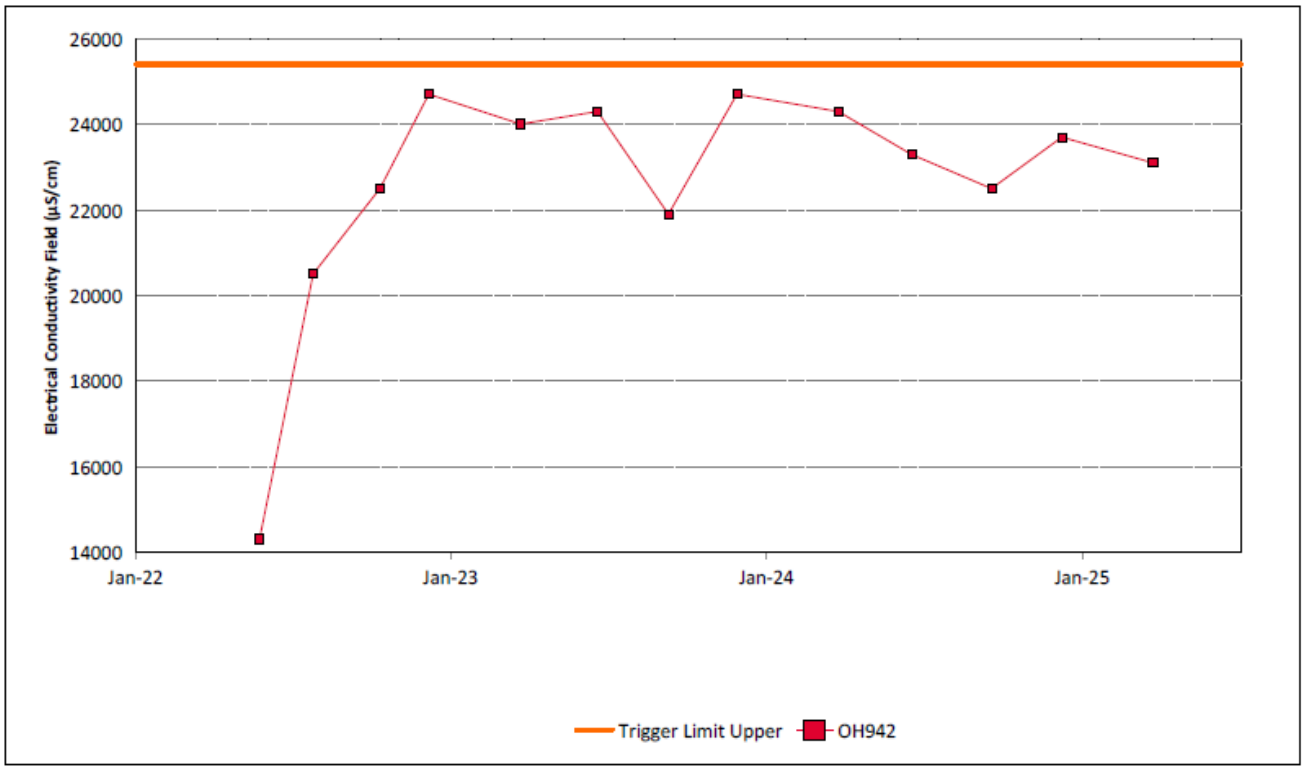

Figure 55: Hunter River Alluvium 3 Electrical Conductivity Field Trend – June 2025

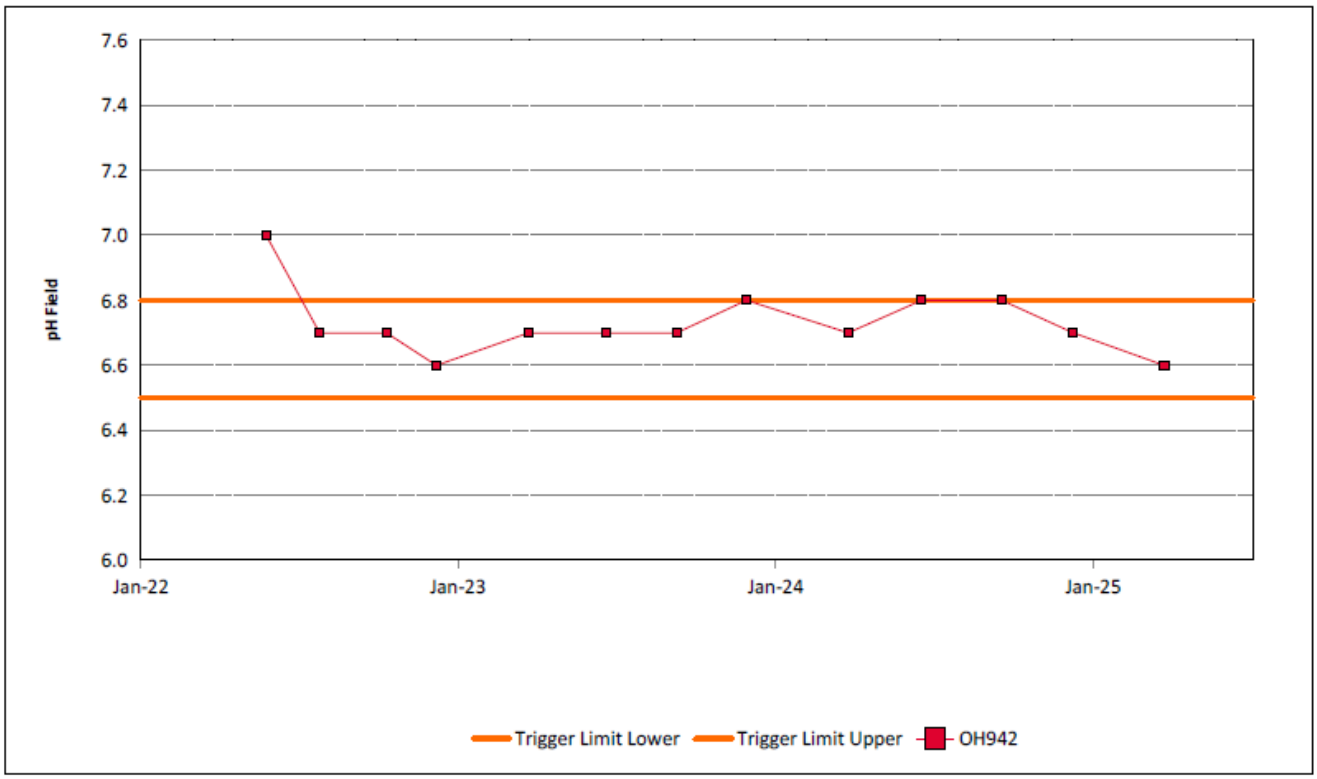

Figure 56: Hunter River Alluvium 3 pH Field Trend – June 2025

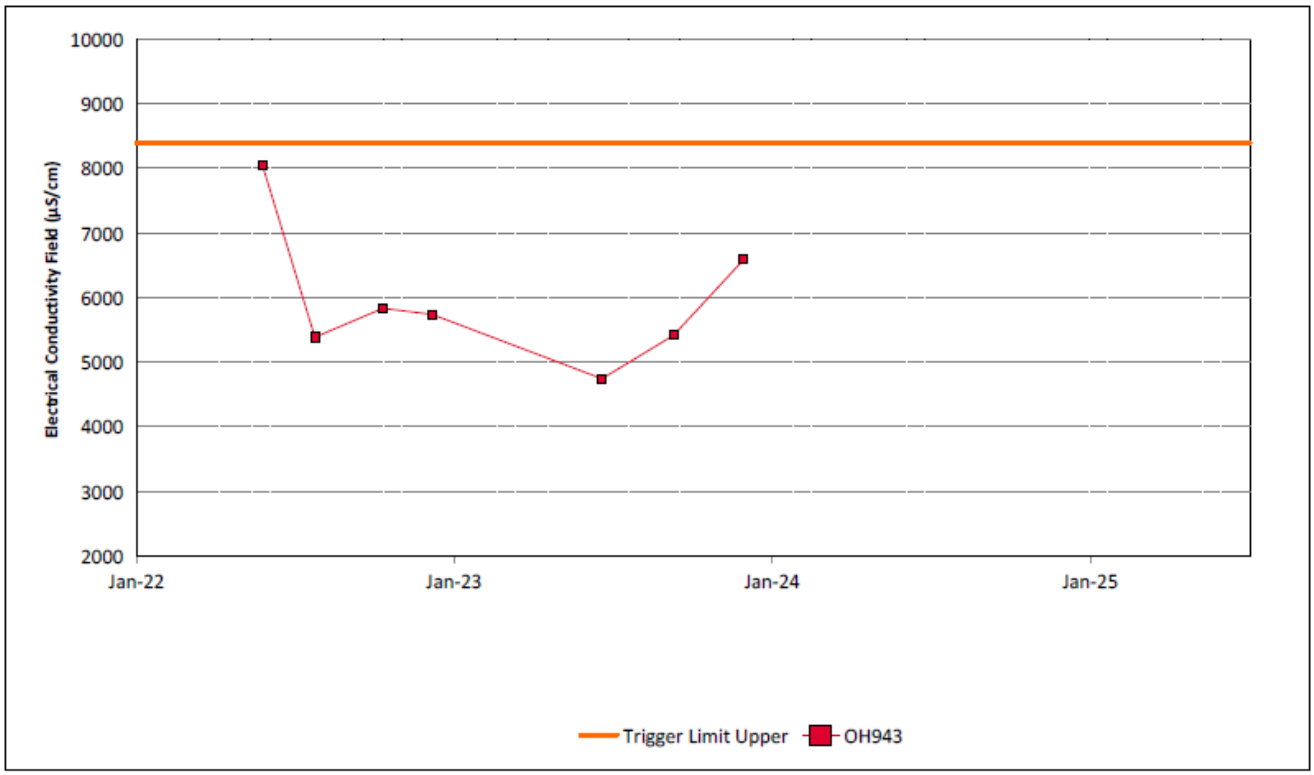

Figure 57: Hunter River Alluvium 4 Electrical Conductivity Field Trend – June 2025

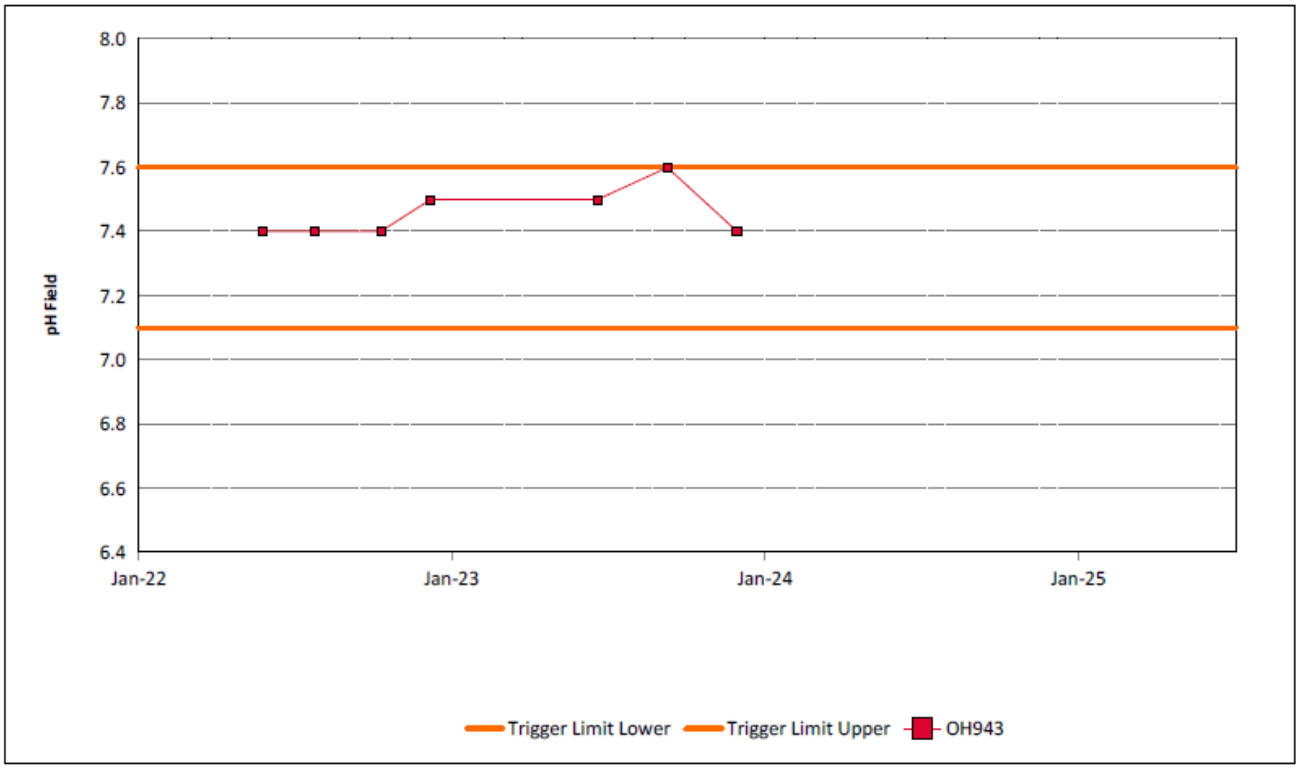

Figure 58: Hunter River Alluvium 4 pH Field Trend – June 2025

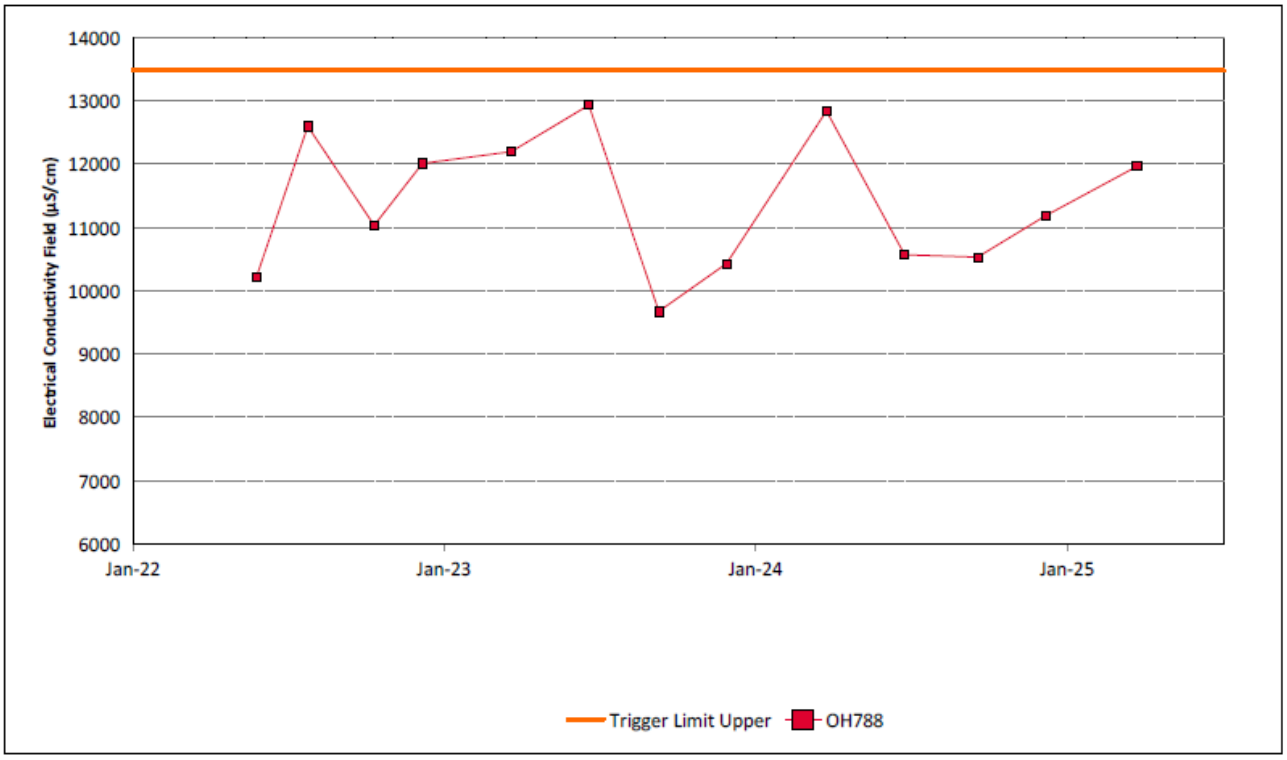

Figure 59: Hunter River Alluvium 5 Electrical Conductivity Field Trend – June 2025

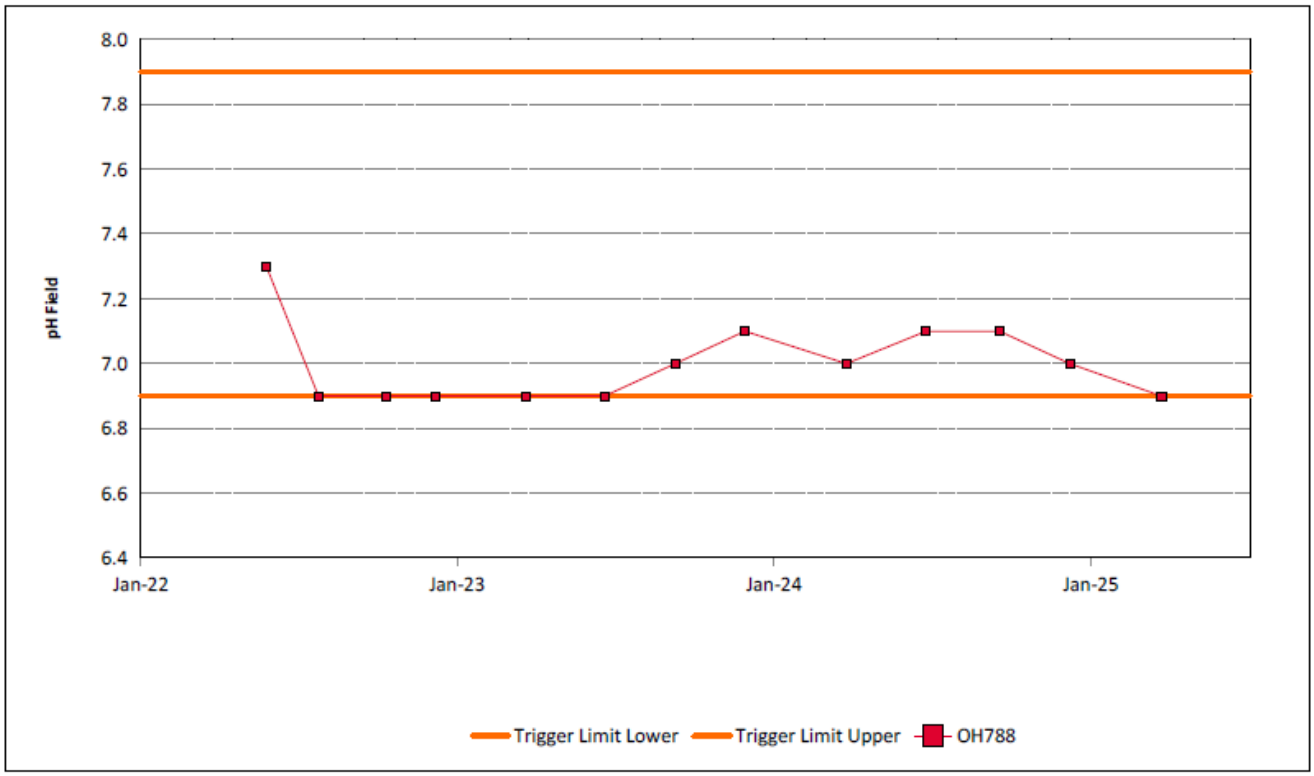

Figure 60: Hunter River Alluvium 5 pH Field Trend – June 2025

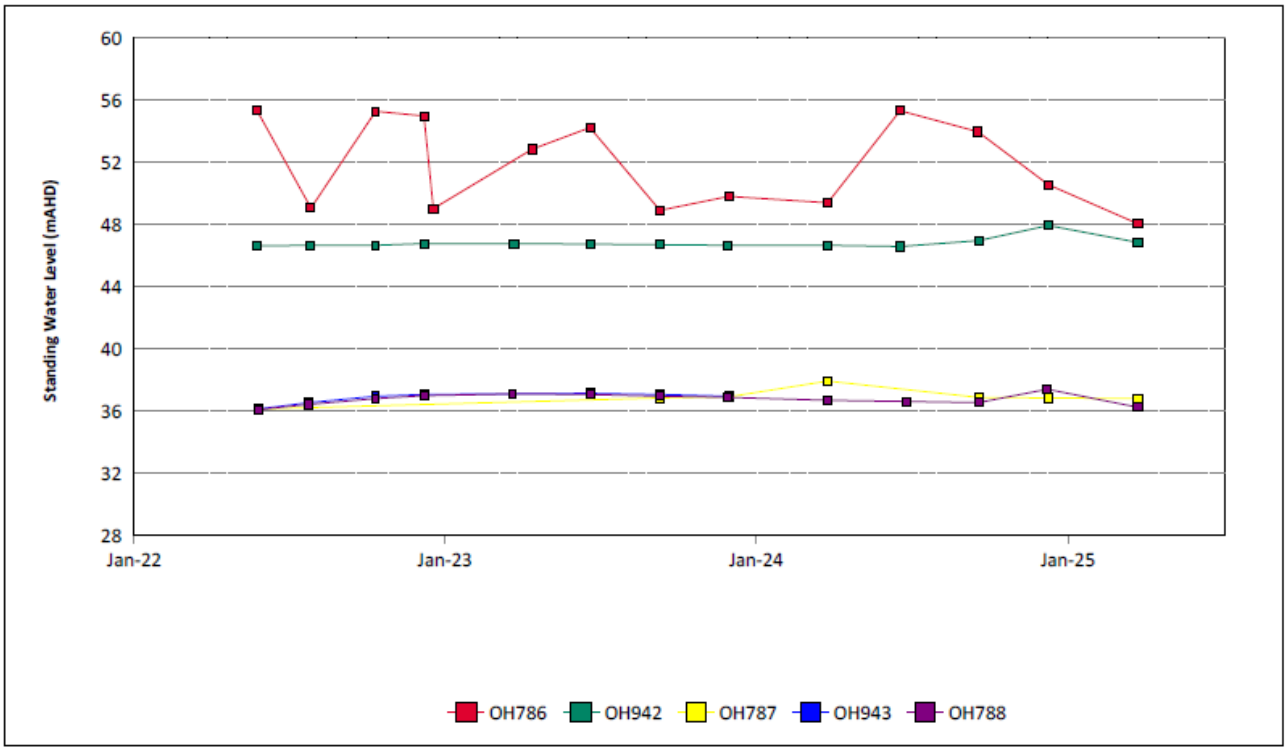

Figure 61: Hunter River Alluvium Standing Water Level Trend – June 2025

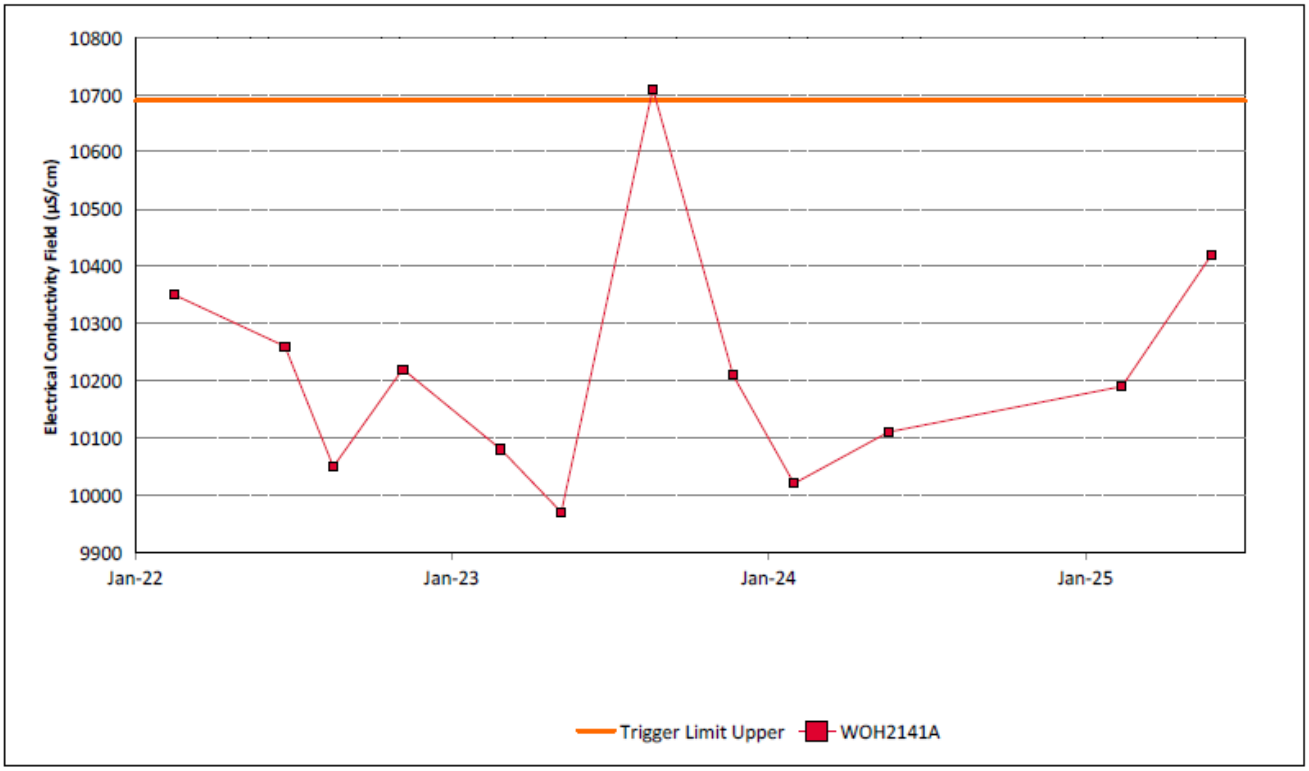

Figure 62: Whynot Seam Electrical Conductivity Field Trend – June 2025

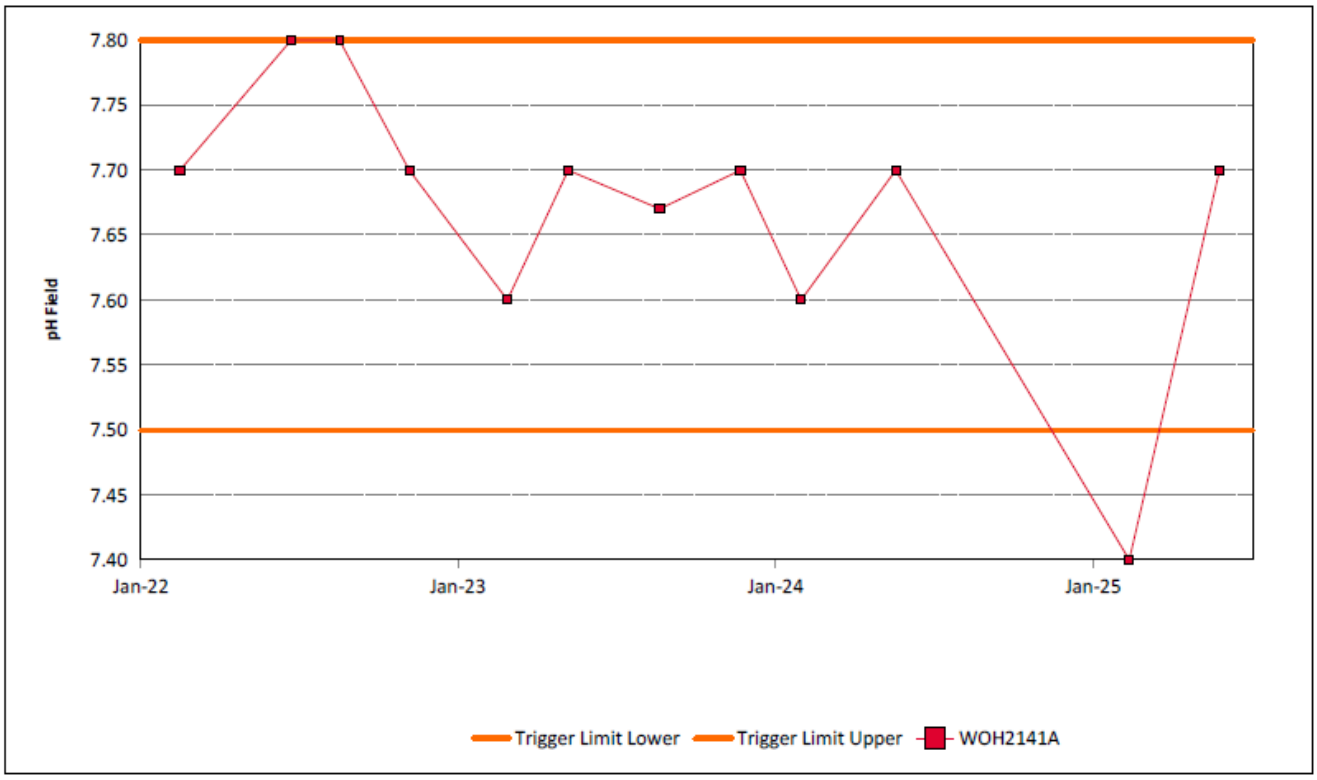

Figure 63: Whynot Seam pH Field Trend – June 2025

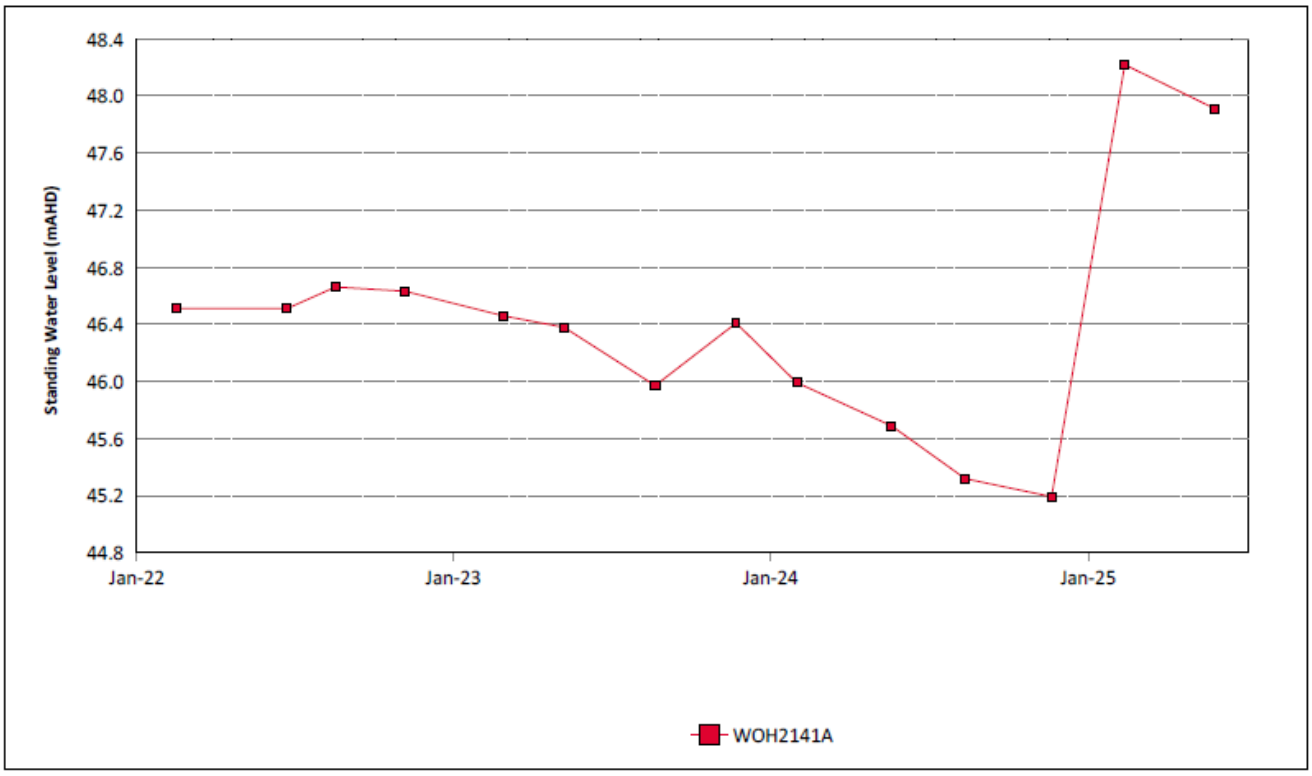

Figure 64: Whynot Seam Standing Water Level Trend – June 2025

3.3.1 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 56**.

Current internal groundwater trigger limit breaches are summarised in **Table 3**

Table 3: Groundwater Trigger Tracking – June 2025

Site	Date	Trigger Limit Breached	Action Taken in Response
PZ7S	28/01/2025	pH – 5th percentile	Consultant has undertaken investigation. With the exception of one measurement in 2013, values for pH have been relatively consistent in PZ7S, remaining circum-neutral over the period of record. There has been no rapid change in pH, or any indication that reducing conditions will continue. Water chemistry analysis indicates groundwater composition at PZ7S is reflective of a rainfall dominant water source, and water type remains consistent over the period of record, indicative of a consistent water source. Groundwater levels were at historic highs during the time of the pH exceedances and are therefore not captured in the baseline data set used to derive triggers at this location. MTW will install a secure cap and review triggers. pH returned to within trigger level for subsequent sampling on 16/04/25.
MB15MTW01D	28/01/2025, 16/04/2025	pH – 5th percentile	Investigation previously completed. The consultant identified in their report that "it is likely the trigger values derived for shallow overburden bores do not accurately represent in-situ groundwater water quality for MB15MTW01D". The result is consistent with previous results for this bore since 2021 and within sample location trigger levels. No further investigation required.
OH1126	13/02/2025, 5/06/2025	pH – 5th percentile	Watching brief*
WOH2141A	13/02/2025	pH – 5th percentile	pH returned to within trigger level for subsequent sampling on 28/05/25.
WOH2156B	26/03/2025, 5/06/2025	pH – 5th percentile	Consultant has undertaken investigation. A rapid increase in groundwater level (due to rainfall recharge) in this bore (located in the Wambo Seam) early 2024 coincided with decrease in pH. Groundwater level remained stable until a rapid decline by approx.. 20m in Feb 2024. pH value decreased further with the groundwater decline. As the mining pit progresses further west, dewatering of monitoring bores is to be expected prior to their decommissioning. Prior to being decommissioned, a similar response was recorded in borehole WD622P in early 2023, which also monitors the Wambo Coal seam. Consultant recommended review of sampling techniques and borehole records for WOH series bores.
OH786	25/03/2025	EC – 95th Percentile	Watching brief*

Site	Date	Trigger Limit Breached	Action Taken in Response
MTD605P	28/01/2025, 15/04/2025	EC – 95th Percentile	Consultant to be engaged to undertake investigation.
OH1138 (1)	13/02/2025	EC – 95th Percentile	EC returned to within trigger level for subsequent sampling on 12/03/25, 17/06/25`.
GW9708	24/06/2025	pH – 5th percentile	Watching Brief*
GW98MTCL2	24/06/2025	pH – 5th percentile	Watching Brief*
* = Watching brief established pending outcomes of subsequent monitoring events. No specific actions required.			

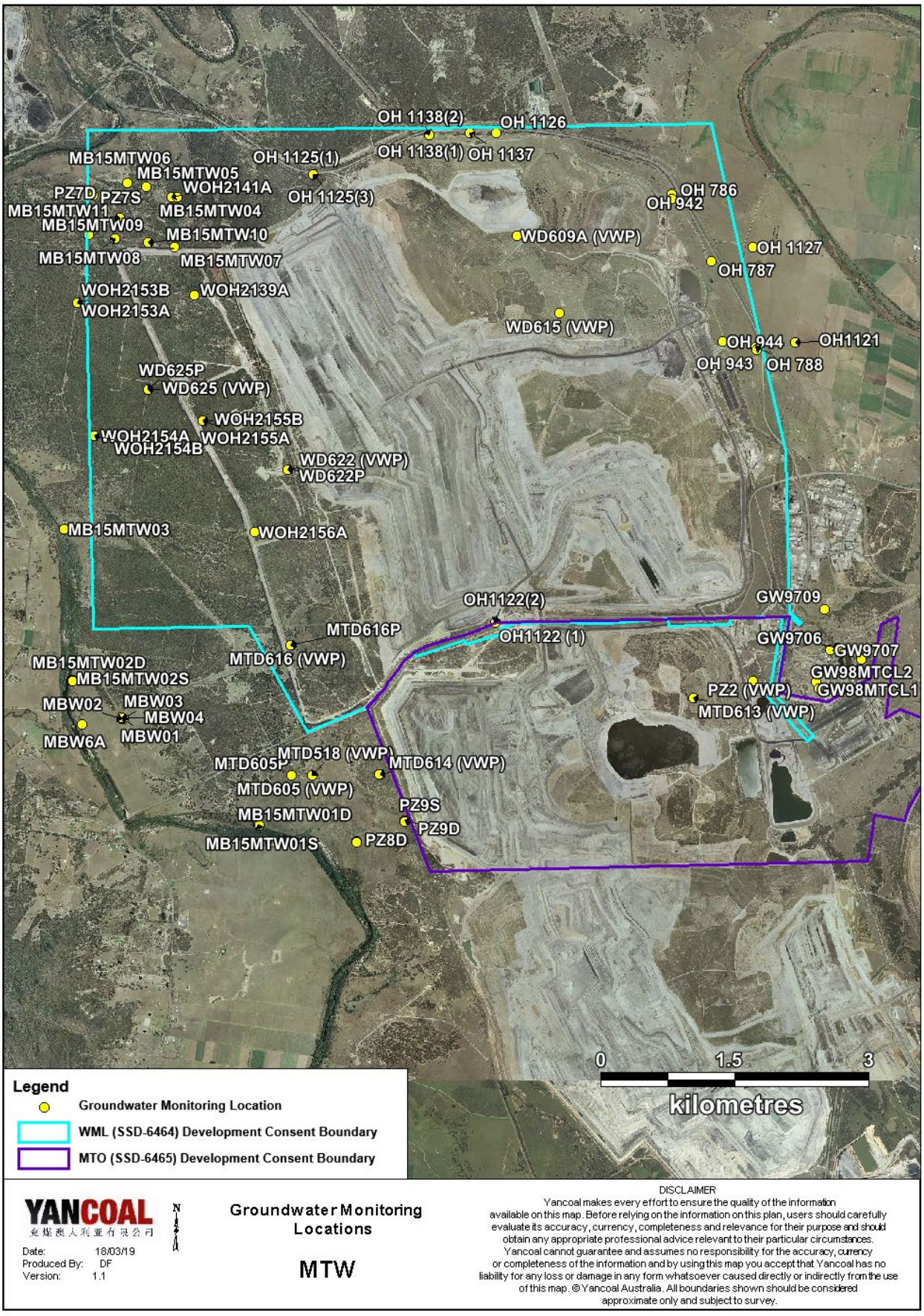

Figure 65: Groundwater Monitoring Location Plan

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 72**.

4.1 Blast Monitoring Results

During June 2025, 23 blasts were initiated at MTW. **Figure 9** to **Figure 14** show the blast monitoring results for the reporting period against the impact assessment criteria. The criteria are summarised in **Table 4**.

Data from one blast on 5 June 2025 was not captured for off-site blast monitors due to an issue with manual data retrieval, as referred to in Section 8.0. Data from one onsite monitor at Charlton Ridge (significantly closer to the blast) that recorded this blast on 5 June 2025 indicated vibration 0.1mm/sec, and overpressure 105.2 dB(L), which indicates that there was no risk of blast exceedance at private residence locations further afield.

Table 4: Blasting Limits

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

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

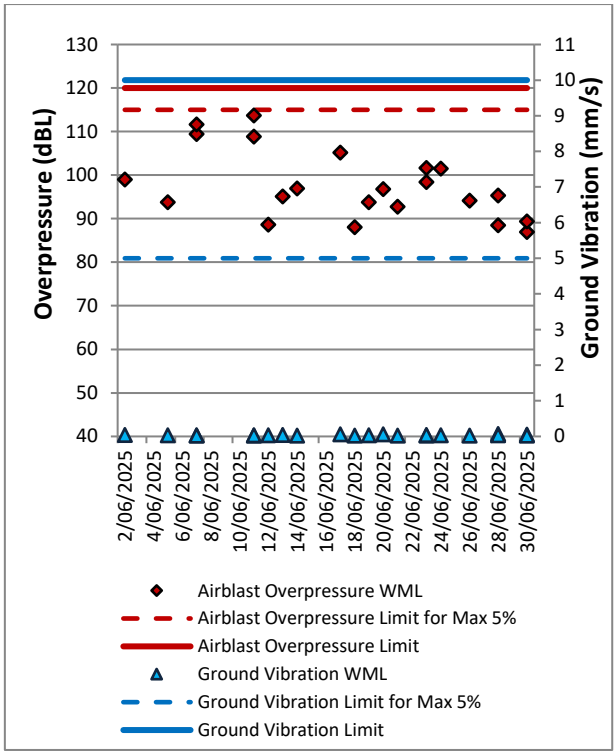

Figure 66: Abbey Green Blast Monitoring Results – June 2025

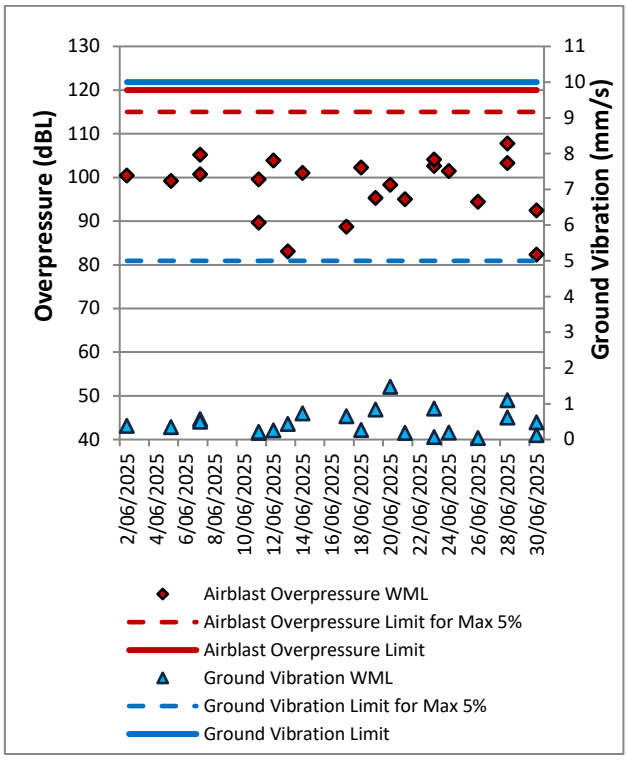

Figure 67: Bulga Village Blast Monitoring Results – June 2025

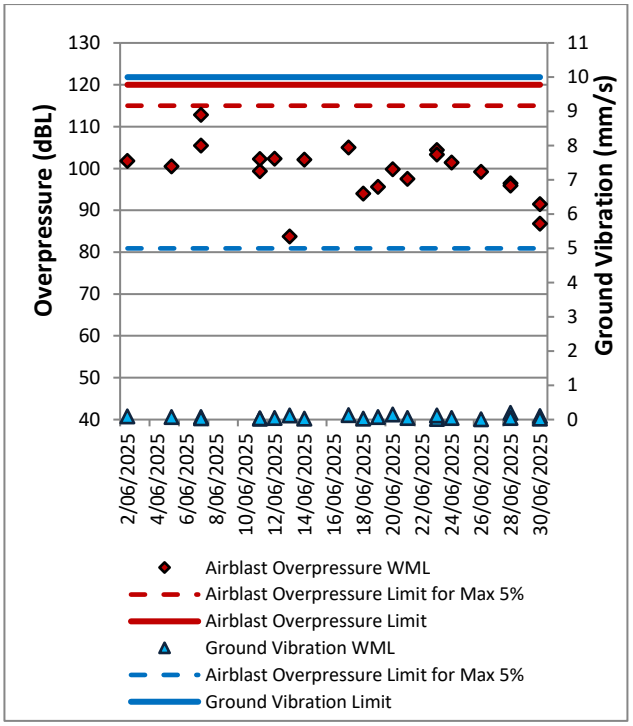

Figure 68: MTIE Blast Monitoring Results – June 2025

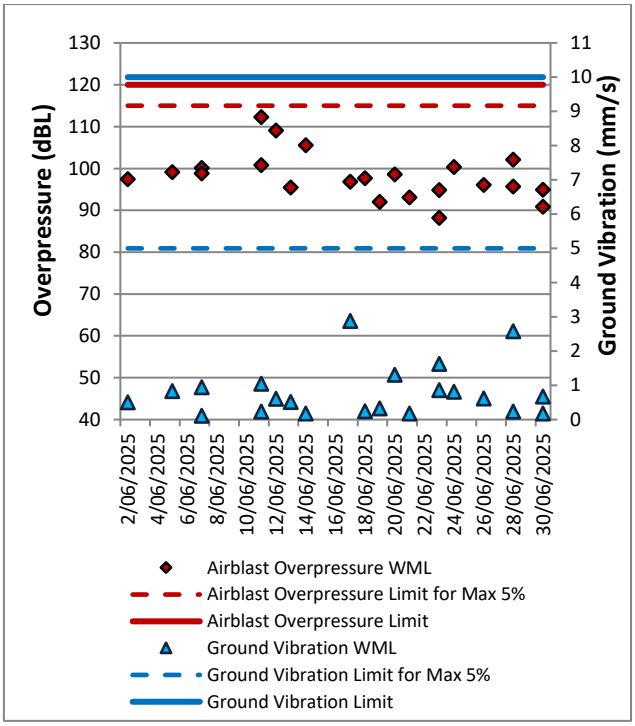

Figure 70: Warkworth Blast Monitoring Results – June 2025

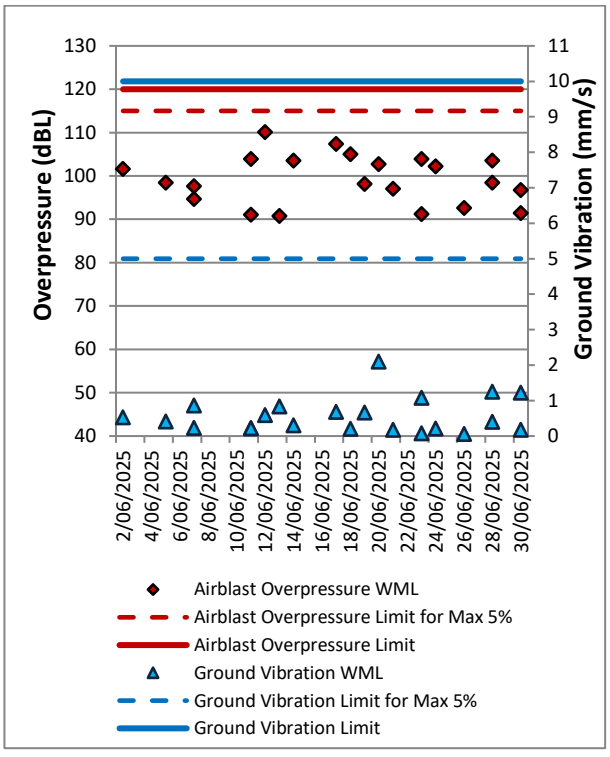

Figure 69: Wambo Road Blast Monitoring Results – June 2025

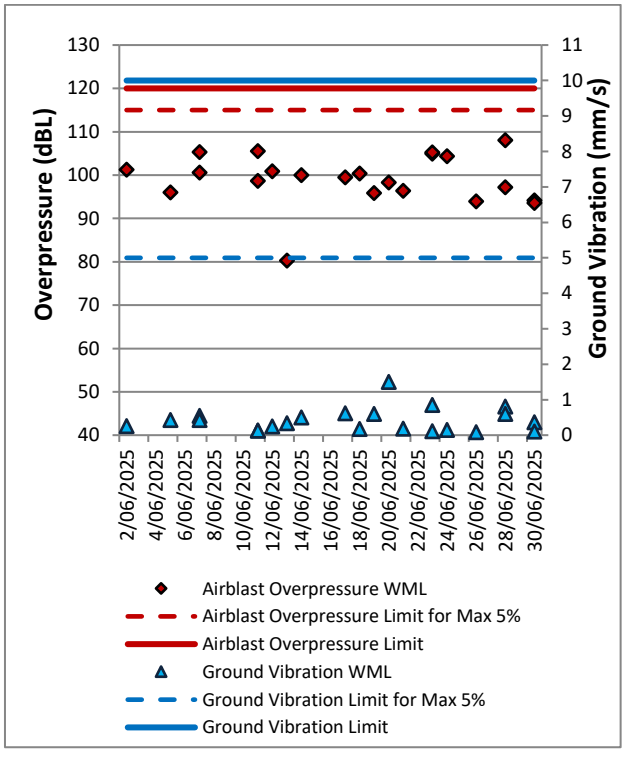

Figure 71: Wollemi Peak Road Blast Monitoring Results – June 2025

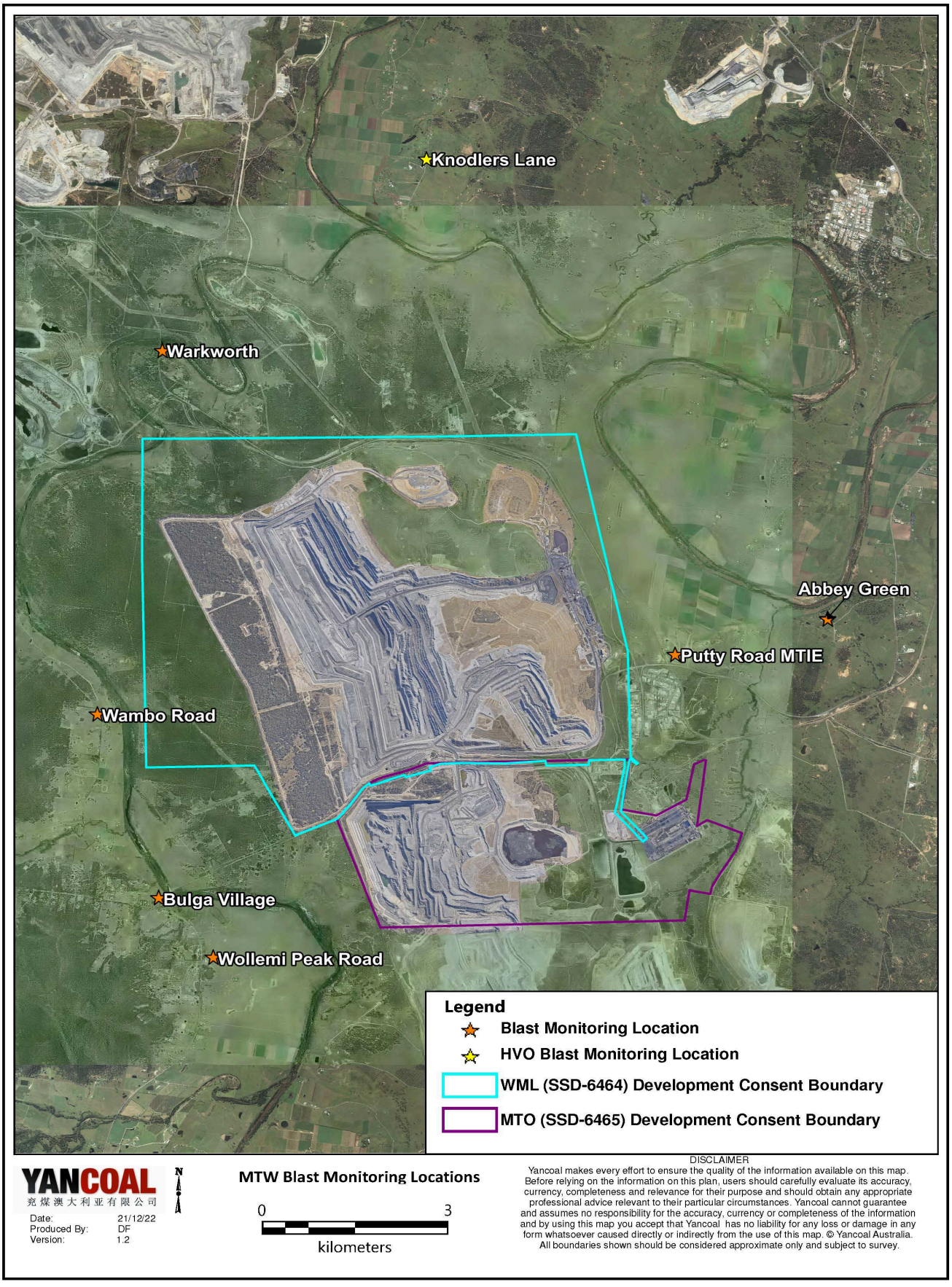

Figure 72: MTW Blast Monitoring Location Plan

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. Real time noise monitoring also occurs at five sites surrounding MTW. Noise monitoring locations are displayed in **Figure 73**.

5.1 Attended Noise Monitoring Results

Attended monitoring was conducted at receiver locations surrounding MTW on the night of 17 June 2025. 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: $L_{Aeq,\ 15\ minute}$ Warkworth Impact Assessment Criteria – June 2025

Location	Date and Time	Wind Speed (m/s)	Stability Class	Criterion dB(A)	Criterion Applies?[1]	WML L_{Aeq} dB[2,3,4]	Exceedance[3,4]
Bulga RFS	17/06/2025 23:35	2.7	E	37	Yes	<20	Nil
Bulga Village	17/06/2025 22:07	2.2	F	38	No	30	NA
Gouldsville	17/06/2025 21:22	2.2	E	38	Yes	29	Nil
Inlet Road	17/06/2025 21:22	2.4	D	37	Yes	<25	Nil
Inlet Road West	17/06/2025 21:00	3.3	D	35	No	<25	NA
Long Point	17/06/2025 21:00	3.3	D	35	No	<20	NA
South Bulga	17/06/2025 22:50	1.7	F	35	Yes	IA	Nil
Wambo Road	17/06/2025 21:46	2.2	F	38	No	29	NA

Notes:
1. Noise criteria apply during all meteorological conditions except the following: 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. Criterion may or may not apply due to rounding of meteorological data values;
2. Site-only LAeq,15minute attributed to WML, including modifying factors if applicable;
3. Bold results in red indicate exceedance of relevant criterion; and
4. NA in exceedance column means atmospheric conditions outside conditions specified in consent, therefore criterion was not applicable.

Table 6: $L_{A1,\ 1\ minute}$ Warkworth - Impact Assessment Criteria – June 2025

Location	Date and Time	Wind Speed (m/s)	Stability Class	Criterion dB(A)	Criterion Applies?[1]	WML $L_{A1,\ 1min}$ dB[2,3,4]	Exceedance[3,4]
Bulga RFS	17/06/2025 23:35	2.7	E	47	Yes	<20	Nil
Bulga Village	17/06/2025 22:07	2.2	F	48	No	33	NA
Gouldsville	17/06/2025 21:22	2.2	E	48	Yes	47	Nil
Inlet Road	17/06/2025 21:22	2.4	D	47	Yes	<25	Nil
Inlet Road West	17/06/2025 21:00	3.3	D	45	No	<25	NA
Long Point	17/06/2025 21:00	3.3	D	45	No	<20	NA
South Bulga	17/06/2025 22:50	1.7	F	45	Yes	IA	Nil
Wambo Road	17/06/2025 21:46	2.2	F	48	No	29	NA

Notes:
1. Noise criteria apply during all meteorological conditions except the following: 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. Criterion may or may not apply due to rounding of meteorological data values;
2. Site-only LA1,1minute attributed to WML;
3. Bold results in red indicate exceedance of relevant criterion; and
4. NA in exceedance column means atmospheric conditions outside conditions specified in consent, therefore criterion was not applicable.

5.1.2 MTO Noise Assessment

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

Table 7: $L_{Aeq,\ 15minute}$ Mount Thorley - Impact Assessment Criteria – June 2025

Location	Date and Time	Wind Speed (m/s)	Stability Class	Criterion dB	Criterion Applies?[1]	MTO L_{Aeq} dB[2,3,4]	Exceedance[3,4]
Bulga RFS	17/06/2025 23:35	2.7	E	37	Yes	<20	Nil
Bulga Village	17/06/2025 22:07	2.2	F	38	No	<20	NA
Gouldsville	17/06/2025 21:22	2.2	E	35	Yes	IA	Nil
Inlet Road	17/06/2025 21:22	2.4	D	37	Yes	<20	Nil
Inlet Road West	17/06/2025 21:00	3.3	D	35	No	IA	NA
Long Point	17/06/2025 21:00	3.3	D	35	No	IA	NA
South Bulga	17/06/2025 22:50	1.7	F	36	Yes	<20	Nil
Wambo Road	17/06/2025 21:46	2.2	F	38	No	<25	NA

Notes:
1. Noise criteria apply during all meteorological conditions except the following: 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. Criterion may or may not apply due to rounding of meteorological data values;
2. Site-only LAeq,15minute attributed to MTO, including modifying factors if applicable;
3. Bold results in red indicate exceedance of relevant criterion; and
4. NA in exceedance column means atmospheric conditions outside conditions specified in consent, therefore criterion was not applicable.

Table 8: $L_{A1,\ 1Minute}$ Mount Thorley - Impact Assessment Criteria – June 2025

Location	Date and Time	Wind Speed (m/s)	Stability Class	Criterion dB	Criterion Applies?[1]	MTO $L_{A1,\ 1min}$ dB[2,3,4]	Exceedance[3,4]
Bulga RFS	17/06/2025 23:35	2.7	E	47	Yes	<20	Nil
Bulga Village	17/06/2025 22:07	2.2	F	48	No	<20	NA
Gouldsville	17/06/2025 21:22	2.2	E	45	Yes	IA	Nil
Inlet Road	17/06/2025 21:22	2.4	D	47	Yes	<20	Nil
Inlet Road West	17/06/2025 21:00	3.3	D	45	No	IA	NA
Long Point	17/06/2025 21:00	3.3	D	45	No	IA	NA
South Bulga	17/06/2025 22:50	1.7	F	46	Yes	<20	Nil
Wambo Road	17/06/2025 21:46	2.2	F	48	No	25	NA

Notes:
1. Noise criteria apply during all meteorological conditions except the following: 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. Criterion may or may not apply due to rounding of meteorological data values;
2. Site-only LA1,1minute attributed to MTO;
3. Bold results in red indicate exceedance of relevant criterion; and
4. NA in exceedance column means atmospheric conditions outside conditions specified in consent, therefore criterion was not applicable.

5.1.3 NPfI Low Frequency Assessment

In accordance with the requirements of the EPA's Noise Policy for Industry (NPfI), the applicability of the low frequency modification factor corrections has been assessed. There were no noise measurements taken during the reporting period which required the penalty to be applied. The WML assessment for low frequency noise is shown in **Table 9** and the MTO assessment for low frequency noise is shown in **Table 10**.

Table 9: Warkworth Low Frequency Noise Assessment – June 2025

Location	Date and Time	Measured WML LAeq dB	Criterion Applies?	Intermittency Modifying Factor?	Tonality Modifying Factor?	Frequency of Tonality[1]	Low-frequency Modifying Factor?	Maximum Exceedance of Reference Spectrum [1,2]	Penalty dB[2]
Bulga RFS	17/06/2025 23:35	<20	Yes	No	No	NA	No	NA	Nil
Bulga Village	17/06/2025 22:07	30	No	No	No	NA	NA	NA	Nil
Gouldsville	17/06/2025 21:22	29	Yes	No	No	NA	No	NA	Nil
Inlet Road	17/06/2025 21:22	<25	Yes	No	No	NA	No	NA	Nil
Inlet Road West	17/06/2025 21:00	<25	No	No	No	NA	NA	NA	Nil
Long Point	17/06/2025 21:00	<20	No	No	No	NA	NA	NA	Nil
South Bulga	17/06/2025 22:50	IA	Yes	No	No	NA	No	NA	Nil
Wambo Road	17/06/2025 21:46	29	No	No	No	NA	NA	NA	Nil

Notes:
1. NA denotes 'not applicable'; and
2. Bold results indicate that application of NPfI modifying factor/s is required.

Table 10: Mount Thorley Operations Low Frequency Noise Assessment – June 2025

Location	Date and Time	Measured WML LAeq dB	Criterion Applies?	Intermittency Modifying Factor?	Tonality Modifying Factor?	Frequency of Tonality[1]	Low-frequency Modifying Factor?	Maximum Exceedance of Reference Spectrum [1,2]	Penalty dB[2]
Bulga RFS	17/06/2025 23:35	<20	Yes	No	No	NA	No	NA	Nil
Bulga Village	17/06/2025 22:07	<20	No	No	No	NA	NA	NA	Nil
Gouldsville	17/06/2025 21:22	IA	Yes	No	No	NA	No	NA	Nil
Inlet Road	17/06/2025 21:22	<20	Yes	No	No	NA	No	NA	Nil
Inlet Road West	17/06/2025 21:00	IA	No	No	No	NA	NA	NA	Nil
Long Point	17/06/2025 21:00	IA	No	No	No	NA	NA	NA	Nil
South Bulga	17/06/2025 22:50	<20	Yes	No	No	NA	NA	NA	Nil
Wambo Road	17/06/2025 21:46	<25	No	No	No	NA	NA	NA	Nil

Notes:
1. NA denotes 'not applicable'; and
2. Bold results indicate that application of NPfI modifying factor/s is required.

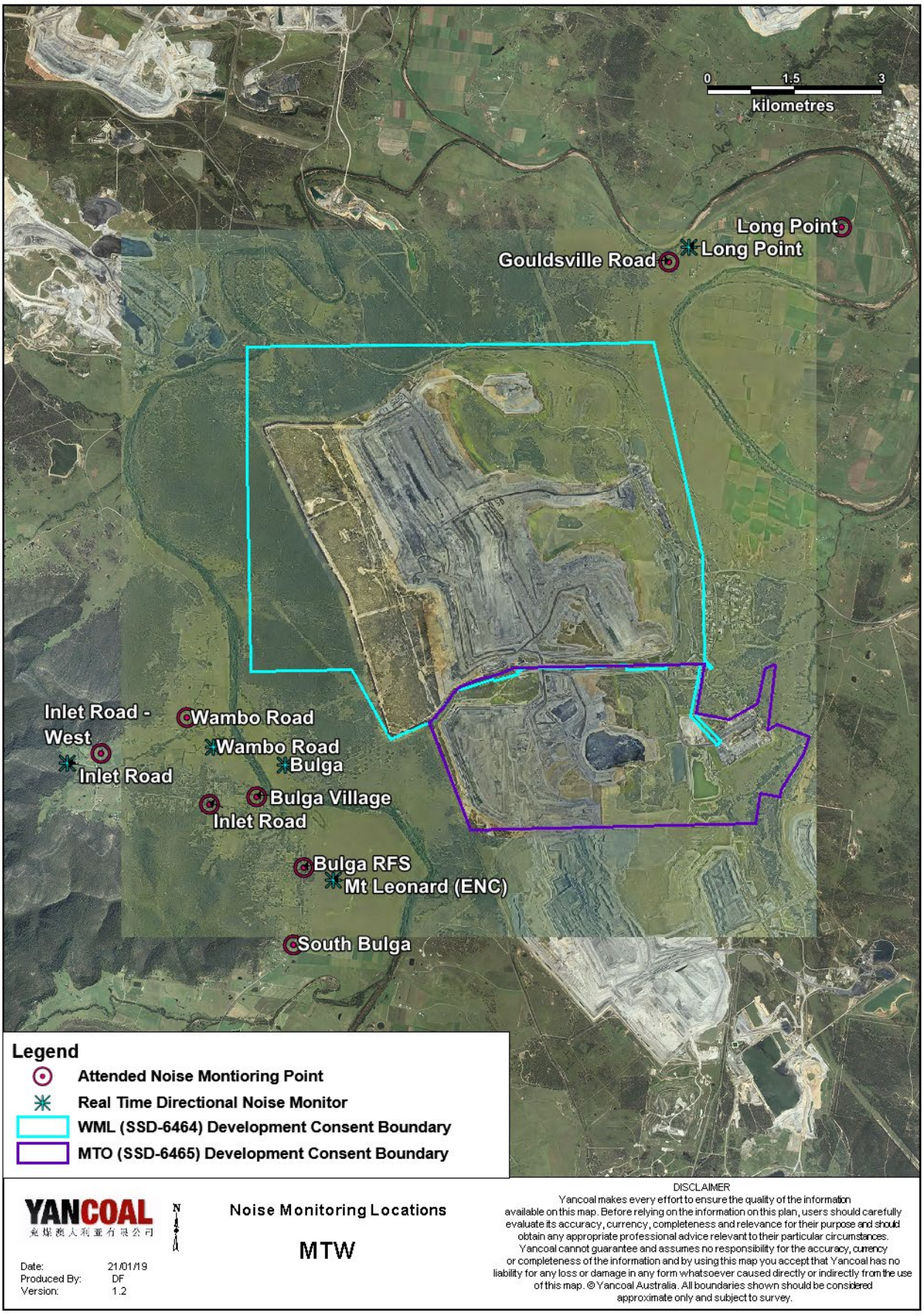

Figure 73: Noise Monitoring Location Plan

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 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:

- 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 the reporting period are provided in **Table 11**.

Table 11: Supplementary Attended Noise Monitoring Data – June 2025

No. of assessments	No. of assessments > trigger	No. of nights where assessments > trigger	% greater than trigger
570	12	6	2.10

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

6.0 OPERATIONAL DOWNTIME

During June, a total of 914 hours of equipment downtime was logged in response to environmental events such as dust, noise and adverse meteorological conditions. Operational downtime by equipment type is shown in **Figure 17**.

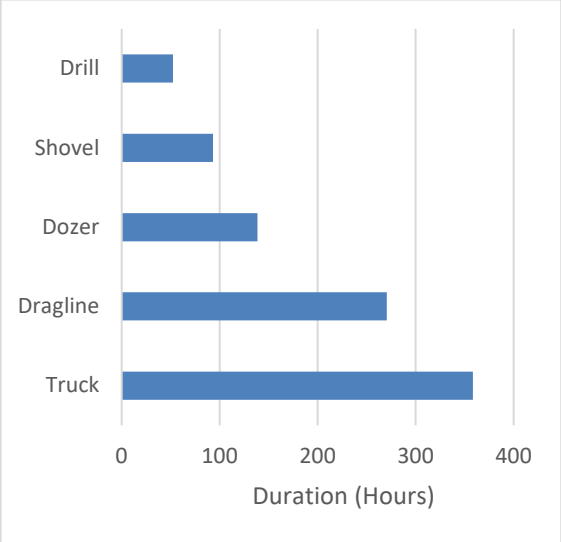

Figure 74: Operational Downtime by Equipment Type – June 2025

7.0 REHABILITATION

During June 2025, 1.0 Ha of land was released, 19.1 Ha was bulk shaped, 4.3 Ha was topsoiled and 10.5 Ha was composted.

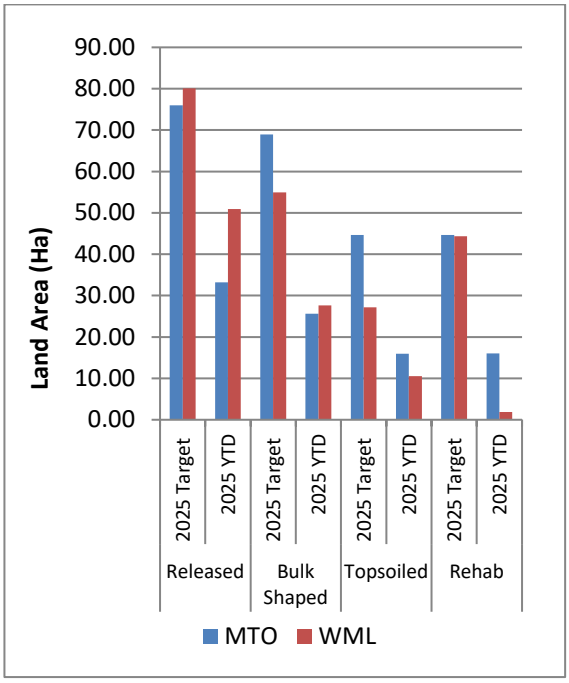

Figure 75: Rehabilitation YTD – June 2025

8.0 ENVIRONMENTAL INCIDENTS

There was one environmental incident recorded during the reporting period.

A blast miscapture for blast w39-bfa-wwa-co1 (initiated on 5 June 2025) was identified during Environment Protection Licence monthly public reporting processes. The blast monitoring systems consultant investigated the opportunity to retrieve data from the database or physical blast monitoring unit and confirmed blast data was beyond memory range. Data from one onsite monitor at Charlton Ridge that recorded this blast indicated vibration 0.1mm/sec, and overpressure 105.2 dB(L), which indicates that there was no risk of blast exceedance at private residence locations further afield. The incident will be reported as a technical non-compliance within the EPL 1376 Annual Return.

9.0 COMPLAINTS

Fourteen complaints were received during the reporting period. Details of these complaints are shown in **Table 12**.

Table 12: Complaints Summary YTD

	Noise	Dust	Blast	Lighting	Other	Total
January	0	3	3	2	0	8
February	2	0	3	2	1	8
March	8	2	5	1	0	16
April	6	4	7	0	0	17
May	4	0	3	0	0	7
June	2	11	1	0	0	14
July						
August						
September						
October						
November						
December						
Total	22	20	22	5	1	70

Appendix A: Meteorological Data

Table 13: Meteorological Data – Charlton Ridge Meteorological Station – June 2025

Date	Air Temperature		Relative Humidity		Wind Direction	Wind Speed	Rainfall
	Maximum (°C)	Minimum (°C)	Maximum (%)	Minimum (%)	Average (°)	Average (m/sec)	total (mm)
1/06/2025	19	8	100	58	183	1.7	0.0
2/06/2025	19	10	100	63	197	1.4	0.0
3/06/2025	19	7	100	51	236	1.5	0.6
4/06/2025	13	6	98	56	213	3.1	0.2
5/06/2025	17	5	100	50	227	1.9	0.0
6/06/2025	14	3	100	56	270	2.1	0.0
7/06/2025	19	8	83	44	273	3.6	0.0
8/06/2025	16	6	81	38	283	4.3	0.0
9/06/2025	12	4	89	53	293	5.9	0.0
10/06/2025	17	7	89	50	296	4.7	0.0
11/06/2025	17	5	91	42	293	3.2	0.0
12/06/2025	16	2	100	48	264	1.9	0.0
13/06/2025	16	6	93	48	255	1.7	0.0
14/06/2025	18	5	100	52	216	1.8	0.0
15/06/2025	17	4	100	51	247	2.2	0.0
16/06/2025	17	2	100	47	253	1.9	0.0
17/06/2025	16	3	99	48	298	2.8	0.2
18/06/2025	14	2	100	40	241	1.7	0.0
19/06/2025	16	0	100	46	239	1.6	0.0
20/06/2025	17	1	100	39	222	1.7	0.0
21/06/2025	18	2	100	48	238	1.7	0.0
22/06/2025	19	3	100	49	257	1.8	0.2
23/06/2025	22	4	100	47	238	1.7	0.0
24/06/2025	18	8	100	65	225	2.8	10.0
25/06/2025	16	6	88	41	277	4.8	0.8
26/06/2025	15	2	93	38	239	2.2	0.0
27/06/2025	15	2	93	53	242	1.7	0.0
28/06/2025	17	6	100	54	190	1.2	0.0
29/06/2025	17	4	100	53	236	1.5	0.0
30/06/2025	17	4	100	60	196	2.3	4.4