Knowledge grows

16 April 2026

Our Reference: 200-200-LET-DWER-0025

Your Reference: MS870

Mr Ian Munro
Manager, Compliance (Ministerial Statements)
Department of Water and Environmental Regulation
Prime House, 8 Davidson Terrace
JOONDALUP WA 6027
Email : compliance@dwer.wa.gov.au

Dear Ian,

Ministerial Statement No. 870, Condition 8 – Yara Pilbara Nitrates
Groundwater Monitoring Results

In accordance with Condition 8-4 of Ministerial Statement 870, Yara Pilbara Nitrates (YPN) undertakes monitoring of all groundwater bores every six months. Where monitoring indicates an exceedance of trigger levels, Condition 8-5 requires that the results be reported to the CEO.

The most recent round of groundwater monitoring was conducted on 18 and 25 March 2026 (MW2 to MW5 and MW1 respectively), with results received on 2 and 13 April 2026 (MW2 to MW5 and MW1 respectively). As previously reported, since 2017, we have exceedances of nitrogen species. Results of the March 2026 groundwater monitoring are provided as Table 1, with exceedances of trigger levels highlighted. Consistent with Condition 8-5, further assessment was undertaken to determine the cause of the exceedances.

The observed manganese concentration (0.57 mg/L) has decreased at MW4 since the previous six-monthly monitoring event but remained above the trigger value. The manganese concentrations at MW4 were assessed as natural geochemical fluctuations in groundwater. The Detailed Site Investigation reported manganese concentrations ranging from 0.01 to 1.4 mg/L across multiple wells, did not indicate a potential source on site and that concentrations may be related to background conditions in the area. Manganese was not classified as a Potential Contaminant of Interest for the site.

Nutrient concentrations (Total Nitrogen, Nitrate and Ammonia) continue to variably exceed trigger values and are consistent with residual influences from the historical unplanned ammonium nitrate releases at the site. Since the previous monitoring round, nutrient levels at MW1, MW3 and MW4 remain comparable, MW2 shows a slight increase, and MW5 shows an increase, and all levels remain within the established historical ranges. Ongoing performance monitoring of groundwater will continue as the remedial scopes are implemented.

The known unplanned releases have been previously reported to the Department of Water and Environmental Regulation (DWER) under Section 72 of the *Environmental Protection Act 1986*

(31 March 2017, 21 July 2017, 22 September 2018, and 6 August 2021). The site was reported by Yara to DWER as a Known or Suspected Contaminated Site via submission of Form 1, on 16 October 2018. On 7 December 2018 DWER classified the site as 'Potentially Contaminated – Investigation Required', and in this listing requested that a Contaminated Sites Auditor be engaged, and Detailed Site Investigation (DSI) be completed. On 6 February 2023 DWER reclassified the site as 'Contaminated - Remediation Required'.

To date, YPN have taken the following actions in response to this issue:

1. Completed Tier 1 and Tier 2 Risk Assessments, and a Hydrogeological Conceptual Site Model (in accordance with DWER guidelines) to assess environmental impact (submitted to DWER 19 June and 7 December 2017);
2. Undertaken an expanded groundwater monitoring program including the installation of an additional 38 onsite and six (6) downstream bores;
3. Completed an extensive repair project at YPN, with a focus on potential source mitigation in areas where groundwater contamination is known or likely;
4. Engaged a Contaminated Sites Auditor from JBS&G;
5. Engaged WSP to undertake further investigations, modelling and assessment (in accordance with DWER guidelines), including completion of:
    - Preliminary Site Investigation (PSI) and DSI;
    - Preliminary Ecological Risk Assessment and Detailed Ecological Risk Assessment; and
    - Site Management Plan, Sampling Analyses Quality Plan and Remedial Action Plan (RAP).
6. Selected the preferred remedial options, completed detailed engineering design, and obtained licence approvals for the onsite remedial infrastructure (Works Approval W6639/2022/1, 26D and 5C).
7. Implemented and commenced the RAP in 2021 and groundwater remedial infrastructure works in 2022, with completion and commissioning of the remedial infrastructure in November 2023.
8. Works Approval 6639/2022/1 was granted in August 2022 for the construction and operation of the remedial infrastructure. Following completion of the infrastructure and demonstration of compliance with the Works Approval requirements, operation of the groundwater extraction system commenced on 6 December 2023. The Works Approval has since expired, and YPN Licence L9223/2019/1 was amended on 3 February 2026 to incorporate the remedial infrastructure. Remedial performance monitoring is ongoing.
9. Groundwater contours shows that hydraulic containment has been achieved with a total mass extracted to 6 September 2025 of 24,689 Kg Ammonia-N and 53,486 Kg Nitrate-N and sent to the evaporation ponds.
10. Following endorsement by the auditor, bioremediation treatment changed from lactate to Emulsified Vegetable Oil (EVO). Groundwater was treated with EVO in Q1 2026, and groundwater performance monitoring is ongoing.
11. Phase 3 of the remedial efforts in 2026 will focus on the evapoconcentration area at the bottom of the rock armour to remove nutrient loads from intercepted groundwater for disposal in the evaporation ponds.

Table 1: Six-Monthly Groundwater Monitoring Results

Analytes	Units	Trigger Limits	MW1	MW2	MW3	MW4	MW5
Aluminium (Filtered)	mg/L	0.021	<0.005	0.009	<0.005	<0.050	<0.025
Alkalinity (total) as CaCO3	mg/L	561	278	275	516	212	246
Arsenic (Filtered)	mg/L	NA	<0.001	<0.001	<0.001	<0.020	<0.010
Calcium (Filtered)	mg/L	1,210	79.3	49.6	32.4	528	908
Cadmium (Filtered)	mg/L	NA	<0.0001	<0.0001	<0.0001	<0.0020	<0.0010
Chloride	mg/L	95,700	396	521	1420	48,000	34,700
Chromium (III) (Filtered)	mg/L	NA	<0.005	<0.005	<0.005	<0.010	<0.005
Chromium (VI) (Filtered)	mg/L	NA	<0.004	<0.004	<0.004	<0.004	<0.004
Copper (Filtered)	mg/L	NA	0.0013	0.0005	0.0007	<0.0020	<0.0010
Iron (Filtered)	mg/L	0.26	<0.005	<0.005	<0.005	<0.050	<0.025
Mercury	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Magnesium (Filtered)	mg/L	5,170	28.3	28.5	72.6	2,540	2,270
Manganese (Filtered)	mg/L	0.242	0.001	0.0083	0.0046	**0.57**	0.12
Ammonium (NH4+)	mg/L	NA	<0.01	35	<0.01	64	630
Ammonia as N (NH3-N)	mg/L	0.04	<0.01	**27**	<0.01	**50**	**490**
Nitrate (as NO3)	mg/L	9.57	**62**	**350**	**385**	**1859**	**8411**
Nitrogen (Total)	mg/L	5.6	**14**	**79**	**87**	**420**	**1900**
Nickel (Filtered)	mg/L	NA	0.001	<0.001	<0.001	0.029	0.012
Oil and Grease	mg/L	NA	<10	<10	<10	<10	<10
Lead (Filtered)	mg/L	NA	0.0001	<0.0001	<0.0001	0.0034	<0.0010
TDS	mg/L	143,000	980	1,300	3,200	83,000	66,000
TSS	mg/L	2,090	22	11	<1	22	500
Zinc (Filtered)	mg/L	0.052	0.009	0.009	0.008	0.046	0.02
pH (in-field)		6-8.4	7.35	7.34	7.74	6.97	6.82

If you have any questions, please don't hesitate to contact the undersigned on susan.giles@yara.com or 9327 8136.

Yours Sincerely

Susan Giles
Environment and Sustainability Manager
Yara Pilbara Nitrates