



Knowledge grows

5 April 2018

Our Reference: 200-200-LET-DWER-0006

Your Reference: MS870

Mr Ian Munro
Manager, Compliance (Ministerial Statements)
Department of Water and Environmental Regulation
Level 8, The Atrium
168 St Georges Terrace
PERTH WA 6000

Email: compliance@dwer.wa.gov.au

Dear Ian,

Yara Pilbara Nitrates 6-Monthly Groundwater Monitoring Results as per Condition 8 of Ministerial Statement No. 870

This letter is to inform the Department of Water and Environmental Regulation (DWER) on the outcomes of the latest six-monthly groundwater monitoring undertaken by Yara Pilbara Nitrates Pty Ltd (YPN) at the Technical Ammonium Nitrate (TAN) plant, as required by Conditions 8-4 and 8-5 of Ministerial Statement 870 in March 2018.

Six-monthly groundwater monitoring was undertaken 13 March 2018 with results received 29 March 2018. As was reported 3 April 2017 and 11 October 2017, elevation in levels of nitrogen species continues. Investigations continue into the cause of these elevations.

Known unplanned releases have been reported to DWER under Section 72 of the *Environmental Protection Act 1986* (31 March and 21 July 2017). Potential additional sources of contamination are being assessed, with findings to be reported according to due process.

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

1. Completed a Tier 1 Risk Assessment, Tier 2 Risk Assessment and Conceptual Site Model (in accordance with DWER guidelines) to assess environmental impact (submitted to DWER 19 June 2017 and 7 December 2017);

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2. Installed an additional two (2) site bores and an additional eight (8) downstream bores;
3. Undertaken an expanded groundwater monitoring program, monitoring results from which are currently indicating that there has been no migration of nitrogen species to downstream bores;'
4. Engaged Golder to undertake further investigations, including a review of pond liner and structural integrity. Yara are currently awaiting the final investigation report and will submit to DWER as required.

Six-monthly groundwater monitoring results can be seen in Table 1 with exceedances of trigger levels highlighted.

Table 1: Six-Monthly Groundwater Monitoring Results

			MW1	MW2	MW3	MW4	MW5
Date	Units	Trigger Limits	13/03/2018	13/03/2018	13/03/2018	13/03/2018	13/03/2018
Aluminium (Filtered)	mg/L	0.021	<0.005	<0.005	<0.005	<0.050	<0.005
Alkalinity (total) as CaCO3	mg/L	561	279	214	593	119	485
Arsenic (Filtered)	mg/L	NA	<0.001	<0.001	<0.001	<0.001	<0.001
Calcium (Filtered)	mg/L	1,210	86	610	84	1,000	55
Cadmium (Filtered)	mg/L	NA	<0.0001	<0.0005	<0.0005	<0.0050	<0.0010
Chloride	mg/L	95,700	340	2,880	4,210	80,700	6,660
Chromium (III+VI) (Filtered)	mg/L	NA	<0.001	<0.001	0.00	0.01	0.01
Copper (Filtered)	mg/L	NA	0.0004	<0.0005	<0.0005	<0.0050	<0.0010
Iron (Filtered)	mg/L	0.26	<0.005	<0.005	<0.005	<0.050	<0.005
Mercury	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Magnesium (Filtered)	mg/L	5,170	30	361	229	4,130	184
Manganese (Filtered)	mg/L	0.242	0.068	0.017	0.015	0.200	0.001
Ammonia as N (NH3-N)	mg/L	0.04	<0.01	270	<0.01	<0.02	<0.01
Nitrate (as NO3) calculated	mg/L	9.57	37.18	2,744.52	31.87	929.59	6,197.30
Nitrogen (Total)	mg/L	5.6	8.4	1,000.0	8.8	240.0	1,700.0
Nickel (Filtered)	mg/L	NA	0	<0.005	<0.005	<0.050	<0.010
Lead (Filtered)	mg/L	NA	<0.0001	<0.0005	<0.0005	<0.0050	<0.0010
TDS	mg/L	143,000	1,000	8,000	7,700	140,000	19,000
TSS	mg/L	2,090	<1	3	1	6	4
Zinc (Filtered)	mg/L	0.052	0.047	<0.005	0.005	<0.050	<0.005
pH		6-8.4	8.10	7.50	8.10	7.30	8.10

Please do not hesitate to contact the undersigned on 08 9183 4112 should you have any queries.

Yours Sincerely

Brian HOWARTH

Health, Environment, Safety & Quality Manager

Yara Pilbara Nitrates