



1<sup>st</sup> September 2016

Our Reference: 200-200-LET-EPA-0009

Your Reference: 2013-0000239827:ST02-2013-004

Mark Rust  
Senior Environmental Officer  
Office of the Environmental Protection Authority  
Locked Bag 10  
East Perth WA 6892

Email: mark.rust@epa.wa.gov.au

Dear Mark,

**Subject: Report to OEPA for Groundwater Monitoring Results as per Condition 8 of Ministerial Statement No. 870**

This letter to inform the OEPA on the outcomes of the latest groundwater monitoring undertaken by Yara Pilbara Nitrates Pty Ltd (YPNPL) at the Technical Ammonium Nitrate Production Facility (TANPF) as required by Conditions 8-4 and 8-5 of Ministerial Statement 870.

*Condition 8-4 The proponent shall sample/monitor all groundwater bores required by Condition 8-3 every six months and shall set groundwater monitoring trigger values at a value of 10% above the baseline contaminant concentrations obtained from the hydrogeological studies required by condition 8-1.*

*Condition 8-5 In the event that monitoring required by condition 8-4 indicates an exceedance of trigger levels: 1. The proponent shall report such findings to the CEO within 7 days of the exceedance being identified; 2. The proponent shall provide evidence which allows determination of the cause of the exceedance; 3. If determined by the CEO to be project attributable, the proponent shall submit actions to be taken to address the exceedance within 7 days of the determination being made to the CEO; 4. The proponent shall implement actions to address the exceedance and shall continue until such time as the CEO determines that the remedial actions may cease; and 5. The proponent shall submit bi-annually, or at a frequency defined to the satisfaction of the CEO, the results of monitoring required by condition 8-4 to the CEO, until such time as the CEO determines that reporting may cease.*

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**Yara Pilbara Nitrates Pty Ltd**

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YPNPL has reported results to OEPA of previous monitoring regularly (most recently in December 2015), as ongoing monitoring continues to show substantial variation that are considered to be reflective of a natural variability rather than a result of site related potential contamination sources as a result of ongoing construction activities. Since the last report to OEPA in December 2015 progress in commissioning of the TANPF has been significantly slower than anticipated and the plant is yet to be fully commissioned.

Groundwater sampling was undertaken in June 2016, with resampling undertaken in August 2016 to check the representativeness of some results from the June sampling event. Due to limitations in sampling equipment, site MW04 was unable to be sampled. This is being addressed through the acquisition of new sampling equipment that will enable sampling of this bore. MW04 will be sampled at the next monitoring event.

In June 2016 a number of analytes were detected at concentrations slightly above trigger values. When these were retested in August 2016 one (1) analyte at one (1) well, MW02, was found to exceed the trigger value of Total Nitrogen.

The Total Nitrogen value at MW2 of 13,000 µg/L has exceeded the trigger value of 5,610µg/L. As previously reported, this was also exceeded in November 2015 (6,840µg/L). YPNPL has initiated an investigation to understand the cause of this elevated Nitrogen value. Results from this investigation will be submitted to the OEPA once it is complete.

Attached to this letter is a summary table showing the 2016 groundwater monitoring results as well as the historical monitoring data, to enable a review of the variability of the parameters over time since 2011.

If you have any queries please do not hesitate to contact Susan Giles, Environmental Superintendent on 9183 4167 or [susan.giles@yara.com](mailto:susan.giles@yara.com).

Yours sincerely

A handwritten signature in blue ink, appearing to read "B. Howarth".

**Brian HOWARTH**

HESQ Manager

**Yara Pilbara Nitrates**

Attachments

1. TANP Groundwater monitoring results

Parameter	pH	TDS	TSS	Alkalinity (total) as CaCO3	Inorganics								Metals												TRHs**									
					Ammonia	Ammonia as N	Chloride	Nitrate (as N)	Nitrate (as NO3-)	Nitrogen (Total)	Reactive Phosphorus as P	Sulphide	Sulphate	Aluminium (Filtered)	Arsenic (Filtered)	Cadmium (Filtered)	Calcium (Filtered)	Chromium (III+VI) (Filtered)	Chromium (hexavalent)	Chromium (Trivalent)	Copper (Filtered)	Iron (Total)	Iron (Filtered)	Lead (Filtered)	Magnesium (Filtered)	Manganese (Filtered)	Mercury	Nickel (Filtered)	Zinc (Filtered)	C6 - C9	C10 - C14	C15 - C28	C29-C36	C10-36 (sum of total)
Units	pH units	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L							
<b>Current Trigger Level</b>	<b>6-8.4</b>	<b>143,000</b>	<b>2,090</b>	<b>561</b>	<b>0.04</b>	<b>40</b>	<b>95,700</b>	<b>NA</b>	<b>9.67</b>	<b>5,600</b>	<b>NA</b>	<b>NA</b>	<b>5,720</b>	<b>0.021</b>	<b>NA</b>	<b>NA</b>	<b>1210</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>143</b>	<b>0.26</b>	<b>NA</b>	<b>5170</b>	<b>0.242</b>	<b>0.0001</b>	<b>NA</b>	<b>0.052</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>
MW1	30/04/2011	6.95	2,000	350		38	780	1.70		2,500	<0.002		170	0.010	<0.001	<0.0001	200	<0.001	<0.002	<0.005			0.008	<0.001	63	0.170	<0.00005		0.016	<40	<50	<200	<200	<450
	20/09/2011	6.86		180		18	710			3,400	0.008	<0.5	150	0.002	<0.001	<0.0001	170	<0.001					1.80	<0.005	54	0.046		<0.001	0.027					
	27/02/2012	6.90		220		5	670	2.00	8.70	2,100	<0.002	<0.5	140	0.002	<0.001	<0.0001	180	<0.001					4.20	<0.005	53	0.088		<0.001	0.038					
	11/10/2012	7.09		520		5	600	1.10	4.70	1,500	0.003	<0.5	100	0.005	<0.001	<0.0001	170	<0.001					30.00	<0.009	51	0.038		<0.001	0.008					
	6/03/2013	7.26		2,900		15	570	1.90	<0.05	2,000	0.003	<0.5	100	<0.005	<0.001	<0.0001	160	<0.001					14.00	<0.005	49	0.170		<0.001	0.010					
	17/04/2013	6.71		16		5	560	2.20		2,400	0.004	<0.5	120	<0.005	<0.001	0.0004	160	<0.001			0.0010		0.39	<0.005	<0.001	49	0.087		<0.001	0.010				
	17/10/2013	5.60	940	25	367	32	300	0.09		240	0.007	<0.1	59	0.006	0.001	<0.00005	66	<0.002		<0.001	<0.0005	1.47	0.437	<0.0001	29	0.425	<0.0001	0.001	0.005	<20	<50	<100	<50	<100
	9/04/2014	7.13	995	<5	358	114	345	1.60		2,090	0.006	<0.1	59	<0.005	0.001	<0.00005	57	<0.002		<0.001	<0.0005	0.57	0.430	<0.0001	31	0.272	<0.0001	<0.0005	<0.001	<20	<50	<100	<50	<100
	30/10/2014	7.44	981	<5	361	5	366	0.16		2,620	0.018	<0.1	75	0.018	0.001	<0.00005	88	<0.002		<0.001	<0.0005	0.33	0.052	<0.0001	32	0.204	<0.0001	0.001	0.009	<20	<50	<100	<50	<100
	30/04/2015	7.31	1,010	<5	272	31	374	2.24		3,040	0.014	<0.1	119	0.006	0.000	<0.00005	92	<0.002	<0.001	<0.0001	0.0050	0.32	0.044	<0.0001	33	0.080	<0.0001	0.001	0.003	<20	<50	<100	<50	<100
	23/11/2015	7.22	1,110	<5	316	5	394	0.25		260	0.010	<0.1	103	0.006	0.001	<0.0001	98	<0.005	<0.001	<0.001	<0.001	0.42	<0.005	<0.0002	33	0.009	<0.0001	0.001	<0.005	<20	<50	<100	<50	<100
1/06/2016	7.90	1,100	440	288	<10	428		2.50	3,100				0.610	0.001	<0.0001	102	<0.005	0.002			<0.002		1.000	0.006	33	0.240	<0.0001	0.005	0.052	<20	<50	<100	<50	<100
9/08/2016													<0.005								<0.005													
MW2	30/04/2011	7.16	2,000	250		200	930	3.30		3,900	0.004	<0.5	170	0.005	<0.001	<0.0001	99	<0.001	<0.002	<0.005			<0.005	<0.001	66	0.005	<0.00005		0.013	<40	<50	<200	<200	<450
	20/09/2011	6.78		190		5	1,200			1,400	0.004	<0.5	210	0.002	<0.001	<0.0001	150	<0.001					6.00	<0.005	98	0.001		<0.001	0.021					
	27/02/2012	6.83		84		30	1,400	0.62	2.70	880	<0.002	<0.5	220	0.005	<0.001	<0.0001	240	<0.001					4.60	<0.020	140	0.220		<0.001	0.047					
	11/10/2012	7.12		440		5	1,300	0.63	2.80	1,100	<0.002	<0.5	180	0.002	<0.001	<0.0001	160	<0.001					12.00	<0.005	94	0.010		<0.001	0.021					
	6/03/2013	7.28		320		5	1,000	0.60	2.70	700	<0.002	<0.5	170	0.006	<0.001	<0.0001	150	<0.001					15.00	<0.005	87	0.012		<0.001	0.017					
	17/04/2013	5.34		290		5	811	2.28		720	0.003	<0.5	200	<0.005	<0.001	<0.00005	112	<0.001			<0.001		5.20	<0.005	100	0.012		<0.001	0.012					
	17/10/2013	6.90	2,040	10	281	5	1,100	0.51		2,700	0.003	<0.1	135	<0.005	<0.0002	0.0003	160	<0.002		<0.001	<0.0005	0.06	<0.002	<0.0001	76	<0.0005	<0.0001	<0.0005	<0.001	<20	<50	<100	<50	<100
	9/04/2014	6.98	1,550	<5	250	5	730	4.94		4,960	0.007	<0.1	135	<0.005	<0.0002	<0.00005	71	<0.002		<0.001	<0.0005	<0.05	<0.002	<0.0001	57	0.001	<0.0001	<0.0005	<0.001	<20	<50	<100	<50	<100
	30/10/2014	7.14	1,650	<5	276	5	771	2.49		2,720	0.010	<0.1	138	0.017	<0.0002	<0.00005	98	<0.002		<0.001	<0.0005	<0.05	<0.002	<0.0001	64	0.002	<0.0001	<0.0005	0.006	<20	<50	<100	<50	<100
	30/04/2015	7.19	1,720	<5	304	17	758	3.55		4,350	0.008	<0.1	163	<0.005	0.000	<0.00005	103	<0.002	<0.001	<0.0001	0.0015	0.14	0.004	0.000	66	0.001	<0.0001	0.001	0.021	<20	<50	<100	<50	<100
	23/11/2015	7.03	1,680	<5	292	5	692	5.44		6,840	0.006	<0.1	180	<0.005	<0.0005	<0.0001	94	<0.005	<0.001	<0.001	<0.001	<0.001	<0.05	<0.005	<0.0002	57	<0.0005	<0.0001	<0.0005	<0.005	<20	<50	<100	<50
14/06/2016	7.90	1,700	240	281	10	750		5.50	5,900				5,900	<0.005	<0.001	<0.0001	93	<0.005	<0.001			0.0004		<0.005	<0.0001	60	0.010	<0.0001	<0.001	0.006				
9/08/2016									13,000					<0.005	<0.001	<0.0001																		
MW3	30/04/2011	7.30	9,800	400		54	5,400	1.90		2,600	0.003	<0.5	800	0.013	<0.005	<0.0005	120	<0.005	<0.002	<0.005			<0.025	<0.005	300	0.022	<0.00005		0.020	<40	<50	<200	<200	<450
	20/09/2011	7.22		280		57	3,700			220	0.006	<0.5	810	0.019	<0.005	<0.0005	85	<0.005					7.40	<0.025	210	0.014		<0.005	0.047					
	27/02/2012	7.18		230		5	4,000	0.32	1.40	610	<0.002	<0.5	940	0.005	<0.005	<0.0005	95	<0.005					6.80	<0.025	210	0.026		<0.005	0.032					
	11/10/2012	7.47		270		12	4,200	0.12	0.51	330	0.003	<0.5	710	<0.01	<0.01	<0.001	100	<0.01					5.80	<0.05	260	0.027		<0.01	0.031					
	6/03/2013	7.32		180		5	5,900	0.26	1.10	420	0.003	<0.5	670	<0.025	<0.005	<0.0005	130	<0.005					6.30	<0.025	340	0.018		<0.005	<0.025					
	17/04/2013	6.17		470		770	28,000	0.03		1,500	0.006	<0.5	1,400	0.072	<0.01	<0.001	350	<0.01			<0.01		21.00	0.520	<0.001	910	1.700		<0.01	<0.05				
	17/10/2013	7.19	7,280	54	479	5	3,140	0.61		530	<0.001	<0.1	647	0.021	0.001	<0.00005	91	<0.0002	<0.001	<0.001	0.0005	<0.05	0.010	<0.0001	232	0.004	<0.0001	0.001	<0.001	<20	<50	<100	<50	<100
	9/04/2014	7.50	9,050	6	466	5	5,000	0.46		840	0.009	<0.1	647	<0.005	0.001	<0.00005	104	<0.0002	<0.001	<0.001	0.0017	<0.05	<0.002	<0.0001	286	0.013	<0.0001	<0.0005						