



Eraring Power Station - EPA Licence 1429

Rocky Point Rd, Morristown NSW 2264

Coal Unloader - EPA Licence 4297

Eraring Coal Delivery Facility, Construction Rd, Dora Creek NSW 2264

Environmental Monitoring Data

November 2016



Unit 1 Boiler Continuous Emission Monitoring Summary

EPA Identification no. 11 - Air emissions monitoring, Boiler 1 stack discharge to air

- Unit 1 returned to service 19th November.

	NOX			Particulates			SOX		
	ppm (7% O2)			mg/m3			ppm (7% O2)		
	Daily Ave	Max Hourly	Min Hourly	Daily Ave	Max Hourly	Min Hourly	Daily Ave	Max Hourly	Min Hourly
1 - Nov	0	0	0	0	0	0	0	0	0
2 - Nov	0	0	0	0	0	0	0	0	0
3 - Nov	0	0	0	0	0	0	0	0	0
4 - Nov	0	0	0	0	0	0	0	0	0
5 - Nov	0	0	0	0	0	0	0	0	0
6 - Nov	0	0	0	0	0	0	0	0	0
7 - Nov	0	0	0	0	0	0	0	0	0
8 - Nov	0	0	0	0	0	0	0	0	0
9 - Nov	0	0	0	0	0	0	0	0	0
10 - Nov	0	0	0	0	0	0	0	0	0
11 - Nov	0	0	0	0	0	0	0	0	0
12 - Nov	0	0	0	0	0	0	0	0	0
13 - Nov	0	0	0	0	0	0	0	0	0
14 - Nov	0	0	0	0	0	0	0	0	0
15 - Nov	0	0	0	0	0	0	0	0	0
16 - Nov	0	0	0	0	0	0	0	0	0
17 - Nov	0	0	0	0	0	0	0	0	0
18 - Nov	0	0	0	0	0	0	0	0	0
19 - Nov	145	226	109	9	18	5	0	0	0
20 - Nov	135	178	108	8	14	5	0	0	0
21 - Nov	140	208	117	7	12	3	217	224	190
22 - Nov	130	152	112	6	13	4	226	233	201
23 - Nov	124	142	105	7	12	5	233	245	216
24 - Nov	131	147	107	8	13	5	225	243	202
25 - Nov	136	149	109	9	14	6	234	269	207
26 - Nov	122	191	107	9	14	6	197	230	182
27 - Nov	124	155	109	10	15	6	226	255	183
28 - Nov	143	184	111	7	13	3	205	222	188
29 - Nov	153	181	122	7	11	4	224	257	183
30 - Nov	119	143	101	12	21	7	209	221	199

Unit 2 Boiler Continuous Emission Monitoring Summary

EPA Identification no. 12 - Air emissions monitoring, Boiler 2 stack discharge to air

- Unit 2 returned to service 21st November.

	NOX			Particulates			SOX		
	ppm (7% O2)			mg/m3			ppm (7% O2)		
	Daily Ave	Max Hourly	Min Hourly	Daily Ave	Max Hourly	Min Hourly	Daily Ave	Max Hourly	Min Hourly
1 - Nov	0	0	0	0	0	0	0	0	0
2 - Nov	0	0	0	0	0	0	0	0	0
3 - Nov	0	0	0	0	0	0	0	0	0
4 - Nov	0	0	0	0	0	0	0	0	0
5 - Nov	0	0	0	0	0	0	0	0	0
6 - Nov	0	0	0	0	0	0	0	0	0
7 - Nov	0	0	0	0	0	0	0	0	0
8 - Nov	0	0	0	0	0	0	0	0	0
9 - Nov	0	0	0	0	0	0	0	0	0
10 - Nov	0	0	0	0	0	0	0	0	0
11 - Nov	0	0	0	0	0	0	0	0	0
12 - Nov	0	0	0	0	0	0	0	0	0
13 - Nov	0	0	0	0	0	0	0	0	0
14 - Nov	0	0	0	0	0	0	0	0	0
15 - Nov	0	0	0	0	0	0	0	0	0
16 - Nov	0	0	0	0	0	0	0	0	0
17 - Nov	0	0	0	0	0	0	0	0	0
18 - Nov	0	0	0	0	0	0	0	0	0
19 - Nov	0	0	0	0	0	0	0	0	0
20 - Nov	0	0	0	0	0	0	0	0	0
21 - Nov	126	148	101	14	20	11	201	219	142
22 - Nov	127	146	113	12	15	11	216	226	200
23 - Nov	125	144	115	13	16	12	227	247	213
24 - Nov	142	171	117	13	17	10	218	231	183
25 - Nov	175	191	151	15	18	14	207	232	187
26 - Nov	169	184	142	15	18	14	201	216	191
27 - Nov	171	196	136	16	18	14	225	235	199
28 - Nov	157	201	118	13	16	10	204	219	193
29 - Nov	145	169	115	13	15	12	215	240	189
30 - Nov	156	184	116	14	17	13	205	219	179

Unit 3 Boiler Continuous Emission Monitoring Summary

EPA Identification no. 13 - Air emissions monitoring, Boiler 3 stack discharge to air

- Unit 3 returned to service 19th November.

	NOX			Particulates			SOX		
	ppm (7% O2)			mg/m3			ppm (7% O2)		
	Daily Ave	Max Hourly	Min Hourly	Daily Ave	Max Hourly	Min Hourly	Daily Ave	Max Hourly	Min Hourly
1 - Nov	0	0	0	0	0	0	0	0	0
2 - Nov	0	0	0	0	0	0	0	0	0
3 - Nov	0	0	0	0	0	0	0	0	0
4 - Nov	0	0	0	0	0	0	0	0	0
5 - Nov	0	0	0	0	0	0	0	0	0
6 - Nov	0	0	0	0	0	0	0	0	0
7 - Nov	0	0	0	0	0	0	0	0	0
8 - Nov	0	0	0	0	0	0	0	0	0
9 - Nov	0	0	0	0	0	0	0	0	0
10 - Nov	0	0	0	0	0	0	0	0	0
11 - Nov	0	0	0	0	0	0	0	0	0
12 - Nov	0	0	0	0	0	0	0	0	0
13 - Nov	0	0	0	0	0	0	0	0	0
14 - Nov	0	0	0	0	0	0	0	0	0
15 - Nov	0	0	0	0	0	0	0	0	0
16 - Nov	0	0	0	0	0	0	0	0	0
17 - Nov	0	0	0	0	0	0	0	0	0
18 - Nov	0	0	0	0	0	0	0	0	0
19 - Nov	136	167	100	23	26	15	184	200	147
20 - Nov	150	162	125	21	26	13	185	201	152
21 - Nov	158	183	114	24	30	16	183	193	152
22 - Nov	148	192	104	27	32	22	182	189	142
23 - Nov	128	145	103	27	32	14	184	197	143
24 - Nov	132	163	110	20	22	16	183	198	154
25 - Nov	133	154	113	19	22	13	182	203	148
26 - Nov	132	150	118	19	22	12	174	191	156
27 - Nov	128	151	114	19	21	13	186	197	151
28 - Nov	150	185	119	22	30	17	184	201	159
29 - Nov	147	175	119	21	26	16	195	207	144
30 - Nov	152	170	126	23	28	16	178	207	149

Unit 4 Boiler Continuous Emission Monitoring Summary

EPA Identification no. 14 - Air emissions monitoring, Boiler 4 stack discharge to air

- Unit 4 out of service.

	NOX			Particulates			SOX		
	ppm (7% O2)			mg/m3			ppm (7% O2)		
	Daily Ave	Max Hourly	Min Hourly	Daily Ave	Max Hourly	Min Hourly	Daily Ave	Max Hourly	Min Hourly
1 - Nov	0	0	0	0	0	0	0	0	0
2 - Nov	0	0	0	0	0	0	0	0	0
3 - Nov	0	0	0	0	0	0	0	0	0
4 - Nov	0	0	0	0	0	0	0	0	0
5 - Nov	0	0	0	0	0	0	0	0	0
6 - Nov	0	0	0	0	0	0	0	0	0
7 - Nov	0	0	0	0	0	0	0	0	0
8 - Nov	0	0	0	0	0	0	0	0	0
9 - Nov	0	0	0	0	0	0	0	0	0
10 - Nov	0	0	0	0	0	0	0	0	0
11 - Nov	0	0	0	0	0	0	0	0	0
12 - Nov	0	0	0	0	0	0	0	0	0
13 - Nov	0	0	0	0	0	0	0	0	0
14 - Nov	0	0	0	0	0	0	0	0	0
15 - Nov	0	0	0	0	0	0	0	0	0
16 - Nov	0	0	0	0	0	0	0	0	0
17 - Nov	0	0	0	0	0	0	0	0	0
18 - Nov	0	0	0	0	0	0	0	0	0
19 - Nov	0	0	0	0	0	0	0	0	0
20 - Nov	0	0	0	0	0	0	0	0	0
21 - Nov	0	0	0	0	0	0	0	0	0
22 - Nov	0	0	0	0	0	0	0	0	0
23 - Nov	0	0	0	0	0	0	0	0	0
24 - Nov	0	0	0	0	0	0	0	0	0
25 - Nov	0	0	0	0	0	0	0	0	0
26 - Nov	0	0	0	0	0	0	0	0	0
27 - Nov	0	0	0	0	0	0	0	0	0
28 - Nov	0	0	0	0	0	0	0	0	0
29 - Nov	0	0	0	0	0	0	0	0	0
30 - Nov	0	0	0	0	0	0	0	0	0

Unit 1 Boiler Emission Test Results

EPA Identification no. 11 - Air emissions monitoring, Boiler 1 stack discharge to air

<u>Name</u>	<u>Reading</u>	<u>Units</u>	<u>Licence Limit</u>	<u>Date</u>
Cadmium	0.0019	mg/m3	0.20	07/02/2015
Carbon Dioxide (Wet)	8.0	%	-	07/02/2015
Carbon Monoxide	15.0	mg/m3	-	07/02/2015
Chlorine	1.00	mg/m3	300	07/02/2015
Copper	0.0019	mg/m3	-	07/02/2015
Dry Gas Density	1.4	kg/m3	-	07/02/2015
Fluoride As HF - Total	10.0	mg/m3	50	07/02/2015
Hazardous Substances (Metals) - Total	0.027	mg/m3	1.00	07/02/2015
Hydrogen Chloride	2.0	mg/m3	100.0	07/02/2015
Mercury	0.0013	mg/m3	0.200	07/02/2015
Moisture	6.0	%	-	07/02/2015
Particulates - Total	19.0	mg/m3	50	07/02/2015
Stack Gas Molecular Weight	30	kg/k-mole	-	07/02/2015
Temperature	114.3	degC	-	07/02/2015
Velocity	12.0	m/sec	-	07/02/2015
Volatile Organic Compounds (VOC) - Total	0.07	mg/m3	-	07/02/2015
Volumetric Flow Rate (Dry At STP)	301	m3/sec	-	07/02/2015

Unit 2 Boiler Emission Test Results

EPA Identification no. 12 - Air emissions monitoring, Boiler 2 stack discharge to air

<u>Name</u>	<u>Reading</u>	<u>Units</u>	<u>Licence Limit</u>	<u>Date</u>
Cadmium	0.06	mg/m3	0.20	30/01/2016
Carbon Dioxide (Wet)	12.0	%	-	30/01/2016
Carbon Monoxide	1.00	mg/m3	-	30/01/2016
Chlorine	0.06	mg/m3	300	30/01/2016
Copper	0.0007	mg/m3	-	30/01/2016
Dry Gas Density	1.4	kg/m3	-	30/01/2016
Fluoride As HF - Total	9.2	mg/m3	50	30/01/2016
Hazardous Substances (Metals) - Total	0.07	mg/m3	1.00	30/01/2016
Hydrogen Chloride	0.80	mg/m3	100.0	30/01/2016
Mercury	0.0003	mg/m3	0.200	30/01/2016
Moisture	7.1	%	-	30/01/2016
Particulates - Total	17.0	mg/m3	50	30/01/2016
Stack Gas Molecular Weight	30	kg/k-mole	-	30/01/2016
Temperature	112.5	degC	-	30/01/2016
Velocity	13.5	m/sec	-	30/01/2016
Volatile Organic Compounds (VOC) - Total	1.8	mg/m3	-	30/01/2016
Volumetric Flow Rate (Dry At STP)	305	m3/sec	-	30/01/2016

Unit 3 Boiler Emission Test Results

EPA Identification no. 13 - Air emissions monitoring, Boiler 3 stack discharge to air

<u>Name</u>	<u>Reading</u>	<u>Units</u>	<u>Licence Limit</u>	<u>Date</u>
Cadmium	0.05	mg/m3	0.20	22/08/2015
Carbon Dioxide (Wet)	11.8	%	-	22/08/2015
Carbon Monoxide	1.00	mg/m3	-	22/08/2015
Chlorine	0.76	mg/m3	200	22/08/2015
Copper	0.010	mg/m3	-	22/08/2015
Dry Gas Density	1.4	kg/m3	-	22/08/2015
Fluoride As HF - Total	11.8	mg/m3	50	22/08/2015
Hazardous Substances (Metals) - Total	0.07	mg/m3	1.00	22/08/2015
Hydrogen Chloride	0.53	mg/m3	100.0	22/08/2015
Mercury	0.0003	mg/m3	0.200	22/08/2015
Moisture	3.2	%	-	22/08/2015
Particulates - Total	2.1	mg/m3	50	22/08/2015
Stack Gas Molecular Weight	30	kg/k-mole	-	22/08/2015
Temperature	117.0	degC	-	22/08/2015
Velocity	10.3	m/sec	-	22/08/2015
Volatile Organic Compounds (VOC) - Total	0.76	mg/m3	-	22/08/2015
Volumetric Flow Rate (Dry At STP)	236	m3/sec	-	22/08/2015

Unit 4 Boiler Emission Test Results

EPA Identification no. 14 - Air emissions monitoring, Boiler 4 stack discharge to air

<u>Name</u>	<u>Reading</u>	<u>Units</u>	<u>Licence Limit</u>	<u>Date</u>
Cadmium	0.0006	mg/m3	0.20	31/10/2015
Carbon Dioxide (Wet)	10.2	%	-	31/10/2015
Carbon Monoxide	0.11	mg/m3	-	31/10/2015
Chlorine	0.86	mg/m3	200	31/10/2015
Copper	0.0004	mg/m3	-	31/10/2015
Dry Gas Density	1.3	kg/m3	-	31/10/2015
Fluoride As HF - Total	3.3	mg/m3	50	31/10/2015
Hazardous Substances (Metals) - Total	0.07	mg/m3	1.00	31/10/2015
Hydrogen Chloride	0.30	mg/m3	100.0	31/10/2015
Mercury	0.0011	mg/m3	0.200	31/10/2015
Moisture	5.4	%	-	31/10/2015
Particulates - Total	0.22	mg/m3	50	31/10/2015
Stack Gas Molecular Weight	30	kg/k-mole	-	31/10/2015
Temperature	112.5	degC	-	31/10/2015
Velocity	11.5	m/sec	-	31/10/2015
Volatile Organic Compounds (VOC) - Total	0.86	mg/m3	-	31/10/2015
Volumetric Flow Rate (Dry At STP)	258	m3/sec	-	31/10/2015

Eraring Coal Unloader Dust Gauges

EPA Identification no. 18 - Depositional dust monitoring within 1 km of the coal handling operations

	Deposited Matter		
	g/m2/month		
	Ash	Combustible	Insolubles
U1	0.70	0.80	1.50
U2	0.50	0.70	1.20
U3	1.70	2.30	4.00
U4	1.30	1.00	2.30
U5	0.70	0.50	1.20
U6	2.30	0.50	2.80

Eraring Due Diligence Dust Gauges

EPA Identification no. 18 - Depositional dust monitoring within 1 km of the coal handling operations

	Deposited Matter		
	g/m2/month		
	Ash	Combustible	Insolubles
E1	0.80	0.30	1.10
E2	0.50	0.30	0.80
E3	0.90	0.20	1.10
E4	0.50	0.10	0.60
E5	0.50	0.10	0.60
E6	2.30	2.70	5.00

Water Quality - Lake Monitoring LM10

EPA Identification no. 4 - The waters of Lake Macquarie located midway between cooling water inlet and Hungary Point

	Temp	pH	Salinity	Dissolved Oxygen		Secchi
	degC		ppt	%	mg/L	m
Depth/Air	25.72					
010cm	26.35	8.13	34.30	90.10	5.82	2.25
050cm	26.32	8.13	34.40	92.00	5.90	
100cm	25.97	8.14	34.40	88.10	5.73	
150cm	26.05	8.13	34.40	92.80	6.06	
200cm	25.88	8.14	34.40	90.20	5.88	
Bottom	25.76	8.10	34.50	78.40	5.13	

Water Quality - Lake Monitoring LM12

EPA Identification no. 6 - The waters of Lake Macquarie located at the Eraring/Vales Point mixing zone off Fishery Point

	Temp	pH	Salinity	Dissolved Oxygen	
	degC		ppt	%	mg/L
010cm	26.14	8.11	34.20	104.70	6.82
050cm	26.11	8.11	34.20	88.00	5.74
100cm	26.05	8.11	34.20	88.50	5.71
150cm	26.01	8.11	34.30	90.20	5.87
200cm	25.88	8.11	34.30	90.20	5.90
250cm	25.51	8.11	34.40	86.00	5.62
300cm	25.40	8.11	34.30	84.70	5.74
350cm	25.13	8.12	34.30	90.20	5.90
400cm	25.13	8.12	34.30	91.60	6.08
450cm	25.01	8.13	34.30	93.30	6.18
500cm	24.89	8.13	34.40	96.10	6.40
550cm	24.79	8.13	34.40	97.30	6.45
600cm	24.75	8.13	34.40	93.90	6.19
650cm	24.72	8.13	34.40	92.10	6.20
700cm	24.69	8.12	34.50	91.30	6.10
Bottom	24.62	8.10	34.70	81.90	5.37

Water Quality - Lake Monitoring LM4

EPA Identification no. 7 - The northern waters of Lake Macquarie east off Lake Macquarie Yacht Club

	Temp	pH	Salinity	Dissolved Oxygen		Secchi
	degC		ppt	%	mg/L	m
Depth/Air	21.61					
010cm	23.48	8.13	34.90	113.70	7.69	2.75
050cm	23.61	8.12	34.70	101.80	6.79	
100cm	23.58	8.12	34.70	101.00	6.83	
150cm	23.62	8.12	34.70	99.50	6.70	
200cm	23.65	8.12	34.70	102.50	7.04	
250cm	23.61	8.12	34.70	102.10	6.79	
300cm	23.67	8.13	34.70	102.30	6.93	
350cm	23.59	8.12	34.70	102.20	6.95	
400cm	23.56	8.13	34.70	104.40	7.04	
450cm	23.52	8.13	34.80	102.30	6.91	
500cm	23.45	8.13	34.80	103.00	6.97	
550cm	23.44	8.13	34.80	104.30	7.07	
600cm	23.41	8.13	34.80	104.40	7.10	
650cm	23.39	8.13	34.80	104.10	7.06	
700cm	23.35	8.14	34.80	104.20	7.06	
750cm	23.35	8.14	34.80	103.70	7.05	
800cm	23.34	8.14	34.80	102.20	6.94	
850cm	23.33	8.14	34.80	102.90	7.04	
900cm	23.33	8.14	34.80	105.50	7.16	
950cm	23.27	8.13	34.80	95.00	6.00	
Bottom	23.04	8.07	34.60	80.00	5.50	

Water Quality - Lake Monitoring LM7

EPA Identification no. 5 - The waters of Lake Macquarie located off old Wangi power station inlet point in Myuna Bay

	Temp	pH	Salinity	Dissolved Oxygen		Secchi
	degC		ppt	%	mg/L	m
Depth/Air	22.78					
010cm	26.21	8.12	34.70	99.80	6.43	2.25
050cm	27.15	8.12	34.70	107.60	6.90	
100cm	27.17	8.11	34.50	116.60	7.44	
150cm	27.15	8.11	34.70	123.60	7.90	
200cm	27.09	8.12	34.70	127.60	8.17	
250cm	26.99	8.11	34.70	133.30	8.55	
300cm	26.84	8.11	34.60	138.70	8.90	
350cm	26.77	8.11	34.60	143.10	9.19	
400cm	26.77	8.11	34.70	151.10	9.77	
450cm	26.26	8.12	34.80	162.20	10.60	
500cm	25.86	8.11	34.60	165.20	10.71	
550cm	25.16	8.08	34.40	168.60	11.00	
Bottom	24.95	8.09	34.50	86.10	5.63	

Eraring Ash Dam Effluent Quality Monitoring

EPA Identification no. 10 - Discharge point below siphon pond weir at Ash Dam

<u>Name</u>	<u>Reading</u>	<u>Units</u>	<u>Licence Limit</u>	<u>Date</u>
Cadmium	0.20	ug/L	-	21/11/2016
Copper	1.00	ug/L	-	21/11/2016
Iron	6.0	ug/L	-	21/11/2016
Lead	0.30	ug/L	-	21/11/2016
Manganese	12.1	ug/L	-	21/11/2016
Nitrite and Nitrate as N	861	ug/L	-	21/11/2016
Phosphorus Reactive as P - Total	55	ug/L	-	21/11/2016
Phosphorus as P - Total	54	ug/L	-	21/11/2016
Selenium	52	ug/L	-	21/11/2016
Suspended Solids (SS)	19,000	ug/L	-	21/11/2016
Zinc	5.0	ug/L	-	21/11/2016
pH	9.0	-	-	21/11/2016

Eraring Cooling Water Inlet Canal

EPA Identification no. 8 - Inlet canal of the cooling water intake from Lake Macquarie

<u>Name</u>	<u>Reading</u>	<u>Units</u>	<u>Licence Limit</u>	<u>Date</u>
Copper	1.00	ug/L	-	21/11/2016
Iron	6.0	ug/L	-	21/11/2016
Selenium	1.00	ug/L	-	21/11/2016
Temperature - Average	25.4	deg C	-	Nov 2016
Temperature - Minimum	17.4	deg C	-	Nov 2016
Temperature - Maximum	27.8	deg C	-	Nov 2016

Eraring Cooling Water Outlet Canal

EPA Identification no. 1 - Cooling water outlet canal to Myuna Bay

<u>Name</u>	<u>Reading</u>	<u>Units</u>	<u>Licence Limit</u>	<u>Date</u>
Copper	1.00	ug/L	5	21/11/2016
Iron	7.0	ug/L	300	21/11/2016
Selenium	1.00	ug/L	2	21/11/2016
Temperature - Average	30.5	deg C	35	Nov 2016
Temperature - Minimum	26.5	deg C	35	Nov 2016
Temperature - Maximum	34.7	deg C	35	Nov 2016
Maximum Daily Discharge from Ash Dam	0.0	ML	150	Nov 2016
Monthly Discharge from Ash Dam	0	ML	-	Nov 2016

Emergency Discharge - Toe Drain Pond

EPA Identification no. 17 - Emergency discharge to toe drain collection pond

<u>Name</u>	<u>Reading</u>	<u>Units</u>	<u>Licence Limit</u>	<u>Date</u>
Nitrite and Nitrate as N	215	ug/L	-	21/11/2016
Phosphorus as P - Total	31	ug/L	-	21/11/2016
pH	7.1	-	-	21/11/2016