



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

May 2015



Unit 1 Boiler Continuous Emission Monitoring Summary

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

- Unit out of service until the 25th.

	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 - May	0	0	0	0	0	0	0	0	0
2 - May	0	0	0	0	0	0	0	0	0
3 - May	0	0	0	0	0	0	0	0	0
4 - May	0	0	0	0	0	0	0	0	0
5 - May	0	0	0	0	0	0	0	0	0
6 - May	0	0	0	0	0	0	0	0	0
7 - May	0	0	0	0	0	0	0	0	0
8 - May	0	0	0	0	0	0	0	0	0
9 - May	0	0	0	0	0	0	0	0	0
10 - May	0	0	0	0	0	0	0	0	0
11 - May	0	0	0	0	0	0	0	0	0
12 - May	0	0	0	0	0	0	0	0	0
13 - May	0	0	0	0	0	0	0	0	0
14 - May	0	0	0	0	0	0	0	0	0
15 - May	0	0	0	0	0	0	0	0	0
16 - May	0	0	0	0	0	0	0	0	0
17 - May	0	0	0	0	0	0	0	0	0
18 - May	0	0	0	0	0	0	0	0	0
19 - May	0	0	0	0	0	0	0	0	0
20 - May	0	0	0	0	0	0	0	0	0
21 - May	0	0	0	0	0	0	0	0	0
22 - May	0	0	0	0	0	0	0	0	0
23 - May	0	0	0	0	0	0	0	0	0
24 - May	0	0	0	0	0	0	0	0	0
25 - May	135	182	111	7	11	2	195	211	183
26 - May	167	191	141	13	23	3	193	208	174
27 - May	165	186	140	15	21	11	185	202	172
28 - May	186	228	162	15	24	10	175	208	155
29 - May	154	182	119	16	22	11	183	211	161
30 - May	158	180	143	18	27	13	166	171	153
31 - May	148	175	131	18	25	13	162	172	155

Unit 2 Boiler Continuous Emission Monitoring Summary

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

	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 - May	159	196	102	6	12	5	180	198	162
2 - May	156	194	128	7	14	4	164	181	147
3 - May	154	180	119	8	13	4	161	170	146
4 - May	143	188	112	6	10	5	159	165	143
5 - May	152	183	106	7	13	4	175	198	151
6 - May	158	178	133	6	9	5	184	207	159
7 - May	155	172	136	9	12	7	196	210	174
8 - May	152	166	130	10	12	8	199	219	182
9 - May	156	202	140	10	13	7	194	207	182
10 - May	157	173	140	10	13	7	201	214	191
11 - May	165	185	147	8	12	6	185	202	176
12 - May	156	179	130	10	13	8	193	211	175
13 - May	153	174	128	9	11	7	191	209	163
14 - May	153	174	116	9	13	6	199	225	166
15 - May	152	184	115	9	12	6	196	213	178
16 - May	148	172	116	8	12	6	184	208	157
17 - May	152	170	133	9	12	6	172	191	144
18 - May	164	182	137	8	14	5	157	167	143
19 - May	153	175	113	8	16	5	164	191	150
20 - May	120	154	102	7	11	6	191	203	178
21 - May	130	155	107	6	9	5	189	199	166
22 - May	156	186	118	7	13	4	194	213	180
23 - May	176	213	146	7	10	5	167	181	153
24 - May	171	213	124	7	11	5	158	166	136
25 - May	185	239	144	8	12	5	158	174	127
26 - May	180	214	139	8	13	5	167	173	152
27 - May	176	220	131	8	13	5	164	179	154
28 - May	193	229	147	13	21	6	157	195	133
29 - May	219	278	174	12	16	10	167	188	146
30 - May	205	231	178	13	17	10	164	175	155
31 - May	163	208	129	13	19	9	154	163	137

Unit 3 Boiler Continuous Emission Monitoring Summary

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

- Unit out of service from 6th - 11th May

	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 - May	210	237	155	13	18	10	202	214	194
2 - May	187	223	163	12	14	9	198	216	185
3 - May	190	232	164	12	15	9	182	189	172
4 - May	193	212	162	11	14	10	176	188	162
5 - May	165	197	151	13	16	9	186	201	164
6 - May	0	0	0	0	0	0	0	0	0
7 - May	0	0	0	0	0	0	0	0	0
8 - May	0	0	0	0	0	0	0	0	0
9 - May	0	0	0	0	0	0	0	0	0
10 - May	0	0	0	0	0	0	0	0	0
11 - May	0	0	0	0	0	0	0	0	0
12 - May	178	206	146	12	16	9	215	231	197
13 - May	188	210	147	14	18	10	213	222	198
14 - May	172	197	120	15	21	10	216	245	180
15 - May	184	204	150	15	20	11	216	228	194
16 - May	186	210	139	16	21	12	219	244	176
17 - May	189	230	156	16	25	12	188	205	168
18 - May	198	228	150	16	23	11	182	191	162
19 - May	176	199	134	17	23	12	209	230	179
20 - May	174	201	126	16	24	11	214	230	203
21 - May	176	202	118	17	25	11	214	228	193
22 - May	174	202	133	21	29	13	223	238	196
23 - May	183	217	146	21	30	16	194	204	171
24 - May	196	216	159	24	33	17	181	193	160
25 - May	191	223	169	24	36	17	169	194	149
26 - May	183	206	155	25	34	18	189	193	181
27 - May	181	212	139	22	36	13	184	201	169
28 - May	193	236	144	14	20	10	171	196	163
29 - May	188	221	140	12	16	10	191	219	171
30 - May	176	196	152	13	16	10	177	188	160
31 - May	210	259	184	14	18	10	172	181	163

Unit 4 Boiler Continuous Emission Monitoring Summary

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

	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 - May	162	176	134	4	8	3	155	169	137
2 - May	144	166	134	3	7	3	144	160	135
3 - May	139	159	120	4	5	4	134	142	119
4 - May	127	134	117	3	8	2	134	138	124
5 - May	153	195	113	3	9	3	163	194	116
6 - May	169	227	133	4	8	3	186	218	164
7 - May	175	189	150	4	8	2	193	208	175
8 - May	178	231	148	5	9	3	193	207	176
9 - May	163	214	142	4	10	2	183	200	168
10 - May	188	226	155	4	9	3	184	191	174
11 - May	161	185	127	5	9	3	176	187	170
12 - May	169	218	141	5	10	3	178	200	157
13 - May	162	223	121	4	10	3	170	180	153
14 - May	197	239	155	5	9	3	182	201	156
15 - May	192	233	161	4	9	3	182	196	173
16 - May	194	214	159	4	10	2	168	185	150
17 - May	231	301	187	4	10	3	140	161	129
18 - May	217	283	175	5	9	3	146	158	121
19 - May	188	212	156	5	8	2	151	167	125
20 - May	163	201	125	4	10	3	159	177	143
21 - May	170	249	145	5	11	3	159	172	145
22 - May	180	218	134	5	9	3	177	219	153
23 - May	198	249	171	5	10	4	174	192	146
24 - May	215	265	191	6	12	4	153	169	133
25 - May	204	258	150	6	13	3	157	179	138
26 - May	184	212	154	4	8	2	173	182	161
27 - May	175	222	152	4	9	2	171	185	151
28 - May	229	280	178	4	9	2	163	182	150
29 - May	207	254	174	4	9	3	177	189	148
30 - May	169	185	156	5	10	2	166	188	143
31 - May	230	278	158	5	10	3	163	177	152

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	0.00010	mg/m3	0.20	24/08/2014
Carbon Dioxide (Wet)	7.6	%	-	24/08/2014
Carbon Monoxide	128	mg/m3	-	24/08/2014
Chlorine	1.9	mg/m3	300	24/08/2014
Copper	0.0010	mg/m3	-	24/08/2014
Dry Gas Density	1.4	kg/m3	-	24/08/2014
Fluoride As HF - Total	7.5	mg/m3	50	24/08/2014
Hazardous Substances (Metals) - Total	0.015	mg/m3	1.00	24/08/2014
Hydrogen Chloride	1.9	mg/m3	100.0	24/08/2014
Mercury	0.00000	mg/m3	0.200	24/08/2014
Moisture	4.9	%	-	24/08/2014
Particulates - Total	14.0	mg/m3	50	24/08/2014
Stack Gas Molecular Weight	30	kg/k-mole	-	24/08/2014
Temperature	113.0	degC	-	24/08/2014
Velocity	10.5	m/sec	-	24/08/2014
Volatile Organic Compounds (VOC) - Total	0.07	mg/m3	-	24/08/2014
Volumetric Flow Rate (Dry At STP)	239	m3/sec	-	24/08/2014

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	0.0011	mg/m3	0.20	05/08/2013
Carbon Dioxide (Wet)	10.3	%	-	05/08/2013
Carbon Monoxide	9.9	mg/m3	-	05/08/2013
Chlorine	0.30	mg/m3	200	05/08/2013
Copper	0.0011	mg/m3	-	05/08/2013
Dry Gas Density	0.94	kg/m3	-	05/08/2013
Fluoride As HF - Total	9.6	mg/m3	50	05/08/2013
Hazardous Substances (Metals) - Total	0.06	mg/m3	1.00	05/08/2013
Hydrogen Chloride	4.1	mg/m3	100.0	05/08/2013
Mercury	0.0007	mg/m3	0.200	05/08/2013
Moisture	6.7	%	-	05/08/2013
Particulates - Total	15.0	mg/m3	50	05/08/2013
Stack Gas Molecular Weight	29	kg/k-mole	-	05/08/2013
Temperature	103.0	degC	-	05/08/2013
Velocity	11.1	m/sec	-	05/08/2013
Volatile Organic Compounds (VOC) - Total	5.7	mg/m3	-	05/08/2013
Volumetric Flow Rate (Dry At STP)	270	m3/sec	-	05/08/2013

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	0.0015	mg/m3	0.20	01/11/2014
Carbon Dioxide (Wet)	12.3	%	-	01/11/2014
Carbon Monoxide	17.0	mg/m3	-	01/11/2014
Chlorine	1.00	mg/m3	200	01/11/2014
Copper	0.0001	mg/m3	-	01/11/2014
Dry Gas Density	1.4	kg/m3	-	01/11/2014
Fluoride As HF - Total	9.0	mg/m3	50	01/11/2014
Hazardous Substances (Metals) - Total	0.0040	mg/m3	1.00	01/11/2014
Hydrogen Chloride	1.3	mg/m3	100.0	01/11/2014
Mercury	0.0003	mg/m3	0.200	01/11/2014
Moisture	2.9	%	-	01/11/2014
Particulates - Total	17.0	mg/m3	50	01/11/2014
Stack Gas Molecular Weight	30	kg/k-mole	-	01/11/2014
Temperature	111.4	degC	-	01/11/2014
Velocity	14.0	m/sec	-	01/11/2014
Volatile Organic Compounds (VOC) - Total	0.24	mg/m3	-	01/11/2014
Volumetric Flow Rate (Dry At STP)	318	m3/sec	-	01/11/2014

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	0.50	0.70	1.20
U2	0.30	0.60	0.90
U3	0.20	0.40	0.60
U4	0.90	0.90	1.80
U5	0.20	0.60	0.80
U6	0.60	0.50	1.10

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	0.40	0.50	0.90
E2	0.60	0.50	1.10
E3	0.40	0.70	1.10
E4	0.50	1.00	1.50
E5	5.60	0.90	6.50
E6	0.80	0.80	1.60

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	18.01					
010cm	19.38	8.23	24.50	106.90	8.26	2.25
050cm	19.62	8.27	27.40	110.50	8.39	
100cm	19.82	8.28	27.70	112.30	8.47	
150cm	19.80	8.26	27.80	112.80	8.52	
200cm	19.73	8.26	27.80	108.40	8.20	
250cm	19.70	8.24	27.90	105.20	7.93	
Bottom	20.00	8.00	29.20	42.30	3.15	

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		Secchi
	degC		ppt	%	mg/L	m
Depth/Air	17.80					
010cm	19.09	8.15	26.40	97.30	7.48	1.75
050cm	19.43	8.15	26.80	97.50	7.46	
100cm	19.67	8.12	27.30	94.60	7.15	
150cm	19.67	8.19	27.90	96.30	7.26	
200cm	19.48	8.13	27.30	89.40	6.74	
250cm	19.49	8.15	29.10	86.50	6.43	
300cm	19.47	8.16	29.80	91.60	6.87	
350cm	19.57	8.12	31.00	85.90	6.39	
400cm	19.61	8.11	31.30	87.40	6.47	
450cm	19.76	8.05	32.50	77.90	5.70	
500cm	19.78	8.02	33.30	70.20	5.11	
550cm	19.75	8.01	33.60	66.20	4.81	
600cm	19.76	8.02	33.70	68.90	5.00	
650cm	19.75	8.03	33.80	63.90	4.63	
700cm	19.73	8.02	33.80	59.40	4.32	
750cm	19.73	8.05	33.80	58.00	4.21	
Bottom	19.72	8.06	33.80	55.50	4.03	

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	20.21					
010cm	19.06	8.36	22.90	128.60		2.25
050cm	19.01	8.38	23.00	113.90	9.01	
100cm	18.96	8.37	23.10	113.10	8.93	
150cm	18.90	8.36	23.30	112.50	8.87	
200cm	18.87	8.36	23.30	110.80	8.73	
250cm	18.82	8.35	23.90	106.20	8.35	
300cm	18.78	8.32	26.60	101.30	7.85	
350cm	18.83	8.32	28.30	107.90	8.26	
400cm	18.93	8.32	30.00	102.50	7.72	
450cm	18.98	8.31	30.40	100.20	7.54	
500cm	19.00	8.30	31.00	97.80	7.33	
550cm	19.07	8.30	31.80	93.20	6.94	
600cm	19.11	8.29	33.10	86.80	6.40	
650cm	19.12	8.25	33.20	87.40	6.45	
700cm	19.13	8.23	33.90	74.80	5.49	
750cm	19.12	8.24	33.80	72.60	5.31	
Bottom	19.13	8.23	34.00	72.20	5.30	

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	19.71					
010cm	22.38	8.19	27.40	122.20	8.84	2.75
050cm	21.92	8.23	27.60	116.10	8.44	
100cm	21.10	8.25	27.80	110.10	8.14	
150cm	20.23	8.27	28.00	102.20	7.68	
200cm	19.94	8.28	28.10	101.60	7.64	
250cm	19.72	8.25	29.60	86.10	6.40	
300cm	19.64	8.19	31.50	75.50	5.58	
350cm	19.61	8.18	32.00	74.50	5.50	
400cm	19.56	8.17	32.70	67.90	5.02	
450cm	19.60	8.16	33.10	68.90	5.05	
500cm	19.63	8.15	33.40	64.00	4.73	
550cm	19.72	8.06	33.50	54.30	3.95	
Bottom	19.77	8.05	33.70	46.40	3.37	

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	0.08	ug/L	-	04/05/2015
Copper	2.0	ug/L	-	04/05/2015
Iron	3.0	ug/L	-	04/05/2015
Lead	0.10	ug/L	-	04/05/2015
Manganese	28	ug/L	-	04/05/2015
Nitrite and Nitrate as N	287	ug/L	-	04/05/2015
Phosphorus Reactive as P - Total	252	ug/L	-	04/05/2015
Phosphorus as P - Total	315	ug/L	-	04/05/2015
Selenium	12.8	ug/L	-	04/05/2015
Suspended Solids (SS)	5.0	mg/L	-	04/05/2015
Zinc	5.0	ug/L	-	04/05/2015
pH	8.7	-	-	04/05/2015

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	2.00	ug/L	-	04/05/2015
Iron	132.0	ug/L	-	04/05/2015
Selenium	1.00	ug/L	-	04/05/2015
Temperature - Average	17.3	deg C	-	May 2015
Temperature - Minimum	15.7	deg C	-	May 2015
Temperature - Maximum	19.8	deg C	-	May 2015

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	2.00	ug/L	5	04/05/2015
Iron	147.0	ug/L	300	04/05/2015
Selenium	1.00	ug/L	2	04/05/2015
Temperature - Average	24.9	deg C	35	May 2015
Temperature - Minimum	19.8	deg C	35	May 2015
Temperature - Maximum	30.3	deg C	35	May 2015
Maximum Daily Discharge from Ash Dam	63.7	ML	150000	May 2015
Monthly Discharge from Ash Dam	461	ML	-	May 2015

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	34	ug/L	-	04/05/2015
Phosphorus as P - Total	176	ug/L	-	04/05/2015
pH	6.5	-	-	04/05/2015