



Eraring Power Station - EPA Licence 1429

Rocky Point Rd, Morriset NSW 2264

Coal Unloader - EPA Licence 4297

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

Environmental Monitoring Data

October 2014



Unit 1 Boiler Continuous Emission Monitoring Summary

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

- {Blank Note}

	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 - Oct	182	217	165	11	19	6	178	189	163
2 - Oct	186	211	172	13	21	8	170	181	161
3 - Oct	194	230	170	13	19	9	167	187	158
4 - Oct	166	183	156	9	16	6	162	171	149
5 - Oct	169	184	153	12	23	4	159	165	154
6 - Oct	164	183	154	9	14	5	172	180	151
7 - Oct	166	186	148	12	18	5	169	175	163
8 - Oct	156	180	145	18	25	9	171	181	156
9 - Oct	151	169	139	16	26	10	175	181	159
10 - Oct	139	192	114	13	26	9	171	182	150
11 - Oct	138	154	112	12	23	7	174	181	164
12 - Oct	156	167	142	10	22	5	162	168	157
13 - Oct	168	195	146	15	24	8	173	181	164
14 - Oct	179	200	158	21	28	14	189	204	164
15 - Oct	180	215	159	24	33	19	199	211	185
16 - Oct	183	211	154	22	32	15	194	202	188
17 - Oct	174	195	147	22	29	16	187	194	181
18 - Oct	164	186	151	12	24	8	191	201	175
19 - Oct	164	192	147	12	22	6	193	202	169
20 - Oct	173	198	142	17	29	9	195	199	185
21 - Oct	158	190	146	14	24	10	187	193	179
22 - Oct	149	174	132	11	20	6	193	201	178
23 - Oct	134	146	123	11	23	6	189	197	182
24 - Oct	149	165	132	9	16	5	185	190	167
25 - Oct	166	188	150	9	20	4	189	196	169
26 - Oct	191	211	160	6	9	4	186	194	177
27 - Oct	194	229	164	7	10	5	184	189	169
28 - Oct	170	180	158	8	13	5	192	199	177
29 - Oct	173	200	153	9	17	5	198	205	190
30 - Oct	173	191	147	11	22	7	198	205	182
31 - Oct	159	177	138	10	21	6	186	197	175

Unit 2 Boiler Continuous Emission Monitoring Summary

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

- Unit out of service from 2300 10/10/14. Unit taken out of service for routine maintenance.

	NOX			Particulates			SOX		
	ppm (7% O ₂)			mg/m ³			ppm (7% O ₂)		
	Daily Ave	Max Hourly	Min Hourly	Daily Ave	Max Hourly	Min Hourly	Daily Ave	Max Hourly	Min Hourly
1 - Oct	154	182	125	13	18	10	196	200	189
2 - Oct	167	190	153	14	17	13	193	203	187
3 - Oct	161	172	154	14	17	12	189	202	180
4 - Oct	174	188	163	12	15	10	184	193	172
5 - Oct	165	176	142	11	14	9	183	187	175
6 - Oct	138	152	125	11	13	9	192	202	177
7 - Oct	162	192	122	13	17	11	193	197	188
8 - Oct	152	185	125	14	18	11	197	205	184
9 - Oct	162	179	151	14	16	11	199	207	183
10 - Oct	145	179	119	13	18	10	203	213	167
11 - Oct	0	0	0	0	0	0	0	0	0
12 - Oct	0	0	0	0	0	0	0	0	0
13 - Oct	0	0	0	0	0	0	0	0	0
14 - Oct	0	0	0	0	0	0	0	0	0
15 - Oct	0	0	0	0	0	0	0	0	0
16 - Oct	0	0	0	0	0	0	0	0	0
17 - Oct	0	0	0	0	0	0	0	0	0
18 - Oct	0	0	0	0	0	0	0	0	0
19 - Oct	0	0	0	0	0	0	0	0	0
20 - Oct	0	0	0	0	0	0	0	0	0
21 - Oct	0	0	0	0	0	0	0	0	0
22 - Oct	0	0	0	0	0	0	0	0	0
23 - Oct	0	0	0	0	0	0	0	0	0
24 - Oct	0	0	0	0	0	0	0	0	0
25 - Oct	0	0	0	0	0	0	0	0	0
26 - Oct	0	0	0	0	0	0	0	0	0
27 - Oct	0	0	0	0	0	0	0	0	0
28 - Oct	0	0	0	0	0	0	0	0	0
29 - Oct	0	0	0	0	0	0	0	0	0
30 - Oct	0	0	0	0	0	0	0	0	0
31 - Oct	0	0	0	0	0	0	0	0	0

Unit 3 Boiler Continuous Emission Monitoring Summary

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

	NOX			Particulates			SOX		
	ppm (7% O ₂)			mg/m ³			ppm (7% O ₂)		
	Daily Ave	Max Hourly	Min Hourly	Daily Ave	Max Hourly	Min Hourly	Daily Ave	Max Hourly	Min Hourly
1 - Oct	176	200	161	4	6	3	191	199	170
2 - Oct	168	183	146	4	7	3	181	191	171
3 - Oct	173	191	158	3	7	3	188	197	181
4 - Oct	191	216	174	3	6	2	178	182	168
5 - Oct	198	210	186	3	6	2	177	185	172
6 - Oct	186	202	171	3	6	2	185	192	174
7 - Oct	174	206	150	3	5	2	190	197	186
8 - Oct	160	179	150	3	6	2	191	199	174
9 - Oct	160	171	151	3	6	3	194	203	169
10 - Oct	160	176	146	4	7	3	197	205	185
11 - Oct	140	152	134	3	5	3	197	205	190
12 - Oct	160	177	140	3	5	2	185	194	170
13 - Oct	175	209	144	4	7	2	197	202	189
14 - Oct	171	187	140	5	9	2	197	209	183
15 - Oct	200	224	154	6	9	4	194	208	151
16 - Oct	215	251	153	5	10	3	189	202	168
17 - Oct	212	236	153	4	8	3	184	196	154
18 - Oct	196	223	176	3	6	2	188	196	171
19 - Oct	188	211	166	4	6	2	196	207	177
20 - Oct	191	209	159	3	6	2	208	214	199
21 - Oct	184	221	164	4	7	2	204	213	187
22 - Oct	174	195	160	3	6	2	201	214	185
23 - Oct	175	191	146	3	7	2	203	211	181
24 - Oct	182	201	153	3	7	2	199	207	179
25 - Oct	147	170	127	3	5	3	199	207	178
26 - Oct	168	176	154	3	5	3	194	208	185
27 - Oct	180	236	156	5	7	4	199	209	188
28 - Oct	167	197	149	4	7	3	199	210	186
29 - Oct	173	199	153	4	7	2	210	215	198
30 - Oct	188	215	148	4	7	3	211	216	191
31 - Oct	174	193	154	3	6	2	206	214	191

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% O ₂)			mg/m ³			ppm (7% O ₂)		
	Daily Ave	Max Hourly	Min Hourly	Daily Ave	Max Hourly	Min Hourly	Daily Ave	Max Hourly	Min Hourly
1 - Oct	156	170	134	6	8	5	157	166	147
2 - Oct	162	187	143	7	10	5	143	150	131
3 - Oct	163	179	148	6	9	5	137	146	120
4 - Oct	179	209	155	6	10	5	137	145	123
5 - Oct	187	215	168	6	8	4	134	141	118
6 - Oct	188	208	170	6	9	5	143	153	129
7 - Oct	188	209	169	6	13	4	145	149	140
8 - Oct	165	181	148	6	10	5	143	151	124
9 - Oct	183	192	167	7	9	5	146	153	136
10 - Oct	182	214	159	7	10	5	149	159	132
11 - Oct	169	187	160	6	9	4	150	158	138
12 - Oct	168	194	140	6	9	4	138	145	129
13 - Oct	187	207	164	6	8	5	148	157	137
14 - Oct	186	208	165	7	10	6	173	194	135
15 - Oct	183	220	132	7	10	6	189	203	161
16 - Oct	213	247	193	7	10	6	185	196	174
17 - Oct	195	229	155	7	9	6	173	187	156
18 - Oct	142	160	123	7	9	5	172	184	149
19 - Oct	151	170	123	6	10	4	179	190	157
20 - Oct	166	188	139	7	10	5	182	195	160
21 - Oct	162	194	140	7	9	6	179	194	160
22 - Oct	155	192	134	7	10	5	188	200	167
23 - Oct	183	200	162	6	9	4	186	196	165
24 - Oct	203	237	170	5	8	4	179	190	165
25 - Oct	173	208	159	7	17	5	129	184	101
26 - Oct	213	250	153	5	9	3	177	189	168
27 - Oct	181	238	143	5	9	3	176	187	144
28 - Oct	211	275	186	5	9	3	185	192	178
29 - Oct	201	219	165	6	9	5	188	195	181
30 - Oct	176	200	157	5	10	4	189	197	176
31 - Oct	190	209	165	5	9	4	185	203	171

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	0.0012	mg/m3	0.20	23/02/2014
Carbon Dioxide (Wet)	10.2	%	-	23/02/2014
Carbon Monoxide	2.9	mg/m3	-	23/02/2014
Chlorine	0.020	mg/m3	300	23/02/2014
Copper	0.0013	mg/m3	-	23/02/2014
Dry Gas Density	0.93	kg/m3	-	23/02/2014
Fluoride As HF - Total	6.4	mg/m3	50	23/02/2014
Hazardous Substances (Metals) - Total	0.07	mg/m3	1.00	23/02/2014
Hydrogen Chloride	3.1	mg/m3	100.0	23/02/2014
Mercury	0.0011	mg/m3	0.200	23/02/2014
Moisture	7.1	%	-	23/02/2014
Particulates - Total	7.3	mg/m3	50	23/02/2014
Stack Gas Molecular Weight	29	kg/k-mole	-	23/02/2014
Temperature	109.0	degC	-	23/02/2014
Velocity	11.8	m/sec	-	23/02/2014
Volatile Organic Compounds (VOC) - Total	4.7	mg/m3	-	23/02/2014
Volumetric Flow Rate (Dry At STP)	283	m3/sec	-	23/02/2014

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	0.0009	mg/m3	0.20	24/08/2014
Carbon Dioxide (Wet)	7.7	%	-	24/08/2014
Carbon Monoxide	0.90	mg/m3	-	06/05/2013
Chlorine	1.8	mg/m3	300	24/08/2014
Copper	0.0009	mg/m3	-	24/08/2014
Dry Gas Density	1.4	kg/m3	-	24/08/2014
Fluoride As HF - Total	7.0	mg/m3	50	24/08/2014
Hazardous Substances (Metals) - Total	0.014	mg/m3	1.00	24/08/2014
Hydrogen Chloride	1.8	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	13.0	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	0.08	mg/m3	-	24/08/2014
Volumetric Flow Rate (Dry At STP)	255	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	0.0010	mg/m3	0.20	13/10/2013
Carbon Dioxide (Wet)	9.4	%	-	13/10/2013
Carbon Monoxide	9.3	mg/m3	-	13/10/2013
Chlorine	0.040	mg/m3	200	13/10/2013
Copper	0.0010	mg/m3	-	13/10/2013
Dry Gas Density	0.94	kg/m3	-	13/10/2013
Fluoride As HF - Total	7.5	mg/m3	50	13/10/2013
Hazardous Substances (Metals) - Total	0.027	mg/m3	1.00	13/10/2013
Hydrogen Chloride	2.8	mg/m3	100.0	13/10/2013
Mercury	0.0022	mg/m3	0.200	13/10/2013
Moisture	6.5	%	-	13/10/2013
Particulates - Total	7.9	mg/m3	50	13/10/2013
Stack Gas Molecular Weight	29	kg/k-mole	-	13/10/2013
Temperature	104.0	degC	-	13/10/2013
Velocity	15.4	m/sec	-	13/10/2013
Volatile Organic Compounds (VOC) - Total	4.7	mg/m3	-	13/10/2013
Volumetric Flow Rate (Dry At STP)	375	m3/sec	-	13/10/2013

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	0.90	1.40
U2	1.00	0.40	1.40
U3	0.40	0.30	0.70
U4	2.30	0.30	2.60
U5	0.60	0.30	0.90
U6	0.60	0.20	0.80

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	1.00	0.10	1.10
E2	0.60	0.20	0.80
E3	0.60	0.20	0.80
E4	0.40	0.10	0.50
E5	0.40	0.20	0.60
E6	0.70	2.60	3.30

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
010cm	21.40	7.98	38.90	101.00	9.40	1.25
050cm	21.50	7.97	38.90	103.00	8.54	
100cm	21.50	7.96	38.90	92.00	8.43	
150cm	21.50	7.96	39.00	92.00	8.40	
200cm	21.50	7.96	39.00	92.00	8.40	
250cm	21.50	7.97	39.00	92.00	8.43	
Bottom	21.50	7.37	38.90	92.00	7.64	

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
010cm	20.40	8.02	38.50	110.00	9.78	2.50
050cm	20.50	7.93	38.40	99.00	9.06	
100cm	20.50	7.92	38.50	99.00	9.11	
150cm	20.50	7.86	38.50	99.00	9.42	
200cm	20.50	7.85	38.50	99.00	9.43	
250cm	20.50	7.92	38.60	99.00	8.98	
300cm	20.50	7.90	38.50	99.00	9.11	
350cm	20.50	7.92	38.60	99.00	9.03	
400cm	20.50	7.92	38.50	99.00	9.00	
450cm	20.50	7.93	38.60	99.00	8.97	
500cm	20.50	7.92	38.60	99.00	8.97	
550cm	20.50	7.92	38.60	99.00	8.98	
600cm	20.50	7.92	38.60	99.00	8.94	
650cm	20.50	7.91	38.70	99.00	8.89	
700cm	19.70	7.91	39.20	99.00	8.45	
Bottom	19.70	7.46	38.30	66.00	6.35	

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
010cm	19.70	7.80	39.10	99.00	9.06	3.16
050cm	19.70	8.17	38.60	99.00	9.50	
100cm	19.70	8.09	38.90	99.00	9.42	
150cm	19.70	8.12	38.90	99.00	9.11	
200cm	19.70	8.13	39.10	99.00	9.13	
250cm	19.70	8.13	39.10	99.00	9.13	
300cm	19.70	8.14	39.10	99.00	9.08	
350cm	19.70	8.13	39.10	99.00	9.08	
400cm	19.70	8.14	39.10	99.00	9.11	
450cm	19.70	8.13	39.10	99.00	9.10	
500cm	19.70	8.12	39.20	99.00	9.13	
550cm	19.70	8.12	39.20	99.00	9.09	
600cm	19.70	8.12	39.20	99.00	9.13	
650cm	19.60	8.13	39.30	99.00	9.23	
700cm	19.40	8.12	39.50	97.00	9.27	
750cm	19.50	8.09	39.50	97.00	9.38	
800cm	18.90	8.09	39.70	97.00	9.41	
850cm	18.80	8.10	39.80	97.00	9.36	
900cm	18.70	8.08	39.80	97.00	9.39	
950cm	18.90	7.78	40.30	86.00	7.87	
Bottom	18.90	7.78	40.30	86.00	7.87	

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
010cm	24.90	7.45	39.20	121.00	9.61	1.50
050cm	25.00	7.65	39.00	109.00	9.41	
100cm	24.90	7.68	39.20	109.00	9.40	
150cm	24.60	7.70	39.20	109.00	9.41	
200cm	22.80	7.79	39.10	105.00	9.31	
250cm	22.10	7.81	39.00	103.00	9.26	
300cm	21.90	7.82	39.00	103.00	9.02	
350cm	21.90	7.85	39.00	103.00	8.92	
400cm	21.80	7.85	39.00	103.00	8.94	
450cm	21.80	7.86	39.00	103.00	8.95	
500cm	21.60	7.88	38.90	103.00	8.73	
Bottom	21.00	7.88	38.90	101.00	8.51	

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	-	07/10/2014
Copper	0.50	ug/L	-	07/10/2014
Iron	5.0	ug/L	-	07/10/2014
Lead	0.20	ug/L	-	07/10/2014
Manganese	13.6	ug/L	-	07/10/2014
Nitrite and Nitrate as N	319	ug/L	-	07/10/2014
Phosphorus Reactive as P - Total	82	ug/L	-	07/10/2014
Phosphorus as P - Total	155	ug/L	-	07/10/2014
Selenium	34	ug/L	-	07/10/2014
Suspended Solids (SS)	5.0	mg/L	-	07/10/2014
Zinc	9.0	ug/L	-	07/10/2014
pH	9.0		-	07/10/2014

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	0.50	ug/L	-	07/10/2014
Iron	15.0	ug/L	-	07/10/2014
Selenium	1.00	ug/L	-	07/10/2014
Temperature - Average	22.1	deg C	-	Oct 2014
Temperature - Minimum	18.9	deg C	-	Oct 2014
Temperature - Maximum	25.6	deg C	-	Oct 2014

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	0.50	ug/L	5	07/10/2014
Iron	5.0	ug/L	300	07/10/2014
Selenium	1.00	ug/L	2	07/10/2014
Temperature - Average	28.6	deg C	35	Oct 2014
Temperature - Minimum	23.9	deg C	35	Oct 2014
Temperature - Maximum	34.3	deg C	35	Oct 2014
Maximum Daily Discharge from Ash Dam	18.4	ML	150000	Oct 2014
Monthly Discharge from Ash Dam	351	ML	-	Oct 2014

- The 98.5% limit specified for temperature in the outlet canal means during normal electricity supply conditions, cooling water may be discharged over 35 degC but up to a max temperature of 37.5 degC for up to 131hrs over the reporting period.

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>
Cadmium	0.08	ug/L	-	07/10/2014
Copper	1.00	ug/L	-	07/10/2014
Iron	1,270	ug/L	-	07/10/2014
Lead	0.10	ug/L	-	07/10/2014
Manganese	966	ug/L	-	07/10/2014
Nitrite and Nitrate as N	108	ug/L	-	07/10/2014
Phosphorus as P - Total	185	ug/L	-	07/10/2014
Selenium	0.60	ug/L	-	07/10/2014
Zinc	9.0	ug/L	-	07/10/2014
pH	7.0		-	07/10/2014