



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

July 2015



Unit 1 Boiler Continuous Emission Monitoring Summary

EPA Identification no. 11 - Air emissions monitoring, Boiler 1 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 - Jul	202	243	182	11	16	9	200	224	177
2 - Jul	206	234	189	14	20	10	229	248	214
3 - Jul	219	252	181	14	24	9	214	232	187
4 - Jul	192	219	173	14	22	9	196	221	186
5 - Jul	208	235	153	13	19	8	197	226	176
6 - Jul	178	215	145	13	27	9	214	246	201
7 - Jul	174	210	138	14	20	10	204	215	194
8 - Jul	160	183	125	14	23	10	186	194	178
9 - Jul	171	219	129	14	25	9	186	211	171
10 - Jul	161	203	125	13	22	7	190	226	163
11 - Jul	164	184	145	12	19	9	183	191	170
12 - Jul	190	227	146	13	19	9	178	193	168
13 - Jul	217	260	171	13	20	10	186	213	172
14 - Jul	179	203	151	12	27	9	209	232	185
15 - Jul	165	181	142	13	22	9	197	225	185
16 - Jul	163	184	128	13	25	9	196	206	182
17 - Jul	172	202	128	14	23	10	192	206	173
18 - Jul	165	192	134	13	21	10	185	200	172
19 - Jul	169	215	144	12	16	9	170	179	162
20 - Jul	177	233	120	12	18	9	172	187	160
21 - Jul	142	195	126	12	25	7	181	188	170
22 - Jul	147	182	119	12	24	8	180	193	168
23 - Jul	167	207	138	11	17	9	174	184	153
24 - Jul	165	189	137	12	19	8	171	184	160
25 - Jul	157	178	119	11	16	9	183	189	175
26 - Jul	198	255	148	13	19	9	192	201	182
27 - Jul	190	280	147	14	19	11	181	201	166
28 - Jul	178	203	147	13	20	10	181	204	170
29 - Jul	172	213	144	14	21	10	183	199	174
30 - Jul	147	185	112	13	26	8	192	206	181
31 - Jul	143	171	123	12	18	8	191	202	176

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 - Jul	128	158	101	11	14	9	172	188	146
2 - Jul	123	150	107	12	17	9	212	227	181
3 - Jul	138	155	101	11	15	9	196	213	181
4 - Jul	131	168	101	12	18	8	172	182	159
5 - Jul	116	146	102	13	18	8	167	212	142
6 - Jul	153	198	101	12	18	8	184	227	160
7 - Jul	173	223	119	11	17	9	193	211	177
8 - Jul	189	226	136	11	14	9	171	184	157
9 - Jul	175	218	139	12	18	9	171	187	161
10 - Jul	157	204	131	13	20	9	188	210	173
11 - Jul	150	165	142	12	15	9	162	182	135
12 - Jul	177	224	150	11	15	10	169	187	157
13 - Jul	211	234	165	11	15	8	172	186	157
14 - Jul	163	208	144	10	14	8	183	208	162
15 - Jul	169	199	134	11	13	10	181	195	161
16 - Jul	177	211	136	11	16	8	185	207	170
17 - Jul	174	203	136	11	16	10	183	193	165
18 - Jul	156	205	118	11	14	9	167	170	164
19 - Jul	140	161	118	11	14	10	161	167	153
20 - Jul	158	189	121	12	15	10	168	174	164
21 - Jul	134	161	108	13	21	9	170	180	162
22 - Jul	135	161	107	12	18	9	171	187	156
23 - Jul	130	155	112	12	16	10	172	181	154
24 - Jul	124	155	101	13	18	10	166	181	155
25 - Jul	118	148	100	11	15	9	176	183	170
26 - Jul	123	158	105	12	14	9	177	187	163
27 - Jul	142	186	103	12	17	10	172	181	166
28 - Jul	123	153	106	12	16	9	172	186	149
29 - Jul	134	159	110	12	17	10	173	182	160
30 - Jul	106	162	85	13	21	9	177	189	161
31 - Jul	109	135	78	12	16	9	179	185	171

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% 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 - Jul	156	181	118	4	7	2	187	212	162
2 - Jul	156	177	141	5	9	3	216	238	196
3 - Jul	169	190	136	5	9	3	195	220	179
4 - Jul	184	249	144	6	11	3	193	207	183
5 - Jul	191	279	159	5	7	2	175	203	163
6 - Jul	208	273	150	5	9	3	207	217	161
7 - Jul	188	222	142	5	11	2	202	220	182
8 - Jul	172	184	131	5	8	3	189	211	167
9 - Jul	171	201	133	6	10	3	186	193	178
10 - Jul	163	187	143	5	9	2	190	210	175
11 - Jul	178	214	149	5	6	3	179	197	168
12 - Jul	205	252	150	5	7	3	178	192	168
13 - Jul	230	293	148	4	6	3	179	192	171
14 - Jul	216	253	154	6	9	3	191	201	178
15 - Jul	205	237	146	5	7	4	199	216	188
16 - Jul	193	224	129	6	8	4	195	207	177
17 - Jul	202	243	127	5	7	4	202	218	183
18 - Jul	174	240	141	5	7	4	182	190	170
19 - Jul	188	226	144	4	6	2	170	180	164
20 - Jul	219	272	150	5	6	3	171	178	164
21 - Jul	169	188	156	5	8	3	180	190	166
22 - Jul	164	184	146	11	24	3	181	189	163
23 - Jul	157	188	134	18	25	12	182	189	162
24 - Jul	151	177	129	15	19	13	173	182	164
25 - Jul	156	178	116	15	20	14	187	197	176
26 - Jul	194	221	156	16	20	8	191	204	181
27 - Jul	191	238	130	18	22	15	181	185	172
28 - Jul	202	265	149	17	21	11	182	195	172
29 - Jul	157	190	122	17	23	12	194	200	183
30 - Jul	156	186	133	13	25	9	193	214	148
31 - Jul	172	224	119	9	12	8	175	194	139

Unit 4 Boiler Continuous Emission Monitoring Summary

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

- - Out of service from 4 - 5 due to a salt leak

	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 - Jul	177	205	152	8	14	6	169	182	154
2 - Jul	172	198	150	7	16	3	205	217	183
3 - Jul	169	191	148	5	9	3	193	210	181
4 - Jul	0	0	0	0	0	0	0	0	0
5 - Jul	0	0	0	0	0	0	0	0	0
6 - Jul	187	220	154	5	10	3	177	192	167
7 - Jul	168	190	120	4	9	3	191	210	161
8 - Jul	176	203	151	5	9	3	171	190	159
9 - Jul	168	192	149	5	9	2	173	188	156
10 - Jul	153	190	120	4	8	2	189	212	158
11 - Jul	184	210	168	4	7	2	171	182	162
12 - Jul	207	270	173	4	8	3	161	175	149
13 - Jul	255	304	190	5	8	3	169	187	157
14 - Jul	208	235	179	5	9	3	187	201	171
15 - Jul	190	214	177	5	8	2	180	192	171
16 - Jul	191	216	171	5	9	3	183	202	158
17 - Jul	185	221	158	5	9	3	174	190	158
18 - Jul	187	212	169	4	9	3	164	176	135
19 - Jul	194	230	168	4	8	2	154	166	142
20 - Jul	209	259	176	4	9	3	165	172	152
21 - Jul	179	205	167	4	10	2	165	177	152
22 - Jul	187	220	167	5	9	3	163	176	147
23 - Jul	179	201	153	4	8	3	170	181	152
24 - Jul	184	197	169	4	7	3	159	172	139
25 - Jul	186	248	154	3	8	2	165	178	153
26 - Jul	186	207	150	3	9	2	163	182	144
27 - Jul	195	238	161	5	10	2	161	174	143
28 - Jul	183	229	151	5	12	3	166	181	136
29 - Jul	173	201	150	5	9	3	175	187	157
30 - Jul	181	207	154	4	9	2	169	188	151
31 - Jul	198	250	167	3	8	2	158	183	134

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 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

- U2 - Funnel taken - Jar smashed - No sample

	Deposited Matter		
	g/m2/month		
	Ash	Combustible	Insolubles
U1	0.30	0.40	0.70
U2	0.00	0.00	0.00
U3	0.40	0.40	0.80
U4	0.30	0.10	0.40
U5	0.10	0.30	0.40
U6	0.50	0.20	0.70

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	0.60	0.40	1.00
E2	0.70	0.30	1.00
E3	0.20	0.30	0.50
E4	0.50	0.60	1.10
E5	15.40	1.90	17.30
E6	0.30	0.20	0.50

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	15.73					
010cm	15.74	8.65	33.30	104.10	8.18	3.00
050cm	15.86	8.67	33.20	111.80	8.77	
100cm	15.90	8.67	33.20	120.70	9.46	
150cm	15.90	8.69	33.20	125.00	9.79	
200cm	15.92	8.70	33.20	129.70	10.16	
250cm	16.24	8.65	33.50	132.30	10.28	
Bottom	16.51	8.64	33.80	86.60	6.67	

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	16.08					
010cm	16.11	8.69	31.70	101.50	8.05	2.25
050cm	16.20	8.67	32.00	102.00	8.00	
100cm	16.21	8.71	31.90	105.70	8.31	
150cm	16.21	8.73	32.00	106.40	8.32	
200cm	16.22	8.74	32.00	105.00	8.25	
250cm	16.21	8.71	32.00	106.30	8.30	
300cm	16.55	8.64	33.00	94.90	7.42	
350cm	16.56	8.66	33.30	92.00	7.10	
400cm	16.64	8.65	33.70	86.10	6.63	
450cm	16.68	8.65	34.30	84.20	6.43	
500cm	16.80	8.62	34.50	75.60	5.71	
550cm	16.92	8.60	34.60	73.00	5.53	
600cm	17.01	8.55	34.80	65.80	4.91	
650cm	17.04	8.55	34.90	63.30	4.29	
700cm	17.02	8.53	35.00	60.60	4.55	
750cm	17.07	8.47	34.80	55.20	4.21	
Bottom	17.07	8.39	34.70	54.60	4.13	

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	8.29					
010cm	14.71	8.50	33.40	96.50	7.79	3.25
050cm	14.84	8.54	33.40	101.90	8.14	
100cm	14.89	8.59	33.30	104.90	8.38	
150cm	14.95	8.59	33.30	106.50	8.50	
200cm	14.93	8.63	33.40	107.10	8.53	
250cm	14.95	8.61	33.40	107.90	8.61	
300cm	14.98	8.63	33.40	107.20	8.53	
350cm	15.02	8.61	33.40	106.60	8.63	
400cm	15.04	8.60	33.90	101.40	7.87	
450cm	16.06	8.55	34.40	102.40	7.95	
500cm	16.18	8.58	34.50	101.10	7.77	
550cm	16.27	8.59	34.60	101.20	7.81	
600cm	16.35	8.57	34.70	99.70	7.67	
650cm	16.34	8.56	34.80	99.80	7.65	
700cm	16.39	8.58	34.90	98.10	7.55	
750cm	16.58	8.60	35.20	95.10	7.25	
800cm	16.75	8.62	35.50	95.50	7.24	
850cm	16.79	8.63	35.50	95.90	7.25	
900cm	16.88	8.66	35.80	100.50	7.61	
Bottom	16.87	8.65	35.80	81.40	6.17	

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	13.08					
010cm	17.70	8.54	32.70	110.20	8.41	3.25
050cm	17.82	8.56	32.70	110.10	8.30	
100cm	17.86	8.59	32.70	112.60	8.56	
150cm	17.82	8.57	32.90	108.70	8.23	
200cm	17.72	8.56	33.00	106.90	8.08	
250cm	17.64	8.54	33.10	108.30	8.15	
300cm	17.56	8.56	33.10	108.10	8.20	
350cm	17.44	8.59	33.20	102.10	7.76	
400cm	17.01	8.59	33.70	93.30	7.01	
450cm	17.01	8.52	34.30	63.60	4.87	
500cm	17.07	8.46	34.40	63.80	4.68	
550cm	17.11	8.39	34.60	46.30	3.51	
Bottom	17.13	8.37	34.70	41.10	3.08	

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>
Copper	1.9	ug/L	-	06/07/2015
Iron	12.0	ug/L	-	06/07/2015
Lead	0.20	ug/L	-	06/07/2015
Manganese	30	ug/L	-	06/07/2015
Nitrite and Nitrate as N	809	ug/L	-	06/07/2015
Phosphorus Reactive as P - Total	203	ug/L	-	06/07/2015
Phosphorus as P - Total	204	ug/L	-	06/07/2015
Selenium	16.7	ug/L	-	06/07/2015
Suspended Solids (SS)	5.0	mg/L	-	06/07/2015
Zinc	5.0	ug/L	-	06/07/2015
pH	9.0	-	-	06/07/2015

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	0.50	ug/L	-	06/07/2015
Iron	10.0	ug/L	-	06/07/2015
Selenium	1.00	ug/L	-	06/07/2015
Temperature - Average	14.2	deg C	-	Jul 2015
Temperature - Minimum	12.2	deg C	-	Jul 2015
Temperature - Maximum	16.4	deg C	-	Jul 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	0.80	ug/L	5	06/07/2015
Iron	42.0	ug/L	300	06/07/2015
Selenium	1.00	ug/L	2	06/07/2015
Temperature - Average	22.2	deg C	35	Jul 2015
Temperature - Minimum	18.0	deg C	35	Jul 2015
Temperature - Maximum	27.3	deg C	35	Jul 2015
Maximum Daily Discharge from Ash Dam	14.6	ML	150000	Jul 2015
Monthly Discharge from Ash Dam	289	ML	-	Jul 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>
Cadmium	0.050	ug/L	-	06/07/2015
Copper	0.50	ug/L	-	06/07/2015
Iron	1,950	ug/L	-	06/07/2015
Lead	0.10	ug/L	-	06/07/2015
Manganese	976	ug/L	-	06/07/2015
Nitrite and Nitrate as N	112	ug/L	-	06/07/2015
Phosphorus as P - Total	123	ug/L	-	06/07/2015
Selenium	0.20	ug/L	-	06/07/2015
Zinc	5.0	ug/L	-	06/07/2015
pH	7.0		-	06/07/2015