



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 2014



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	196	220	162	16	21	10	193	209	174
2 - Jul	201	218	168	17	25	10	185	210	172
3 - Jul	209	233	184	17	24	11	196	225	170
4 - Jul	205	233	168	15	24	9	191	207	167
5 - Jul	207	239	169	16	27	10	193	218	163
6 - Jul	208	231	176	15	21	12	191	220	176
7 - Jul	195	234	145	15	22	10	191	202	181
8 - Jul	188	223	129	14	23	7	239	264	209
9 - Jul	176	200	138	14	26	8	222	273	191
10 - Jul	195	232	155	14	19	12	192	216	172
11 - Jul	224	283	160	14	20	7	194	233	169
12 - Jul	178	193	164	13	19	6	181	194	170
13 - Jul	176	201	150	17	24	8	200	231	169
14 - Jul	197	248	151	17	24	13	185	209	160
15 - Jul	209	235	171	15	20	10	191	202	177
16 - Jul	201	260	152	14	19	12	184	209	165
17 - Jul	180	227	147	14	20	10	221	245	183
18 - Jul	201	239	161	16	25	12	192	231	171
19 - Jul	171	199	143	15	20	9	165	185	149
20 - Jul	210	261	157	15	20	10	153	158	145
21 - Jul	217	264	151	16	21	7	162	175	147
22 - Jul	195	231	136	16	23	12	203	219	168
23 - Jul	200	235	160	17	24	12	177	205	164
24 - Jul	205	242	149	17	26	11	196	235	162
25 - Jul	197	253	163	16	24	9	194	220	168
26 - Jul	202	271	161	13	17	8	176	208	152
27 - Jul	182	220	153	14	22	5	154	158	143
28 - Jul	203	272	152	14	24	7	162	185	151
29 - Jul	166	183	147	9	20	5	183	211	169
30 - Jul	162	174	137	8	13	5	183	198	168
31 - Jul	164	186	151	9	14	4	223	268	193

Unit 2 Boiler Continuous Emission Monitoring Summary

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

- No data available from the 12th - 15th due to instrument fault.

	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	225	267	175	19	23	17	192	220	182
2 - Jul	185	216	151	19	22	15	228	247	214
3 - Jul	192	210	156	19	23	17	212	232	188
4 - Jul	156	180	139	18	22	15	221	233	210
5 - Jul	154	172	122	18	21	16	212	233	188
6 - Jul	171	188	144	18	21	14	215	248	187
7 - Jul	154	175	126	18	22	15	232	267	197
8 - Jul	164	193	135	17	23	14	261	284	237
9 - Jul	205	250	138	18	21	16	203	230	183
10 - Jul	196	225	148	18	22	14	217	244	188
11 - Jul	191	234	147	18	22	14	213	239	203
12 - Jul	0	0	0	0	0	0	0	0	0
13 - Jul	0	0	0	0	0	0	0	0	0
14 - Jul	0	0	0	0	0	0	0	0	0
15 - Jul	0	0	0	0	0	0	0	0	0
16 - Jul	159	230	102	16	21	13	206	234	185
17 - Jul	167	207	133	17	21	14	235	287	214
18 - Jul	175	211	125	18	22	15	223	285	194
19 - Jul	177	211	126	18	22	15	202	246	166
20 - Jul	198	241	148	18	20	14	171	183	158
21 - Jul	203	240	152	19	22	15	178	194	168
22 - Jul	180	197	161	19	22	16	213	226	190
23 - Jul	170	196	123	19	22	15	241	286	206
24 - Jul	180	196	158	19	23	17	223	258	192
25 - Jul	175	230	127	18	22	15	193	200	182
26 - Jul	171	200	138	17	21	14	185	194	175
27 - Jul	153	177	133	16	21	13	173	176	165
28 - Jul	151	195	131	17	23	14	188	197	174
29 - Jul	172	195	161	16	20	14	216	252	189
30 - Jul	155	177	121	15	19	13	210	233	192
31 - Jul	124	143	105	16	19	13	247	267	223

Unit 3 Boiler Continuous Emission Monitoring Summary

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

- No data available from the 4th - 7th due to instrument fault.

	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	213	245	181	6	9	4	178	189	168
2 - Jul	219	241	170	6	11	3	189	205	161
3 - Jul	193	239	147	5	11	1	199	232	162
4 - Jul	0	0	0	0	0	0	0	0	0
5 - Jul	0	0	0	0	0	0	0	0	0
6 - Jul	0	0	0	0	0	0	0	0	0
7 - Jul	0	0	0	0	0	0	0	0	0
8 - Jul	189	233	154	6	10	3	255	285	181
9 - Jul	230	270	170	6	10	3	220	239	192
10 - Jul	253	291	218	6	10	4	197	219	176
11 - Jul	221	254	165	6	10	4	191	218	171
12 - Jul	198	242	152	5	10	2	191	204	165
13 - Jul	205	242	175	5	9	4	205	222	176
14 - Jul	244	281	194	7	11	5	193	227	175
15 - Jul	249	293	176	6	10	3	203	223	194
16 - Jul	208	270	153	6	9	3	199	220	183
17 - Jul	214	289	157	6	10	3	228	291	177
18 - Jul	227	300	116	7	11	5	219	280	190
19 - Jul	262	332	153	6	11	4	191	240	163
20 - Jul	312	372	190	7	11	3	167	183	126
21 - Jul	285	331	197	7	12	4	179	221	130
22 - Jul	254	292	205	7	11	5	205	236	165
23 - Jul	264	315	178	7	11	4	201	217	159
24 - Jul	250	279	158	7	10	5	204	235	146
25 - Jul	254	287	201	6	11	4	201	219	146
26 - Jul	257	296	199	5	10	3	189	215	150
27 - Jul	252	302	190	4	8	2	166	198	137
28 - Jul	254	291	200	6	11	4	170	179	126
29 - Jul	200	219	164	4	8	2	182	204	134
30 - Jul	185	214	159	3	7	2	184	198	130
31 - Jul	181	207	170	4	5	3	223	263	155

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 - Jul	195	220	174	7	10	5	201	216	181
2 - Jul	189	213	152	7	10	5	216	235	205
3 - Jul	189	213	174	7	10	5	199	218	171
4 - Jul	204	265	172	7	10	5	206	229	184
5 - Jul	230	253	194	7	11	5	202	229	179
6 - Jul	233	270	176	7	10	6	198	224	175
7 - Jul	218	269	162	7	11	6	216	257	177
8 - Jul	179	223	147	7	11	6	248	273	228
9 - Jul	220	267	152	7	11	5	202	240	184
10 - Jul	217	244	170	7	13	6	207	245	185
11 - Jul	201	234	166	7	9	6	214	251	184
12 - Jul	190	227	148	7	10	5	203	253	169
13 - Jul	189	238	147	7	10	6	201	222	180
14 - Jul	213	240	177	7	10	6	199	221	179
15 - Jul	188	214	151	7	10	7	207	233	198
16 - Jul	217	259	160	7	10	5	204	236	176
17 - Jul	191	252	166	7	10	6	231	268	202
18 - Jul	212	272	148	7	11	6	200	269	163
19 - Jul	193	234	157	7	10	6	179	201	153
20 - Jul	228	247	196	9	13	6	155	165	148
21 - Jul	214	226	191	10	14	7	163	188	152
22 - Jul	196	237	166	9	11	5	214	263	183
23 - Jul	178	222	145	9	13	7	189	231	171
24 - Jul	182	222	152	9	14	6	193	227	168
25 - Jul	183	233	142	7	10	6	199	229	175
26 - Jul	164	195	145	6	9	6	169	180	155
27 - Jul	177	205	151	7	11	5	158	160	151
28 - Jul	191	268	147	8	11	6	167	180	157
29 - Jul	168	191	142	7	10	6	201	240	168
30 - Jul	171	187	155	6	10	4	183	201	166
31 - Jul	154	180	127	6	10	5	222	254	181

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

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<u>Name</u>	<u>Reading</u>	<u>Units</u>	<u>Licence Limit</u>	<u>Date</u>
Cadmium	0.0011	mg/m3	0.20	06/05/2013
Carbon Dioxide (Wet)	10.4	%	-	06/05/2013
Carbon Monoxide	0.90	mg/m3	-	06/05/2013
Chlorine	0.28	mg/m3	300	06/05/2013
Copper	0.0011	mg/m3	-	06/05/2013
Dry Gas Density	0.93	kg/m3	-	06/05/2013
Fluoride As HF - Total	6.4	mg/m3	50	06/05/2013
Hazardous Substances (Metals) - Total	0.025	mg/m3	1.00	06/05/2013
Hydrogen Chloride	3.2	mg/m3	100.0	06/05/2013
Mercury	0.0022	mg/m3	0.200	06/05/2013
Moisture	7.5	%	-	06/05/2013
Particulates - Total	3.8	mg/m3	50	06/05/2013
Stack Gas Molecular Weight	29	kg/k-mole	-	06/05/2013
Temperature	108.0	degC	-	06/05/2013
Velocity	12.2	m/sec	-	06/05/2013
Volatile Organic Compounds (VOC) - Total	5.4	mg/m3	-	06/05/2013
Volumetric Flow Rate (Dry At STP)	293	m3/sec	-	06/05/2013

Unit 3 Boiler Emission Test Results

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

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<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	0.40	0.50	0.90
U2	0.20	0.10	0.20
U3	0.30	0.10	0.40
U4	0.50	0.20	0.70
U5	0.30	0.10	0.30
U6	1.50	0.50	2.00

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	0.70	0.50	1.20
E3	0.20	0.30	0.50
E4	0.60	0.40	1.00
E5	0.20	0.10	0.30
E6	0.20	0.30	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
010cm	14.77	8.42	35.26	99.40	8.09	3.00
050cm	14.75	8.43	35.28	99.30	8.09	
100cm	14.74	8.43	35.27	99.20	8.07	
150cm	14.67	8.44	35.27	99.40	8.10	
200cm	14.67	8.45	35.29	99.40	8.11	
250cm	14.64	8.45	35.29	99.60	8.12	
Bottom	14.64	8.45	35.30	99.80	8.14	

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	14.15	8.43	34.75	100.10	8.28	4.20
050cm	14.14	8.43	34.75	100.10	8.27	
100cm	14.14	8.44	34.75	100.10	8.27	
150cm	14.13	8.44	34.76	100.00	8.27	
200cm	14.12	8.45	34.76	99.90	8.26	
250cm	14.11	8.45	34.77	100.00	8.27	
300cm	14.03	8.45	34.80	100.00	8.28	
350cm	14.15	8.45	34.95	99.60	8.22	
400cm	14.29	8.45	35.09	99.70	8.20	
450cm	14.42	8.45	35.03	99.40	8.15	
550cm	14.46	8.46	35.06	99.30	8.14	
600cm	14.45	8.46	35.06	99.40	8.15	
650cm	14.66	8.46	35.18	99.30	8.10	
700cm	14.90	8.46	35.33	97.40	7.90	
750cm	14.92	8.46	35.33	96.40	7.82	
Bottom	14.91	8.46	35.34	96.40	7.82	

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	14.24	8.42	35.84	99.70	8.17	6.10
050cm	14.24	8.43	35.84	99.90	8.18	
100cm	14.24	8.43	35.84	99.80	8.18	
150cm	14.24	8.44	35.84	100.00	8.19	
200cm	14.23	8.44	35.83	99.90	8.19	
250cm	14.23	8.45	35.82	99.70	8.17	
300cm	14.23	8.46	35.85	99.80	8.18	
350cm	14.24	8.47	35.83	99.80	8.18	
400cm	14.24	8.48	35.83	99.70	8.17	
450cm	14.27	8.48	35.85	99.70	8.16	
550cm	14.29	8.48	35.84	99.80	8.17	
600cm	14.27	8.48	35.83	99.80	8.18	
650cm	14.28	8.48	35.84	99.70	8.17	
700cm	14.35	8.48	35.89	100.00	8.17	
750cm	14.37	8.48	35.86	99.90	8.17	
800cm	14.37	8.47	35.87	99.80	8.16	
850cm	14.34	8.47	35.88	99.80	8.16	
900cm	14.46	8.47	35.92	99.80	8.14	
950cm	14.44	8.47	35.89	100.00	8.16	
Bottom	14.39	8.47	35.90	100.40	8.20	

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	18.13	8.41	35.44	115.10	8.77	4.80
050cm	18.12	8.41	35.44	115.00	8.76	
100cm	18.12	8.41	35.41	115.00	8.76	
150cm	18.07	8.41	35.45	115.00	8.77	
200cm	17.78	8.41	35.36	115.00	8.82	
250cm	17.25	8.42	35.05	114.30	8.81	
300cm	16.81	8.43	34.74	113.20	8.88	
350cm	15.78	8.44	35.27	99.70	7.96	
400cm	15.51	8.45	35.43	97.80	7.83	
450cm	15.43	8.45	35.44	97.20	7.80	
550cm	15.43	8.45	35.44	97.50	7.83	
600cm	15.41	8.45	35.52	97.20	7.80	
Bottom	15.64	8.41	35.42	93.60	7.46	

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	-	01/07/2014
Copper	1.00	ug/L	-	01/07/2014
Iron	14.0	ug/L	-	01/07/2014
Lead	0.20	ug/L	-	01/07/2014
Manganese	98	ug/L	-	01/07/2014
Nitrite and Nitrate as N	104	ug/L	-	01/07/2014
Phosphorus Reactive as P - Total	292	ug/L	-	01/07/2014
Phosphorus as P - Total	336	ug/L	-	01/07/2014
Selenium	22.0	ug/L	-	01/07/2014
Suspended Solids (SS)	6.0	mg/L	-	01/07/2014
Zinc	7.0	ug/L	-	01/07/2014
pH	9.2	-	-	01/07/2014

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	2.00	ug/L	-	01/07/2014
Iron	15.0	ug/L	-	01/07/2014
Selenium	2.00	ug/L	-	01/07/2014
Temperature - Average	14.0	deg C	-	Jul 2014
Temperature - Minimum	12.5	deg C	-	Jul 2014
Temperature - Maximum	15.3	deg C	-	Jul 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	3.00	ug/L	5	01/07/2014
Iron	20.0	ug/L	300	01/07/2014
Selenium	2.00	ug/L	2	01/07/2014
Temperature - Average	22.1	deg C	35	Jul 2014
Temperature - Minimum	17.3	deg C	35	Jul 2014
Temperature - Maximum	25.0	deg C	35	Jul 2014
Maximum Daily Discharge from Ash Dam	29.3	ML	150000	Jul 2014
Monthly Discharge from Ash Dam	383	ML	-	Jul 2014

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	0.20	ug/L	-	01/07/2014
Copper	2.0	ug/L	-	01/07/2014
Iron	6,690	ug/L	-	01/07/2014
Lead	0.20	ug/L	-	01/07/2014
Manganese	1,270	ug/L	-	01/07/2014
Nitrite and Nitrate as N	67	ug/L	-	01/07/2014
Phosphorus as P - Total	62	ug/L	-	01/07/2014
Selenium	2.0	ug/L	-	01/07/2014
Zinc	7.0	ug/L	-	01/07/2014
pH	6.8		-	01/07/2014