Eraring Power Station - EPA Licence 1429

Rocky Point Rd, Dora Creek NSW 2264

Environmental Monitoring Data

October 2017

Unit 1 Boiler Continuous Emission Monitoring Summary

EPA Identification no. 11 - Air emissions monitoring, Boiler 1 stack discharge to air
Unit out of service 28th-31st October 2017

	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 -October	121	146	103	6.3	10.4	3.7	195	209	183
2 - October	135	215	111	6.0	12.1	2.6	205	211	186
3 - October	145	177	111	4.5	8.5	2.6	199	205	190
4 - October	134	161	119	6.3	10.6	3.1	197	205	184
5 - October	135	189	108	7.4	10.0	3.0	186	191	175
6 - October	130	155	109	5.9	8.2	3.0	182	195	172
7 - October	122	146	106	7.6	14.5	3.0	184	203	176
8 - October	127	177	110	5.6	11.6	2.1	190	198	175
9 - October	162	214	112	5.2	6.0	3.2	192	205	175
10 - October	154	204	106	4.3	5.8	2.7	184	198	168
11 – October	140	169	111	4.5	5.4	3.4	179	190	157
12 – October	128	171	112	3.9	6.3	2.4	180	191	163
13 – October	143	176	110	15.2	23.0	4.1	171	187	159
14 - October	118	148	107	21.7	27.8	16.9	185	200	165
15 - October	121	155	109	23.2	32.4	16.1	194	204	175
16 - October	142	186	106	23.5	33.2	18.0	197	222	175
17 - October	128	161	104	24.3	32.4	18.9	169	182	142
18 - October	147	178	107	19.7	29.7	13.7	164	181	152
19 - October	138	174	103	17.1	21.5	12.7	185	201	169
20 - October	139	179	103	24.6	48.1	16.2	184	209	155
21 - October	130	186	100	19.2	22.6	14.8	198	217	154
22 - October	120	148	101	18.7	26.3	14.1	182	214	170
23 October	165	195	104	17.8	29.4	13.4	163	182	150
24 October	162	199	104	16.7	26.3	13.2	184	205	165
25 - October	141	197	112	16.5	24.9	12.6	202	**229**	181
26 - October	145	179	111	17.6	23.5	13.6	196	216	178
27 - October o	157	193	131	18.5	30.2	13.9	205	220	182
28 - October									
29 - October									
30 October									
31 October									

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% 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 -October	130	139	117	17.9	20.5	14.9	217	237	190
2 - October	138	160	112	17.2	22.5	13.0	234	246	213
3 - October	139	173	119	14.0	18.3	10.0	220	229	196
4 - October	136	153	113	13.2	18.9	8.6	210	222	187
5 - October	135	170	113	12.6	18.6	7.8	211	223	192
6 - October	136	169	108	14.5	17.8	11.0	203	211	183
7 - October	139	177	118	18.0	19.9	14.2	198	204	175
8 - October	143	240	107	17.4	21.9	11.1	204	210	184
9 - October	162	189	119	12.6	19.0	7.9	205	217	181
10 - October	144	171	118	13.7	18.2	11.0	193	206	169
11 – October	131	154	112	13.2	18.7	8.2	187	204	156
12 – October	136	183	109	14.0	17.0	10.3	197	209	165
13 – October	138	169	108	12.8	18.5	9.2	190	202	166
14 - October	130	168	108	16.7	19.8	9.7	207	232	173
15 - October	123	150	107	20.0	26.7	14.3	218	225	195
16 - October	161	227	121	16.3	22.0	10.5	223	234	189
17 - October	141	171	112	16.1	21.5	11.2	197	212	179
18 - October	147	184	101	14.7	19.5	11.5	184	192	163
19 - October	141	187	110	14.5	20.3	9.4	190	203	171
20 - October	150	191	106	15.6	20.7	11.4	196	220	161
21 - October	128	187	109	17.5	21.2	13.3	225	243	188
22 - October	120	158	105	17.1	21.1	11.7	177	209	152
23 October	150	173	108	15.3	23.7	10.0	185	199	167
24 October	150	171	112	14.1	23.0	9.8	209	244	176
25 - October	156	181	111	13.6	19.5	10.2	235	**257**	211
26 - October	153	173	107	13.9	19.6	10.3	203	218	183
27 - October	153	188	126	15.4	23.4	11.4	227	251	202
28 - October	143	184	102	16.5	20.8	13.6	197	215	182
29 - October	139	164	110	17.6	22.3	15.1	186	204	161
30 October	154	173	113	17.5	21.8	13.5	177	192	150
31 October	148	179	123	21.2	22.9	19.8	199	214	174

Unit 3 Boiler Continuous Emission Monitoring Summary

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

No results for 20th- 26th October 2017. Unit out of service

	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 -October	124	135	114	26.2	32.0	23.4	240	249	232
2 - October	138	175	122	26.0	33.9	22.3	243	249	235
3 - October	161	189	129	27.6	35.8	17.8	238	247	232
4 - October	151	174	126	18.7	24.5	15.9	227	241	205
5 - October	138	170	120	18.1	22.1	15.8	222	232	204
6 - October	139	169	113	18.5	22.4	16.7	211	237	181
7 - October	136	162	120	19.0	23.9	16.7	228	239	210
8 - October	129	160	109	19.8	23.5	16.7	223	235	193
9 - October	142	169	109	17.1	23.7	12.9	228	246	204
10 - October	132	152	105	18.0	21.2	16.5	218	245	206
11 – October	128	154	105	18.0	22.7	14.8	207	222	177
12 – October	119	156	104	16.5	21.0	13.9	215	228	182
13 – October	115	139	104	16.8	22.1	13.8	208	216	191
14 - October	111	115	105	18.3	20.9	16.2	213	232	180
15 - October	118	123	111	22.4	42.9	15.7	226	246	141
16 - October	121	128	115	19.1	25.5	15.7	229	256	206
17 - October	117	134	103	18.9	23.9	16.2	206	219	192
18 - October	119	131	108	18.7	21.4	16.6	196	212	176
19 - October	126	141	120	19.2	25.6	16.2	213	226	201
20 - October									
21 - October									
22 - October									
23 October									
24 October									
25 - October									
26 - October									
27 - October	117	124	114	23.4	27.2	19.6	202	226	162
28 - October	118	123	114	22.9	33.2	18.7	199	222	184
29 - October	123	134	112	20.1	23.3	18.6	202	215	178
30 October	123	130	117	19.5	22.2	16.1	172	193	120
31 October	123	130	114	19.9	21.2	18.7	203	219	126

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 -October	155	163	147	18.8	20.5	17.5	259	269	246
2 - October	169	191	158	18.9	20.7	17.0	264	269	257
3 - October	172	192	155	18.2	24.8	15.7	251	258	232
4 - October	164	177	148	17.3	19.3	15.1	244	254	233
5 - October	169	203	143	17.3	18.9	15.6	237	246	227
6 - October	161	226	126	14.1	15.0	4.9	223	240	162
7 - October	166	182	147	15.5	17.1	14.5	247	258	221
8 - October	170	202	155	17.2	21.2	13.0	255	265	241
9 - October	180	219	144	15.3	18.7	10.4	257	268	232
10 - October	180	205	154	16.5	18.6	14.5	232	252	174
11 – October	169	193	156	16.6	19.6	12.9	237	245	228
12 – October	165	190	155	16.9	18.7	15.2	232	251	208
13 – October	156	171	143	17.8	21.3	16.1	212	220	207
14 - October	156	184	136	18.5	20.2	17.1	219	241	203
15 - October	159	190	136	21.1	33.9	16.5	244	255	222
16 - October	186	228	135	18.6	23.7	15.0	250	269	237
17 - October	173	198	142	18.5	22.1	15.5	227	235	211
18 - October	181	208	138	18.1	20.6	16.5	214	226	204
19 - October	165	212	133	18.0	20.6	16.0	217	239	198
20 - October	159	180	123	22.6	34.5	18.0	218	228	209
21 - October	166	201	140	18.8	20.9	16.8	269	273	264
22 - October	148	170	136	19.8	23.4	17.7	225	263	202
23 October	157	176	138	18.7	28.1	14.7	204	224	187
24 October	159	177	148	16.9	26.3	13.7	231	267	211
25 - October	187	212	126	15.4	17.7	14.1	246	266	226
26 - October	165	191	130	17.4	20.8	14.7	235	271	205
27 - October o	174	194	153	17.1	25.7	14.3	237	270	200
28 - October	163	189	123	16.6	19.4	14.8	217	235	197
29 - October	144	181	124	16.2	17.8	14.2	216	236	187
30 October	157	188	132	15.8	17.9	12.2	193	229	119
31 October	171	197	140	16.6	17.8	15.3	202	253	122

Unit 1 Boiler Emission Test Results

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

Name	Reading	Units	Licence Limit	Date
Cadmium	0.019	mg/m^3	0.2	15/08/2017
Carbon Dioxide (Wet)	12.6	%	-	15/08/2017
Carbon Monoxide	14	ppm	-	15/08/2017
Chlorine	0.083	mg/m^3	200	15/08/2017
Copper	0.0014	mg/m^3	-	15/08/2017
Dry Gas Density	1.35	kg/m^3	-	15/08/2017
Fluoride As HF - Total	8.7	mg/m^3	50	15/08/2017
Hazardous Substances (Metals) - Total	0.030	mg/m^3	1	15/08/2017
Hydrogen Chloride	2.6	mg/m^3	100	15/08/2017
Mercury	<0.000096	mg/m^3	0.2	15/08/2017
Moisture	5.3	%	-	15/08/2017
Particulates - Total	1.9	mg/m^3	50	15/08/2017
Stack Gas Molecular Weight	30.3	kg/k-mole	-	15/08/2017
Temperature	107	degC	-	15/08/2017
Velocity	15	m/sec	-	15/08/2017
Volatile Organic Compounds (VOC) - Total	<0.08	ppm	-	15/08/2017
Volumetric Flow Rate (Dry At STP)	343	m^3/sec	-	15/08/2017

Unit 2 Boiler Emission Test Results

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

Name	Reading	Units	Licence Limit	Date
Cadmium	0.0050	mg/m^3	0.2	20/12/2016
Carbon Dioxide (Wet)	11.9	%	-	20/12/2016
Carbon Monoxide	3	ppm	-	20/12/2016
Chlorine	0.61	mg/m^3	200	20/12/2016
Copper	0.0020	mg/m^3	-	20/12/2016
Dry Gas Density	1.4	kg/m^3	-	20/12/2016
Fluoride As HF - Total	7.5	mg/m^3	50	20/12/2016
Hazardous Substances (Metals) - Total	0.009	mg/m^3	1	20/12/2016
Hydrogen Chloride	0.23	mg/m^3	100	20/12/2016
Mercury	0.0003	mg/m^3	0.2	20/12/2016
Moisture	4.0	%	-	20/12/2016
Particulates - Total	15	mg/m^3	50	20/12/2016
Stack Gas Molecular Weight	30	kg/k-mole	-	20/12/2016
Temperature	110	degC	-	20/12/2016
Velocity	12.0	m/sec	-	20/12/2016
Volatile Organic Compounds (VOC) - Total	0.07	ppm	-	20/12/2016
Volumetric Flow Rate (Dry At STP)	299	m^3/sec	-	20/12/2016

Unit 3 Boiler Emission Test Results

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

Name	Reading	Units	Licence Limit	Date
Cadmium	0.0040	mg/m^3	0.2	02/05/2017
Carbon Dioxide (Wet)	13.1	%	-	02/05/2017
Carbon Monoxide	12	ppm	-	02/05/2017
Chlorine	0.037	mg/m^3	200	02/05/2017
Copper	0.0015	mg/m^3	-	02/05/2017
Dry Gas Density	1.4	kg/m^3	-	02/05/2017
Fluoride As HF - Total	13	mg/m^3	50	02/05/2017
Hazardous Substances (Metals) - Total	0.009	mg/m^3	1	02/05/2017
Hydrogen Chloride	4.0	mg/m^3	100	02/05/2017
Mercury	0.00010	mg/m^3	0.2	02/05/2017
Moisture	5.8	%	-	02/05/2017
Particulates - Total	0.07	mg/m^3	50	02/05/2017
Stack Gas Molecular Weight	30	kg/k-mole	-	02/05/2017
Temperature	118	degC	-	02/05/2017
Velocity	16.0	m/sec	-	02/05/2017
Volatile Organic Compounds (VOC) - Total	0.08	ppm	-	02/05/2017
Volumetric Flow Rate (Dry At STP)	396	m^3/sec	-	02/05/2017

Unit 4 Boiler Emission Test Results

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

Name	Reading	Units	Licence Limit	Date
Cadmium	0.0012	mg/m^3	0.2	15/02/2017
Carbon Dioxide (Wet)	13.5	%	-	15/02/2017
Carbon Monoxide	15	ppm	-	15/02/2017
Chlorine	0.12	mg/m^3	200	15/02/2017
Copper	0.0018	mg/m^3	-	15/02/2017
Dry Gas Density	1.4	kg/m^3	-	15/02/2017
Fluoride As HF - Total	8.3	mg/m^3	50	15/02/2017
Hazardous Substances (Metals) - Total	0.009	mg/m^3	1	15/02/2017
Hydrogen Chloride	1.9	mg/m^3	100	15/02/2017
Mercury	0.0001	mg/m^3	0.2	15/02/2017
Moisture	5.6	%	-	15/02/2017
Particulates - Total	7.8	mg/m^3	50	15/02/2017
Stack Gas Molecular Weight	31	kg/k-mole	-	15/02/2017
Temperature	121	degC	-	15/02/2017
Velocity	17.0	m/sec	-	15/02/2017
Volatile Organic Compounds (VOC) - Total	0.06	ppm	-	15/02/2017
Volumetric Flow Rate (Dry At STP)	431	m^3/sec	-	15/02/2017

Eraring Depositional Dust Gauges

EPA Identification no.18, 25, 26 & 27 - Depositional dust monitoring within 1km of the coal handling operations

	Deposited Matter		
	g/m^2/month		
	Ash	**Combustible**	**Insolubles**
E2	0.4	0.2	0.6
E4	0.6	0.6	1.2
E6	0.3	0.4	0.7
U6	0.4	0.2	0.6

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	21.18					
010cm	20.63	8.59	35.1	101.1	7.18	2.25
050cm	20.58	8.31	35.2	87.1	6.21	
100cm	20.58	8.22	35.2	84.1	6.01	
150cm	20.57	8.29	35.1	85.8	6.07	
200cm	20.58	8.44	35.3	85.4	6.05	
Bottom	20.58	8.31	35.6	78.0	5.44	

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	18.23					
010cm	20.31	8.16	35.5	79.5	5.64	2.75
050cm	20.31	8.25	35.5	80.9	5.72	
100cm	20.33	8.25	35.5	79.9	5.69	
150cm	20.35	8.25	35.5	83.0	5.86	
200cm	20.36	8.34	35.5	88.3	6.27	
250cm	20.36	8.28	35.5	88.2	6.26	
300cm	20.36	8.27	35.6	83.1	5.90	
350cm	20.39	8.27	35.6	92.1	6.53	
400cm	20.37	8.27	35.6	89.5	6.36	
450cm	20.36	8.27	35.6	89.2	6.33	
500cm	20.29	8.27	35.6	84.8	6.03	
550cm	20.29	8.26	35.6	88.5	6.29	
600cm	20.25	8.26	35.6	89.2	6.34	
650cm	20.25	8.27	35.6	89.2	6.34	
700cm	20.24	8.27	35.6	88.2	6.25	
Bottom	20.23	8.26	35.6	85.2	6.02	

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	18.20					
010cm	18.87	8.24	35.0	100.6	7.34	4.75
050cm	18.91	8.20	34.9	99.3	7.26	
100cm	18.94	8.22	34.9	101.5	7.42	
150cm	18.94	8.22	34.9	100.3	7.33	
200cm	18.94	8.22	35.0	101.5	7.40	
250cm	18.94	8.22	35.0	95.2	6.95	
300cm	18.94	8.22	35.0	101.7	7.43	
350cm	18.95	8.22	35.0	105.8	7.73	
400cm	18.95	8.22	35.0	104.1	7.58	
450cm	18.95	8.22	35.0	101.7	7.43	
500cm	18.95	8.22	35.0	101.6	7.42	
550cm	18.95	8.22	35.1	91.4	6.67	
600cm	18.96	8.22	35.1	99.4	7.26	
650cm	18.96	8.22	35.3	102.7	7.48	
700cm	18.95	8.22	35.3	99.1	7.22	
750cm	18.96	8.22	35.3	99.2	7.22	
800cm	18.94	8.21	35.3	96.5	7.04	
850cm	18.93	8.21	35.3	99.3	7.24	
900cm	18.93	8.21	35.3	97.2	7.09	
Bottom	18.92	8.26	35.3	95.1	6.93	

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	18.35					
010cm	22.42	8.25	35.2	88.4	6.07	2.25
050cm	22.58	8.15	35.1	93.0	6.38	
100cm	22.63	8.19	35.1	93.1	6.37	
150cm	22.67	8.23	35.1	97.9	6.70	
200cm	22.69	8.30	35.1	99.6	6.82	
250cm	22.66	8.27	35.1	100.7	6.87	
300cm	22.67	8.25	35.1	104.0	7.10	
350cm	22.66	8.24	35.1	100.1	6.85	
400cm	21.70	8.24	35.0	95.2	6.62	
450cm	21.23	8.24	35.0	87.0	6.12	
500cm	21.02	8.24	34.9	86.0	6.01	
550cm	20.70	8.23	35.0	85.4	6.06	
Bottom	20.56	8.24	35.5	68.4	4.84	

Eraring Ash Dam Effluent Quality Monitoring

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

Name		Units	Licence Limit	Date
Cadmium	0.07	ug/L	-	05/10/2017
Copper	1.2	ug/L	-	05/10/2017
Iron	<2	ug/L	-	05/10/2017
Lead	<0.1	ug/L	-	05/10/2017
Manganese	17.1	ug/L	-	05/10/2017
Nitrite and Nitrate as N	4650	ug/L	-	05/10/2017
Phosphorus Reactive as P - Total	499	ug/L	-	05/10/2017
Phosphorus as P - Total	534	ug/L	-	05/10/2017
Selenium	13.8	ug/L	-	05/10/2017
Suspended Solids (SS)	5000	ug/L	-	05/10/2017
Zinc	2	ug/L	-	05/10/2017
pH	6.88		-	05/10/2017

Eraring Cooling Water Inlet Canal

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

Name		Units	Licence Limit	Date
Copper	1.4	ug/L	-	05/10/2017
Iron	<5	ug/L	-	05/10/2017
Selenium	<1	ug/L	-	05/10/2017
Temperature – Average	22.5	deg C	-	Oct 2017
Temperature – Minimum	19.5	deg C	-	Oct 2017
Temperature - Maximum	25.5	deg C	-	Oct 2017

Eraring Cooling Water Outlet Canal

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

Name	Reading	Units	Licence Limit	Date
Copper	2.1	ug/L	5	05/10/2017
Iron	13	ug/L	300	05/10/2017
Selenium	<1	ug/L	2	05/10/2017
Temperature – Average	29.3	deg C	35	Oct 2017
Temperature – Minimum	24.3	deg C	35	Oct 2017
Temperature - Maximum	33.8	deg C	35	Oct 2017
Maximum Daily Discharge from Ash Dam	17.98	ML	150	Oct 2017
Monthly Discharge from Ash Dam	164.4	ML	-	Oct 2017

Emergency Discharge – Toe Drain Pond

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

Name	Reading	Units	Licence Limit	Date
Nitrite and Nitrate as N	140	ug/L	-	05/10/2017
Phosphorus as P – Total	<5	ug/L	-	05/10/2017
pH	8.48		-	05/10/2017