



GRIFFIN ENERGY PTY LTD

**Collie B Power Station
(Collie B)**

Attachment 11

**Proponent's Response to Submissions
Re-estimation of Hazard Index for Acid Gases**

April 2005

Re-estimation of Hazard Index for Acid Gases

Table 1 and 2 below present the evaluated hazard quotients for the TAPM 3rd Grid with a revised “best” estimate of HCl and HF. These tables replace Table 8-7 of AQHRA.

The following notes apply to both tables:

- All receptors are residential with the exception of 6, 13, 18, 21 and 22(denoted by asterisk);
- **Shaded values** - Values just above 1 do not generally represent cause for concern, due to the inherent conservatism of a preliminary risk assessment, but may require more refinement in the estimates and modelling systems to confirm the assumptions underlying the model predictions. Hazard quotients less than 1 present no cause for concern and hazard quotients with values around 10 do present some concern regarding possible health effects and require further detailed investigation.
- Note that the maximum hazard index at receptor 19 is lower than in the report as an estimated conservative value of the SO₂ concentration was used, whereas here the actual concentration on the grid was used. The grid value represents an area of 1500 by 1500m and therefore may be lower than indicated on a contour plot dependent on where the receptor sits within that grid cell.

Table 1 Scenario 1 - Estimated Hazard Quotients and Hazard Index for Acid Gases (for all 22 Receptors using the TAPM 3rd grid results and the “best” estimate of HF and HCl emissions)

Receptor	Hazard Quotient for SO ₂	Hazard Quotient for NO ₂	Hazard Quotient for HCl	Hazard Quotient for HF	Hazard Index for Acid gases
14	0.39	0.26	0.01	0.13	0.80
12	0.18	0.20	0.01	0.07	0.46
13*	0.32	0.25	0.01	0.12	0.70
19	0.66	0.37	0.03	0.26	1.31
15	0.26	0.24	0.01	0.10	0.61
20	0.73	0.40	0.03	0.28	1.44
18*	0.49	0.32	0.02	0.19	1.02
22*	0.56	0.35	0.02	0.22	1.14
10	0.55	0.33	0.02	0.22	1.12
11	0.32	0.26	0.01	0.13	0.72
6*	0.16	0.19	0.01	0.06	0.42
21*	0.40	0.28	0.02	0.16	0.86

9	0.40	0.29	0.02	0.16	0.87
7	0.35	0.27	0.01	0.14	0.76
8	0.32	0.26	0.01	0.12	0.72
16	0.26	0.23	0.01	0.10	0.61
2	0.32	0.26	0.01	0.12	0.71
3	0.23	0.22	0.01	0.09	0.54
4	0.36	0.25	0.01	0.12	0.74
17	0.46	0.28	0.02	0.16	0.93
5	0.43	0.30	0.02	0.17	0.92
1	0.22	0.21	0.01	0.08	0.52

Table 2 Scenario 5 - Estimated Hazard Quotients and Hazard Index for Acid Gases (for the 22 receptors using the TAPM 3rd grid results and the “best” estimate of HF and HCl emissions)

Receptor	Hazard Quotient for SO2	Hazard Quotient for NO2	Hazard Quotient for HCl	Hazard Quotient for HF	Hazard Index for Acid gases
14	0.41	0.27	0.01	0.13	0.81
12	0.14	0.18	0.01	0.05	0.39
13*	0.30	0.23	0.01	0.11	0.65
19	0.60	0.33	0.02	0.22	1.17
15	0.25	0.22	0.01	0.08	0.56
20	0.66	0.35	0.02	0.24	1.27
18*	0.40	0.27	0.02	0.16	0.84
22*	0.45	0.28	0.02	0.18	0.93
10	0.45	0.29	0.02	0.18	0.93
11	0.23	0.21	0.01	0.09	0.54
6*	0.13	0.18	0.00	0.05	0.36
21*	0.34	0.24	0.01	0.12	0.71
9	0.31	0.24	0.01	0.12	0.68

7	0.29	0.23	0.04	0.21	0.77
8	0.30	0.24	0.01	0.12	0.67
16	0.49	0.28	0.03	0.15	0.96
2	0.29	0.23	0.01	0.09	0.62
3	0.29	0.22	0.01	0.07	0.59
4	0.41	0.26	0.04	0.20	0.90
17	0.58	0.31	0.06	0.32	1.27
5	0.51	0.29	0.06	0.27	1.13
1	0.25	0.22	0.01	0.06	0.54