

Appendix 8.12: Proposed Development (Operational Phase) Impacts at Ecological Receptors (Development in Isolation)

APPENDIX 8.12 – PROPOSED DEVELOPMENT (OPERATIONAL PHASE) IMPACTS AT ECOLOGICAL RECEPTORS (DEVELOPMENT IN ISOLATION)

Table 8.12.1: Predicted 2030 Annual Mean NO_x Concentration Change

Receptor	NO _x Annual Mean Concentration		PC Difference (µg/m ³)	% PC of Critical Level
	2030 Baseline (µg/m ³) PEC	2030 Baseline + Proposed Development (µg/m ³) PEC		
MN.E1.R0	34.38	34.56	0.17	0.6%
MN.E1.R2	33.20	33.37	0.17	0.6%
MN.E1.R5	31.64	31.80	0.15	0.5%
MN.E1.R10	29.47	29.61	0.14	0.5%
MN.E1.R20	26.19	26.31	0.12	0.4%
MN.E1.R30	23.85	23.95	0.10	0.3%
MN.E1.R40	22.08	22.17	0.09	0.3%
MN.E1.R50	20.68	20.76	0.08	0.3%
MN.E1.R60	19.55	19.63	0.07	0.2%
MN.E1.R70	18.61	18.68	0.07	0.2%
MN.E1.R80	17.82	17.88	0.06	0.2%
MN.E1.R90	17.14	17.20	0.06	0.2%
MN.E1.R100	16.55	16.61	0.05	0.2%
MN.E1.R110	16.03	16.08	0.05	0.2%
MN.E1.R120	15.57	15.62	0.05	0.2%
MN.E1.R130	15.16	15.21	0.04	0.1%
MN.E1.R140	14.79	14.84	0.04	0.1%
MN.E1.R150	14.46	14.50	0.04	0.1%
MN.E1.R160	14.16	14.20	0.04	0.1%
MN.E1.R170	13.88	13.92	0.04	0.1%
MN.E1.R180	13.64	13.67	0.03	0.1%
MN.E1.R190	13.40	13.44	0.03	0.1%
MN.E1.R200	13.19	13.22	0.03	0.1%

Table 8.12.2: Predicted 2030 24-Hour Mean NO_x Concentrations

Receptor	24-Hour Mean NO _x Concentrations		PC Difference (µg/m ³)	% PC of Critical Level
	2030 Baseline (µg/m ³) PC	2030 Baseline + Proposed Development (µg/m ³) PC		
MN.E1.R0	10.59	10.66	0.06	0.1%
MN.E1.R2	10.11	10.17	0.05	0.1%
MN.E1.R5	9.46	9.53	0.05	0.1%
MN.E1.R10	8.57	8.63	0.04	0.1%
MN.E1.R20	7.22	7.27	0.04	0.0%
MN.E1.R30	6.26	6.30	0.03	0.0%
MN.E1.R40	5.53	5.57	0.03	0.0%
MN.E1.R50	4.95	4.99	0.03	0.0%
MN.E1.R60	4.49	4.52	0.02	0.0%
MN.E1.R70	4.11	4.13	0.02	0.0%
MN.E1.R80	3.78	3.80	0.02	0.0%
MN.E1.R90	3.50	3.52	0.02	0.0%
MN.E1.R100	3.26	3.28	0.02	0.0%
MN.E1.R110	3.04	3.06	0.02	0.0%
MN.E1.R120	2.85	2.87	0.02	0.0%
MN.E1.R130	2.69	2.70	0.01	0.0%
MN.E1.R140	2.53	2.55	0.01	0.0%
MN.E1.R150	2.40	2.41	0.01	0.0%
MN.E1.R160	2.27	2.29	0.01	0.0%
MN.E1.R170	2.16	2.17	0.01	0.0%
MN.E1.R180	2.06	2.07	0.01	0.0%
MN.E1.R190	1.96	1.97	0.01	0.0%
MN.E1.R200	1.87	1.89	0.01	0.0%

Table 8.12.3: Predicted 2030 Annual Mean NH₃ Concentration Change

Receptor	NH ₃ Annual Mean Concentration		PC Difference (µg/m ³)	% PC of Critical Level
	2030 Baseline (µg/m ³) PEC	2030 Baseline + Proposed Development (µg/m ³) PEC		
MN.E1.R0	3.74	3.76	0.02	2.1%
MN.E1.R2	3.64	3.66	0.02	2.0%
MN.E1.R5	3.50	3.52	0.02	1.9%
MN.E1.R10	3.31	3.33	0.02	1.7%
MN.E1.R20	3.03	3.05	0.01	1.4%
MN.E1.R30	2.83	2.84	0.01	1.2%
MN.E1.R40	2.68	2.69	0.01	1.0%
MN.E1.R50	2.56	2.57	0.01	0.9%
MN.E1.R60	2.47	2.48	0.01	0.8%
MN.E1.R70	2.39	2.40	0.01	0.8%
MN.E1.R80	2.33	2.33	0.01	0.7%
MN.E1.R90	2.27	2.28	0.01	0.6%
MN.E1.R100	2.22	2.23	0.01	0.6%
MN.E1.R110	2.18	2.19	0.01	0.6%
MN.E1.R120	2.15	2.15	0.01	0.5%
MN.E1.R130	2.11	2.12	0.00	0.5%
MN.E1.R140	2.09	2.09	0.00	0.5%
MN.E1.R150	2.06	2.06	0.00	0.4%
MN.E1.R160	2.04	2.04	0.00	0.4%
MN.E1.R170	2.02	2.02	0.00	0.4%
MN.E1.R180	2.00	2.00	0.00	0.4%
MN.E1.R190	1.98	1.98	0.00	0.4%
MN.E1.R200	1.96	1.97	0.00	0.3%

Table 8.12.4: Predicted 2030 Total Acid Deposition

Receptor ID	2030 Baseline (kgN/ha/yr) PEC	2030 Baseline + Proposed Development (kgN/ha/yr) PEC	PC Difference (kgN/ha/yr)	% PC of Critical Load
Transect 1				
MN.E1.R0	2.39	2.39	0.00	1.0%
MN.E1.R2	2.38	2.38	0.00	1.0%
MN.E1.R5	2.36	2.36	0.00	0.8%
MN.E1.R10	2.34	2.34	0.00	0.7%
MN.E1.R20	2.30	2.30	0.00	0.6%
MN.E1.R30	2.28	2.28	0.00	0.6%
MN.E1.R40	2.26	2.26	0.00	0.5%
MN.E1.R50	2.24	2.24	0.00	0.5%
MN.E1.R60	2.23	2.23	0.00	0.4%
MN.E1.R70	2.22	2.22	0.00	0.5%
MN.E1.R80	2.21	2.21	0.00	0.4%
MN.E1.R90	2.20	2.20	0.00	0.3%
MN.E1.R100	2.19	2.19	0.00	0.2%
MN.E1.R110	2.19	2.19	0.00	0.2%
MN.E1.R120	2.18	2.18	0.00	0.3%
MN.E1.R130	2.18	2.18	0.00	0.2%
MN.E1.R140	2.17	2.17	0.00	0.2%
MN.E1.R150	2.17	2.17	0.00	0.2%
MN.E1.R160	2.16	2.17	0.00	0.2%
MN.E1.R170	2.16	2.16	0.00	0.2%
MN.E1.R180	2.16	2.16	0.00	0.2%
MN.E1.R190	2.16	2.16	0.00	0.1%
MN.E1.R200	2.15	2.15	0.00	0.2%

Table 8.12.5: Predicted 2030 Total Nitrogen Deposition

Receptor ID	2030 Baseline (keq ha/year) PEC	2030 Baseline + Proposed Development (keq ha/year) PEC	PC Difference (keq ha ⁻¹ year ⁻¹)	% PC of Critical Load
Transect 1				
MN.E1.R0	48.17	48.35	0.19	1.2%
MN.E1.R2	47.23	47.41	0.18	1.2%
MN.E1.R5	45.99	46.15	0.17	1.1%
MN.E1.R10	44.25	44.40	0.15	1.0%
MN.E1.R20	41.64	41.77	0.12	0.8%
MN.E1.R30	39.77	39.88	0.11	0.7%
MN.E1.R40	38.36	38.45	0.09	0.6%
MN.E1.R50	37.26	37.34	0.08	0.6%
MN.E1.R60	36.37	36.44	0.07	0.5%
MN.E1.R70	35.63	35.70	0.07	0.5%
MN.E1.R80	35.01	35.07	0.06	0.4%
MN.E1.R90	34.49	34.55	0.06	0.4%
MN.E1.R100	34.04	34.09	0.05	0.3%
MN.E1.R110	33.64	33.69	0.05	0.3%
MN.E1.R120	33.29	33.34	0.05	0.3%
MN.E1.R130	32.98	33.03	0.04	0.3%
MN.E1.R140	32.71	32.75	0.04	0.3%
MN.E1.R150	32.46	32.50	0.04	0.3%
MN.E1.R160	32.24	32.28	0.04	0.3%
MN.E1.R170	32.04	32.08	0.04	0.2%
MN.E1.R180	31.86	31.90	0.03	0.2%
MN.E1.R190	31.70	31.73	0.03	0.2%
MN.E1.R200	31.54	31.57	0.03	0.2%