

**ATTACHMENT A:**

**Modeling in Support of Additional Two-Unit Operating  
Configurations**

## Unit 1 & Unit 2 Operation – SO2 Table

Mirant Potomac, Alexandria, Virginia

Maximum Impacts Predicted by AERMOD-PRIME

Compliance Based on Highest, Second-Highest Short-term and Highest Annual Concentrations

Units 1 & 2 on 24 hrs/day @ Max load

SO2 = 0.31 lb/MBtu for both units.

Year	Pollutant	Averaging Period	AERMOD-PRIME	Monitored Background	AERMOD-PRIME + Background	NAAQS	Impact Location		Distance	Direction	Ground Elevation	Flagpole Elevation
			Concentrations ( $\mu\text{g}/\text{m}^3$ )				X (m)	Y (m)	m	deg	m	m
2000	SO <sub>2</sub>	3-hour	608	238.4	847	1300	322770.8	4298791.5	182.7	349	6.1	39.6
		24-hour	330	27.0	357	365	322880.8	4298542.5	102.7	133	6.7	0.0
		Annual*	31	15.7	47	80	322880.8	4298542.5	102.7	133	6.7	0.0
2001	SO <sub>2</sub>	3-hour	651	238.4	889	1300	322770.8	4298791.5	182.7	349	6.1	39.6
		24-hour	327	27.0	354	365	322880.8	4298542.5	102.7	133	6.7	0.0
		Annual*	31	15.7	46	80	322880.8	4298542.5	102.7	133	6.7	0.0
2002	SO <sub>2</sub>	3-hour	616	238.4	855	1300	322858.6	4298648.5	64.6	56	4.1	0.0
		24-hour	312	27.0	339	365	322787.7	4298786.0	174.8	354	4.6	39.6
		Annual*	25	15.7	41	80	322880.8	4298542.5	102.7	133	6.7	0.0
2003	SO <sub>2</sub>	3-hour	602	238.4	841	1300	322858.6	4298648.5	64.6	56	4.1	0.0
		24-hour	275	27.0	302	365	322880.8	4298542.5	102.7	133	6.7	0.0
		Annual*	19	15.7	35	80	322880.8	4298542.5	102.7	133	6.7	0.0
2004	SO <sub>2</sub>	3-hour	606	238.4	845	1300	322858.6	4298648.5	64.6	56	4.1	0.0
		24-hour	332	27.0	359	365	322880.8	4298542.5	102.7	133	6.7	0.0
		Annual*	22	15.7	38	80	322880.8	4298542.5	102.7	133	6.7	0.0

\* Includes annual capacity factor of 65%

## Unit 2 & Unit 3 Operation – SO2 Table

Mirant Potomac, Alexandria, Virginia

Maximum Impacts Predicted by AERMOD-PRIME

Compliance Based on Highest, Second-Highest Short-term and Highest Annual Concentrations

Unit 2 cycling min-max. Unit 3 at Max load 24 hours

SO2 = 0.24 lb/MBtu for both units.

Year	Pollutant	Averaging Period	AERMOD-PRIME	Monitored Background	AERMOD-PRIME + Background	NAAQS	Impact Location		Distance	Direction	Ground Elevation	Flagpole Elevation
			Concentrations ( $\mu\text{g}/\text{m}^3$ )				X (m)	Y (m)	m	deg	m	m
2000	SO <sub>2</sub>	3-hour	626	238.4	864	1300	322770.8	4298791.5	182.7	349	6.1	39.6
		24-hour	340	21.0	361	365	322787.7	4298786.0	174.8	354	4.6	39.6
		Annual*	31	15.7	47	80	322787.7	4298786.0	174.8	354	4.6	39.6
2001	SO <sub>2</sub>	3-hour	629	238.4	867	1300	322770.8	4298791.5	182.7	349	6.1	39.6
		24-hour	297	21.0	318	365	322787.7	4298786.0	174.8	354	4.6	39.6
		Annual*	34	15.7	50	80	322787.7	4298786.0	174.8	354	4.6	39.6
2002	SO <sub>2</sub>	3-hour	614	238.4	852	1300	322770.8	4298791.5	182.7	349	6.1	39.6
		24-hour	319	21.0	340	365	322787.7	4298786.0	174.8	354	4.6	39.6
		Annual*	29	15.7	45	80	322787.7	4298786.0	174.8	354	4.6	39.6
2003	SO <sub>2</sub>	3-hour	619	238.4	857	1300	322787.7	4298786.0	174.8	354	4.6	39.6
		24-hour	45	21.0	66	365	322854.0	4298627.0	51.0	73	5.0	0.0
		Annual*	23	15.7	39	80	322854.0	4298627.0	51.0	73	5.0	0.0
2004	SO <sub>2</sub>	3-hour	560	238.4	799	1300	322763.3	4298799.5	192.1	347	6.5	39.6
		24-hour	247	21.0	268	365	322858.6	4298648.5	64.6	56	4.1	0.0
		Annual*	25	15.7	41	80	322787.7	4298786.0	174.8	354	4.6	39.6

\* Includes annual capacity factor of 65%

## Unit 2 & Unit 5 Operation – SO2 Table

Mirant Potomac, Alexandria, Virginia

Maximum Impacts Predicted by AERMOD-PRIME

Compliance Based on Highest, Second-Highest Short-term and Highest Annual Concentrations

Unit 2 cycling min-max. Unit 5 at Max load 24 hours

SO2 = 0.37 lb/MBtu for both units.

Year	Pollutant	Averaging Period	AERMOD-PRIME	Monitored Background	AERMOD-PRIME + Background	NAAQS	Impact Location		Distance	Direction	Ground Elevation	Flagpole Elevation
			Concentrations ( $\mu\text{g}/\text{m}^3$ )				X (m)	Y (m)	m	deg	m	m
2000	SO <sub>2</sub>	3-hour	639	238.4	878	1300	322787.7	4298786.0	174.8	354	4.6	39.6
		24-hour	305.8	53.0	359	365	322787.7	4298786.0	174.8	354	4.6	39.6
		Annual*	24	15.7	40	80	322787.7	4298786.0	174.8	354	4.6	39.6
2001	SO <sub>2</sub>	3-hour	703	238.4	941	1300	322770.8	4298791.5	182.7	349	6.1	39.6
		24-hour	310	53.0	363	365	322787.7	4298786.0	174.8	354	4.6	39.6
		Annual*	28	15.7	44	80	322787.7	4298786.0	174.8	354	4.6	39.6
2002	SO <sub>2</sub>	3-hour	683	238.4	921	1300	322763.3	4298799.5	192.1	347	6.5	39.6
		24-hour	297	53.0	350	365	322787.7	4298786.0	174.8	354	4.6	39.6
		Annual*	23	15.7	38	80	322787.7	4298786.0	174.8	354	4.6	39.6
2003	SO <sub>2</sub>	3-hour	578	238.4	816	1300	322787.7	4298786.0	174.8	354	4.6	39.6
		24-hour	198	53.0	251	365	322787.7	4298786.0	174.8	354	4.6	39.6
		Annual*	15	15.7	30	80	322787.7	4298786.0	174.8	354	4.6	39.6
2004	SO <sub>2</sub>	3-hour	615	238.4	853	1300	322787.7	4298786.0	174.8	354	4.6	39.6
		24-hour	191	53.0	244	365	322880.8	4298542.5	102.7	133	6.7	0.0
		Annual*	18	15.7	34	80	322854.0	4298627.0	51.0	73	5.0	0.0

\* Includes annual capacity factor of 65%

## Unit 3 & Unit 4 Operation – SO2 Table

Mirant Potomac, Alexandria, Virginia

Maximum Impacts Predicted by AERMOD-PRIME

Compliance Based on Highest, Second-Highest Short-term and Highest Annual Concentrations

Unit 3 @ 6hr max/18hr min, Unit 4 @ 7hr max/17hr min

SO2 = 0.24 lb/MBtu for both units.

Year	Pollutant	Averaging Period	AERMOD-PRIME	Monitored Background	AERMOD-PRIME + Background	NAAQS	Impact Location		Distance	Direction	Ground Elevation	Flagpole Elevation
			Concentrations ( $\mu\text{g}/\text{m}^3$ )				X (m)	Y (m)	m	deg	m	m
2000	SO <sub>2</sub>	3-hour	504	238.4	743	1300	322787.7	4298786.0	174.8	354	4.6	39.6
		24-hour	310	53.0	363	365	322787.7	4298786.0	174.8	354	4.6	39.6
		Annual*	33	15.7	49	80	322787.7	4298786.0	174.8	354	4.6	39.6
2001	SO <sub>2</sub>	3-hour	584	238.4	823	1300	322787.7	4298786.0	174.8	354	4.6	39.6
		24-hour	297	53.0	350	365	322787.7	4298786.0	174.8	354	4.6	39.6
		Annual*	36	15.7	52	80	322787.7	4298786.0	174.8	354	4.6	39.6
2002	SO <sub>2</sub>	3-hour	564	238.4	802	1300	322787.7	4298786.0	174.8	354	4.6	39.6
		24-hour	285	53.0	338	365	322787.7	4298786.0	174.8	354	4.6	39.6
		Annual*	30	15.7	45	80	322787.7	4298786.0	174.8	354	4.6	39.6
2003	SO <sub>2</sub>	3-hour	474	238.4	713	1300	322787.7	4298786.0	174.8	354	4.6	39.6
		24-hour	219	53.0	272	365	322787.7	4298786.0	174.8	354	4.6	39.6
		Annual*	19	15.7	34	80	322854.0	4298627.0	51.0	73	5.0	0.0
2004	SO <sub>2</sub>	3-hour	496	238.4	735	1300	322787.7	4298786.0	174.8	354	4.6	39.6
		24-hour	199	53.0	252	365	322787.7	4298786.0	174.8	354	4.6	39.6
		Annual*	22	15.7	38	80	322787.7	4298786.0	174.8	354	4.6	39.6

\* Includes annual capacity factor of 65%

## Unit 3 & Unit 5 Operation – SO2 Table

Mirant Potomac, Alexandria, Virginia

Maximum Impacts Predicted by AERMOD-PRIME

Compliance Based on Highest, Second-Highest Short-term and Highest Annual Concentrations

Units 3 & 5 @ 12hr min/12hr max

SO2 = 0.24 lb/MBtu for both units.

Year	Pollutant	Averaging Period	AERMOD-PRIME	Monitored Background	AERMOD-PRIME + Background	NAAQS	Impact Location		Distance	Direction	Ground Elevation	Flagpole Elevation
			Concentrations ( $\mu\text{g}/\text{m}^3$ )				X (m)	Y (m)	m	deg	m	m
2000	SO <sub>2</sub>	3-hour	500	238.4	738	1300	322787.7	4298786.0	174.8	354	4.6	39.6
		24-hour	304	53.0	357	365	322787.7	4298786.0	174.8	354	4.6	39.6
		Annual*	28	15.7	44	80	322787.7	4298786.0	174.8	354	4.6	39.6
2001	SO <sub>2</sub>	3-hour	585	238.4	824	1300	322787.7	4298786.0	174.8	354	4.6	39.6
		24-hour	290	53.0	343	365	322787.7	4298786.0	174.8	354	4.6	39.6
		Annual*	32	15.7	47	80	322787.7	4298786.0	174.8	354	4.6	39.6
2002	SO <sub>2</sub>	3-hour	544	238.4	782	1300	322787.7	4298786.0	174.8	354	4.6	39.6
		24-hour	270	53.0	323	365	322787.7	4298786.0	174.8	354	4.6	39.6
		Annual*	26	15.7	42	80	322787.7	4298786.0	174.8	354	4.6	39.6
2003	SO <sub>2</sub>	3-hour	383	238.4	622	1300	322787.7	4298786.0	174.8	354	4.6	39.6
		24-hour	185	53.0	238	365	322787.7	4298786.0	174.8	354	4.6	39.6
		Annual*	16	15.7	32	80	322854.0	4298627.0	51.0	73	5.0	0.0
2004	SO <sub>2</sub>	3-hour	463	238.4	701	1300	322787.7	4298786.0	174.8	354	4.6	39.6
		24-hour	165	53.0	218	365	322787.7	4298786.0	174.8	354	4.6	39.6
		Annual*	19	15.7	34	80	322787.7	4298786.0	174.8	354	4.6	39.6

\* Includes annual capacity factor of 65%