

DIVINE STRAKE AIR DISPERSION MODELING RESULTS
for
SULFUR DIOXIDE

The attached table is updated to include estimated sulfur dioxide concentrations resulting from the Divine Strake Experiment. Output from the POLU4WN model was used to estimate quantities of all emissions from the proposed explosive experiment. All emissions of oxides of sulfur were combined to provide input into Open Burn/Open Detonation Model (OBODM) to model the dispersion; thus overestimating the concentration of sulfur dioxide that may be expected to result from Divine Strake. The sulfur oxide compounds that were reported by POLU4WN and used as input to OBODM are: Sulfuric Acid (H_2SO_4), Sulfur Oxide (S_2O), Sulfur trioxide (SO_3), Sulfur Dioxide (SO_2), Carbon Oxide Sulfide (CSO), and Sulfur Oxide (SO). Despite the overestimation, the concentration of sulfur dioxide is expected to be well within the Nevada Ambient Air Quality Standards at the boundary of the Nevada Test Site. Following the table are the OBODM one hour, three hour, and 24 hour plume plots for sulfur dioxide.

Updated Air Dispersion Modeling Results

Pollutant	Averaging Period	Maximum Modeled NTS Sources ^f (u/m ³) ^a	Background Concentration ^f (u/m ³) ^a	Modeled Divine Strake Test (u/m ³) ^a	Total NTS Concentration (u/m ³) ^a	NAAQS ^g Standard (u/m ³) ^a	NV AAQS ^g Standard (u/m ³) ^a
Nitrogen Dioxide	Annual	2.5	0	0.00001	2.50001	100	100
Sulfur Dioxide	Annual	0.6	0			80	80
	24-hour	17.0	0	0.00096	17.00096	365 ^b	365
	3-hour	74.9	0	0.00767	74.90767	1,300 ^b	1,300
Carbon Monoxide	8-hour	42.2	0	0	42.2	10,000 ^b	10,000 ^c
	1-hour	222.5	0	0.00010	222.50010	40,000 ^b	40,000
PM10 ^d	Annual	0.6	9.0			50	50
	24-hour	17.4	10.2	0.01673	27.61673	150 ^b	150
Ozone	1-hour	204.7 ^e	0	0.10094	204.80094	235 ^b	235

a u/m³ = micrograms per cubic meter

b Not to be exceeded more than once per calendar year

c 6,670 μ/m³ at areas equal to or greater than 5,000 feet above Mean Sea Level

d Particulate matter with aerodynamic diameter less than or equal to 10 microns

e Ozone concentrations were conservatively assumed to be equal to VOC concentrations

f Source: Appendix 7, NTS Air Quality Operating Permit Renewal Application Package, March, 2002

g Source: NAC 445B.22097

Note: All concentrations of emissions are modeled at the boundary of the Nevada Test Site