

## **Appendix F3.1**

### **Air and Atmospheric Values**

## Federal and State Air Quality Regulations

### Federal Clean Air Act

The Federal Clean Air Act (CAA), and the subsequent Federal Clean Air Act Amendments of 1990 (CAAA), require the United States Environmental Protection Agency (USEPA) to identify National Ambient Air Quality Standards (NAAQS) on air pollutants to protect public health and welfare. To date, the USEPA has established NAAQS for six pollutants, known as criteria pollutants (**Table F3.1-1**). The ambient standards set for these pollutants satisfy criteria specified in the CAA. States may set their own ambient air quality standards as long as they meet or exceed the federal NAAQS.

**Table F3.1-1 National and State Ambient Air Quality Standards**

Pollutant	Averaging Time	Nevada Standards (micrograms per cubic meter [ $\mu\text{g}/\text{m}^3$ ])	National and Utah Standards	
			Primary ( $\mu\text{g}/\text{m}^3$ )	Secondary ( $\mu\text{g}/\text{m}^3$ )
Ozone ( $\text{O}_3$ ) <sup>1</sup>	8-Hour	147	147	147
Carbon monoxide (CO)	1-Hour	40,000	40,000	40,000
CO less than 5000 feet above mean sea level	8-Hour	10,000	10,000	10,000
CO at or greater than 5000 feet above mean sea level	8-Hour	6,670		
Sulfur dioxide ( $\text{SO}_2$ )	1-Hour	NS <sup>2</sup>	196	NS
	3-Hour	1,300	NS	1,300
	24-Hour	365	365	NS
	Annual Average	80	80	NS
Nitrogen dioxide ( $\text{NO}_2$ )	1-hour	NS	188	NS
	Annual Average	100	100	100
Particulate matter with an aerodynamic diameter of 10 microns or less ( $\text{PM}_{10}$ )	24-Hour	150	150	150
	Annual Average	50	NS	NS
Particulate matter with an aerodynamic diameter of 2.5 microns or less ( $\text{PM}_{2.5}$ )	24-Hour	35	35	35
	Annual Average	15	15	15
Lead	Calendar Quarter	1.5	1.5	1.5
Hydrogen Sulfide	1-Hour	112	NS	NS

<sup>1</sup> The National Standard for ozone was changed on May 27, 2008. All areas will be re-designated as attainment or nonattainment for compliance with the new standard in 2010.

<sup>2</sup> NS = No Standard.

The USEPA has developed classifications for distinct geographic regions. An area is classified as in attainment if the area has attained compliance with the NAAQS for that pollutant. It is classified as non attainment if the levels of ambient air pollution exceed the NAAQS for that pollutant. If the monitored pollutants have fallen from nonattainment levels to attainment levels, it is classified as maintenance. Areas for which sufficient ambient monitoring data are not available are designated as unclassified for those particular pollutants.

The CAA directs the USEPA to delegate primary responsibility for air pollution control to state governments, which comply with certain minimum requirements. State governments, in turn, often delegate this responsibility to local or regional governmental organizations. The State Implementation Plan (SIP) was originally the mechanism by which a state set emission limits and allocated pollution control responsibility to meet the NAAQS. The function of a SIP broadened after passage of the CAAA and now includes the implementation of specific technology-based emission standards, permitting of sources, collection of fees, coordination of air quality planning, and prevention of significant deterioration of air quality within regional planning areas and statewide. Section 176 of the CAA, as amended, requires that federal agencies must not engage in, approve, or support in any way any action that does not conform to a SIP for the purpose of attaining Ambient Air Quality Standards (AAQS).

A list of the criteria pollutants regulated under the CAA, and their currently applicable NAAQS set by the USEPA for each, along with State of Nevada Standards, are listed in **Table F3.1-1**. Utah has the same air quality standards as NAAQS.

#### Nevada State Air Quality Program

The Bureau of Air Pollution Control (BAPC) is the agency in the State of Nevada that has been delegated the responsibility for implementing a SIP (excluding Washoe and Clark counties, which have their own SIP). Included in the SIP are the State of Nevada air quality permit programs (Nevada Administrative Code [NAC] 445B.001 through 445B.3497, inclusive). The Nevada AAQS also are part of the SIP. The Nevada AAQS generally are identical to the NAAQS. In addition to establishing the Nevada AAQS, the BAPC is responsible for permit and enforcement activities throughout the State of Nevada.

Controlling fugitive dust from construction activities is covered in the NAC 445B.22037 – Emission of Particulate Matter: Fugitive Dust. A Class II Air Quality Operating Permit for Stand-Alone Surface Area Disturbance Permit and a dust control plan are required for surface disturbances of more than 5 acres. The plan must consider “best practical methods” to prevent particulate matter from becoming airborne that include, but are not limited to paving, chemical stabilization, watering, phased construction, and re-vegetation.

#### Clark County

USEPA has designated parts of Clark County as nonattainment for CO and PM<sub>10</sub>, and a designation of nonattainment for O<sub>3</sub> is expected. The conformity requirement applies to federal transportation decisions made in O<sub>3</sub>, CO, and/or PM<sub>10</sub> nonattainment or maintenance areas. As such, Clark County must submit a Transportation Conformity Plan to USEPA, via the State of Nevada, to satisfy the criteria of 40 Code of Federal Regulations (CFR) Part 51, Subpart T and Part 93, Subpart A.

The purpose of the Clark County Transportation Conformity Plan is to implement Section 176(c) of the CAA, as amended at 42 United States Code (USC) 7401, and the related requirements of 23 USC 109(j), 40 CFR Part 51 Subpart T, and 40 CFR Part 93 regarding the conformity of transportation plans, programs, and projects with state implementation plans. To fall within the scope of the conformity regulation, transportation plans, programs, and projects must be developed, funded, or approved by the United States Department of Transportation (USDOT) and the Clark County Metropolitan Planning Organization or other recipients of funds under Title 23 of the USC or the Federal Transit Act, 49 USC 1601.

The Clark County Transportation Conformity Plan is based on the CAA section 176(c)(4)(E), which provides the requirements for conformity SIPs, and the transportation conformity regulations at 40 CFR Part 51.390 and Part 93.100-129. These regulations detail consultation criteria, policies, and procedures that Metropolitan Planning Organizations must follow when addressing transportation conformity issues. The Clark County Transportation Conformity Plan applies to all USEPA designated nonattainment and maintenance areas for transportation related criteria pollutants within Clark County, Nevada, now or in the future. The Clark County Department of Air Quality and Environmental Management will update this plan whenever the U.S. Congress enacts new regulations that affect transportation consultation criteria, policies, or procedures.

In June 2005, USEPA made a finding that the Las Vegas Valley nonattainment area had attained the CO NAAQS by the applicable attainment date (2000). (This finding of attainment removed the CAA requirement for the area to develop contingency measures.) There are presently no monitored exceedances of the CO health-based standard, which is 9 parts per million (ppm) averaged over 8 hours. Las Vegas Valley has experienced no exceedances from 1999 to the present. The number of exceedances of the CO NAAQS has decreased from over 40 per year in the 1980s to less than 3 per year in late 1990s. The severity of violations has also decreased, from a high value of 21 ppm in 1981 to a high value of 7.3 ppm in 2000. The last exceedances of the 8-hour CO NAAQS, 10.3 ppm, and 10.1 ppm, occurred in 1998 at the Sunrise Avenue site in Las Vegas.

In December 2008, USEPA made a determination that a large section of Clark County including the Las Vegas Valley is a nonattainment area for the 8-hour O<sub>3</sub> standard. The nonattainment area is described as that portion of Clark County that lies in hydrographic areas 164A, 164B, 165, 166, 167, 212, 213, 214, 216, 217, and 218 but excluding the Moapa River Indian Reservation and the Fort Mojave Indian Reservation. The nonattainment designation for the 8-hour O<sub>3</sub> standard was vacated by court action in 2007. O<sub>3</sub> is not usually emitted directly into the air, but at ground-level is created by a chemical reaction between oxides of nitrogen and volatile organic compounds in the presence of sunlight.

According to the Clark County PM<sub>10</sub> SIP document, fugitive and paved road dust sources dominate PM<sub>10</sub> emissions in the Las Vegas Valley. Violations of the 24-hour national standard (150 µg/m<sup>3</sup>) are typically associated with high-wind events and sources of fugitive dust that are located near the air quality samplers (construction activities, aggregate processing facilities, unpaved roads, and disturbed vacant land). Violations of the 24-hour PM<sub>10</sub> national standard rarely occur at several monitoring stations throughout the Las Vegas Valley at the same time. However, even without high winds, fugitive dust sources can cause elevated 24-hour PM<sub>10</sub> concentrations at a nearby air quality sampler leading to annual average concentrations above annual AAQS for PM<sub>10</sub> (50 µg/m<sup>3</sup>). Combustion particles and particles that evolve from condensation and/or chemical reactions play an insignificant role in PM<sub>10</sub> air quality problems in the Las Vegas Valley (Clark County 2001).

Research conducted by Clark County in preparing the PM<sub>10</sub> SIP determined that peak ambient PM<sub>10</sub> concentrations in the nonattainment area typically occur during high-wind conditions. These high concentrations are generated primarily by windblown soil particles from disturbed soil surfaces. Particles are largely available to become airborne due to the relative lack of protective vegetation typical of arid desert climate, the fine texture of the type of soils that are present in the basin, and the large amount of surface soil disturbance activities occurring in the nonattainment area (Clark County 2001).

The SIP identified measures for control of dust from construction activities as listed below:

- Strengthen requirements of existing fugitive dust control rules;
- Provide for better enforcement of fugitive dust control rules;
- Mitigation bond requirement;
- Dust control plans for construction/land clearing and demolition;
- Dust control monitor required for construction sites having more than 50 acres of actively disturbed area;
- Track out control;
- Staging areas, equipment storage, and material storage areas; and
- Use of surfactants or tackifiers.

#### Utah State Air Quality Program

The Utah Division of Air Quality (UDAQ), a division of the Utah Department of Environmental Quality, is the agency in the State of Utah that is responsible for oversight of air quality and development and implementation of Utah's SIP. The UDAQ is responsible for permit and enforcement activities throughout the state, as well as the

state's air monitoring program. In addition to the UDAQ, any political subdivision of Utah has the authority to mandate air pollution controls.

In the State of Utah there are several areas that are designated as nonattainment or maintenance areas by USEPA. The UDAQ is required to have SIPs or Maintenance Plans for those areas that are not designated as attainment. Currently, all of Utah is in attainment for NO<sub>2</sub>, and O<sub>3</sub>; however portions of Utah are designated as nonattainment or maintenance for CO, PM<sub>10</sub>, PM<sub>2.5</sub>, or SO<sub>2</sub>. A majority of the areas not designated as attainment are in close proximity to Salt Lake City and its metropolitan area, including Davis, Salt Lake, Utah, Tooele, and Weber Counties. While the groundwater development area extends into Tooele County, the portions of Tooele County that have been designated as nonattainment are approximately 50 miles from the groundwater development area.

Research conducted by UDAQ in preparing the PM<sub>10</sub> SIP determined that peak ambient PM<sub>10</sub> concentrations in the nonattainment area typically occur during winter-time conditions. These high concentrations are primarily due to nearby stationary sources, mobile sources and wood burning, in that order of importance. Together these three source types contribute more than 75 percent of the measured winter-time PM<sub>10</sub> concentrations analyzed for the SIP (UDAQ 2002).

**References**

Clark County. 2001.  $PM_{10}$  State Implementation Plan for Clark County. June 2001.

UDAQ. 2002. Utah State Implementation Plan Section IX, Part A: Fine Particulate Matter ( $PM_{10}$ ). July 2002.