standards

8.3 Applicability

The SRMT Air Quality Program will perform ambient monitoring for sulfur dioxide, heavy metals, particulate matter (10 and 2.5 microns), ozone and nitrogen dioxide.

Section 9.0

Air Quality Standards

- 9.1 General
- 9.2 Sulfur Dioxide
- 9.3 Particulate Matter
- 9.4 Nitrogen Dioxide
- 9.5 Ozone
- 9.6 Fluorides
- 9.7 Heavy Metals

9.1 General

- (1) Air quality standards are designed to provide protection from the adverse health effects of air contamination and they are intended further to protect and conserve the natural resources and environment and to promote maximum comfort and enjoyment and use of property consistent with the economic and social well-being of the community.
- (2) The provisions of this section shall apply to all areas within the exterior boundaries of the St. Regis Mohawk Reservation and any other areas that the SRMT can show jurisdiction over.
- (3) No person shall permit, suffer or allow the emission of contaminants from an emission source, which alone or in combination with emissions from other sources cause contravention of air quality standards promulgated in this Section.
- (4) Notwithstanding the existence of specific standards, emissions of odorous, toxic or deleterious substances in concentrations or of such duration that will affect human health or well-being or unreasonably interfere with the enjoyment of property or unreasonably and adversely affect plant or animal life shall not be permitted.

9.2 Sulfur Dioxide

(1) Definitions

- (a) Sulfur Dioxide (SO2). A nonflammable, nonexplosive, colorless gas, having a pungent, irritating odor. For the purpose of this subsection, this term shall also include other material that may test as sulfur dioxide by the specified method of measurement.
- (b) ug/m3. Micrograms of contaminant per cubic meter of air.

(2) Standards

- (a) Primary ambient air quality standards for sulfur oxides (sulfur dioxide).
 - (i) The level of the annual standard is 0.030 parts per million (ppm), not to be exceeded in a calendar year. The annual arithmetic mean shall be rounded to three decimal places (fractional parts equal to or greater than 0.0005 ppm shall be rounded up).
 - (ii) The level of the 24-hour standard is 0.14 parts per million (ppm), not to be exceeded more than once per calendar year. The 24-hour averages shall be determined from successive nonoverlapping 24-hour blocks starting at midnight each calendar day and shall be rounded to two decimal places (fractional parts equal to or greater than 0.005 ppm shall be rounded up).
- (b) Secondary ambient air quality standards for sulfur oxides.
 - (i) The level of the 3-hour standard is 0.5 parts per million (ppm), not to be exceeded more than once per calendar year. The 3-hour averages shall be determined from successive nonoverlapping 3-hour blocks starting at midnight each calendar day and shall be rounded to 1 decimal place (fractional parts equal to or greater than 0.05 ppm shall be rounded up).

(3) Measurement

For primary ambient air standards

- (a) Sulfur oxides shall be measured in the ambient air as sulfur dioxide by the reference method described in 40 CFR Part 50 Appendix A or by an equivalent method designated in accordance with 40 CFR Part 53.
- (b) To demonstrate attainment, the annual arithmetic mean and the second-highest 24-hour averages must be based upon hourly data that are at least 75 percent complete in each calendar quarter. A 24-hour block average shall be considered valid if at least 75 percent of the hourly averages for the 24-hour period are available. In the event that only 18, 19, 20, 21, 22, or 23 hourly averages are available, the 24-hour block average shall be computed as the sum of the available hourly averages using 18, 19, etc. as the divisor. If fewer than 18 hourly averages are available, but the 24-hour average would exceed the level of the standard when zeros are substituted for the missing values, subject to the rounding rule of paragraph (2)(a)(i) of this section, then this shall be considered a valid 24-hour average. In this case, the 24-hour block average shall be computed as the sum of the available hourly averages divided by 24.

For secondary ambient air standards

- (a) Sulfur oxides shall be measured in the ambient air as sulfur dioxide by the reference method described in 40 CFR Part 50 Appendix A or by an equivalent method designated in accordance with 40 CFR Part 53.
- (b) To demonstrate attainment, the second-highest 3-hour average must be based upon hourly data that are at least 75 percent complete in each calendar quarter. A 3-hour block average shall be considered valid only if all three hourly averages for the 3-hour period are available. If only one or two hourly averages are available, but the 3-hour average would exceed the level of the standard when zeros are substituted for the missing values, subject to the rounding rule of paragraph (2)(b)(i) of this section, then this shall be considered a valid 3-hour average. In all cases, the 3-hour block average shall be computed as the sum of the hourly averages divided by 3.

9.3 Particulate Matter

(1) Definition.

Particulate is any matter dispersed in the atmosphere, whether solid or liquid, in which the individual particles are larger than single molecules (about 0.0002 μ in diameter), but smaller than about 500 μ . Suspended particulates range below 10 μ in diameter. For the purposes of this subsection, the suspended particulates are as collected and measured by the method specified.

(2) Standards.

- (a) Primary and secondary ambient air quality standards for PM10.
 - (i) The level of the primary and secondary 24-hour ambient air quality standards for particulate matter is 150 micrograms per cubic meter (ug/m3), 24-hour average concentration. The standards are attained when the expected number of days per calendar year with a 24-hour average concentration above 150 ug/m3, as determined in accordance with 40 CFR 50 Appendix J, is equal to or less than one.
 - (ii) The level of the primary and secondary annual standards for particulate matter is 50 micrograms per cubic meter (ug/m3), annual arithmetic mean. The standards are attained when the expected annual arithmetic mean concentration, as determined in accordance with 40 CFR Appendix J, is less than or equal to 50 ug/m3.
- (b) Primary and secondary ambient air quality standards for PM2.5

- (i) The standards for PM 2.5 are met when the annual arithmetic mean concentration, as determined in accordance with 40 CFR Part 50 Appendix L, is less than or equal to 15.0 micrograms per cubic meter.
- (ii) The 24-hour primary and secondary PM2.5 standards are met when the 98th percentile 24-hour concentration, as determined in accordance with 40 CFR Part 50 Appendix L, is less than or equal to 65 micrograms per cubic meter.

(3) Measurement

- (a) For the purpose of determining attainment of the primary and secondary standards, particulate matter shall be measured in the ambient air as PM10 (particles with an aerodynamic diameter less than or equal to a nominal 10 micrometers) by the reference method based on 40 CFR Part 50 Appendix J or designated in accordance with 40 CFR Part 53.
- (b) For the purpose of determining attainment of the primary and secondary standards, particulate matter shall be measured in the ambient air as PM2.5 (particles with an aerodynamic diameter less than or equal to a nominal 10 micrometers) by the reference methods based on Appendix L of 40 CFR Section 50.

9.4 Nitrogen Dioxide

(1) Definitions

Nitrogen dioxide is a reddish-orange-brown gas with a characteristic pungent odor. It is corrosive and highly oxidizing and may be physiologically irritating. NO2 is essential to the production of photochemical smog.

(2) Standards

- (a) Primary and secondary ambient air quality standards for nitrogen dioxide.
 - (i) The level of the national primary ambient air quality standard for nitrogen dioxide is 0.053 parts per million (100 micrograms per cubic meter), annual arithmetic mean concentration.
 - (ii) The level of national secondary ambient air quality standard for nitrogen dioxide is 0.053 parts per million (100 micrograms per cubic meter), annual arithmetic mean concentration.

(3) Measurement

- (a) The concentration of NO2 is determined by the reference method based on 40 CFR Part 50 F and designated in accordance with 40 CFR Part 53, or
- (b) An equivalent method designated in accordance with 40 CFR Part 53.
- (c) The standards are attained when the annual arithmetic mean concentration in a calendar year is less than or equal to 0.053 ppm, rounded to three decimal places (fractional parts equal to or greater than 0.0005 ppm must be rounded up). To demonstrate attainment, an annual mean must be based upon hourly data that are at least 75 percent complete or upon data derived from manual methods that are at least 75 percent complete for the scheduled sampling days in each calendar quarter.

9.5 Ozone

(1) Definition

Ozone can cause irritation of the mucous membranes, damage to vegetation and deterioration of materials. They affect the clearance mechanism of the lungs and later resistance to bacterial infection.

(2) Standards

- (a) For 1-hour primary and secondary ambient air quality standards for ozone.
 - (i) The level of the national 1-hour primary and secondary ambient air quality standards for ozone measured by a reference method based on 40 CFR Part 50 Appendix D and designated in accordance with 40 CFR Part 53, is 0.12 parts per million (235 ug/m3).
 - (ii) The 1-hour standards set forth in this section will remain applicable to all areas notwithstanding the promulgation of 8-hour ozone standard. In addition, after the 8-hour standard has become fully enforceable under part D of title I of the CAA and subject to no further legal challenge, the 1-hour standards set forth in this section will no longer apply to an area once EPA determines that the area has air quality meeting the 1-hour standard. Area designations and classifications with respect to the 1-hour standards are codified in 40 CFR part 81.
- (b) For 8-hour primary and secondary ambient air quality standards for ozone.
 - (i) The level of the national 8-hour primary and secondary ambient air quality standards for ozone, measured by a reference method based on 40 CFR Part 50 Appendix D and designated in accordance with 40 CFR Part 53, is 0.08 parts per million (ppm), daily maximum 8-hour average.

(ii) The 8-hour primary and secondary ozone ambient air quality standards are met at an ambient air quality monitoring site when the average of the annual fourth-highest daily maximum 8-hour average ozone concentration is less than or equal to 0.08 ppm.

9.6 Fluoride

(1) Definitions

Unless a different meaning is clearly required by context, words and phrases used in this section shall have the following meanings; general terms common with other sections of the Rlan as defined in Section 5, and terms specific to standards for fluoride as defined below:

- (a) Forage" means grasses, pasture and other vegetation that is consumed or is intended to be consumed by livestock.
- (b) "Cured forage" means hay, straw, ensilage that is consumed or is intended to be consumed by livestock.
- (c) "Fluoride" refers to a heterogeneous group of compounds from the highly reactive, nonmetallic gaseous element known as fluorine. For the purpose of this standard, fluoride will include material that tests as fluoride by the method specified or other methods acceptable to the director.

(2) Standards-forage

- (a) All sampling to determine compliance with these standards shall be conducted in locations and during time periods consistent with protecting livestock and vegetation.
- (b) The fluoride content of forage calculated by dry weight shall not exceed:
 - (i) For growing season (not to exceed six consecutive months)- 40 ppm
 - (ii) For any 60 day period- 60 ppm
 - (iii) For any 30 day period- 80 ppm

(3) Standards-Ambient

- (a) All sampling to determine compliance with these standards shall be conducted in locations and during time periods consistent with protecting livestock and vegetation.
- (b) Gaseous fluorides in the ambient air calculated as HF at standard conditions (25 degrees Celsius, 760 in. Hg) shall not exceed:
 - (i)12 hour averages to be less than 1.13 ppb;
 - (ii) 24 hour averages to be less than 0.88 ppb;

- (iii) One week averages to be less than 0.50 ppb; and,
- (iv) One month averages to be less than 0.25 ppb.

(4) Measurement

- (a) Compliance with standards. When requested by the Air Quality Program, persons emitting fluorides to the ambient air shall demonstrate their compliance with Section 9.6.2 and 9.6.3 by conducting a monitoring program approved in writing by the Air Quality Program. All monitoring data shall be submitted to the Air Quality Program monthly.
- (b) Total fluorides in and on forage is determined by current scientifically acceptable measurement practices that are considered to be standard methods or other methods acceptable to the Director of the Environment Division.

9.7 Heavy Metals

(1) Definitions

All metals shall include the metallic form and metallic compounds that may test as those metals by the acceptable analytical method.

(2) Standards

Applicable in all levels during any month, the average concentration shall not exceed:

- (a) Beryllium (Be) 4.2E-4 ug/m3 (b) Cadmium (Cd) 2.4E-2 ug/m3 (c) Chromium (Cr) 1.2 ug/m3 (d) Lead (Pb) 7.5E-1 ug/m3 (e) Nickel (Ni) 4.0E-3 ug/m3 (f) Zinc (Zn) 50.0 ug/m3
- (3) Measurement

Metals in air will be sampled according to 40 CFR 50 Appendix B, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere (High-Volume Method). The concentration of metals in the ambient air will be analyzed using EPA Method IO-3.5, Inductively Coupled Plasma/Mass Spectrometry (ICP/MS).

9.8 Monitoring Instruments

| POLLUTANT | PREVENTION and CONTROL | MONITORING | EQUIPMENT |
|-----------|------------------------|--------------|-----------|
| | | and SCHEDULE | - |

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|-----------------|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Ozone | Reduce motor vehicle reactive | 1 I omedon hind mileticul | |
| | organic gas (ROG) and nitrogen oxide | 1 | |
| | (NOx) emissions through inspection | Model 400A Ozone Analyzer, | |
| | programs, and reduced vehicle use. Limit | Model 700 Calibrator. | |
| | ROG emissions from commercial/ | | |
| | industrial operations and consumer | Continuous Monitoring | |
| | products. Conserve energy. | | |
| Respirable | Control dust sources, industrial | R&P Company Incorporated. | |
| Particulate | Particulate emissions. | | |
| Matter | wood burning stoves and | Particulate Monitor. | |
| (PM10) | fireplaces. Reduce secondary | | |
| 1 | pollutants, which react to form | T . | |
| | PM10. Conserve energy. | Community in the state of the s | |
| Fine | Reduce combustion emissions | R&P Company Incorporated. | |
| Particulate | from motor vehicles, equipment, industries, | TEOM Series 1400a. | |
| Matter | and agricultural and | ACCU System. | |
| (PM2.5) | residential burning. | Acco bysicin. | |
| ` ′ | . | Continuous Monitoring-TEOM | |
| | | Every 6th Day-ACCU | |
| Nitrogen | Control motor vehicle and | API, Inc. | |
| Dioxide | industrial combustion emissions. | Model 200A NOx Analyzer | |
| (NO2) | Conserve energy. | Model 700 Calibrator | |
| (2.02) | Combat ve energy. | Woder 700 Carorator | |
| | | Candianana Mariana | |
| Heavy Metals | Reduce emissions from industrial sources. | Continuous Monitoring | |
| Ticavy Iviciais | Reduce emissions from industrial sources. | HI-Q Environmental | |
| | | Total Suspended Particulate | |
| | | Monitor. | |
| | | | |
| 0.10 | | Every 6 th Day | |
| Sulfur | Reduce use of high sulfur fuels | API, Inc. | |
| Dioxide | (e.g. use low sulfur reformulated | Model 100A SO2 Analyzer | |
| (SO2) | diesel or natural gas). Conserve | Model 700 Calibrator | |
| | energy. | İ | |
| | | Continuous Monitoring | |

