

APPENDIX III:

Key Terms

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KEY TERMS

Air Quality Monitoring – a program through which air quality samples are collected to judge attainment of ambient air quality standards, to prevent or alleviate air pollution emergencies, to observe pollution trends throughout regions, and to evaluate the effects of urban, land-use, and transportation planning relating to air pollution. The Ambient Air Monitoring Program in Pennsylvania is run by DEP and two local independent health departments (Allegheny and Philadelphia counties). Measurements are taken in areas of high population density, high expected levels of pollution, or both.

Ambient air quality – concentration of pollutants in the air around us, generally expressed in parts of pollutant per volume of air (contrasted with emissions)

Area sources of air pollution – usually refers to smaller commercial sources that are not required to be permitted, residential and other miscellaneous sources (ex. fires).

Biogenic sources – natural sources of air pollution, for example, trees.

Emissions – for purposes of ozone, the organic and nitrogen oxide pollution coming directly from area, mobile, nonroad and stationary facilities, estimated before dilution in the ambient air.

Emission offsets – emission reductions achieved on a continuous basis that allow a new source of air pollution to construct and operate. Generally, more than one pound of reduction is required to offset one pound of new pollution so there is a net reduction in emissions.

Classification – the Clean Air Act divides nonattainment areas for ozone (and other pollutants) into various categories, depending on the extent of their pollution. The more polluted areas must do more, but they are given more time to reduce pollution and attain the standard.

Core Based Statistical Area – a central county or group of counties with at least one population core and a high degree of social and economic integration. Criteria are set by the U.S. Office of Management and Budget.

Designation - the process by which the U.S. Environmental Protection identifies the areas which do not meet the NAAQS.

Design Value - the value for a monitor or a nonattainment area that, for legal purposes, determines whether the monitor or area violates the standard. The 8-hour design value for a monitor is the fourth highest maximum 8-hour concentration over three years. The 8-hour design value for an area with more than one monitor is the highest monitor design value.

Emissions – pollution emitted directly from a source. Generally expressed in mass over a time period, ex. tons per day or tons per year.

Metropolitan Statistical Area - a CBSA with a minimum population of at least 50,000.

Micropolitan Statistical Area – a CBSA with a population of at least 10,000 but less than 50,000.

Mobile sources of air pollution – highway vehicles, including cars, motorcycles, trucks and buses.

National Ambient Air Quality Standards (NAAQS)– established by EPA. Primary standards protect public health with a margin of safety, secondary standards protect the environment.

New Source Review – the process by which new or modified major sources are reviewed in nonattainment areas to determine whether or not they must obtain compensating

emission reductions to ensure overall pollution decreases. (See also emission offsets)

Nonattainment – if an area (boundaries determined by EPA) is violating a NAAQS or has not completed all requirements to be removed from this status, it is designated nonattainment.

Nonroad (off-road) sources of air pollution – construction, farming, lawn and garden, industrial plant vehicles, airport service equipment, locomotives, airplanes, etc.

Nitrogen oxides (NO_x) -- Chemical compounds containing nitrogen and oxygen; reacts with volatile organic compounds in the presence of heat and sunlight to form ozone. NO_x contributes to haze, acid rain, particulate formation and the nitrification of waterways and soils.

Ozone – a gas composed of three oxygen atoms. It is not usually emitted directly into the air, but at ground level is created by a chemical reaction between oxides of nitrogen (NO_x) and volatile organic compounds (VOC) in the presence of heat and sunlight. Ozone has the same chemical structure whether it occurs miles above the earth (stratospheric) or at ground level (tropospheric) and can be good or bad, depending on its location in the atmosphere.

Ozone Transport Region (OTR) --- area where ozone and its precursors are assumed to be regional. The Northeast Ozone Transport Region, the only one defined by the statute, includes ME, NH, RI, CT, MA, VT, NY, NJ, DE, MD, PA, DC, northern VA, and is governed by a Commission, the composition of which was also determined by Congress. The law gives EPA the authority to form others. EPA has not done so.

Ppb (ppm) – parts per million, parts per billion. A measure of concentration in ambient air. (0.08 parts per million can be expressed as 80 parts per billion)

Reasonably Available Control Technology (RACT)- An emission limitation on existing sources in nonattainment areas that takes into account the cost of controls.

State Implementation Plan (SIP) - Document prepared by states, and submitted to EPA for approval, which identifies actions and programs to be undertaken by the State and its subdivisions to implement their responsibilities under the Clean Air Act. Once approved by EPA, a SIP is federally enforceable.

Stationary (point) sources of air pollution – major industrial facilities with permits that are individually assessed by DEP

Tons per day – for ozone, tons of pollutant emitted on a typical summer weekday

Volatile Organic Compounds (VOCs) - A group of chemicals that react in the atmosphere with nitrogen oxides in the presence of heat and sunlight to form ozone; does not include methane and other compounds determined by EPA to have negligible photochemical reactivity.