New Mexico Air Quality Control Regions

What are Air Quality Control Regions?

In the field of air quality management, the axiom “air pollution is no respecter of political boundaries” is firmly established. By controlling air pollution on a regional basis, the jurisdictional boundary is no longer a barrier to effective air management.

Important factors in setting the boundaries of an air quality control region or AQCR include climate and meteorology, topography, vegetation, land use patterns, population characteristics, and growth projections. The administrator of the EPA has designated eight such AQCRs in New Mexico. Five of these regions are intrastate, while 3 are interstate. In the northwest, AQCR 014 includes portions of Arizona, Colorado, and Utah as well as part of New Mexico. The El Paso-Las Cruces-Alamogordo interstate region, AQCR 153, includes several counties in Texas as well as four counties in New Mexico. AQCR 012 includes portions of southeastern Arizona and southwestern New Mexico. The remaining regions cover areas totally within the boundaries of the state of New Mexico.

How are Air Quality Control Regions used?

When modeling to demonstrate compliance with the Prevention of Significant Deterioration (PSD) increments, dispersion modeling must include all PSD increment consuming sources in addition to the proposed source. All post-baseline sources emitting SO_2, NO_2, PM10, or PM2.5 are considered to consume increment whether or not their emission rates exceed EPA’s de minimus ton per year levels.

To determine whether an existing source consumes increment, it is necessary to know the applicable baseline dates. There are two types of baseline dates: 1) Major Source Baseline Date and 2) Minor Source Baseline Date.

The major source baseline dates are fixed dates identified in the Clean Air Act for each of the four criteria pollutants NO_2, SO_2, PM10, and PM2.5. Emissions associated with a modification at a major stationary source consume increment after this date. This applies to all AQCRs in the state.

The minor source baseline date is set by the first complete PSD application received by the Air Quality Bureau for that AQCR. Emission changes at all sources after this date affect the increment. An emission source can “consume increment” if the emissions increase, or “expand the increment” if the emissions decrease. Minor source baseline dates are established in each Air Quality Control Region.

AQCR 012

Pollutant Minor Source Baseline Date
NO_2 August 10, 1995
SO_2 August 10, 1995
PM10 August 10, 1995

The Arizona-New Mexico Southern Border Interstate Air Quality Control Region 012 is located in the southwestern part of the state and covers an area of 10,374 square miles. The counties within the region include Grant, Hidalgo and Luna.

The landscape in the region is one of high mountains and plains in Grant County to one of desert valleys and small, low mountain ranges in Hidalgo and Luna Counties. Elevations range from 3,800 feet above sea level in the desert valleys to 8,000 feet above sea level in the low mountain ranges. Altitudes in the higher mountain region in Grant County range to about 10,000 feet. The average annual temperature for the region is 60.4° F and the average annual precipitation ranges from 10 inches in the desert valleys and lower mountain ranges to 20 inches in the higher mountain ranges. The region is within the lower Colorado River Basin except for Luna County, which is entirely within the Southwest Closed Basin, and more than half of the Hidalgo County area is within the underground water basin.

Luna County's natural resources are very limited. Surface water is non-existent, and ground water is being used at a far greater rate than natural recharge to underground basins. Mineral resources are available, but little mining is done. The natural resources of Hidalgo County are varied. Livestock production is thriving while cultivated land is limited. Grant County has many mineral resources ranging from vast copper deposits to substantial amounts of molybdenum, zinc, lead and iron.

AQCR 014

Pollutant Minor Source Baseline Date
NO_2 June 6, 1989
SO_2 October 2, 1978
PM10 October 2, 1978

The New Mexico portion of the Four Corners Interstate Air Quality Control Region 014 is composed of San Juan County in its entirety, that portion of McKinley County west of the Continental Divide, that portion of Rio Arriba County lying west of the Continental Divide, all areas of the Jicarilla Apache reservation, and that portion of Valencia County lying within the Zuni and Ramah Navajo Reservation.

The total area of AQCR 014 is about 12,500 square miles. The landscape ranges from mesas and valleys to foothills and mountains. Elevations range from 4,800 feet in the Chuska Mountains along the western border between New Mexico and Arizona. Vegetation in the region includes grasslands, sagebrush, piñon and juniper as well as ponderosa pine forests in the higher elevations.

Mean monthly temperatures range from a low of 29.4° F in January to a high of 74.8° F in July. Average annual precipitation ranges from 5.6 to 10.9 inches, but is as high as 16 inches or more at higher elevations. Average wind speeds in the region are in the range of 10 miles per hour.

Natural resources in the region include extensive grazing areas for sheep and cattle, timber, and minerals including natural gas, petroleum, coal, helium and vanadium. Cultivated land is limited, while corn, dry beans, hay and apples are the major crops. Most irrigated farming occurs along the San Juan and Animas Rivers and on the Zuni Reservation. The major land use in the region is grazing.

AQCR 152

Pollutant Minor Source Baseline Date
NO_2 March 26, 1997
SO_2 May 14, 1981
PM10 March 26, 1997
PM2.5 February 11, 2013

The Albuquerque-Mid Rio Grande Intrastate Air Quality Control Region 152 is located in central New Mexico along the north-south oriented Rio Grande Valley. It is composed of portions of Sandoval and Valencia Counties, and Bernalillo County in its entirety. The northwest corner is bounded by the Continental Divide.

The total area of AQCR 152 is about 5,000 square miles. The topography varies from mesas and arroyos to mountains. Along the eastern border of the region are the Sandia and Manzano Mountains and in the north are the Jemez and Sierra Nacimiento Mountains. Elevations range from 4,800 feet at the Rio Grande to 10,678 feet at Sandia Peak. Vegetation includes grass, sage brush, juniper, piñon and ponderosa pine forests and irrigated crops in the Rio Grande Valley.

Mean daily temperatures range from 22° F in January to 92° F in July. As in other portions of the state, there is a large 30 degree range of daily temperatures. Average annual precipitation is only eight inches, except in the mountains. This precipitation falls as a result of occasional showers, which are least frequent in the winter months. There is no regular and frequent cleansing of contaminants from the air by precipitation. Average wind speed in the region is about nine miles per hour, but the average is higher in the late winter and spring, which causes occasional dust storms. Inversions, which tend to trap pollutants at ground level, occur frequently. Inversions below 500 feet occur on slightly over 80 percent of the winter months.

Natural resources in the region include grazing areas, irrigated farmland in the river valley, timber, and some minerals such as gypsum, pumice, and sand and gravel. Geothermal resources are located in northern Sandoval County.

AQCR 153

Pollutant Minor Source Baseline Date
NO_2 August 2, 1995
SO_2 None
PM10 June 16, 2000

The New Mexico portion of the El Paso-Las Cruces-Alamogordo Interstate Air Quality Control Region 153 is composed of Doña Ana, Otero, Sierra, and Lincoln Counties. The total area of AQCR 153 is 18,335 square miles. The topography is varied with a large number of mountains separating the drainage basins. In the west lies the Black Range, and in the east the Guadalupe, Sacramento, Jicarilla, and Capitan Mountains. The San Andres Mountains extend down the middle of the region separating the Tularosa basin from the Jornada del Muerto and the Rio Grande Valley. There are also gypsum dunes and extensive lava beds and sand wasteland. Elevations in the region vary from 3,800 feet in the Rio Grande Valley to approximately 12,000 feet at Sierra Blanca.

Except for the mountains and the fertile Rio Grande Valley which contains croplands, the landscape of the region is semi-desert with a sparse cover of mesquite, creosote bush, and other arid flora. In the higher altitudes are piñon, juniper, and ponderosa pine forests. Mean monthly temperatures in the region range from a low of 29.7° F in January to 82.8° F in July. Because of the high altitudes across the state, differences between day and night temperatures usually average about 30° F or more. Average annual precipitation ranges from 7.9 inches in the southern desert to 25.8 inches in the mountains. Most rainfall is slight in many parts of the region, destructive flash floods occur with summertime thunderstorms. Average annual wind speed in the region is about 10 miles per hour.

Natural resources in the region include grazing land, timber, coal, iron, and water in some areas. Much of the grazing land suffers from lack of rainfall. Mesquite and creosote bush limit its usefulness. The amount of available grazing land has also decreased because of important federal industries such as White Sands Missile Range, Holloman Air Force Base, and Fort Bliss. Areas of timber are located in Sierra, Otero and Lincoln Counties, and this resource is being exploited commercially, mainly in the last two. Irrigated croplands are located along the Rio Hondo in Lincoln County and also along the Rio Grande in Doña Ana County. Crops include cotton, fruits, nuts, vegetables, and alfalfa. Although the acreage is limited, Doña Ana County leads the state in the production of cotton, vegetables and pecans.

AQCR 154

Pollutant Minor Source Baseline Date
NO_2 None
SO_2 None
PM10 None

The Northeastern Plains Intrastate Air Quality Control Region 154 covers an area of 22,747 square miles, extends from the northeastern part of the state to the central portion of the

state, and includes Colfax, Guadalupe, Harding, Mora, San Miguel, Torrance and Union Counties.

The landscape is one of rolling grasslands of the central plains in the northeastern portion of the region to one of plateaus, mesas, and mountains in the northwestern portion of the region. The elevation varies from 3,800 feet in the plains to 11,600 feet in the mountains. A large portion of the region is drained by the Canadian and Pecos River Systems. A small portion of the region around Torrance County lies in the Estancia underground water basin.

The climate in this region is semi-arid with the exception of the mountain regions. Average high and low temperatures for the year are 74.0° F and 33° F, respectively. The average annual precipitation ranges from 15 inches on the plains and plateaus to 22 inches in the mountain regions.

AQCR 155

Pollutant Minor Source Baseline Date
NO_2 March 16, 1988
SO_2 July 28, 1978
PM10 February 20, 1979
PM2.5 November 13, 2013

The Pecos-Permian Basin Intrastate Air Quality Control Region 155 is composed of Quay, Curry, De Baca, Roosevelt, Chaves, Lea, and Eddy Counties. Generally, it includes the areas known as the Southern High Plains and the Middle Pecos River drainage basin.

The total area of AQCR 155 is 23,749 square miles. The landscape is predominately plains or rolling hills, although the southwestern part of the region is somewhat mountainous. Elevation ranges from 2,900 feet where the Pecos River flows into Texas to above 7,000 feet in the mountains of the southwest. Vegetation is generally grassland dotted with yucca, mesquite, or cholla; small piñon-juniper forests are found in the northern part of the region and near the Guadalupe, Sacramento, and Capitan Mountains along the southwestern border of the region. AQCR 155 also contains the most extensive areas of croplands in New Mexico.

Mean monthly temperatures in the region range from 37.4° F in January to 79.7° F in July. Average annual precipitation ranges from 11.5 inches in Eddy County to 16.8 inches in Curry and Roosevelt Counties. Average wind speeds are about 11 miles per hour.

Good farm and rangeland, extensive oil and natural gas deposits, and potash are the major natural resources of AQCR 155. Most irrigated farming occurs along the Pecos River in lower Chaves and Eddy Counties and along the eastern border with Texas in Quay, Curry, Roosevelt, and Lea Counties. Some dryland farming is also done in this latter area.

AQCR 156

Pollutant Minor Source Baseline Date
NO_2 None
SO_2 August 4, 1978
PM10 August 4, 1978

The Southwestern Mountains-Augustine Plains Intrastate Air Quality Control Region 156 covers 20,256 square miles in western New Mexico and includes Catron County, Socorro County, those portions of McKinley County lying east of the Continental Divide, and those portions of Valencia County, excluding Zuni and Ramah Navajo Reservations, lying west of a line described as follows: starting at the point at which the south boundary of Bernalillo County intersects with the section line between sections 1 and 2, Township 7 North, Range 2 West; then southerly on section lines to the Socorro-Valencia County line at sections 11, 12, 13 and 14, Township 5 North, Range 2 West.

The region's landscape is variable, going from timbered mountain ranges to mesas, plains and cultivated river valleys. Elevations range from 4,600 feet along the Rio Grande Valley to 11,000 feet in the mountains. The region is drained by the Rio Grande basin, the lower Colorado River basin, the Western Closed Basin and partially by the Central Closed Basin. The average annual temperature is about 56° F. The average annual precipitation ranges from 8 to 14 inches in the plains and valleys to as high as 30 inches in the mountains.

The natural resources of AQCR 156 include a large amount of grazing land and land suitable for farming, timber and minerals. Catron County has an abundance of natural resources which includes thousands of acres of timber and grazing land, minerals, water resources, and wildlife. Almost the entire County of Socorro can be utilized for grazing purposes while irrigated farming is concentrated along the upper Rio Grande Valley. The flood plain of the Rio Grande Valley in Valencia County offers good opportunities for irrigated agriculture.

AQCR 157

Pollutant Minor Source Baseline Date
NO_2 None
SO_2 None
PM10 None

The Upper Rio Grande Valley Intrastate Air Quality Control Region 157 covers 6,136 square miles in the northern section of the state and is composed of Santa Fe, Taos, and Los Alamos Counties and that portion of Rio Arriba County lying east of the Continental Divide and not included within the Jicarilla Apache Reservation.

The landscape is one of high mountains, valleys, rugged foothills and plains. Elevations range from 5,600 feet along the Rio Grande to 13,151 feet in the mountains. The region is drained by the Rio Grande and its main tributaries the Red River and the Chama River. It is also partially drained by headwaters of the Pecos River in Santa Fe County. The climate in the region is

usually pleasant with an average annual temperature of 50° F, an average high of 70.4° F in July and an average low of 29.9° F in January. Daily low and high temperatures usually vary as much as 30° F. The average annual precipitation in the region is 15 inches, with June and July being the wettest months and November being the driest.

Natural resources in the region include water, minerals, timber, wildlife and scenic grandeur. A good portion of the region is used for grazing. Beryllium, molybdenum, pegmatite, perlite and mica are prevalent minerals found in the northern portion of the region. Other mineral resources such as copper, uranium, gypsum, pumice and sand and gravel are found in various locations throughout the region.