

ON THE AIR

Fall
2018

A Newsletter about
Clean Air. Provided
by Spokane Regional
Clean Air Agency.

Spotlight: Air Quality Monitoring

The wildfire season put our Air Quality Monitoring program under the spotlight. Here are answers to some of the commonly-asked questions we received.

Why isn't there an air monitoring station closer to my home?

Air quality can certainly vary neighborhood to neighborhood, and day to day, depending on many factors. For example, if your neighbors burn wood to heat their home, you may see an impact to your neighborhood's air quality. Idling cars, recreational fires, and other daily activities can also affect air in our immediate surroundings.

The air quality monitoring network is designed to ensure that the overall air shed in Spokane County meets national ambient air quality standards. Monitoring locations are selected to represent air quality over broad areas. The emphasis is on areas expected to have the worst pollution and avoid redundancy, i.e., not using our resources to monitor in two or more

areas with pollution levels that tend to track closely together. Our locations are:

Augusta Ave & Fiske St, measures fine particles (PM_{2.5}) and coarse particles (PM₁₀)

Broadway Ave near University Ave, measures PM_{2.5}

Colbert, measures PM_{2.5}

Greenbluff, Ecology operated site, measures ozone (O₃) during ozone season (May-Sept)

Monroe St & Wellesley Ave, Ecology-operated site, measures PM_{2.5}

Turnbull National

Wildlife Refuge, measures O₃ (May-Sept) and PM₁₀

Airway Heights, removed on 6/18/18, due to building remodeling expected to last at least 18 months.

Through research and careful planning, our air monitoring is also used to measure typical concentrations in areas of high population density, determine the impact of significant sources or source categories on air quality (e.g. winter

Is air monitoring necessary?

Not only is it important to the public health of our residents to know about the quality of the air they are breathing, it is required that we measure air quality to ensure compliance with national, health-based air quality standards.

Air quality monitoring data is also used to identify trends and to determine attainment with national ambient air quality standards. We must demonstrate to EPA that we are in compliance with air quality standards.

Air monitoring data can be used to activate emergency control procedures to prevent or alleviate significant air pollution events such as wildfires, dust storms, etc.

Air quality monitoring data enables us to track pollution levels and to curtail the use of wood stoves when pollution levels reach a "trigger value" established in state and local rules. ■



Rooftop air monitoring equipment at Spokane Clean Air's office near Spokane Community College

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wood heating, wildfire smoke, blowing dust, summer ozone) and establish background concentration levels (e.g. measuring PM₁₀ at Turnbull Wildlife Refuge).

How are monitoring sites selected?

It is important that the data the monitoring network collects is representative of Spokane County as a whole. To ensure this is met, the U.S. EPA created guidelines for selecting the number of and locations of monitors:

- The priority area is the zone of highest pollution concentration within the region; one or more stations should be located in this area (PM_{2.5} at Augusta, Broadway, and Monroe);
- Close attention should be given to densely populated areas within the region, especially when they are in the vicinity of heavy pollution (PM_{2.5} at Augusta, Broadway, and Monroe);
- The quality of air entering the region is to be assessed by stations situated on the periphery of the region (e.g., PM₁₀ at Turnbull); meteorological factors (e.g., frequencies of wind directions) are of primary importance in locating these stations;
- Sampling should be undertaken in areas of projected growth to determine the effects of future development on the environment (PM_{2.5} at Colbert and Airway Heights);
- A major objective of compliance monitoring is the evaluation of progress made in attaining the desired air quality; for this purpose, sampling stations should be strategically situated to facilitate evaluation of the implemented control strategies.

To select locations according to these criteria, it is necessary to have information on the location of emission

sources, geographical variability of ambient pollutant concentrations, meteorological conditions and population density. Therefore, selection of the number, locations and types of sampling stations is a complex process.

Other factors taken into account when selecting air monitoring sites

Economics – The amount of resources required for the entire data collection activity, including operators, instrumentation, installation, safety equipment, maintenance, data retrieval/data transfer, data analysis, quality assurance and data interpretation.

Security – Experience has shown that in some cases, a particular site may not be appropriate for the establishment of an ambient monitoring station simply due to problems with the security of the equipment.

Logistics – Logistics is the process of dealing with the procurement, maintenance and transportation of material and personnel for a monitoring operation.

Atmospheric considerations – Atmospheric considerations may include the spatial and temporal variability of the pollutants and its transport to the monitoring site. Effects of buildings, terrain, and heat sources or sinks on the air trajectories can produce local anomalies of excessive pollutant concentrations.

Topography – Both the transport and the diffusion of air pollutants are complicated by topographical features.

None of the factors mentioned above stand alone. Each is dependent in part on the others and all must be considered. We operate an appropriate number of sites to protect public health, taking into account and making the best use of the resources we have available. ■

Air Quality Monitoring Objectives

1. Support compliance with ambient air quality standards and emissions strategy development.

Data from monitors is used for comparison with the National Ambient Air Quality Standards (NAAQS) to determine attainment status classification. In addition, data is used for implementing agency programs designed to meet NAAQS, developing attainment and maintenance plans, evaluating regional air quality models used in developing emission strategies, and tracking of trends in air pollution control measures aimed at improving air quality.

2. Provide air pollution data to the general public in a timely manner.

Spokane Clean Air provides current and forecasted air quality data on the Agency's web page. Current air quality levels are updated hourly and available the public.

3. Collect only credible data that has the greatest opportunities to benefit public health.

Data is collected using a level of quality control consistent with its intended use. ■

Smoke from wood heating

key contributor to winter air pollution in our neighborhoods

The cozy, warm glow of wood heating has a downside. Wood smoke is a complex mixture of gases and particles. When inhaled, tiny particles bypass filters in your nose and throat, penetrating deep into your lungs. Epidemiological studies link exposure to particles to loss of lung function, bronchitis, lung disease, heart attacks and premature death.

Wood smoke affects us all.

One chimney may seem inconsequential, but when multiplied by all the fireplaces and woodstoves across our area, it constitutes a lot of air pollution. In fact, wood burning is the chief source of wintertime air pollution. On an average winter day, up to ¾ of particulate pollution comes from wood burning stoves, fireplaces and fireplace inserts.

Today's devices are much cleaner...when used properly.

Older wood burning stoves and fireplaces emit far more air pollution than new models. Although it's how you operate your stove and prepare your

firewood that matters most. Improper operation can result in excessive chimney smoke, which can result in complaints. Excessive smoke is unlawful and can result in enforcement action.

Tips to burn cleaner, more efficiently.

- ➔ Wood should be cut, split, stacked and covered to dry at least 12 months before burning. Burning unseasoned wood emits more smoke and wastes wood.
- ➔ Never burn treated wood, plastic, magazines, paper, gift wrap, cardboard or trash. These materials emit chemicals when burned. The only fuel you may burn is dry, natural firewood or manufactured logs and pellets.
- ➔ Start your fire using small pieces of wood. Keep the stove door slightly open for about one minute to help the fire burn strongly before closing and latching it.
- ➔ Start small, load it with one piece as needed instead of loading it with several large pieces at once.

- ➔ Be sure not to close the air control damper too much.
- ➔ Go outside and check your chimney – if it's dark, take a flashlight. After a 20-minute start-up, only heat waves or a wisp of smoke should be visible. If you see more than this, you need to open the damper and provide more air to your fire.
- ➔ Don't burn during a burn ban. That's when air pollution is expected to exceed health-based air quality standards. Check current conditions at 509-477-4710 or online at spokanecleanair.org. While online you may subscribe to receive emails when burn bans are issued and lifted.

Reduce your heating needs.

The best way to reduce emissions is to not light a fire at all. Keep warm by adding insulation to your attic, caulking leaks or weather-stripping doors, windows and pipes. Weatherization tips are available at energy.gov/public-services/homes/home-weatherization. ■

Tired of your Old Flame? *Replace it Today & Save!*

For the last several years, Spokane Clean Air has teamed up with state and federal agencies to improve air quality by providing incentives for people to replace their old, inefficient and dirty wood stoves and inserts with cleaner devices.

Under the current state grant, those residing in the Spokane County Smoke Control Zone or in the city limits of Deer Park, may apply

to replace their old wood stove or fireplace insert with wood, pellet or gas devices or a mini-split ductless heat pump.

The incentives range from \$500 for wood devices, \$750 toward pellet and \$1,000 toward natural gas or mini-split heat pump. The amount is subtracted from your bill at the time of purchase from a pre-qualified hearth dealer. The incentive is not retroactive.

More information and application forms are at SpokaneCleanAir.org. ■



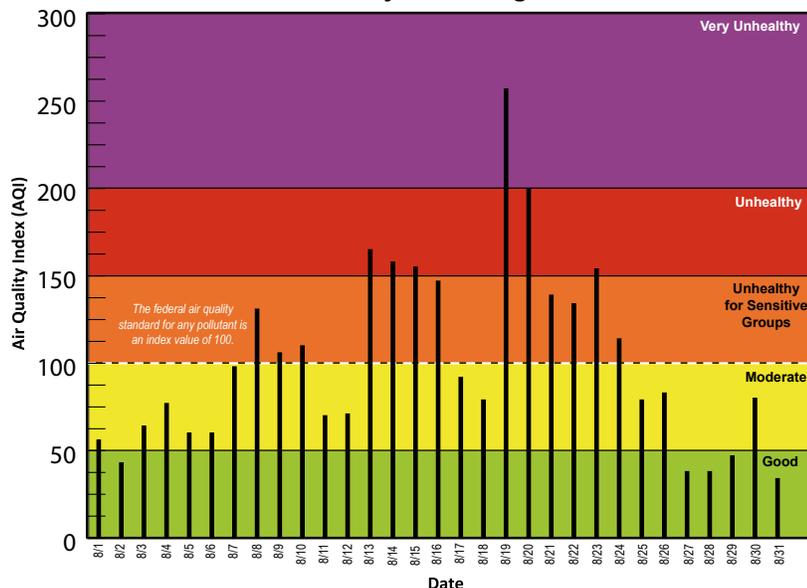
Wildfire Smoke Recap

How bad was our air quality this past wildfire season? It was bad. There were 13 days when air pollution measured over the 24 hour, health-based air quality standard. These 13 days occurred between August 8 and August 24. How does this past wildfire season compare with previous years? Take a look:

Season	2018	2017	2016	2015	2014	2013	2012
# Days above the health-based standard	13	16	0	13	1	0	2

* 1999 - 2011: no wildfire smoke impacts

Air Quality Index August 2018



On the Air is a publication of the Spokane Regional Clean Air Agency. Its purpose is to inform local residents on all aspects of outdoor air pollution in Spokane County. Contact Lisa Woodard, *Editor*, with comments or ideas: Phone: 477-4727, ext. # 115 Email: lwoodard@spokanecleanair.org

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