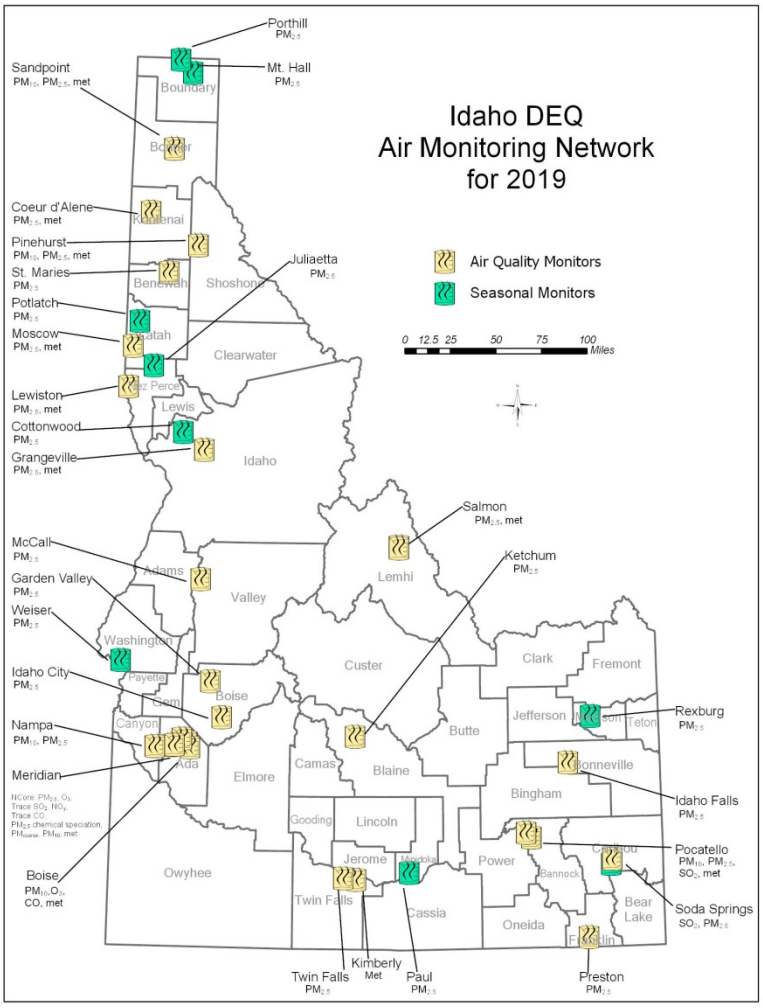
# Idaho Department of Environmental Quality Annual Ambient Air Quality Monitoring Network Plan

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**Department of Environmental Quality**
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# Abbreviations, Acronyms, and Symbols

| | |
|---|---|
| µ | micron |
| µg | microgram |
| AQI | Air Quality Index |
| AQS | air quality system |
| ARM | approved regional method |
| BAM | beta attenuation monitor |
| CBSA | core-based statistical area |
| CDD | clean data determination |
| CFR | Code of Federal Regulations |
| CO | carbon monoxide |
| CRB | Crop Residue Burning |
| CSA | combined statistical area |
| DEQ | Idaho Department of Environmental Quality |
| DV | design value |
| EPA | United States Environmental Protection Agency |
| FEM | federal equivalent method |
| FRM | federal reference method |
| m | meter |
| $m^2$ | square meter |
| $m^3$ | cubic meter |
| MSA | metropolitan statistical area |
| mbar | millibar |
| NAA | nonattainment area |
| NAAQS | National Ambient Air Quality Standards |
| NO | nitric oxide |
| $NO_2$ | nitrogen dioxide |
| $NO_x$ | nitrogen oxides |
| $NO_y$ | total reactive nitrogen |
| $O_3$ | ozone |
| POC | parameter occurrence code |
| $PM_{2.5}$ | particulate matter with diameter less than or equal to 2.5 microns |
| $PM_{10}$ | particulate matter with diameter less than or equal to 10 microns |
| $PM_{10-2.5}$ | particulate fraction with a nominal diameter between 2.5 and 10.0 microns |
| ppb | parts per billion |
| ppm | parts per million |
| s | second |

| | |
|---|---|
| SCC | sharp cut cyclone |
| SIP | state implementation and maintenance plan |
| SLAMS | state and local air monitoring station |
| $SO_2$ | sulfur dioxide |
| SPM | special purpose monitor |
| STN | Speciation Trends Network |
| STP | sewage treatment plant |
| TEOM | tapered element oscillating microbalance |
| VSCC | very sharp cut cyclone |
| XRF | x-ray fluorescence |

# Executive Summary

The objective of the Idaho Department of Environmental Quality's (DEQ's) 2019 annual ambient air quality monitoring network plan is to determine whether the state's ambient air quality monitoring network is achieving its monitoring objectives and identify any needed modifications. While this is an ongoing annual assessment, DEQ also conducts a comprehensive 5-year network assessment, which was completed in 2015 and is found at *www.deq.idaho.gov/media/60177248/ambient-aq-monitoring-network-5-year-assessment.pdf*.

DEQ proposes the following network modifications in this year's annual network plan:

- Replace the Thermo Scientific 1400AB particulate matter 10 ($PM_{10}$) monitors, which are approaching end-of-service life, with the beta attenuation mass (BAM) 1020 $PM_{10}$ monitors. In 2019, BAM 1020 monitors are expected to be deployed at the Boise-Fire Station #5 and Sandpoint sites.
- Replace the existing 2025 federal reference method (FRM) $PM_{2.5}$ monitors with Met One Instrument's E-SEQ-FRM $PM_{2.5}$ monitors at all the current 2025 FRM sites. The 2025 FRM monitors were discontinued and are no longer supported by the manufacturer.
- Relocate the E-SEQ-FRM precision monitor from St. Maries to the Nampa site. The existing collocated pair of 2025 FRM $PM_{2.5}$ monitors at St. Luke's will remain in operation until phase out of the 2025 FRM monitors is complete.
- Remove the collocated 2025 FRM $PM_{10}$ precision monitor at the St. Luke's site. Collocated $PM_{10}$ monitoring for coarse measurements is no longer a regulatory requirement.
- To address power and access concerns at the Soda Springs special purpose monitor (SPM) location, the E-Sampler will be relocated from its current hospital rooftop location to an adjacent ground-level location.
- The Sandpoint site location is currently owned by University of Idaho who intends to sell the land in 2019. DEQ started the process to relocate the site to a nearby location.
- The eastern Idaho ozone modeling and assessment has been completed. The Garrett and Gould site in Pocatello has been selected as the location for DEQ's upcoming ozone monitoring efforts in eastern Idaho. The monitoring equipment has been procured, while site improvements and staff training are currently underway. Sampling is scheduled to begin no later than the 2020 season.
- Install a meteorological tower at the St. Marie's site. This tower will monitor the same parameters as the existing sites in the Coeur d'Alene region.
- Relocate the existing BAM $PM_{2.5}$ SPM monitor and meteorological tower from the current Coeur d'Alene – Lancaster Road site to a location nearer the city of Coeur d'Alene. The new location will reflect population exposure in and around the city of Coeur d'Alene.
- Change the sampling frequency of the 2025 FRM $PM_{2.5}$ monitor at the Nampa Fire Station site to 1:1.

Since submitting the 2018 annual network plan, DEQ made the following modifications to the network. Some items required US Environmental Protection Agency approval, while less significant items did not.

- Deployed the E-SEQ-FRM monitor in St. Maries to replace a malfunctioning 2025 FRM monitor. Because the deployment of this E-SEQ-FRM monitor occurred before the network-wide collocation pair was in place at the Nampa site, an additional E-SEQ-FRM monitor was deployed at St. Maries to fulfill instrument-specific precision monitoring requirements.
- Completed the relocation of the nitrogen dioxide ($NO_2$) analyzer from the Meridian—Near-Road site to the Meridian—St. Luke's NCore site to retain National Ambient Air Quality Standards (NAAQS) monitoring for $NO_2$.
- Replaced DEQ's single remaining 1405-F $PM_{2.5}$ tapered element oscillating microbalance (TEOM) monitor with a BAM 1020 $PM_{2.5}$ monitor at the Pocatello—Garrett and Gould monitoring site.
- Replaced the Ketchum 1400AB $PM_{2.5}$ TEOM with a BAM 1020 $PM_{2.5}$ monitor at a ground location near the current site.
- Relocated the BAM 1020 $PM_{2.5}$ monitor from the Franklin site to the DEQ $PM_{2.5}$ state and local air monitoring station site in Preston. This monitor provides continuous $PM_{2.5}$ concentrations in conjunction with the FRM for Air Quality Index reporting.
- Replaced the Thermo Scientific 1400AB $PM_{10}$ monitors with BAM 1020 $PM_{10}$ monitors at the Nampa, Pocatello, and Pinehurst sites.
- Replaced the 1400AB $PM_{2.5}$ TEOM monitor with BAM 1020 $PM_{2.5}$ monitor (both used as SPMs for Air Quality Index reporting) at the Garden Valley site.

# 1 Introduction

This document, in accordance with the federal requirements described below, is the Idaho Department of Environmental Quality's (DEQ's) 2019 annual ambient air quality monitoring network plan. The primary goal of the annual network plan is to determine whether the state monitoring network is achieving its monitoring objectives and identify any needed modifications. The appendices provide additional information on network design values (Appendix A), the IMPROVE monitoring network (Appendix B), supplemental correspondence (Appendix C), and federal requirement checklists (Appendix D).

Idaho's monitoring network has four principal objectives: (1) assess compliance with National Ambient Air Quality Standards (NAAQS); (2) support smoke management programs, including agricultural and prescribed burning practices; (3) identify emergency episodes caused by windblown dust or wildfire; and (4) support the evaluation of state implementation and maintenance plans (SIPs). In addition, DEQ operates a network of continuous fine particulate matter ($PM_{2.5}$) monitors and surface meteorology stations to support air quality forecasting, the Air Quality Index (AQI) program, and modeling projects. DEQ also leverages the IMPROVE monitoring network to fulfill requirements for the $PM_{2.5}$ transport (Hells Canyon) and $PM_{2.5}$ background (Craters of the Moon National Monument) monitoring sites (Appendix B).

Beginning July 1, 2007, state agencies were required to adopt and submit to the US Environmental Protection Agency (EPA) regional administrator an annual monitoring network plan (40 CFR 58.10). The plan shall provide for the establishment and maintenance of an air quality surveillance system that consists of a network made up of the following types of monitoring stations:

- State and local air monitoring stations (SLAMS), including monitors that use the following methods:
  - Federal reference method (FRM)
  - Federal equivalent method (FEM)
  - Approved regional method (ARM)
- NCore stations (included in the national network of multipollutant monitoring stations)
- $PM_{2.5}$ (particulate matter with diameter less than or equal to 2.5 microns [µ]) Speciation Trends Network (STN) stations
- Special purpose monitoring (SPM) stations

This plan also lists seasonal $PM_{2.5}$ monitors used for smoke and agricultural burning management.

The plan shall include a statement of purpose for each monitor and evidence that siting and operation of each monitor meet the requirements of Appendices A, B, C, D, and E of 40 CFR 58 where applicable (Appendix D).

This plan is made available for public inspection for 30 days before submission to EPA and subsequently includes public comments and responses (Appendix E). Any annual network plan that proposes SLAMS network modifications—including new monitoring sites—is subject to

approval by the EPA regional administrator, who shall approve or disapprove the plan within 120 days.

All stations required to be operational by January 1, 2020, and specific locations for the required monitors are included in this plan. The annual network plan contains the following required information for existing and proposed sites where appropriate:

- Air quality system (AQS, EPA database) site identification number
- Location, including street address and geographical coordinates
- Sampling and analysis method for each measured parameter
- Operating schedules for each monitor
- Proposals to remove or move a monitoring station within 18 months following plan submittal
- Monitoring objective and spatial scale of representativeness for each monitor as defined in Appendix D to 40 CFR 58
- Identifying any sites that are suitable or unsuitable for comparison against the annual $PM_{2.5}$ NAAQS as described in 40 CFR 58.30
- Metropolitan statistical area (MSA), core-based statistical area (CBSA), combined statistical area (CSA), or other area represented by the monitor
- Designation of any lead monitors as either source-oriented or nonsource-oriented (i.e., NCore) according to Appendix D of 40 CFR 58
- Source-oriented monitors for which a waiver has been requested or granted by the EPA regional administrator as allowed for under paragraph 4.5(a)(ii) of Appendix D to 40 CFR 58
- Source-oriented or nonsource-oriented site for which a waiver has been requested or granted by the EPA regional administrator for the use of lead-$PM_{10}$ (particulate matter with diameter less than or equal to 10 µ) monitoring in lieu of lead-total suspended particulate monitoring allowed under paragraph 2.10 of Appendix C to 40 CFR 58

The annual network plan documents how states and local agencies provide for the review of changes to a $PM_{2.5}$ monitoring network that impact the location of a violating $PM_{2.5}$ monitor. The affected state or local agency must document the process for obtaining public comment and include any comments received through the public notification process within their submitted plan.

# 2 Air Quality Surveillance Systems and Monitoring Objectives

Ambient air monitoring objectives have shifted over time, requiring air quality agencies to reevaluate and reconfigure monitoring networks. A variety of factors contribute to these shifting monitoring objectives:

- Air quality has changed since adoption of the federal Clean Air Act and NAAQS. For example, the problems of high ambient concentrations of lead and carbon monoxide (CO) have largely been solved.

- Populations and behaviors have changed. For example, the US population has (on average) grown, aged, and shifted toward urban and suburban areas over the past four decades. In addition, rates of vehicle ownership and annual miles driven have increased.
- New air quality objectives have been established, including rules to reduce air toxics, $PM_{2.5}$, and regional haze.
- The understanding of air quality issues and the capability to monitor air quality have both improved. Together, the enhanced understanding and capabilities can be used to design more effective air monitoring networks.

Ambient air monitoring networks must be designed to meet three basic monitoring objectives. Each objective is equally important and must be considered individually.

- **Provide air pollution data to the general public in a timely manner**. Data can be presented to the public in a number of ways, including air quality maps, newspaper articles or advertisements, internet sites, and as part of weather forecasts and public advisories.
- **Provide support for determining compliance with ambient air quality standards and developing emissions control strategies**. Data from qualified monitors for NAAQS pollutants are used for comparing an area's air pollution levels against the NAAQS. Data from monitors of various types can be used in developing attainment and maintenance plans. Data from SLAMS, and especially the NCore station, are used to evaluate the regional air quality models used in developing emission strategies and to track effectiveness of air pollution abatement control measures. In monitoring locations near major air pollution sources, source-oriented monitoring data can provide insight into how well industrial sources are controlling their pollutant emissions.
- **Provide support for air pollution research studies**. Air pollution data from the NCore multipollutant monitoring network can be used to supplement data collected by researchers working on health effects assessments and atmospheric processes or for monitoring methods development work.

To support the air quality management work indicated in the three basic air monitoring objectives, a network must be designed with a variety of monitoring site types. Monitoring sites must be capable of informing airshed managers about many things including the peak air pollution levels, typical levels in populated areas, air pollution transported into and outside of a city or region, and air pollution levels near specific emissions sources. The following list summarizes these site types:

- Maximum concentrations of air pollutants expected to occur in the area covered by the network
- Typical pollutant concentrations in areas of high population density
- Impact of significant sources or source categories on air quality
- General background concentration levels of air pollutants
- Extent of regional pollutant transport among populated areas and compliance with secondary air quality standards
- Air pollution impacts on visibility, vegetation damage, or other welfare-based impacts

The adequacy of an ambient air monitoring network may be determined by using a variety of tools, including the following:

- Federal monitoring requirements and network minimums
- Analyses of historical monitoring data
- Maps of pollutant emissions densities
- Dispersion modeling
- Special studies/saturation sampling
- SIP requirements
- Revised monitoring strategies (e.g., new regulations and reengineering of the air monitoring network)
- Network maps and network descriptions with site objectives defined
- Best professional judgment

The appropriate location of a monitor can only be determined on the basis of stated objectives. The following tools can help determine whether monitor locations are meeting their stated objectives:

- Maps, graphical overlays, and information based on geographic information systems, which are extremely helpful for visualizing the adequacy of monitor locations
- Plots (graphs) of potential emissions levels and/or historical monitored levels of pollutants versus monitor locations
- Modeling or special studies (including saturation monitoring studies) may be appropriate for determining the adequacy of a particular monitor location

# 3 DEQ's Ambient Air Quality Monitoring Network

DEQ is responsible for operating and maintaining the ambient air monitoring network for Idaho. Some air monitors in Idaho are managed by tribal monitoring organizations on tribal lands. This document is limited to the monitors in the air monitoring network that are managed by DEQ (Figure 1).

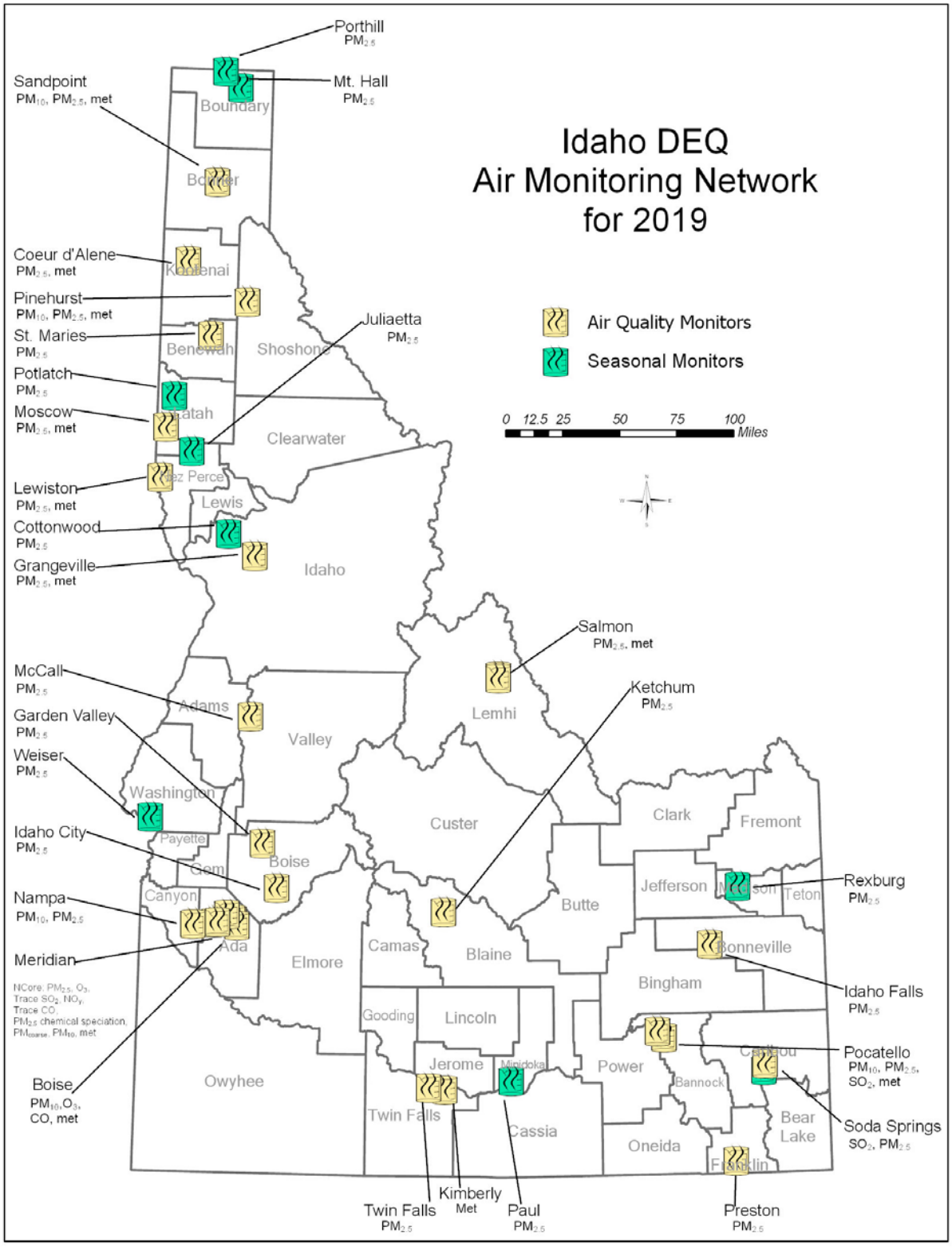


**Figure 1. Idaho air quality monitoring network, 2019.**

## 3.1 Monitoring Sites

On January 1, 2019, DEQ's SLAMS network consisted of 26 distinct monitoring sites measuring criteria pollutants and surface meteorology (Table 1). DEQ's ambient air quality monitoring network is operated and maintained by monitoring staff at DEQ's six regional offices.

**Table 1. DEQ monitoring stations, locations, and AQS identification codes.**

| Site | Address | Latitude/ Longitude | AQS Identification |
|---|---|---|---|
| Sandpoint—<br>University of Idaho | U of I Research Center, 2105 N. Boyer Ave.<br>Sandpoint, ID 83864 | +48.291820/<br>- 116.556560 | 160170003 |
| Coeur d'Alene—<br>Lancaster Rd. | Lancaster Road<br>Hayden, ID 83835 | +47.788908/<br>-116.804539 | 160550003 |
| Coeur d'Alene—LMP | Camp Cross, McDonald Point<br>Lake Coeur d'Alene, ID | +47.555253/<br>-116.817331 | 160550004 |
| St. Maries | Forest Service Building<br>St. Maries, ID 83861 | +47.316667/<br>-116.570280 | 160090010 |
| Pinehurst | 106 Church St.<br>Pinehurst, ID 83850 | +47.536389/<br>-116.236667 | 160790017 |
| Moscow | 1025 Plant Sciences Rd.<br>Moscow, ID 83843 | +46.728000/<br>-116.955667 | 160570005 |
| Lewiston | 1200 29th St.<br>Lewiston, ID 83501 | +46.408352/<br>-116.992533 | 160690012 |
| Grangeville | US Forest Service Compound<br>Grangeville, ID 83530 | +45.9274167/<br>-116.105944 | 160490002 |
| McCall | 500 N. Mission St.<br>McCall, ID 83638 | +44.542486/<br>-116.062358 | 160850002 |
| Garden Valley | 946 Banks Lowman Rd.<br>Garden Valley, ID 83622 | +44.104675/<br>-115.973084 | 160150002 |
| Nampa—Fire Station | 923 1st St. S.<br>Nampa, ID 83651 | +43.580310/<br>-116.562676 | 160270002 |
| Meridian—<br>St. Luke's | Eagle Rd and I-84<br>Meridian, ID 83642 | +43.600699/<br>-116.347853 | 160010010 |
| Boise—<br>Eastman Garage | 166 N. 9th<br>Boise, ID 83702 | +43.616379/<br>-116.203817 | 160010014 |
| Boise—<br>Fire Station #5 | 16th and Front<br>Boise, ID 83702 | +43.618889/<br>-116.213611 | 160010009 |
| Boise—<br>White Pine Elementary | 401 E. Linden St.<br>Boise, ID 83706 | +43.577603/<br>-116.178156 | 160010017 |
| Garden City | Ada County Fairgrounds<br>Garden City, ID 83714 | +43.647819/<br>-116.269514 | 160010020 |
| Idaho City | 3851 Hwy 21<br>Idaho City, ID 83631 | +43.823017/<br>-115.838557 | 160150001 |
| Ketchum | 111 West 8th St.<br>Ketchum, ID 83340 | +43.682558/<br>-114.371094 | 160130004 |
| Twin Falls | 650 W. Addison<br>Twin Falls, ID 83301 | +42.56505/<br>-114.494767 | 160830007 |
| Kimberly | 50 Highway 50<br>Kimberly, ID 83341 | +42.553325/<br>-114.354853 | 160830009 |

| Site | Address | Latitude/ Longitude | AQS Identification |
|---|---|---|---|
| Pocatello—Garrett and Gould | Garrett and Gould<br>Pocatello, ID 83204 | +42.876725/<br>-112.460347 | 160050015 |
| Pocatello—<br>Sewage Treatment Plant | Batiste Chubbuck Rd.<br>Pocatello, ID 83204 | +42.916389/<br>-112.515833 | 160050004 |
| Preston | 450 East 800 South<br>Preston, ID 83263 | +42.08266/<br>-111.863297 | 160410002 |
| Soda Springs | 5-Mile Rd.<br>Soda Springs, ID 83276 | +42.695278/<br>-111.593889 | 160290031 |
| Idaho Falls | Hickory and Sycamore St.<br>Idaho Falls, ID 83402 | +43.464700/<br>-112.046450 | 160190011 |
| Salmon—<br>Charles St. | N. Charles St.<br>Salmon, ID 83467 | +45.181893/<br>-113.890285 | 160590004 |

DEQ also uses seasonal monitors at nine locations for the state's Crop Residue Burning (CRB) Program (Table 2). This program is in place to oversee agricultural burning and limit the smoke impacts particularly to sensitive populations (i.e., schools, hospitals). Met One Instruments E-sampler $PM_{2.5}$ monitors are established in locations where agricultural burning typically takes place and the monitors are strategically located at sensitive population properties in order to detect any smoke hitting those sites. Farmers are required to apply for permits prior to burning. E-sampler monitoring data, in addition to meteorological parameters, are analyzed to determine if transport characteristics are acceptable to allow for proper smoke dispersion, especially away from sensitive populations. The E-samplers are only active during the agricultural burning season and as a result may only operate for about 2 – 5 months in any given year. As a result of these unique objectives and conditions, the data from these monitors is not submitted to EPA's AQS database.

**Table 2. CRB station locations.**

| Site | County | Address or Location | Latitude/Longitude | Program Objective |
|---|---|---|---|---|
| Porthill | Boundary County | Tavern Farm Rd.<br>Porthill, ID 83853 | +48.995911/<br>-116.509953 | Smoke Management |
| Mt. Hall | Boundary County | 1275 Idaho 1<br>Bonners Ferry, ID 83805 | +48.894014/<br>-116.359381 | Smoke Management |
| Cottonwood | Idaho County | BLM Field Office, 1 Butte Dr.<br>Cottonwood, ID 83522 | +46.06319/<br>-116.34824 | Smoke Management |
| Potlatch | Latah County | 510 Elm St.<br>Potlatch, ID 83855 | +46.92106/<br>-116.89627 | Smoke Management |
| Juliaetta | Latah County | 3rd Street<br>Juliaetta, ID 83535 | +46.578731/<br>-116.708958 | Smoke Management |
| Weiser | Washington County | 690 W. Indianhead Rd.<br>Weiser, ID 83672 | +44.261694/<br>-116.979172 | Smoke Management |
| Paul | Minidoka County | 201 N. 1st Street West<br>Paul, ID 83347 | +42.6078167/<br>-113.786817 | Smoke Management |
| Soda Springs—Caribou Hospital | Caribou County | Caribou Hospital,<br>300 South 3rd Street West<br>Soda Springs, ID 83276 | +42.651670/<br>-111.614720 | Smoke Management |
| Rexburg | Madison County | Madison Middle School,<br>575 W. 7th Street<br>Rexburg, ID 83440 | +43.809486/<br>-111.800475 | Smoke Management |

## 3.2 DEQ Monitoring Network—Monitoring Purpose, Scale of Representativeness, and Area Represented

The ambient air quality and meteorological data collected from DEQ's network is used for a variety of purposes, including the following:

- Determining compliance with the NAAQS
- Determining the locations of maximum pollutant concentrations
- Forecasting air quality to determine the AQI
- Providing early detection of smoke impacts (smoke management)
- Determining the effectiveness of air pollution control programs
- Evaluating the effects of air pollution levels on public health
- Tracking the progress of air quality-related SIPs
- Supporting pollutant dispersion models
- Developing responsible, cost-effective air pollution control strategies
- Analyzing air quality trends

Spatial scale of representativeness is used to clarify the link between general monitoring objectives, site types, and the physical location of a particular monitor. The goal in locating monitors is to correctly match the spatial scale represented by the sample of monitored air with the spatial scale most appropriate for the monitoring site type, air pollutant measured, and monitoring objective. Spatial scale of representativeness is described by the physical dimensions of the air parcel nearest to a monitoring site throughout which actual pollutant concentrations are reasonably similar. The scales of interest for the monitoring site types described above are as follows:

1. ***Microscale***—Defines the concentrations in air volumes associated with area dimensions ranging from several meters up to about 100 meters.
2. ***Middle scale***—Defines the concentrations typical of areas up to several city blocks in size with dimensions ranging from about 100 to 500 meters.
3. ***Neighborhood scale***—Defines concentrations within some extended area of the city that has relatively uniform land use with dimensions in the range of 0.5–4.0 kilometers.
4. ***Urban scale***—Defines concentrations within an area of city-like dimensions, on the order of 4–50 kilometers. Within a city, the geographic placement of emissions sources may result in no single site that represents air quality on an urban scale. The neighborhood and urban scales may potentially overlap in applications concerning secondarily formed or homogeneously distributed air pollutants.
5. ***Regional scale***—Defines an area that is usually rural, is of reasonably homogeneous geography without large emissions sources, and extends from tens to hundreds of kilometers.
6. ***National and global scales***—These measurement scales represent concentrations characterizing a nation or the globe as a whole.

Properly siting a monitor requires specifying the monitoring objective, types of sites necessary to meet the objective, and desired spatial scale of representativeness. For example, consider a case where the objective is to determine NAAQS compliance by understanding the maximum ozone concentrations for an area. Candidate areas would most likely be located downwind of a

metropolitan area, probably in suburban residential areas where children and other susceptible individuals are likely to be outdoors. Sites in such areas are most likely to represent an urban scale of measurement. In this example, physical location would be determined by considering ozone precursor emission patterns, public activity, and meteorological characteristics affecting ozone formation and dispersion. Spatial scale of representativeness would not be used in the selection process but would be a result of site location.

In some cases, the physical location of a site is determined from jointly considering both the basic monitoring objective and the type of monitoring site desired or required. For example, to determine typical $PM_{2.5}$ concentrations over a geographic area that has relatively high $PM_{2.5}$ concentrations, a neighborhood scale site is most appropriate. Such a site would likely be located in a residential or commercial area having a high overall $PM_{2.5}$ emission density but not in the immediate vicinity of any single dominant source. In this example, the desired scale of representativeness would be an important factor in determining the physical location of the monitoring site.

In either case, classification of the monitor by its type and spatial scale of representativeness is necessary and will aid in interpreting the monitoring data for a particular monitoring objective (e.g., public reporting, NAAQS compliance determination, or research support).

Table 3 illustrates the relationship between the various site types and is used to support the three basic monitoring objectives and scales of representativeness most appropriate for each site type.

**Table 3. Relationships between site types and scales of representativeness.**

| Site Type | Appropriate Siting Scales |
|---|---|
| Maximum concentration | Micro, middle, neighborhood (*sometimes* urban or regional for secondarily formed pollutants) |
| Population oriented | Neighborhood, urban |
| Source impact | Micro, middle, neighborhood |
| General/background | Urban, regional |
| Regional transport | Urban, regional |
| Welfare-related impacts | Urban, regional |

Federal ambient air monitoring regulations use the statistical-based definitions for metropolitan areas provided by the Office of Management and Budget and the Census Bureau. These areas are referred to as metropolitan statistical areas or micropolitan statistical areas—both of which are CBSAs—and CSAs. A CBSA associated with at least one urbanized area of 50,000 individuals or more is termed an MSA. A CBSA associated with at least one urbanized cluster of at least 10,000 individuals or more is termed a micropolitan statistical area. A CSA consists of two or more adjacent CBSAs.

By definition, both MSAs and CSAs have a high degree of integration; however, many such areas cross state or other political boundaries. An MSA or CSA may also cross more than one airshed. EPA recognizes that state or local agencies must consider MSA/CSA boundaries and their own political boundaries and geographical characteristics in designing their air monitoring networks. EPA also recognizes there may be situations where the EPA regional administrator and the affected state or local agencies may need to augment or divide the overall MSA/CSA monitoring responsibilities and requirements among these various agencies to achieve an

effective network design. Full monitoring requirements apply separately to each affected state or local agency in the absence of an agreement between the affected agencies and the EPA regional administrator.

## 3.3 Monitoring Methods, Monitor Designation, and Sampling Frequency

Monitoring methods used for making NAAQS compliance determinations at a SLAMS site must be designated FRM or FEM according to 40 CFR 53. A method for monitoring $PM_{2.5}$ concentrations that has not been designated as an FRM or FEM may be approved as an ARM by the EPA regional administrator. SPMs may include FRM- and FEM-level monitors as well as other monitors typically used for special studies or as surrogate measures or indicators of emergency episodes (e.g., beta attenuation monitors [BAMs] used for early detection of smoke).

Table 4 lists monitoring methods used by DEQ along with associated method codes required when submitting the monitoring data to EPA's AQS database. Method codes for meteorological parameters are not included in the table.

**Table 4. Air monitoring method codes.**

| Parameter/ Pollutant | Method Designation | AQS Method Code | Instrument and Instrument Parameters |
|---|---|---|---|
| $PM_{10}$ | FEM | 079[a] | TEOM—gravimetric analysis, instrumental—R&P SA246B inlet |
| | FEM | 122 | Met One Beta Gauge (BAM) |
| $PM_{10}$ | FRM | 127 | Thermo/R & P 2025 sequential $PM_{10}$ |
| CO | FRM | 593[b] | Teledyne API Model 300EU or T300U |
| | FEM | 093 | Teledyne API Model T300 |
| $SO_2$ | FEM | 100 | Teledyne API Model T100 |
| | FRM | 600[a] | Teledyne API Model 100EU or T100U |
| $O_3$ | FEM | 087 | Teledyne API, Model 400E or T400 |
| $NO_2$ | FRM | 099 | Teledyne API, Model 200E |
| | FEM | 200 | Teledyne API Model T200UP |
| | FEM | 599 | Teledyne API, Model 200EU |
| $NO_y$ | FEM | 699[b] | Teledyne API, Model 200EU or T200U |
| $PM_{2.5}$ | FRM | 145 | R&P Model 2025 sequential w/ VSCC |
| | FRM | 545 | Met One E-SEQ-FRM w/VSCC |
| $PM_{2.5}$ | SPM | 731 | Met One Beta Gauge (BAM) w/ SCC |
| $PM_{10-2.5}$ | FRM | 176 | Thermo Scientific Partisol-Plus Model 2025 Sequential Sampler Pair w/ VSCC |

a. Applicable code varies seasonally w/ instrument operating temperature settings.
b. Trace gas monitor – NCore
*Notes*: BAM = beta attenuation monitor, CO = carbon monoxide, FEM = federal equivalent method, FRM = federal reference method, $NO_2$ = nitrogen dioxide, $No_y$ = total reactive nitrogen, $O_3$ = ozone, $PM_{2.5}$ = particulate matter less than 2.5 µ in diameter, $PM_{10}$ = particulate matter less than 10 µ in diameter, $PM_{10-2.5}$ = particulate matter in between 2.5 and 10 µ in diameter, SCC = sharp cut cyclone, $SO_2$ = sulfur dioxide, SPM = special purpose monitor, TEOM = tapered element oscillating microbalance, VSCC = very sharp cut cyclone

Monitoring sites designated as SLAMS are intended to address specific air quality management interests and are frequently single-pollutant measurement sites. The SLAMS sites must be approved by the EPA regional administrator.

Monitoring sites designated as SPMs in the annual network plan and AQS do not count toward meeting network minimum requirements. SPM sites using methods designated as FRMs or FEMs or approved as ARMs are bound to the quality assurance requirements of 40 CFR 58 Appendix A. The SPMs in DEQ's network provide continuous particulate matter concentrations for posting to the AQI, supporting the CRB program, and monitoring episodic events. The BAMs are configured with an SCC and do not meet FEM designation requirements and as such are operated as SPMs in the network.

Gaseous pollutants and meteorological parameters are sampled continuously and typically averaged for each hour. Data completeness for a continuous monitor is computed as the number of valid hourly samples collected divided by the number of potential hourly samples for the period in question (e.g., 8,760 potential hourly samples annually).

Particulate matter can be sampled continuously or by time-integrated, filter-based methods. Filter-based methods typically collect samples for 24-hour periods. For NAAQS comparison, particulate matter data are reported as a 24-hour average, collected from midnight to midnight at local standard time. The minimum monitoring schedule for a $PM_{2.5}$ site is based on the type of monitor, monitor's objectives, and design value (relative to the 24-hour NAAQS) determined for the monitored site (Figure 2).

For the monitors in DEQ's ambient air quality monitoring network, Table 5 lists a variety of parameters associated with the monitors and information used in reporting data to the AQS.

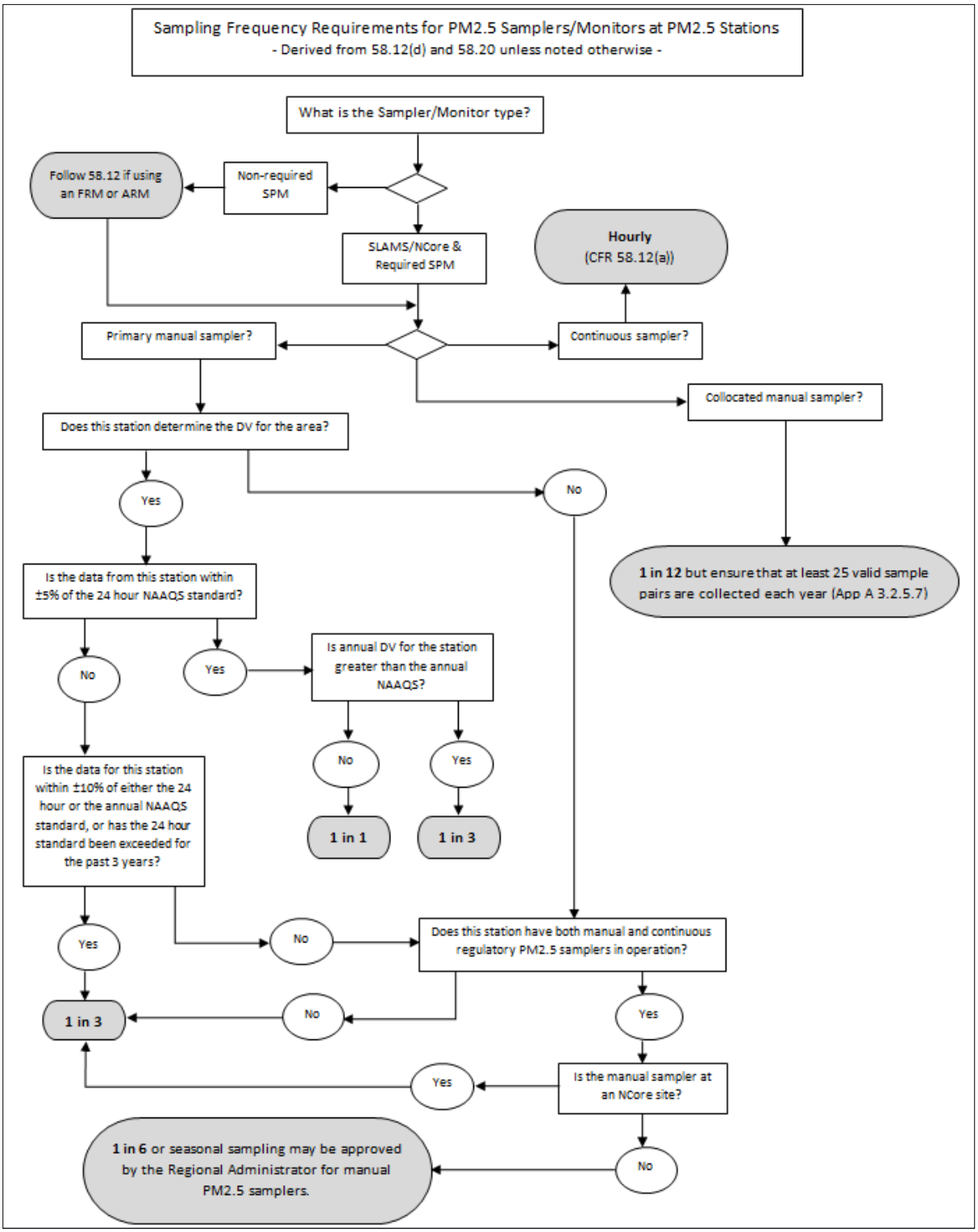


**Figure 2. Minimum monitoring frequency based on ratio of local concentration to standard (DV = design value).**

Table 5 summarizes the monitoring purpose, area represented, and monitoring scale of representativeness for DEQ's FRM, FEM, and SPM year-round monitors.

**Table 5. Monitoring site summaries.**

| Site Information | | | | | Monitor Information | | | | | | | Regulatory and Program Objectives |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MSA/County** | **2018 Est. Pop.** | **Site Name** | **AQS Identification** | **Scale** | **Pollutant** | **Begin Date** | **Designation** | **Frequency** | **AQS Method Code** | **Parameter Code** | **POC #** | |
| **Metropolitan Statistical Areas** | | | | | | | | | | | | |
| Logan UT-ID | 140,794 | Preston | 160410002 | Neighborhood | $PM_{2.5}$—FRM | 2017 | SLAMS | 1/1 | 145 | 88101 | 1 | Complies with $PM_{2.5}$ NAAQS Requirements [a], $PM_{2.5}$ SIP |
| | | | | | $PM_{2.5}$—BAM 1020 | 2018 | SPM | Continuous | 731 | 88502 | 3 | AQI, smoke management |
| Boise City—Nampa | 730,426 | Nampa—Fire Station | 160270002 | Neighborhood | $PM_{10}$—BAM 1020 | 2000 | SLAMS | Continuous | 122 | 81102 | 2 | Complies with $PM_{10}$ NAAQS Requirements [a]. |
| | | | | | $PM_{2.5}$—FRM | 2008 | SLAMS | 1/1 | 145 | 88101 | 1 | Complies with $PM_{2.5}$ NAAQS Requirements [a]. |
| | | | | | $PM_{2.5}$—BAM 1020 | 2015 | SPM | Continuous | 731 | 88502 | 3 | AQI |
| | | Meridian—St. Luke's | 160010010 | Neighborhood | $PM_{2.5}$—FRM | 2006 | NCore | 1/3 | 145 | 88101 | 1 | NCore—trace gas, NCore—$PM_{10\text{-}2.5}$, $PM_{2.5}$ NAAQS, $PM_{2.5}$ chemical speciation, $O_3$ NAAQS, AQI, meteorological [b], $NO_2$ |
| | | | | | $PM_{2.5}$—BAM 1020 | 2016 | SPM | Continuous | 731 | 88502 | 7 | |
| | | | | | $PM_{2.5}$ Chemical Speciation | 2006 | NCore | 1/3 | | | 5 | |
| | | | | | $PM_{10\text{-}2.5}$ | 2011 | NCore | 1/3 | 176 | 86101 | 1 | |
| | | | | | $O_3$ | 2007 | NCore | Continuous | 87 | 44201 | 1 | |
| | | | | | $SO_2$ | 2009 | NCore | Continuous | 600 | 42401 | 1,2 | |
| | | | | | $NO_y$ | 2009 | NCore | Continuous | 699 | 42600<br>42601<br>42601 | 1<br>3<br>1 | |
| | | | | | CO | 2009 | NCore | Continuous | 593 | 42101 | 1 | |
| | | | | | $PM_{10}$ | 2011 | NCore | 1/3 | 127 | 85101 | 1 | |
| | | | | | $PM_{2.5}$—FRM | 2013 | Precision[c] | 1/6 | 145 | 88101 | 2 | |
| | | | | | $PM_{10}$ | 2011 | Precision | 1/12 | 127 | 85101 | 2 | |
| | | Boise—Eastman Garage | 160010014 | Micro | CO | 1993 | SLAMS | Continuous | 093 | 42101 | 1 | Required as per Northern Ada County SIP |
| | | Boise—Fire Station #5 | 160010009 | Neighborhood | $PM_{10}$—TEOM | 1999 | SLAMS | Continuous | 079 | 81102 | 3 | $PM_{10}$ SIP, Complies with $PM_{10}$ NAAQS requirements, smoke management, AQI |
| | | Boise—White Pine Elementary | 160010017 | Neighborhood | $O_3$ | 2009 | SLAMS | Continuous | 087 | 44201 | 1 | Complies with $O_3$ NAAQS Requirements [a] |
| Coeur d'Alene | 161,505 | Coeur d'Alene—Lancaster Rd. | 160550003 | Urban | $PM_{2.5}$—BAM 1020 | 2015 | SPM | Continuous | 731 | 88502 | 3 | AQI, smoke management, meteorological [b] |
| Idaho Falls | 148,904 | Idaho Falls | 160190011 | Neighborhood | $PM_{2.5}$—BAM 1020 | 2015 | SPM | Continuous | 731 | 88502 | 4 | AQI, smoke management |
| Lewiston | 63,018 | Lewiston | 160690012 | Neighborhood | $PM_{2.5}$—BAM 1020 | 2016 | SPM | Continuous | 731 | 88502 | 4 | AQI, smoke management, meteorological [b] |
| Pocatello | 87,138 | Pocatello—Garrett and Gould | 160050015 | Neighborhood | $PM_{2.5}$—BAM 1020 | 2015 | SPM | Continuous | 731 | 88502 | 4 | AQI, smoke management |
| | | | | | $PM_{10}$—BAM 1020 | 2001 | SLAMS | Continuous | 122 | 81102 | 3 | Complies with $PM_{10}$ SIP requirements |
| | | Pocatello—Sewage Treatment | 160050004 | Middle | $SO_2$ | 1981 | SLAMS | Continuous | 100 | 42401 | 2, 4 | $SO_2$ NAAQS |
| **Micropolitan Statistical Areas** | | | | | | | | | | | | |
| Hailey | 29,088 | Ketchum | 160130004 | Urban | $PM_{2.5}$—BAM 1020 | 2009 | SPM | Continuous | 731 | 88502 | 3 | Smoke management, AQI |
| Moscow | 40,134 | Moscow | 160570005 | Urban | $PM_{2.5}$—BAM 1020 | 2016 | SPM | Continuous | 731 | 88502 | 4 | AQI, smoke management, meteorological [b] |
| Sandpoint | 44,727 | Sandpoint | 160170003 | Neighborhood | $PM_{10}$—TEOM | 2013 | SLAMS | Continuous | 079 | 81102 | 3 | AQI, Complies with $PM_{10}$ SIP, Complies with $PM_{10}$ NAAQS requirements, smoke management, meteorological [b] |
| | | | | | $PM_{2.5}$—BAM 1020 | 2015 | SPM | Continuous | 731 | 88502 | 3 | AQI, smoke management |
| Twin Falls | 110,096 | Twin Falls | 160830007 | Neighborhood | $PM_{2.5}$—BAM 1020 | 2016 | SPM | Continuous | 731 | 88502 | 3 | Smoke management, AQI |
| **County Monitors** | | | | | | | | | | | | |
| Benewah | | St. Maries | 160090010 | Neighborhood | $PM_{2.5}$—FRM | 2003 | SLAMS | 1/1 | 545 | 88101 | 1 | Complies with $PM_{2.5}$ SIP |
| | | | | | $PM_{2.5}$—FRM | 2018 | Precision | 1/6 | 545 | 88101 | 2 | PM2.5 Instrument Collocation |
| | | | | | $PM_{2.5}$—BAM 1020 | 2014 | SPM | Continuous | 731 | 88502 | 3 | AQI, smoke management |

| Site Information | | | | | Monitor Information | | | | | | | Regulatory and Program Objectives |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MSA/County | 2018 Est. Pop. | Site Name | AQS Identification | Scale | Pollutant | Begin Date | Designation | Frequency | AQS Method Code | Parameter Code | POC # | |
| Shoshone | | Pinehurst | 160790017 | Neighborhood | $PM_{2.5}$—FRM | 1999 | SLAMS | 1/1 | 145 | 88101 | 1 | Complies with $PM_{2.5}$ NAAQS requirements, meteorological [b] |
| | | | | | $PM_{2.5}$—BAM 1020 | 2014 | SPM | Continuous | 731 | 88502 | 4 | AQI, smoke management |
| | | | | | $PM_{10}$—BAM 1020 | 1998 | SLAMS | Continuous | 122 | 81102 | 3 | Complies $PM_{10}$ SIP and $PM_{10}$ NAAQS, |
| Idaho | | Grangeville | 160490002 | Neighborhood | $PM_{2.5}$—BAM 1020 | 2001 | SPM | Continuous | 731 | 88502 | 4 | AQI, smoke management, meteorological [b] |
| Valley | | McCall | 160850002 | Urban | $PM_{2.5}$—BAM 1020 | 2017 | SPM | Continuous | 731 | 88502 | 4 | AQI, smoke management |
| Boise | | Garden Valley | 160150002 | Urban | $PM_{2.5}$—BAM 1020 | 2001 | SPM | Continuous | 731 | 88502 | 3 | AQI, smoke management |
| | | Idaho City | 160150001 | Neighborhood | $PM_{2.5}$—BAM 1020 | 2000 | SPM | Continuous | 731 | 88502 | 4 | AQI, Smoke Management |
| Lemhi | | Salmon—Charles St. | 160590004 | Neighborhood | $PM_{2.5}$—FRM | 2003 | SLAMS | 1/3 | 145 | 88101 | 1 | Complies $PM_{2.5}$ NAAQS, meteorological [b] |
| | | | | | $PM_{2.5}$—BAM 1020 | 2009 | SPM | Continuous | 731 | 88502 | 4 | AQI, smoke management |
| Caribou | | Soda Springs | 160290031 | Middle | $SO_2$ | 2000 | SLAMS | Continuous | 100 | 42401 | 1, 2 | Complies with $SO_2$ NAAQS |

a. See Appendix D for minimum monitoring requirements.
b. Meteorological parameters are listed in section 3.3, Table 6.
c. Based on the FRM monitor count of five, the network is required to operate one collocated monitor. This monitor fulfills that requirement.
*Notes:* AQI = air quality index , BAM = beta attenuation monitor, CO = carbon monoxide, FRM = federal reference method, NO = nitric oxide, $NO_2$ = nitrogen dioxide, $NO_x$ = nitrogen oxides, $NO_y$ = total reactive nitrogen, $O_3$ = ozone, MSA = metropolitan statistical area, NAAQS = National Ambient Air Quality Standard, $PM_{2.5}$ = particulate matter less than 2.5 µ in diameter, $PM_{10}$ = particulate matter less than 10 µ in diameter, $PM_{10-2.5}$ = particulate matter in between 2.5 and 10 µ in diameter, POC = parameter occurrence code SIP = state implementation plan, $SO_2$ = sulfur dioxide, TEOM = tapered element oscillating microbalance.

DEQ currently operates twelve 10-meter meteorological stations. Meteorological measurements are used to support AQI forecasting and air quality modeling analyses. Data collected from DEQ's meteorological stations are submitted to the AQS.

Table 6 provides a list of parameters measured at DEQ meteorological stations. DEQ operates the meteorological monitoring network according to EPA's 2008 *Quality Assurance Handbook for Air Pollution Measurement Systems Volume IV: Meteorological Measurements Version 2.0 (Final).*

**Table 6. DEQ meteorological monitoring stations and parameters.**

| Site | Meteorological Parameters Monitored | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 2-meter temp. (°C) | 10-meter temp. (°C) | Barometric Pressure (mbar) | Relative Humidity (%) | Wind Direction (degrees) | Wind Speed (m/s) | Solar Radiation (Watt/m$^2$) | Precipitation (rain, inches) |
| Sandpoint—University of Idaho | X | X | X | X | X | X | X | X |
| Pinehurst | X | X | X | X | X | X | X | X |
| Coeur d'Alene—LMP | X | X | X | X | X | X | X | X |
| Coeur d'Alene—Lancaster Rd. | X | X | X | X | X | X | X | X |
| Moscow | X | X | X | X | X | X | X | X |
| Lewiston | X | X | X | X | X | X | X | X |
| Grangeville | X | X | X | X | X | X | X | X |
| Meridian—St. Luke's | X | X | X | X | X | X | X | N/A |
| Garden City | X | X | X | X | X | X | X | N/A |
| Kimberly | X | X | X | X | X | X | X | N/A |
| Pocatello—Garrett and Gould | X | X | X | X | X | X | X | X |
| Salmon—Charles St. | X | X | X | X | X | X | X | N/A |

*Notes*: m/s = meter per second, mbar = millibar, Watt/m$^2$ = watt per square meter, N/A = parameter not monitored, X = monitored parameter

# 4 DEQ Network Modifications Subsequent to EPA-Approved 2018 Ambient Monitoring Network Plan

The following network modifications were made after EPA approved the 2018 annual network plan. Modifications proposed and implemented after the 2018 plan and before DEQ submitted this 2019 plan have been addressed on a case-by-case basis and communicated through email and mail, when necessary. Applicable documentation is included in Appendix C.

- Deployed the E-SEQ-FRM monitor in St. Maries to replace a malfunctioning 2025 FRM monitor. Because deployment of the E-SEQ-FRM monitor occurred before the network-wide collocation pair was in place at the Nampa site, an additional E-SEQ-FRM monitor was deployed at St. Maries to fulfill instrument-specific precision monitoring requirements.

- Completed the relocation of the nitrogen dioxide ($NO_2$) analyzer from the Meridian—Near-Road site to the Meridian—St. Luke's NCore site to retain NAAQS monitoring for $NO_2$.
- Replaced DEQ's single remaining 1405-F $PM_{2.5}$ tapered element oscillating microbalance (TEOM) monitor with a BAM 1020 $PM_{2.5}$ monitor at the Pocatello—Garrett and Gould monitoring site.
- Replaced the Ketchum 1400AB $PM_{2.5}$ TEOM with a BAM 1020 $PM_{2.5}$ monitor at a ground location near the current site.
- Relocated the BAM 1020 $PM_{2.5}$ monitor from the Franklin site to the DEQ $PM_{2.5}$ SLAMS site in Preston. This monitor provides continuous $PM_{2.5}$ concentrations in conjunction with the FRM for AQI reporting.
- Replaced the Thermo Scientific 1400AB $PM_{10}$ monitors with BAM 1020 $PM_{10}$ monitors at the Nampa, Pocatello, and Pinehurst sites.
- Replaced the 1400AB $PM_{2.5}$ TEOM monitor with BAM 1020 $PM_{2.5}$ monitor (both used as SPMs for AQI reporting) at the Garden Valley site.

# 5 Network Description and Modifications

DEQ's rationale for proposing network modifications (if any) for each monitored pollutant is provided below with a summary of the proposed changes. Annual air quality data summaries for DEQ's air monitoring network are found at *www.deq.idaho.gov/air-quality/monitoring/monitoring-network*. More information about criteria pollutants (those pollutants for which EPA has established NAAQS) and NAAQS is found at *https://www.epa.gov/criteria-air-pollutants*.

## 5.1 $PM_{10}$ Monitoring Network

Five $PM_{10}$ monitoring sites are currently operating. These monitors support local SIP efforts and/or $PM_{10}$ maintenance plans by assessing compliance with the $PM_{10}$ NAAQS and will continue operating through 2019. Monitoring in these areas is required to demonstrate attainment of the appropriate NAAQS. The AQS ID for the corresponding, DEQ operated monitor is provided with the airshed description.

The $PM_{10}$ monitoring locations are selected to represent average population exposure to spatially representative concentrations in the middle, neighborhood, and urban scales.

The following airshed is designated as moderate nonattainment for the 24-hour $PM_{10}$ NAAQS (150 micrograms per cubic meter [$\mu g/m^3$]):

- Fort Hall Reservation (Bannock County—partial, Power County—partial)

The Fort Hall Reservation nonattainment area is on tribal land and is not administered by DEQ.

The following airsheds are classified as maintenance areas and require monitoring to demonstrate compliance with a specific $PM_{10}$ NAAQS over specific time frames:

- Boise-Northern Ada County (AQS ID 160010009)
- Bonner County—partial (city of Sandpoint) (AQS ID 160170003)

- Portneuf Valley (Bannock County—partial, Power County—partial) (AQS ID 160050015)

The following airshed is designated as attainment with a limited maintenance plan for the 24-hour $PM_{10}$ NAAQS (150 µg/m³):

- Shoshone County—partial (excluding Pinehurst)
- Pinehurst (Shoshone County – partial – city of Pinehurst) (AQS ID 160790017)

For more information on area designations of Idaho's airsheds, visit *www.epa.gov/green-book*. The $PM_{10}$ design values for 2016–2018 are listed in Appendix A.

**2019 Modifications**

- DEQ was notified by the University of Idaho (site property owners) of their intention to sell the land currently occupied by the Sandpoint monitoring site. DEQ is reviewing alternative site locations in the area to relocate the monitors.
- Replace the Thermo Scientific 1400AB $PM_{10}$ monitors, which are approaching end-of-service life, with BAM 1020 $PM_{10}$ monitors. In 2019, BAM 1020 monitors are expected to be deployed at the Boise and Sandpoint sites.

## 5.2 $PM_{2.5}$ Core NAAQS Compliance Monitoring Network

DEQ operates a core network of six $PM_{2.5}$ monitoring sites for NAAQS compliance. DEQ began monitoring $PM_{2.5}$ by FRM in 1998 with an initial network of 13 sites. Over time, the network has been reduced due to site redundancy within airsheds or overall low ambient concentrations relative to the NAAQS. The following six sites remain:

- Pinehurst
- St. Maries
- Treasure Valley (Nampa—Fire Station)
- Treasure Valley (Meridian—St. Luke's)
- Salmon
- Preston

Federal regulations require a minimum of two $PM_{2.5}$ monitoring sites in the Treasure Valley (Boise City MSA), based on population. The Meridian—St. Luke's monitor also satisfies the requirement for $PM_{2.5}$ monitoring at NCore sites.

The West Silver Valley (WSV) airshed (including Pinehurst) has been designated as moderate nonattainment area for the annual $PM_{2.5}$ NAAQS (12 µg/m³). A clean data determination for the WSV 2012 $PM_{2.5}$ NAA was effective on January 22, 2019. Part of Franklin County in the Logan UT-ID NAA is classified nonattainment area for the 24-hour $PM_{2.5}$ NAAQS (35 µg/m³). A clean data determination for the Logan, UT-ID NAA 2006 24-hour $PM_{2.5}$ was effective on October 19th, 2018.

At the close of 2017, the Franklin monitoring site was shut down due to property access issues. The monitors were moved to Preston in 2018. The Preston site is representative of population exposure in the county, due to the higher population that resides in Preston. Additionally, the site represents sensitive population exposure due to it being located at a school.

$PM_{2.5}$ design values (updated for 2016–2018) and current and proposed sampling frequencies are listed in Appendix A. Table A2 presents data obtained from FRM monitors.

**2019 Modifications**

- Replace the existing 2025 FRM $PM_{2.5}$ monitors with Met One Instrument's E-SEQ-FRM $PM_{2.5}$ monitors at all the current 2025 FRM sites. The 2025 FRM monitors were discontinued and are no longer supported by the manufacturer.
- Relocate the E-SEQ-FRM precision monitor from St. Maries to the Nampa site. The existing collocated pair of 2025 FRM $PM_{2.5}$ monitors at St. Luke's will remain in operation until phase out of the 2025 FRM monitors is complete.
- Change the sampling frequency of the 2025 FRM $PM_{2.5}$ monitor at the Nampa Fire Station site to 1:1.

## 5.3 $PM_{2.5}$ Continuous Monitoring Network

DEQ performs continuous $PM_{2.5}$ year-round monitoring at 18 sites throughout the state using Met One BAM 1020 $PM_{2.5}$ monitors. The real-time and continuous $PM_{2.5}$ data support DEQ's air quality forecasting, AQI, and smoke management programs. These monitors are configured as special purpose, non-NAAQS monitors.

The $PM_{2.5}$ continuous monitors are located at these monitoring sites:

- Sandpoint—University of Idaho
- Coeur d'Alene—Lancaster Road
- St. Maries
- Pinehurst
- Moscow
- Lewiston
- Grangeville
- McCall
- Sandpoint—University of Idaho
- Idaho City
- Nampa—Fire Station
- Meridian—St. Luke's
- Ketchum
- Twin Falls
- Pocatello—Garrett and Gould
- Preston
- Idaho Falls
- Salmon

DEQ also uses Met One E-Samplers as seasonal SPMs at nine locations to support the state's CRB Program (Table 2).

A SPM monitor is typically also used each year, routinely at the Boise Fire Station site, to assess wildfire smoke impacts in and around the downtown Boise area. This monitor is only set up and used during wildfire smoke events.

**2019 Modifications**

- The E-Sampler SPM monitor in Soda Springs has historically been located on the hospital roof. This monitor is being relocated to a ground level site for the 2019 season. This improves site access and provides a more reliable power source.
- Relocate the existing BAM $PM_{2.5}$ SPM monitor and meteorological tower from the current Coeur d'Alene – Lancaster Road site to a location nearer the city of Coeur

d'Alene. The new location will reflect population exposure in and around the city of Coeur d'Alene.

## 5.4 Ozone Monitoring Network

DEQ currently operates two ozone monitors, both in the Treasure Valley. Federal regulations require two ozone monitors in an urban area or MSA the size of the Boise City–Nampa MSA. One site must be designed to record the maximum concentration for the MSA. NCore sites can be counted toward minimum SLAMS ozone network requirements. Ozone is monitored during the ozone season as prescribed in 40 CFR 58 Appendix D. The ozone season in Idaho is April 1 through September 30.

The Treasure Valley ozone monitors are located at the following sites:

- Meridian—St. Luke's NCore site near the Meridian St. Luke's Hospital
- White Pine Elementary site in southeastern Boise

DEQ began monitoring at the White Pine Elementary site in 2009 when it had to relocate the Whitney Elementary School site, which was demolished in 2008. The White Pine Elementary site was chosen based on evidence that it would represent the maximum ozone concentration for the Boise City–Nampa MSA.

Ozone design values for 2016–2018 are listed in Appendix A.

**2019 Modifications**

The eastern Idaho ozone modeling and assessment has been completed. This analysis has suggested that the Pocatello MSA may contain some of the higher concentration gradients in eastern Idaho and is therefore DEQ's first priority for ozone monitoring. Concentrations in other MSA's and locations were more influenced by non-anthropogenic sources, such as biogenic emissions and high elevation. The Garrett and Gould site in Pocatello has been selected as the location for DEQ's upcoming ozone monitoring efforts in eastern Idaho. The monitoring equipment has been procured, while site improvements and staff training are currently underway. Sampling is scheduled to begin no later than the 2020 season.

## 5.5 Carbon Monoxide Monitoring Network

Monitoring for CO in the Treasure Valley began in 1977. Violations of the health-based standard for CO occurred every winter from 1977 until 1986, and as a result, Northern Ada County was designated a CO nonattainment area by EPA. In December 2002, the *Northern Ada County CO Limited Maintenance Plan* was approved by EPA, which reclassified the area as attainment for the CO NAAQS. No exceedances of the CO NAAQS have occurred since 1991.

DEQ operates two CO monitors: the Boise—Eastman Garage site in downtown Boise and the Meridian—St. Luke's NCore site. The Boise—Eastman Garage site is an urban canyon site designed to measure maximum concentrations to which the population is exposed. This site is needed to demonstrate NAAQS compliance as specified in the *Northern Ada County CO Maintenance Plan*. The Meridian—St. Luke's CO monitor is a trace level monitor, capable of

measuring much lower CO than conventional CO monitors used for NAAQS compliance. The Meridian—St. Luke's CO monitor is required for NCore sites.

The CO (1-hour and 8-hour) design values for 2016–2018 are listed in Appendix A.

**2019 Modifications**

- DEQ proposes no changes to the CO monitoring network.

## 5.6 Sulfur Dioxide Monitoring Network

Three sulfur dioxide ($SO_2$) monitors currently operate in Idaho:

- Pocatello—Sewage Treatment Plant (STP)
- Soda Springs
- Meridian—St. Luke's

The Pocatello—STP site is a maximum concentration site used to assess impacts of local industrial emissions. The Soda Springs monitor is also a maximum concentration site for assessing industrial impacts from a nearby source. Both $SO_2$ monitoring locations in southeastern Idaho were identified as fence-line hot spots from conventional dispersion model applications. The Meridian—St. Luke's monitor is a trace-level monitor required for NCore monitoring.

The $SO_2$ design values for 2016–2018 are listed in Appendix A.

**2019 Modifications**

- DEQ proposes no changes to the $SO_2$ monitoring network.

## 5.7 Nitrogen Dioxide Monitoring Network

DEQ was granted approval by EPA to shut down the Meridian—Near-Road site, which included $NO_2$ monitoring. To retain NAAQS monitoring for $NO_2$, DEQ relocated the $NO_2$ monitor to the Meridian—St. Luke's NCore site.

The $NO_2$ design values for 2016–2018 are listed in Appendix A.

**2019 Modifications**

- DEQ proposes no changes to the $NO_2$ monitoring network.

## 5.8 $PM_{10\text{-}2.5}$ ($PM_{coarse}$) Monitoring Network

$PM_{10\text{-}2.5}$ ($PM_{coarse}$) is defined as the particulate fraction with a nominal diameter between 2.5 and 10.0 µ. $PM_{10\text{-}2.5}$ is determined by calculating the fractional mass difference between collocated and matching (i.e., same type of monitor) FRM $PM_{10}$ and FRM $PM_{2.5}$ monitors. Section 3 of Appendix D to 40 CFR 58 requires $PM_{10\text{-}2.5}$ monitoring at NCore monitoring stations.

DEQ initiated $PM_{10-2.5}$ monitoring at the Meridian—St. Luke's NCore site beginning January 1, 2011. Both the $PM_{2.5}$ and $PM_{10-2.5}$ samplers are operated every third day according to the national monitoring schedule.

**2019 Modification**

- DEQ will remove the collocated 2025 FRM $PM_{10}$ precision monitor at the St. Luke's site. Collocated $PM_{10}$ monitoring for coarse measurements is no longer a regulatory requirement.

## 5.9 Summary of Proposed Network Modifications for DEQ's 2019 Air Monitoring Network Plan

DEQ proposes the following network modifications:

- Replace the Thermo Scientific 1400AB $PM_{10}$ monitors, which are approaching end-of-service life, with BAM 1020 $PM_{10}$ monitors. In 2019, BAM 1020 monitors are expected to be deployed at the Boise-Fire Station #5 and Sandpoint sites.
- Replace the existing 2025 FRM $PM_{2.5}$ monitors with Met One Instrument's E-SEQ-FRM $PM_{2.5}$ monitors at all the current 2025 FRM sites. The 2025 FRM monitors were discontinued and are no longer supported by the manufacturer.
- Relocate the E-SEQ-FRM precision monitor from St. Maries to the Nampa site. The existing collocated pair of 2025 FRM $PM_{2.5}$ monitors at St. Luke's will remain in operation until phase out of the 2025 FRM monitors is complete.
- Remove the collocated 2025 FRM $PM_{10}$ precision monitor at the St. Luke's site. Collocated $PM_{10}$ monitoring for coarse measurements is no longer a regulatory requirement.
- To address power and access concerns at the Soda Springs SPM location, the E-Sampler will be relocated from its current hospital rooftop location to an adjacent ground-level location.
- The Sandpoint site location is currently owned by University of Idaho who intends to sell the land in 2019. DEQ started the process to relocate the site to a nearby location.
- The eastern Idaho ozone modeling and assessment has been completed. The Garrett and Gould site in Pocatello has been selected as the location for DEQ's upcoming ozone monitoring efforts in eastern Idaho. The monitoring equipment has been procured, while site improvements and staff training are currently underway. Sampling is scheduled to begin no later than the 2020 season.
- Install a meteorological tower at the St. Marie's site. This tower will monitor the same parameters as the existing sites in the Coeur d'Alene region.
- Relocate the existing BAM $PM_{2.5}$ SPM monitor and meteorological tower from the current Coeur d'Alene – Lancaster Road site to a location nearer the city of Coeur d'Alene. The new location will reflect population exposure in and around the city of Coeur d'Alene.
- Change the sampling frequency of the 2025 FRM $PM_{2.5}$ monitor at the Nampa Fire Station site to 1:1.

# 6 Future Ambient Air Monitoring Requirements and Associated Costs

EPA is required to review criteria pollutant NAAQS on a routine 5-year schedule. Currently, EPA is reviewing a number of pollutants, and through rulemaking, will propose changes to ambient air monitoring requirements for some pollutants. This review can result in additional monitors and new monitoring requirements for Idaho. At this time, until rulemakings are made final, it is difficult to specifically project DEQ's future monitoring requirements and associated costs.

# Appendix A. DEQ Ambient Monitoring Network Design Values

Many of the Idaho Department of Environmental Quality's (DEQ's) particulate matter $(PM)_{2.5}$ and $PM_{10}$ monitors were impacted by smoke from wildfires and dust storms from 2016 to 2018. The Clean Air Act allows agencies to flag such data for exceptional and natural events and for the United States Environmental Protection Agency (EPA) to concur if appropriate steps and demonstrations are completed. Design values are provided below reflecting inclusion and exclusion of these data; these values are preliminary.

Table A2 represents data obtained from federal reference methods (FRM).

**Table A1. 2016–2018 $PM_{10}$ preliminary design values.**

| Site | County/ AQS ID | Exceedances | | | 3-Year Estimated Exceedances |
|---|---|---|---|---|---|
| | | 2016 | 2017 | 2018 | |
| Sandpoint | Bonner 160170003 | 0.0 | 5.0/0.0 | 1.0/0.0 | 2.0/0.0 |
| Pinehurst | Shoshone 160790017 | 0.0 | 0.0/0.0 | 0.0 | 0.0/0.0 |
| Nampa | Canyon 160270002 | 0.0 | 0.0 | 0.0 | 0.0/0.0 |
| Boise | Ada 160010009 | 0.0 | 1.0/0.0 | 0.0 | 0.3/0.0 |
| Pocatello | Bannock 160050015 | 0.0 | 1.0/0.0 | 1.0/0.0 | 0.7/0.0 |

*Notes*: A monitor violates the 24-hour $PM_{10}$ National Ambient Air Quality Standard if the 3-year average of estimated exceedances (>150 micrograms per cubic meter) is greater than 1. Concentration data are denoted with/without exceptional event data included. AQS = air quality system; ID = identification

**Table A2. 2016–2018 preliminary design values for core $PM_{2.5}$ monitoring stations—FRM or FEM (primary monitor).**

| Monitoring Site | County/ AQS ID | 98th Percentile 24-Hour Concentration (µg/m³) | | | 2016–2018 24-Hour Design Value (µg/m³) | Required Sampling Frequency[a] (Current Frequency) | 2016–2018 Annual Design Value (µg/m³) |
|---|---|---|---|---|---|---|---|
| | | 2016 | 2017 | 2018 | | | |
| Meridian—St. Luke's | Ada 160010010 | 19/19 | 40/36 | 32/23 | 30/26 | 1:3[b] (1:3) | 7.7/6.3 |
| St. Maries | Benewah 160090010 | 26/26 | 54/38 | 31/31[c] | 37/32 | 1:3 (1:1) | 10.5/9.1 |
| Nampa—Fire Station | Canyon 160270002 | 21/21 | 45/37 | 33/24 | 33/27 | 1:1 (1:1)[d] | 9.4/8.1 |
| Preston | Franklin 160410002 | 33/33[e] | 38/24[e] | 27/21 | 33/26[f] | 1:3 (1:1) | 7.2/6.5 |
| Salmon | Lemhi 160590004 | 39/39 | 60/40 | 31/31 | 43/37 | 1:3 (1:3) | 11.4/9.7 |
| Pinehurst | Shoshone 160790017 | 29/29 | 45/36 | 40/34 | 38/33 | 1:3 (1:1) | 11.2/10.2 |

a. Required sampling frequencies based on flagged exceptional event data excluded. EPA has recently recommended that DEQ include exceptional event data when determining sampling frequencies. DEQ has stated its concerns about this practice; see Appendix C for additional information. Figure 2 provides an explanation of required monitoring/sampling frequencies.
b. NCore monitors are required to operate every third day.
c. Does not meet data completeness criteria.
d. Sample frequency to be changed from 1:3 to 1:1 on Jan. 1st, 2020 as per EPA guidance.
e. Concentrations were taken from the Franklin site for 2016 and 2017 (AQS 160410001)
f. Franklin site decommissioned at the end of 2017, Preston site commissioned in 2018. The design values are from the combined data set.

*Notes*: A monitor violates the 24-hour $PM_{2.5}$ National Ambient Air Quality Standard (NAAQS) if the 3-year average of the annual 98th-percentile 24-hour average exceeds 35 micrograms per cubic meter (µg/m³). The annual $PM_{2.5}$ NAAQS is violated if the 3-year average of the annual arithmetic mean exceeds 12 µg/m³. Concentration data are denoted with/without all "flagged" exceptional event data included. The concentration values may change depending on how many of the "flagged" exceptional events are documentable, as concurred by EPA. Special purpose monitors are not listed in this table. Those data are provided in DEQ's annual data summary reports provided on the DEQ webpage. AQS = air quality system; ID = identification

**Table A3. 2016–2018 ozone preliminary design values.**

| Site | County/ AQS ID | 4th-Highest Daily Maximum 8-Hour Average (ppm) | | | 3-Year Design Value (ppm) |
|---|---|---|---|---|---|
| | | 2016 | 2017 | 2018 | |
| Boise—White Pine | Ada 160010017 | 0.072/0.065 | 0.076/0.068 | 0.068/0.064 | 0.072/0.066 |
| Meridian—St. Luke's | Ada 160010010 | 0.062/0.062 | 0.071/0.069 | 0.067/0.066 | 0.066/0.065 |

*Notes*: A monitor violates the 8-hour ozone National Ambient Air Quality Standard if the 3-year average of the annual 4th-highest daily maximum average exceeds 0.070 parts per million (ppm). Concentration data are denoted with/without exceptional event data included. AQS = air quality system; ID = identification

**Table A4. 2016–2018 carbon monoxide preliminary design values (1-hour).**

| Site | County/ AQS ID | 1st-/2nd-Highest 1-Hour Average (ppm) | | |
|---|---|---|---|---|
| | | 2016 | 2017 | 2018 |
| Boise—Eastman | Ada 160010014 | 6.9/6.0 | 20/15.9 | 4.9/4.6 |
| Meridian—St. Luke's | Ada 160010010 | 1.6/1.4 | 1.0/0.9 | 1.0/1.0 |
| Meridian—Near-Road | Ada 160010023 | 1.3/1.3 | 1.0/1.0[a] | —/—[a] |

a. Does not meet data completeness criteria, Near-Road site was decommissioned in 2017
*Notes*: A monitor violates the 1-hour carbon monoxide National Ambient Air Quality Standard if it exceeds 35 parts per million (ppm) more than once per year. AQS = air quality system; ID = identification

**Table A5. 2016–2018 carbon monoxide preliminary design values (8-hour).**

| Site | County/ AQS ID | 1st-/2nd-Highest 8-Hour Average (ppm) | | |
|---|---|---|---|---|
| | | 2016 | 2017 | 2018 |
| Boise—Eastman | Ada 160010014 | 3.0/2.5 | 7.5/4.1 | 2.0/1.6 |
| Meridian—St. Luke's | Ada 160010010 | 1.0/0.9 | 0.8/0.7 | 0.7/0.7 |
| Meridian—Near-Road | Ada 160010023 | 0.9/0.9 | 0.7/0.7[a] | —/—[a] |

a. Does not meet data completeness criteria, Near-Site was decommissioned in 2017
*Notes*: A monitor violates the 8-hour CO National Ambient Air Quality Standard if it exceeds 9 parts per million (ppm) more than once per year. AQS = air quality system; ID = identification

**Table A6. 2016–2018 sulfur dioxide preliminary design values.**

| Site | County/ AQS ID | 99th Percentile—Highest Daily Maximum 1-Hour Average (ppb) | | | 3-Year Design Value (ppb) |
|---|---|---|---|---|---|
| | | 2016 | 2017 | 2018 | |
| Pocatello—STP | Bannock 160050004 | 33 | 37 | 44 | 38 |
| Soda Springs | Caribou 160290031 | 32 | 34 | 27 | 31 |
| Meridian—St. Luke's | Ada 160010010 | 4 | 3 | 3 | 3 |

*Notes*: A monitor violates the 1-hour sulfur dioxide National Ambient Air Quality Standard if the 3-year average of the annual 99th-percentile highest daily maximum 1-hour averages exceeds 75 parts per billion (ppb). AQS = air quality system; ID = identification

**Table A7. 2016–2018 nitrogen dioxide ($NO_2$) preliminary design values.**

| Site | County/ AQS ID | 98th Percentile—Highest Daily Maximum 1-Hour Average (ppb) | | | 3-Year Design Value (ppb) |
|---|---|---|---|---|---|
| | | 2016 | 2017 | 2018 | |
| Meridian—Near-Road | Ada 160010023 | **41** | **50**[a] | **—** | —/—[a] |
| Meridian—St. Luke's | Ada 160010010 | **—** | **—** | **—**[b] | —/—[b] |

*Notes*: A monitor violates the 1-hour nitrogen dioxide National Ambient Air Quality Standard if the 3-year average of the annual 98th-percentile highest daily maximum 1-hour averages exceeds 100 parts per billion (ppb). AQS = air quality system; ID = identification

a. Does not meet data completeness criteria, Near-Road site was decommission in 2017.

b. Monitor was relocated from the Near-Road site to the St. Luke's site in 4th quarter 2018.

# Appendix B. Craters of the Moon and Hells Canyon Monitoring Stations (IMPROVE Network)

The Idaho Department of Environmental Quality (DEQ) is leveraging the IMPROVE monitoring network to fulfill requirements for the particulate matter $(PM)_{2.5}$ transport (Hells Canyon) and $PM_{2.5}$ background (Craters of the Moon National Monument) monitoring sites (Figure B1).

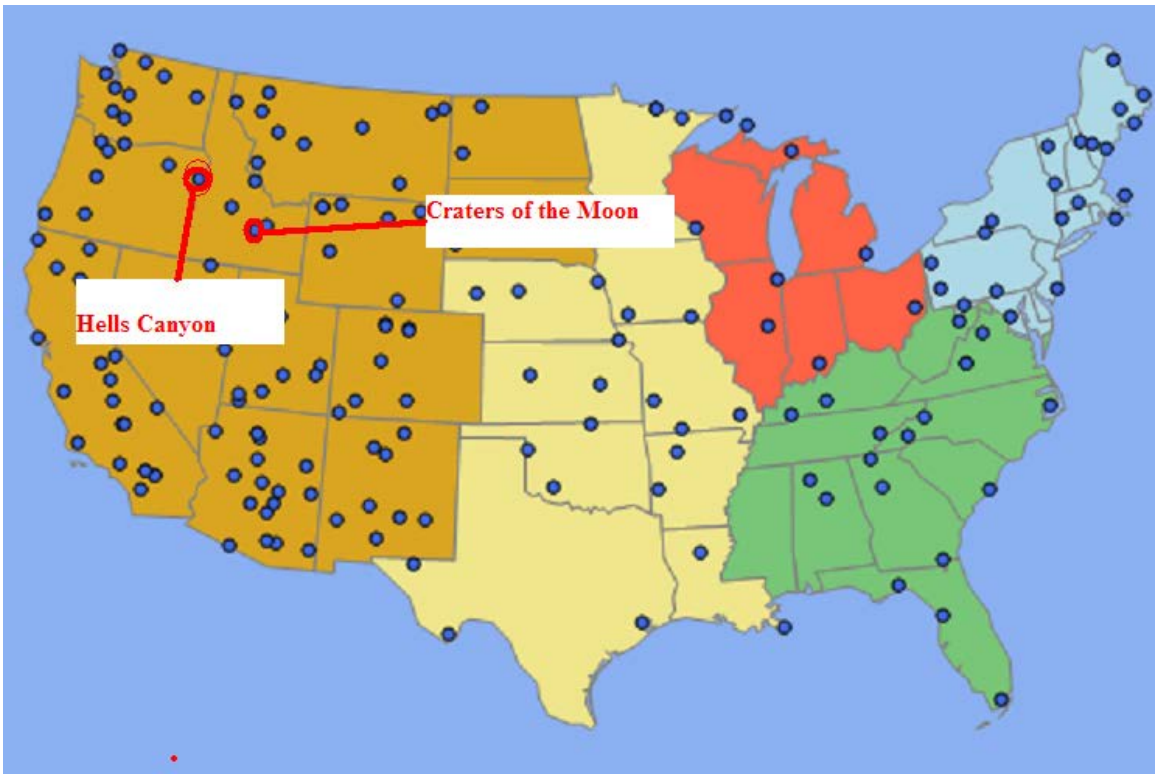


**Figure B1. IMPROVE monitoring network.**

IMPROVE was initiated in 1985 as an extensive long-term monitoring program to establish current visibility conditions, track changes in visibility, and determine causal mechanism for the visibility impairment in national parks and wilderness areas (*http://vista.cira.colostate.edu/Improve/*).

## Craters of the Moon

Monitoring began at the Craters of the Moon site in 1992 (Figure B2). Raw data gathered at this site are found at *https://www.epa.gov/outdoor-air-quality-data/air-data-concentration-plot*.

**Figure B2. Craters of the Moon sampling platform.**

Figure B3 shows the typical background concentration of $PM_{2.5}$ of 1–6 micrograms per cubic meter (µg/m$^3$). Only the concentrations through 3$^{rd}$ quarter 2018 have been reported to AQS. On occasion, the monitor is impacted by smoke from regional fires and other burning activities.

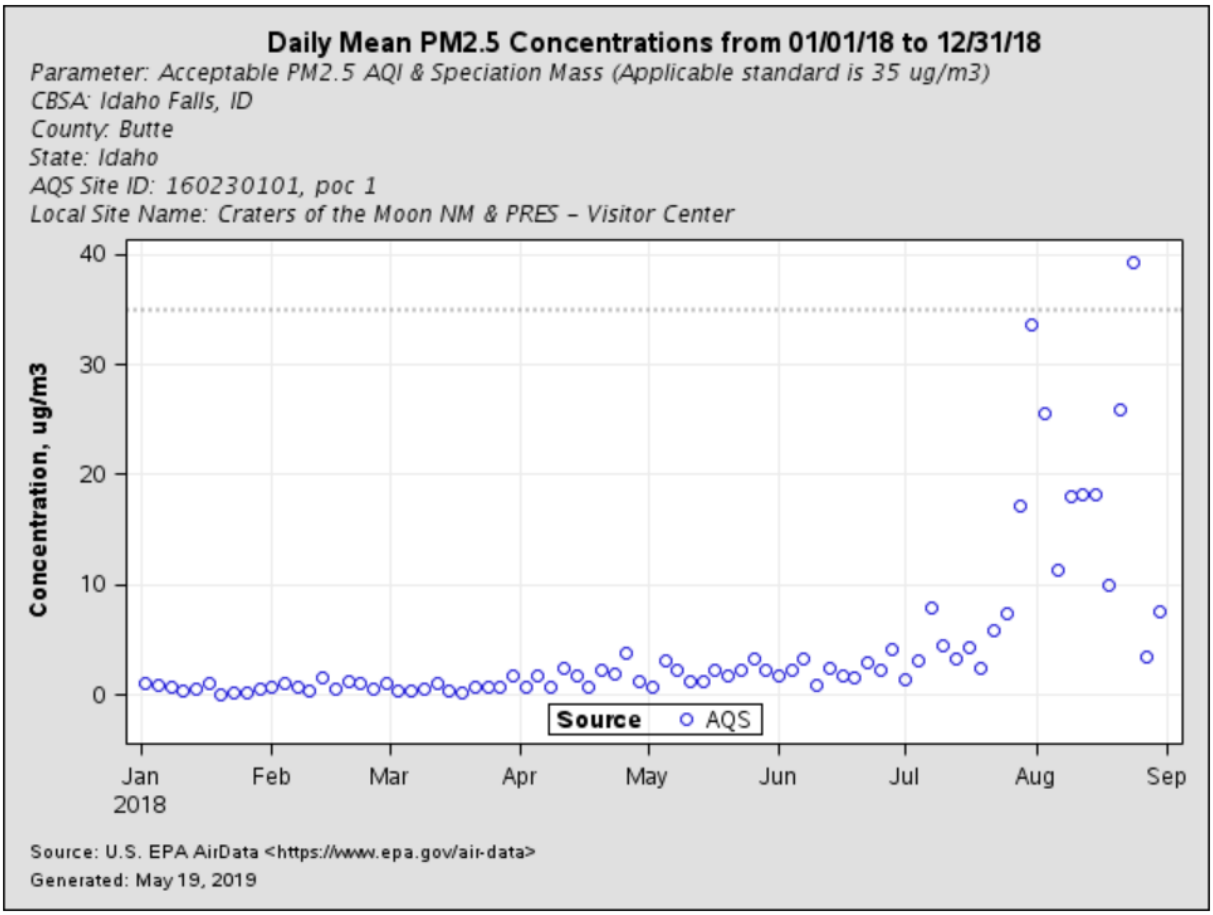


**Figure B3. 2018 $PM_{2.5}$ measured at Craters of the Moon IMPROVE site.**

## Hells Canyon

Monitoring began at the Hells Canyon site in 2001 (Figure B4). Raw data gathered at this site are found at *https://www.epa.gov/outdoor-air-quality-data/air-data-concentration-plot*.

**Figure B4. Hells Canyon monitoring station.**

Figure B5 shows the Hells Canyon $PM_{2.5}$ measurements for 2018. Only the concentrations through 3rd quarter have been reported to AQS. Typical transport concentrations of 2–5 µg/m$^3$ are represented; however, on occasion, values can be higher. Typically, elevated levels of $PM_{2.5}$ are associated with either summer/fall smoke impacts or regional winter stagnation events.

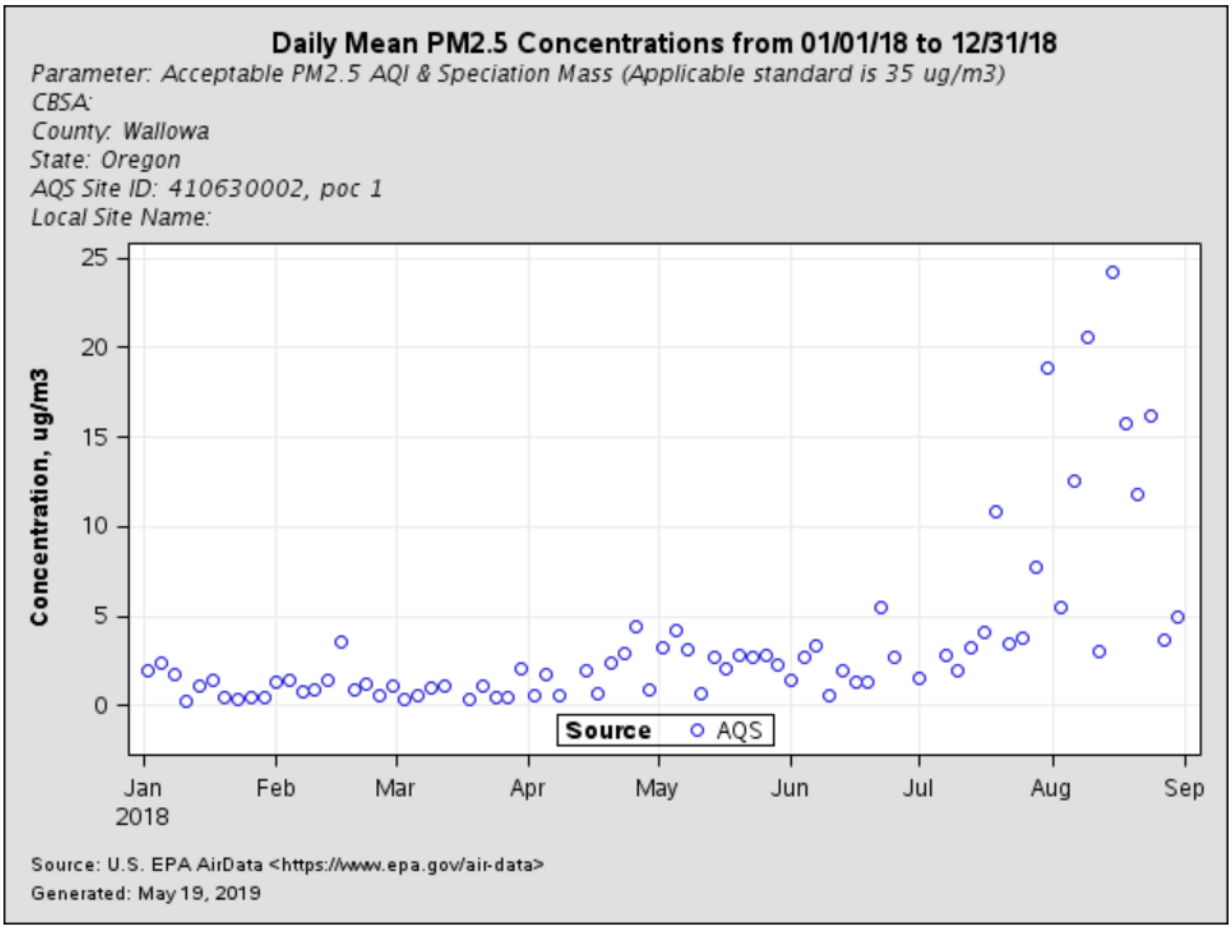


**Figure B5. 2018 $PM_{2.5}$ measured at Hells Canyon IMPROVE site.**

# Appendix C. EPA–DEQ Correspondence

There is nothing reportable for this year's annual network plan.

| | |
|---|---|
| **From:** | Steve Miller |
| **To:** | Jager, Doug; Ben Seely |
| **Cc:** | Suzuki, Debra; Hall, Kristin |
| **Subject:** | RE: Sampling Frequency for Nampa PM2.5 Site |
| **Date:** | Monday, July 01, 2019 11:22:28 AM |
| **Attachments:** | image003.png |

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Doug,

DEQ has a number of reservations relating to the Exceptional Events Rule (EER). A primary concern is the extra resources the EER can ultimately require states to expend. DEQ expressed this and other concerns during EPA's period of accepting comments on the EER in late 2018. Several other western states shared these same concerns, which were expressed by The Western States Air Resources Council (WESTAR). Few, if any, of these concerns were addressed in the final release of the EER. As a result, DEQ felt the need to express concerns directly with EPA headquarters. EPA accommodated DEQ's request in the spring of 2019.

Wildfires are now an annual occurrence in the western U.S. Smoke from such events has led to increases in concentrations during the summer and early fall. In turn, the elevated concentrations have also driven up air quality design values. It is these elevated design values that can then lead to higher sampling frequencies (as is the case with the Nampa monitor). DEQ feels it is taking the more appropriate and consistent approach in excluding exceptional events to dictate monitor sampling frequencies. By doing so, DEQ feels that it gains a more refined picture of air quality issues that DEQ can actually govern and regulate. For example, the Nampa daily design value from 2015-2017 was a 34 ug/m3 with exceptional events included and a 28 ug/m3 with exceptional events taken out of the dataset. This demonstrates a vastly different picture of air quality. It allows one to see that the air quality is typically quite good, outside of the wildfire season. And in the communities with wintertime air quality issues, DEQ's practice of excluding exceptional events allows DEQ to truly identify how significant the wintertime issue may be in comparison to any violation of the NAAQS. In the past, DEQ has conducted daily sampling if the practice of excluding exceptional events brought DEQ within 5% of the daily NAAQS. DEQ feels this is the right thing to do. By not excluding exceptional events in this case, one may actually only have to monitor at a 1:3 frequency. DEQ has not asked for formal concurrence by EPA in excluding exceptional events to dictate sampling schedules. DEQ has done this as an internal exercise in its data flagging to keep record of the agency's exceptional events and their impact on minimum monitoring requirements. That being said, DEQ could also submit these exceptional events for concurrence if needed due to a violation of the NAAQS.

The inability to exclude exceptional events for minimum monitoring requirements also may lead to DEQ being required to add additional monitoring sites. There are some real challenges and significant costs in doing this. DEQ agrees that air quality during wildfire events can be poor. DEQ provides air quality index and forecast information to the public to enable them to make better informed health decisions. DEQ does so using real-time continuous special purpose monitors operating daily. In addition, DEQ's smoke management program (including a DEQ meteorologist) analyzes smoke impacts and dispersion to inform Idaho's residents of air quality conditions. This is worth mentioning to demonstrate that DEQ has various mechanisms to disseminate air quality information to the public. DEQ believes that a much more sound approach in dictating the locations

and number of monitors to be placed in any given area is done via the 5-Year Network Assessment. The analysis done during this assessment allows DEQ to really strategically pinpoint air quality issues and where additional monitoring may be best utilized and also maximized from a resource standpoint. From a minimum monitoring requirements angle, this may mean that the MSA population size does not trigger monitoring but that DEQ recognizes a significant cause for concern and would recommend monitoring in the area.

DEQ has attempted to convey these concerns and information in the most practical way possible. We appreciate EPA listening to DEQ's concerns. EPA's EER remains that DEQ cannot exclude exceptional events for the above-stated reasons. DEQ will follow this policy and operate the Nampa monitor on a daily frequency starting 1/1/2020. DEQ remains hopeful that EPA will continue to analyze and take comments on any way the EER and others rules, policies, and guidance can be more helpful to the agencies implementing monitoring programs in their respective areas.

**Steve Miller | Air Quality Data Bureau Chief**
Idaho Department of Environmental Quality
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Office: (208) 373-0432
http://www.deq.idaho.gov/

*Our mission is to protect human health and the quality of Idaho's air, land, and water.*

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**From:** Jager, Doug [mailto:Jager.Doug@epa.gov]
**Sent:** Thursday, June 27, 2019 6:44 PM
**To:** Steve Miller; Ben Seely
**Cc:** Suzuki, Debra; Hall, Kristin
**Subject:** Sampling Frequency for Nampa PM2.5 Site

Steve,

On April 30, 2019 IDEQ provided a briefing to EPA via a conference call regarding whether ambient air measurements impacted by wildfire emissions should be used or should be excluded when determining regulatory minimum air monitoring requirements. While several issues were discussed on the call, including the complexities of communicating to the public air quality design values computed with and without wildfire events, a specific concern presented to us was whether days that may be impacted by wildfire events should be excluded from the design value calculation used for assessing the sampling frequency of the Nampa $PM_{2.5}$ monitor (AQS ID 16-027-0002).

EPA had multiple internal conversations following your April 30$^{th}$ briefing to discuss the points you raised. Ultimately it was decided that monitoring requirements did not fit under the 2016 Exceptional Events Rule (EER) as a regulatory determination defined by the EER, 40 CFR Part 50.14(a)(1)(i)(A-F). The EER is intended to mitigate NAAQS attainment decisions that could result from exceptional events, such as wildfire emissions beyond the control of the state air program. As EPA stated in our April 4$^{th}$, 2019 Clarification Memo on Data Modification there is not an EPA-approved

mechanism for data exclusion, selection, or adjustment for determining monitoring siting, sampling frequency, minimum number, or other monitoring requirements. EPA did not intend for the ERR to affect the number, locations, or frequency of the ambient air monitoring. One of the goals of the regulatory monitoring network is to know as best we can the quality of the air that people are exposed. Monitoring this exposure is independent of whether the air quality is being impacted by regulatorily controllable sources or by wildfire events.

Based on EPA regulations and guidance and on the 2017-2015 design value for the Nampa $PM_{2.5}$ monitor, this monitor should begin daily sampling and continue sampling at a daily sample collection frequency for a minimum of three years. After three years of daily sampling at this station we will be able to assess whether this monitoring station is eligible for every third day sampling, see 40 CFR § 58.12(d)(1)(iii). To avoid statistical sampling biases being introduced into the computation of $PM_{2.5}$ Design Values, changes to sampling frequencies should only occur at the start of the calendar year. As such, EPA Region 10 requests that the current sampling schedule continue at the Nampa monitor through the end of CY 2019. Daily sampling should begin January 1, 2020.

EPA encourages monitoring with FEM continuous $PM_{2.5}$ monitors, especially for areas that are required to perform daily sampling. Nationally more and more states are moving towards using continuous FEMs as their primary $PM_{2.5}$ monitors and we are recommending it for all states in Region 10. With that said, both the FRM and FEM sampling methods are approved by EPA's Office of Research and Development. As such, it is IDEQ's decision whether the daily sampling at the Nampa monitoring station is performed with FRM or FEM monitoring equipment. Please give me a call or email if you have any further questions.

Thanks,

Doug Jager
Air Planning, State/Tribal Coordination Branch
Air and Radiation Division
U.S. EPA Region 10
1200 Sixth Avenue, Suite 155, Mail Code: 15-H13
Seattle, WA 98101-3140

Office: 206-553-2961

# Appendix D. 40 CFR 58—Appendix D and E Checklists

| State of Idaho CBSA List[1,2] | | | |
|---|---|---|---|
| CBSA Number | Name | State | Estimate 2018 Population |
| Metro | | | |
| 14260 | Boise City - Nampa | ID | 730,426 |
| 17660 | Coeur d'Alene | ID | 161,505 |
| 26820 | Idaho Falls | ID | 148,904 |
| 30300 | Lewiston | ID-WA | 63,018 |
| 38540 | Pocatello | ID | 87,138 |
| 30860 | Logan | UT-ID | 140,794 |
| Micro | | | |
| 13940 | Blackfoot | ID | 46,236 |
| 15420 | Burley | ID | 44,689 |
| 25200 | Hailey | ID | 29,088 |
| 34140 | Moscow | ID | 40,134 |
| 34300 | Mountain Home | ID | 27,259 |
| 39940 | Rexburg | ID | 52,472 |
| 41760 | Sandpoint | ID | 44,727 |
| 46300 | Twin Falls | ID | 110,096 |
| 27220 | Jackson | WY-ID | 34,721 |

[1]Minimum monitoring requirements apply to the metropolitan statistical area (MSA). CBSA includes both MSAs and micropolitan statistical areas.
[2]Population based on latest available census figures.

| PART 58 APPENDIX D SITE EVALUATION FORM FOR PM2.5 | | | | |
|---|---|---|---|---|
| APPLICABLE SECTION | REQUIREMENT | CRITERIA MET? | | |
| | | YES | NO | N/A |
| 4.7.1(a) | States, and where applicable local agencies must operate the minimum number of required $PM_{2.5}$ SLAMS sites listed in Table D-5 of this appendix. Use the form below and Table D-5 to verify if each of your MSAs have the appropriate number of SLAMS FRM/FEM/ARM samplers. | X | | |
| 4.7.1(b) | Each required SLAMS FRM/FEM/ARM monitoring stations or sites must be sited to represent area-wide air quality in the given MSA (typically neighborhood or urban spatial scale, though micro-or middle-scale okay if it represent many such locations throughout the MSA). | X | | |
| 4.7.1(b)(1) | At least one SLAMS FRM/FEM/ARM monitoring station is to be sited at neighborhood or larger scale in an area of expected maximum concentration for each MSA where monitoring is required by 4.7.1(a). | X | | |
| 4.7.1(b)(2) | For CBSAs with a population of 1,000,000 or more persons, at least one FRM/FEM/ARM $PM_{2.5}$ monitor is to be collocated at a near-road $NO_2$ station. | | | X |
| 4.7.1(b)(3) | For MSAs with additional required SLAMS sites, a FRM/FEM/ARM monitoring station is to be sited in an area of poor air quality. | X* | | |
| 4.7.2 | Each State must operate continuous $PM_{2.5}$ analyzers equal to at least one-half (round up) the minimum required sites listed in Table D-5 of this appendix. At least one required continuous analyzer in each MSA must be collocated with one of the required FRM/FEM/ARM monitors, unless at least one of the required FRM/FEM/ARM monitors is itself a continuous FEM or ARM monitor, in which case no collocation requirement applies. | X | | |
| 4.7.3 | Each State shall install and operate at least one $PM_{2.5}$ site to monitor for regional background and at least one $PM_{2.5}$ site to monitor regional transport (note locations in comment field). Non-reference PM2.5 monitors such as IMPROVE can be used to meet this requirement. | X** | | |
| 4.7.4 | Each State shall continue to conduct chemical speciation monitoring and analyses at sites designated to be part of the $PM_{2.5}$ Speciation Trends Network (STN). | X | | |

Comments:

*DEQ has several sites in Idaho that are not found within an officially listed MSA, but DEQ has retained SLAMS FRM/FEM/ARM monitoring stations there due to moderate to poor air quality. Those sites include Pinehurst, Salmon, and St. Maries.

**DEQ uses the IMPROVE network's Hells Canyon site for PM2.5 regional transport and the Craters of the Moon National Monument site for PM2.5 regional background.

| MSA Description[1] | MSA population[2,3] | 2016-2018 24-Hour Design Value[4] | Minimum required number of PM2.5 SLAMS FRM/FEM/ARM sites (from Table D-5) | Present number of PM2.5 SLAMS FRM/FEM/ARM sites in MSA | Present number of continuous PM2.5 analyzers in MSA | Present number of PM2.5 STN analyzers in MSA |
|---|---|---|---|---|---|---|
| Boise City-Nampa | 730,426 | 33/27 | 1 | 2 | 4 | 2 |
| Coeur d'Alene | 161,505 | - | 0 | 0 | 1 | 0 |
| Idaho Falls | 148,904 | - | 0 | 0 | 1 | 0 |
| Lewiston | 63,018 | - | 0 | 0 | 1 | 0 |
| Pocatello | 87,138 | - | 0 | 0 | 1 | 0 |
| Logan | 140,794 | 33/26 | 1 | 1 | 1 | 0 |

[1]see http://www2.census.gov/econ/susb/data/msa_codes_2007_to_2011.txt)

[2]Minimum monitoring requirements apply to the metropolitan statistical area (MSA). CBSA includes both MSAs and micropolitan statistical areas.

[3]Population based on latest available census figures.

[4] Design values with and without exceptional events.

| Table D-5 of Appendix D to Part 58 – PM2.5 Minimum Monitoring Requirements | | |
|---|---|---|
| MSA population[1, 2] | Most recent 3-year design value ≥85% of any PM2.5 NAAQS[3] | Most recent 3-year design value <85% of any PM2.5 NAAQS[3, 4] |
| >1 million | 3 | 2 |
| 500K to 1 million | 2 | 1 |
| 50K to <500K[5] | 1 | 0 |

[1]Minimum monitoring requirements apply to the Metropolitan statistical area (MSA).
[2]Population based on latest available census figures. https://www.census.gov/
[3]The $PM_{2.5}$ National Ambient Air Quality Standards (NAAQS) levels and forms are defined in 40 CFR part 50.
[4]These minimum monitoring requirements apply in the absence of a design value.
[5]Metropolitan statistical areas (MSA) must contain an urbanized area of 50,000 or more population.

| PART 58 APPENDIX D SITE EVALUATION FORM FOR PM10 | | | | |
|---|---|---|---|---|
| APPLICABLE SECTION | REQUIREMENT | CRITERIA MET? | | |
| | | YES | NO | N/A |
| 4.6(a) | Table D-4 indicates the approximate number of permanent stations required in MSAs to characterize national and regional PM10 air quality trends and geographical patterns. Use the form below and Table D-4 to verify if your PM10 network has to appropriate number of samplers. | X | | |
| Comments: | | | | |

| MSA Description[1] | MSA population[2, 3] | Minimum required number of PM10 stations (from Table D-4) | Present number of PM10 stations in MSA |
|---|---|---|---|
| Boise City-Nampa | 730,426 | 1-2 | 2 |
| Coeur d'Alene | 161,505 | 0 | 0 |
| Idaho Falls | 148,904 | 0 | 0 |
| Lewiston | 63,018 | 0 | 0 |
| Pocatello | 87,138 | 0 | 1 |
| Logan | 140,794 | 0 | 0 |

[1]see http://www2.census.gov/econ/susb/data/msa_codes_2007_to_2011.txt
[2]Minimum monitoring requirements apply to the Metropolitan statistical area (MSA). CBSA includes both MSAs and micropolitan statistical areas.
[3]Population based on latest available census figures.

| Table D-4 of Appendix D to Part 58 – PM10 Minimum Monitoring Requirements | | | |
|---|---|---|---|
| MSA population[1, 2] | High concentration[2] | Medium concentration[3] | Low concentration[4 5] |
| >1 million | 6-10 | 4-8 | 2-4 |
| 500K to 1 million | 4-8 | 2-4 | 1-2 |
| 250K to 500K | 3-4 | 1-2 | 0-1 |
| 100K to 250K | 1-2 | 0-1 | 0 |

[1]Selection of urban areas and actual numbers of stations per area will be jointly determined by EPA and the State agency.
[2]High concentration areas are those for which ambient PM10 data show ambient concentrations exceeding the PM10 NAAQS by 20 percent or more.
[3]Medium concentration areas are those for which ambient PM10 data show ambient concentrations exceeding 80 percent of the PM10 NAAQS.
[4]Low concentration areas are those for which ambient PM10 data show ambient concentrations less than 80 percent of the PM10 NAAQS.
[5]These minimum monitoring requirements apply in the absence of a design value.

| PART 58 APPENDIX D SITE EVALUATION FORM FOR SO2 | | | | |
|---|---|---|---|---|
| APPLICABLE SECTION | REQUIREMENT | CRITERIA MET? | | |
| | | YES | NO | N/A |
| 4.4.1 | State and, where appropriate, local agencies must operate a minimum number of required $SO_2$ monitoring sites (based on PWEI calculation specified in 4.4.2 – use Table 1 and 2 below to determine minimum requirement for each CBSA) | X | | |
| 4.4.2(a)(1) | Is the monitor sited within the boundaries of the parent CBSA and is it one of the following site types: population exposure, highest concentration, source impacts, general background, or regional transport? | X | | |
| 4.4.3(a) | Has the EPA Regional Administrator required additional $SO_2$ monitoring stations above the minimum number of monitors required in 4.4.2? If so, note location in comment field. | X* | | |
| 4.4.5(a) | Is your agency counting an existing SO2 monitor at an NCore site in a CBSA with a minimum monitoring requirement? | X | | |
| Comments:<br>*DEQ is conducting source/highest concentration monitoring in Pocatello and Soda Springs. | | | | |

Table

| CBSA Description[1] | CBSA population[1, 2] | total amount of SO2 in tons per year emitted within the CBSA (used 2017 NEI[3]) | PWEI (population x total emissions ÷1,000,000) | Minimum required number of SO2 monitors in CBSA (see Table 2 below) | Present number of SO2 monitors in CBSA |
|---|---|---|---|---|---|
| Boise City-Nampa | 730,426 | 85.66 | 62.57 | 0 | 1 |
| Coeur d'Alene | 161,505 | 29.23 | 4.72 | 0 | 0 |
| Idaho Falls | 148,904 | 0.30 | 0.04 | 0 | 0 |
| Lewiston | 63,018 | 51.10 | 3.22 | 0 | 0 |
| Pocatello | 87,138 | 748.18 | 65.19 | 0 | 2 |
| Logan | 140,794 | 0.0 | 0.0 | 0 | 0 |

[1] *https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=PEP_2017_PEPANNRES&prodType=table*
[2] Minimum monitoring requirements apply to the Core Based statistical area (CBSA). CBSA includes both metropolitan and micropolitan statistical areas.
[3] Based on 2017 NEI submitted data, currently under EPA review.

| Table 2. Minimum SO2 Monitoring Requirements (Section 4.4.2 of App D to Part 58) | |
|---|---|
| PWEI (Population weighted Emission Index) Value | Require number of SO2 monitors |
| >= 1,000,000 | 3 |
| >= 100,000 but < 1,000,000 | 2 |
| >= 5,000 but < 100,000 | 1 |

| PART 58 APPENDIX D SITE EVALUATION FORM FOR CARBON MONOXIDE (CO) | | | | | |
|---|---|---|---|---|---|
| APPLICABLE SECTION | REQUIREMENT | OBSERVED | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 4.2.1(a) | One CO monitor is required to operate collocated with one required near-road $NO_2$ monitor in CBSAs having a population of 1,000,000 or more persons. If a CBSA has more than one required near-road $NO_2$ monitor, only one CO monitor is required to be collocated with a near-road $NO_2$ monitor within that CBSA. | | | | X |
| 4.2.2(a) | Has the EPA Regional Administrator required additional CO monitoring stations above the minimum number of monitors required in 4.2.1? If so, note location in comment field. | | X* | | |
| Comments:<br>*DEQ has two additional monitors that are required. One is at DEQ's St. Luke's – Meridian, ID N-Core site, and the other one is at DEQ's Boise – Eastman CO maintenance area site. | | | | | |

| MSA Description[1] | CBSA population[2,3] | Minimum required number of SLAMS CO sites | Present number of SLAMS CO sites in MSA |
|---|---|---|---|
| Boise City-Nampa | 730,426 | 1 – N-Core*<br>1 – Maintenance Area* | 2 |
| Coeur d'Alene | 161,505 | 0 | 0 |
| Idaho Falls | 148,904 | 0 | 0 |
| Lewiston | 63,018 | 0 | 0 |
| Pocatello | 87,138 | 0 | 0 |
| Logan | 140,794 | 0 | 0 |

[1]see http://www2.census.gov/econ/susb/data/msa_codes_2007_to_2011.txt

[2]Minimum monitoring requirements apply to the Core Based statistical area (CBSA). CBSA includes both metropolitan and micropolitan statistical areas.

[3]Population based on latest available census figures.

| PART 58 APPENDIX D SITE EVALUATION FORM FOR NITROGEN DIOXIDE (NO2) | | | | |
|---|---|---|---|---|
| APPLICABLE SECTION | REQUIREMENT | CRITERIA MET? | | |
| | | YES | NO | N/A |
| 4.3.2(a) | Near-road NO2 Monitors: One microscale near-road $NO_2$ monitoring station in each CBSA with a population of 500,000 or more persons. | | | X |
| 4.3.2(a) | Near-road NO2 Monitors: An additional near-road $NO_2$monitoring station is required for any CBSA with a population of 2,500,000 persons, or in any CBSA with a population of 500,000 or more persons that has one or more roadway segments with 250,000 or greater AADT count. | | | X |
| 4.3.2(b) | Near-road NO2 Monitors: Measurements at required near-road $NO_2$ monitor sites utilizing chemiluminescence FRMs must include at a minimum: NO, $NO_2$, and $NO_X$ | | | X |
| 4.3.3(a) | Area-wide NO2 Monitoring: One monitoring station in each CBSA with a population of 1,000,000 or more persons to monitor a location of expected highest $NO_2$ concentrations representing the neighborhood or larger spatial scales. | | | X |
| Comments:<br>DEQ recently shut down its near-road monitoring site per EPA approval. DEQ is proposing to operate an NO2 monitor at its St. Luke's N-Core site. | | | | |

| Table | | | | | |
|---|---|---|---|---|---|
| CBSA Description[1] | CBSA population[2, 3] | Required number of Near-road NO2 sites | Present number of Near-road NO2 sites | Required number of Area-wide NO2 sites | Present number of Area-wide NO2 sites |
| Boise City-Nampa | 730,426 | 0 | 0 | 0 | 0 |
| Coeur d'Alene | 161,505 | 0 | 0 | 0 | 0 |
| Idaho Falls | 148,904 | 0 | 0 | 0 | 0 |
| Lewiston | 63,018 | 0 | 0 | 0 | 0 |
| Pocatello | 87,138 | 0 | 0 | 0 | 0 |
| Logan | 140,794 | 0 | 0 | 0 | 0 |

[1]see http://www2.census.gov/econ/susb/data/msa_codes_2007_to_2011.txt
[2]Minimum monitoring requirements apply to the Core Based statistical area (CBSA). CBSA includes both metropolitan and micropolitan statistical areas.
[3]Population based on latest available census figures.

| PART 58 APPENDIX D SITE EVALUATION FORM FOR OZONE | | | | |
|---|---|---|---|---|
| APPLICABLE SECTION | REQUIREMENT | CRITERIA MET? | | |
| | | YES | NO | N/A |
| 4.1(b) | At least one $O_3$ site for each MSA, or CSA if multiple MSAs are involved, must be designed to record the maximum concentration (note location in comment field). | X* | | |
| 4.1(c) | The appropriate spatial scales for $O_3$ sites are neighborhood, urban, and regional (note deviations in comment field). | X | | |
| 4.1(f) | Confirm that the monitoring agency consulted with EPA R10 when siting the maximum O3 concentration site. | X | | |
| 4.1(i) | O3 is being monitored at SLAMS monitoring sites during the "ozone season" as specified in Table D-3 of Appendix D to Part 58. | X | | |
| Comments:<br>*DEQ's White Pine Elementary site in Boise serves as the maximum concentration site. | | | | |

| MSA Description[a] | MSA population[1, 2] | Minimum required number of SLAMS O3 sites (from Table D-2) | Present number of SLAMS O3 sites in CBSA | |
|---|---|---|---|---|
| Boise City-Nampa | 730,426 | 2 | 2 | |
| Coeur d'Alene | 161,505 | 0 | 0 | |
| Idaho Falls | 148,904 | 0 | 0 | |
| Lewiston | 63,018 | 0 | 0 | |
| Pocatello | 87,138 | 0 | 0 | |
| Logan | 140,794 | 0 | 0 | |
| [a]see http://www2.census.gov/econ/susb/data/msa_codes_2007_to_2011.txt | | | | |

| Table D-2 of Appendix D to Part 58 - SLAMS O3 Monitoring Minimum Requirements | | |
|---|---|---|
| MSA population[1, 2] | Most recent 3-year design value concentrations ≥85% of any O3 NAAQS[3] | Most recent 3-year design value concentrations <85% of any O3 NAAQS[3, 4] |
| >10 million | 4 | 2 |
| 4-10 million | 3 | 1 |
| 350,000-<4 million | 2 | 1 |
| 50,000-<350,000[5] | 1 | 0 |
| [1]Minimum monitoring requirements apply to the Metropolitan statistical area (MSA). CBSA includes both MSAs and micropolitan statistical areas.<br>[2]Population based on latest available census figures.<br>[3]The ozone (O3) National Ambient Air Quality Standards (NAAQS) levels and forms are defined in 40 CFR part 50.<br>[4]These minimum monitoring requirements apply in the absence of a design value.<br>[5]Metropolitan statistical areas (MSA) must contain an urbanized area of 50,000 or more population. | | |

| Table D-3 of Appendix D to Part 58—Ozone Monitoring Season by State | | |
|---|---|---|
| State | Begin month | End Month |
| Idaho | April | September |

| PART 58 APPENDIX E SITE EVALUATION FORM FOR CO | | | | | |
|---|---|---|---|---|---|
| SITE NAME__**Eastman**_____ SITE ADDRESS__**166 N. 9th Street, Boise ID 83702**<br>AQS ID__**160010014**_____ EVALUATION DATE__**05/02/2019**_____ EVALUATOR___**Ed Jolly – Idaho DEQ**_____ | | | | | |
| APPLICABLE SECTION | REQUIREMENT | COMMENTS | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 2. HORIZONTAL AND VERTICAL PLACEMENT | For neighborhood or larger spatial scale sites the probe must be located 2-15 meters above ground level and must be at least 1 meter vertically or horizontally away from any supporting structure, walls, *etc.*, and away from dusty or dirty areas. If located near the side of a building or wall, then locate on the windward side relative to the prevailing wind direction during the season of highest concentration potential. | | X | | |
| 3. SPACING FROM MINOR SOURCES | (a) For neighborhood scale avoid placing the monitor probe inlet near local, minor sources. The source plume should not be allowed to inappropriately impact the air quality data collected at a site. | Eastman is a microscale site. | | | X |
| 4. SPACING FROM OBSTRUCTIONS | (a) To avoid scavenging, the probe inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet (exception is street canyon or source-oriented sites where buildings and other structures are unavoidable). | | X | | |
| | (b) The probe inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. | | X | | |
| 5. SPACING FROM TREES | (a) To reduce possible interference the probe inlet must be at least 10 meters or further from the drip line of trees. | | | X* | |
| | (c) No trees should be between source and probe inlet for microscale sites. | | X** | | |
| 6. SPACING FROM ROADWAYS | 2. (b) Microscale CO monitor probes in downtown areas or urban street canyon locations shall be located a minimum distance of 2 meters and a maximum distance of 10 meters from the edge of the nearest traffic lane. | | X*** | | |
| | 2. (c) Microscale CO monitor inlet probes in downtown areas or urban street canyon locations shall be located at least 10 meters from an intersection and preferably at a midblock location. | | X | | |
| 9. PROBE MATERIAL & RESIDENCE TIME | (a) Sampling train material must be FEP Teflon or borosilicate glass (e.g., Pyrex) for reactive gases. | | X | | |
| | (c) Sampling probes for reactive gas monitors at NCore must have a sample residence time less than 20 seconds. | | X**** | | |
| Are there any changes that might compromise original siting criteria? If so, provide detail in comment section. | | | | | |

Other Comments:

*Probe inlet is approximately 1 meter from tree branch. The City of Boise has worked with DEQ to keep the tree trimmed, but cutting the tree down is not favored.

**Trees are on North and South sides of probe inlet and not the West side where the traffic (CO source) occurs.

***A further analysis of this site revealed a “no parking” area immediately in front of the probe inlet. If one takes this space into account and then measures to the edge of the nearest traffic lane, the probe inlet is greater than 2 meters away.

****This site is not an N-Core site. Its sample residence time is longer than 20 seconds.

| PART 58 APPENDIX E SITE EVALUATION FORM FOR CO | | | | | |
|---|---|---|---|---|---|
| SITE NAME__**N-Core**_____ SITE ADDRESS__**Eagle Road & I-84, Meridian ID 83642**<br>AQS ID__**160010010**_____ EVALUATION DATE__**05/02/2019**_____ EVALUATOR___**Ed Jolly – Idaho DEQ**_____ | | | | | |
| APPLICABLE SECTION | REQUIREMENT | COMMENTS | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 2. HORIZONTAL AND VERTICAL PLACEMENT | For neighborhood or larger spatial scale sites the probe must be located 2-15 meters above ground level and must be at least 1 meter vertically or horizontally away from any supporting structure, walls, *etc.*, and away from dusty or dirty areas. If located near the side of a building or wall, then locate on the windward side relative to the prevailing wind direction during the season of highest concentration potential. | | X | | |
| 3. SPACING FROM MINOR SOURCES | (a) For neighborhood scale avoid placing the monitor probe inlet near local, minor sources. The source plume should not be allowed to inappropriately impact the air quality data collected at a site. | | X | | |
| 4. SPACING FROM OBSTRUCTIONS | (a) To avoid scavenging, the probe inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet (exception is street canyon or source-oriented sites where buildings and other structures are unavoidable). | | X | | |
| | (b) The probe inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. | | X | | |
| 5. SPACING FROM TREES | (a) To reduce possible interference the probe inlet must be at least 10 meters or further from the drip line of trees. | | X | | |
| | (c) No trees should be between source and probe inlet for microscale sites. | Not a microscale site | | | X |
| 6. SPACING FROM ROADWAYS | 2. (b) Microscale CO monitor probes in downtown areas or urban street canyon locations shall be located a minimum distance of 2 meters and a maximum distance of 10 meters from the edge of the nearest traffic lane. | | | | X |
| | 2. (c) Microscale CO monitor inlet probes in downtown areas or urban street canyon locations shall be located at least 10 meters from an intersection and preferably at a midblock location. | | | | X |
| 9. PROBE MATERIAL & RESIDENCE TIME | (a) Sampling train material must be FEP Teflon or borosilicate glass (e.g., Pyrex) for reactive gases. | | X | | |
| | (c) Sampling probes for reactive gas monitors at NCore must have a sample residence time less than 20 seconds. | | X | | |
| Are there any changes that might compromise original siting criteria? If so, provide detail in comment section. No. | | | | | |
| Other Comments: | | | | | |

| Roadway average daily traffic, vehicles per day | Minimum distance[1] (meters) |
|---|---|
| ≤10,000 | 10 |
| 15,000 | 25 |
| 20,000 | 45 |
| 30,000 | 80 |
| 40,000 | 115 |
| 50,000 | 135 |
| ≥60,000 | 150 |

[1] Distance from the edge of the nearest traffic lane. The distance for intermediate traffic counts should be interpolated from the table values based on the actual traffic count.

| PART 58 APPENDIX E SITE EVALUATION FORM FOR NO, NOx, NO2, and NOy | | | | | |
|---|---|---|---|---|---|
| SITE NAME_ **N-Core** SITE ADDRESS__**Eagle Road & I-84, Meridian ID 83642**<br>AQS ID__**160010010**_____ EVALUATION DATE__**05/02/2019**_____<br>EVALUATOR__**Ed Jolly – Idaho DEQ**_____ | | | | | |
| APPLICABLE SECTION | REQUIREMENT | COMMENTS | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 2. HORIZONTAL AND VERTICAL PLACEMENT | For neighborhood or larger spatial scale sites the probe must be located 2-15 meters above ground level and must be at least 1 meter vertically or horizontally away from any supporting structure, walls, *etc.*, and away from dusty or dirty areas. Microscale near-road $NO_2$ monitoring sites are required to have sampler inlets between 2 and 7 meters above ground level. If located near the side of a building or wall, then locate the sampler probe on the windward side relative to the prevailing wind direction during the season of highest concentration potential. | | X | | |
| 3. SPACING FROM MINOR SOURCES | (a) For neighborhood scale and larger avoid placing the monitor probe inlet near local, minor sources. The source plume should not be allowed to inappropriately impact the air quality data collected at a site. | | X | | |
| 4. SPACING FROM OBSTRUCTIONS | (a) To avoid scavenging, the probe inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet. | | X | | |
| | (b) The probe inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. | | X | | |
| | (d) For near-road $NO_2$ monitoring stations, the monitor probe shall have an unobstructed air flow, where no obstacles exist at or above the height of the monitor probe, between the monitor probe and the outside nearest edge of the traffic lanes of the target road segment. | | | | X |
| 5. SPACING FROM TREES | (a) To reduce possible interference the probe inlet must be at least 10 meters or further from the drip line of trees. | | X | | |
| | (c) No trees should be between source and probe inlet for microscale sites. | Not a microscale site | | | X |
| 6. SPACING FROM ROADWAYS | See spacing requirements table below | | X | | |
| 9. PROBE MATERIAL & RESIDENCE TIME | (a) Sampling train material must be FEP Teflon or borosilicate glass (e.g., Pyrex). | | X | | |
| | (c) Sampling probes for reactive gas monitors at NCore and at $NO_2$ sites must have a sample residence time less than 20 seconds. | | X | | |
| Are there any changes that might compromise original siting criteria? If so, provide detail in comment section.<br>No. | | | | | |
| Other Comments: | | | | | |

| Roadway average daily traffic, vehicles per day | Minimum distance[1] (meters) | Minimum distance[1,] (meters) |
|---|---|---|
| ≤1,000 | 10 | 10 |
| 10,000 | 10 | 20 |
| 15,000 | 20 | 30 |
| 20,000 | 30 | 40 |
| 40,000 | 50 | 60 |
| 70,000 | 100 | 100 |
| ≥110,000 | 250 | 250 |

[1]Distance from the edge of the nearest traffic lane. The distance for intermediate traffic counts should be interpolated from the table values based on the actual traffic count.

| PART 58 APPENDIX E SITE EVALUATION FORM FOR O3 | | | | | |
|---|---|---|---|---|---|
| SITE NAME__**N-Core**_____ SITE ADDRESS__**Eagle Road & I-84, Meridian, ID 83642**_____<br>AQS ID__**160010010**_____EVALUATION DATE__**05/02/2019**_____EVALUATOR__**Ed Jolly – Idaho DEQ** | | | | | |
| APPLICABLE SECTION | REQUIREMENT | COMMENTS | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 2. HORIZONTAL AND VERTICAL PLACEMENT | 2-15 meters above ground level. 1 meter vertically or horizontally away from any supporting structure, walls, *etc.*, and away from dusty or dirty areas. If located near the side of a building or wall, then locate on the windward side relative to the prevailing wind direction during the season of highest concentration potential. | | X | | |
| 3. SPACING FROM MINOR SOURCES | (a) For neighborhood scale avoid placing the monitor probe inlet near local, minor sources. The source plume should not be allowed to inappropriately impact the air quality data collected at a site. | | X | | |
| | (b) To minimize scavenging effects, the probe inlet must be away from furnace or incineration flues or other minor sources of $SO_2$ or NO. | | X | | |
| 4. SPACING FROM OBSTRUCTIONS | (a) To avoid scavenging, the probe inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet. | | X | | |
| | (b) The probe inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. | | X | | |
| 5. SPACING FROM TREES | (a) To reduce possible interference the probe inlet must be at least 10 meters or further from the drip line of trees. | | X | | |
| | (c) No trees should be between source and probe inlet for microscale sites. | | | | X* |
| 6. SPACING FROM ROADWAYS | See spacing requirements table below | | X | | |
| 9. PROBE MATERIAL & RESIDENCE TIME | (a) Sampling train material must be FEP Teflon or borosilicate glass (e.g., Pyrex). | | X | | |
| | (c) Sampling probes for reactive gas monitors at NCore must have a sample residence time less than 20 seconds. | | X | | |
| Are there any changes that might compromise original siting criteria? If so, provide detail in comment section.<br>No. | | | | | |
| Other Comments:<br>*Not a microscale site. | | | | | |

| Roadway average daily traffic, vehicles per day | Minimum distance[1] (meters) | Minimum distance[1, 2] (meters) |
|---|---|---|
| ≤1,000 | 10 | 10 |
| 10,000 | 10 | 20 |
| 15,000 | 20 | 30 |
| 20,000 | 30 | 40 |
| 40,000 | 50 | 60 |
| 70,000 | 100 | 100 |
| ≥110,000 | 250 | 250 |

[1]Distance from the edge of the nearest traffic lane. The distance for intermediate traffic counts should be interpolated from the table values based on the actual traffic count.
[2]Applicable for ozone monitors whose placement has not already been approved as of December 18, 2006.

| PART 58 APPENDIX E SITE EVALUATION FORM FOR O3 | | | | | |
|---|---|---|---|---|---|
| SITE NAME__**White Pine Elementary**_____ SITE ADDRESS_**401 E. Linden St., Boise ID 83706**<br>AQS ID__**160010017**_____EVALUATION DATE__**05/02/2019**___EVALUATOR__**Ed Jolly – Idaho DEQ** | | | | | |
| APPLICABLE SECTION | REQUIREMENT | COMMENTS | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 2. HORIZONTAL AND VERTICAL PLACEMENT | 2-15 meters above ground level. 1 meter vertically or horizontally away from any supporting structure, walls, *etc.*, and away from dusty or dirty areas. If located near the side of a building or wall, then locate on the windward side relative to the prevailing wind direction during the season of highest concentration potential. | | X | | |
| 3. SPACING FROM MINOR SOURCES | (a) For neighborhood scale avoid placing the monitor probe inlet near local, minor sources. The source plume should not be allowed to inappropriately impact the air quality data collected at a site. | | X | | |
| | (b) To minimize scavenging effects, the probe inlet must be away from furnace or incineration flues or other minor sources of $SO_2$ or NO. | | X | | |
| 4. SPACING FROM OBSTRUCTIONS | (a) To avoid scavenging, the probe inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet. | | X | | |
| | (b) The probe inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. | | X | | |
| 5. SPACING FROM TREES | (a) To reduce possible interference the probe inlet must be at least 10 meters or further from the drip line of trees. | | X | | |
| | (c) No trees should be between source and probe inlet for microscale sites. | | | | X* |
| 6. SPACING FROM ROADWAYS | See spacing requirements table below | | X | | |
| 9. PROBE MATERIAL & RESIDENCE TIME | (a) Sampling train material must be FEP Teflon or borosilicate glass (e.g., Pyrex). | | X | | |
| | (c) Sampling probes for reactive gas monitors at NCore must have a sample residence time less than 20 seconds. | | X | | |
| Are there any changes that might compromise original siting criteria? If so, provide detail in comment section.<br>No. | | | | | |
| Other Comments:<br>*Not a microscale site. | | | | | |

| Roadway average daily traffic, vehicles per day | Minimum distance[1] (meters) | Minimum distance[1, 2] (meters) |
|---|---|---|
| ≤1,000 | 10 | 10 |
| 10,000 | 10 | 20 |
| 15,000 | 20 | 30 |
| 20,000 | 30 | 40 |
| 40,000 | 50 | 60 |
| 70,000 | 100 | 100 |
| ≥110,000 | 250 | 250 |

[1]Distance from the edge of the nearest traffic lane. The distance for intermediate traffic counts should be interpolated from the table values based on the actual traffic count.

[2]Applicable for ozone monitors whose placement has not already been approved as of December 18, 2006.

| PART 58 APPENDIX E SITE EVALUATION FORM FOR PM2.5, PM10, PM10-2.5,and Pb | | | | | |
|---|---|---|---|---|---|
| SITE NAME__**Pocatello**_____ SITE ADDRESS__**Corner of Garrett and Gould Streets, Pocatello ID 83204**<br>AQS ID__**160050015**_____ EVALUATION DATE__**05/02/2019**<br>EVALUATOR__**Marshall Magee – Idaho DEQ** | | | | | |
| APPLICABLE SECTION | REQUIREMENT | COMMENTS | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 2. HORIZONTAL AND VERTICAL PLACEMENT | 2-15 meters above ground level (AGL) for neighborhood or larger spatial scale, 2-7 meters for microscale spatial scale sites and middle spatial scale $PM_{10-2.5}$ sties. 1 meter vertically or horizontally away from any supporting structure, walls, *etc.*, and away from dusty or dirty areas. If located near the side of a building or wall, then locate on the windward side relative to the prevailing wind direction during the season of highest concentration potential. | | X | | |
| 3. SPACING FROM MINOR SOURCES | (a) For neighborhood or larger spatial scales avoid placing the monitor near local, minor sources. The source plume should not be allowed to inappropriately impact the air quality data collected at a site. Particulate matter sites should not be located in an unpaved area unless there is vegetative ground cover year round. | | X | | |
| 4. SPACING FROM OBSTRUCTIONS | (a) To avoid scavenging, the inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet. | | X | | |
| | (b) The inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. For particle sampling, a minimum of 2 meters of separation from walls, parapets, and structures is required for rooftop site placement. | | X | | |
| 5. SPACING FROM TREES | (a) To reduce possible interference the inlet must be at least 10 meters or further from the drip line of trees. | | X | | |
| | (c) No trees should be between source and probe inlet for microscale sites. | Not a microscale site | | | X |
| 6. SPACING FROM ROADWAYS | Spacing from roadways is dependent on the spatial scale and ADT count. See section 6.3(b) and figure E-1 for specific requirements. | | X | | |
| Are there any changes that might compromise original siting criteria?<br>No. | | | | | |
| Other Comments: | | | | | |

| PART 58 APPENDIX E SITE EVALUATION FORM FOR PM2.5, PM10, PM10-2.5,and Pb | | | | | |
|---|---|---|---|---|---|
| SITE NAME__**Boise Fire Station**_____ SITE ADDRESS__**16th and Front Street, Boise ID 83702**<br>AQS ID__**160010009**_____ EVALUATION DATE__**05/02/2019**<br>EVALUATOR__**Ed Jolly – Idaho DEQ** | | | | | |
| APPLICABLE SECTION | REQUIREMENT | COMMENTS | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 2. HORIZONTAL AND VERTICAL PLACEMENT | 2-15 meters above ground level (AGL) for neighborhood or larger spatial scale, 2-7 meters for microscale spatial scale sites and middle spatial scale $PM_{10-2.5}$ sties. 1 meter vertically or horizontally away from any supporting structure, walls, *etc.*, and away from dusty or dirty areas. If located near the side of a building or wall, then locate on the windward side relative to the prevailing wind direction during the season of highest concentration potential. | | X | | |
| 3. SPACING FROM MINOR SOURCES | (a) For neighborhood or larger spatial scales avoid placing the monitor near local, minor sources. The source plume should not be allowed to inappropriately impact the air quality data collected at a site. Particulate matter sites should not be located in an unpaved area unless there is vegetative ground cover year round. | | X | | |
| 4. SPACING FROM OBSTRUCTIONS | (a) To avoid scavenging, the inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet. | | X | | |
| | (b) The inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. For particle sampling, a minimum of 2 meters of separation from walls, parapets, and structures is required for rooftop site placement. | | X | | |
| 5. SPACING FROM TREES | (a) To reduce possible interference the inlet must be at least 10 meters or further from the drip line of trees. | | X | | |
| | (c) No trees should be between source and probe inlet for microscale sites. | Not a microscale site | | | X |
| 6. SPACING FROM ROADWAYS | Spacing from roadways is dependent on the spatial scale and ADT count. See section 6.3(b) and figure E-1 for specific requirements. | | X | | |
| Are there any changes that might compromise original siting criteria?<br>No. | | | | | |
| Other Comments: | | | | | |

| PART 58 APPENDIX E SITE EVALUATION FORM FOR PM2.5, PM10, PM10-2.5,and Pb | | | | | |
|---|---|---|---|---|---|
| SITE NAME__**Cottonwood**_____ SITE ADDRESS__**BLM Field Office – 1 Butte Dr., Cottonwood ID 83522**<br>AQS ID__**N/A**_____ EVALUATION DATE__**05/03/2019**<br>EVALUATOR__**Zac Bishop – Idaho DEQ** | | | | | |
| APPLICABLE SECTION | REQUIREMENT | COMMENTS | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 2. HORIZONTAL AND VERTICAL PLACEMENT | 2-15 meters above ground level (AGL) for neighborhood or larger spatial scale, 2-7 meters for microscale spatial scale sites and middle spatial scale $PM_{10-2.5}$ sties. 1 meter vertically or horizontally away from any supporting structure, walls, *etc.*, and away from dusty or dirty areas. If located near the side of a building or wall, then locate on the windward side relative to the prevailing wind direction during the season of highest concentration potential. | | X | | |
| 3. SPACING FROM MINOR SOURCES | (a) For neighborhood or larger spatial scales avoid placing the monitor near local, minor sources. The source plume should not be allowed to inappropriately impact the air quality data collected at a site. Particulate matter sites should not be located in an unpaved area unless there is vegetative ground cover year round. | | X | | |
| 4. SPACING FROM OBSTRUCTIONS | (a) To avoid scavenging, the inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet. | | | X* | |
| | (b) The inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. For particle sampling, a minimum of 2 meters of separation from walls, parapets, and structures is required for rooftop site placement. | | X | | |
| 5. SPACING FROM TREES | (a) To reduce possible interference the inlet must be at least 10 meters or further from the drip line of trees. | | | X** | |
| | (c) No trees should be between source and probe inlet for microscale sites. | Not a microscale site | | | X |
| 6. SPACING FROM ROADWAYS | Spacing from roadways is dependent on the spatial scale and ADT count. See section 6.3(b) and figure E-1 for specific requirements. | | X | | |
| Are there any changes that might compromise original siting criteria?<br>No. | | | | | |
| Other Comments:<br>* A tree is located 6 meters away from the monitor. The tree height is 7 meters above the height of the inlet. This monitor (e-sampler) is operated seasonally and is not a SLAMS site. The predominant wind direction during the season of highest pollutant concentration is not impeded by the tree.<br><br>**The monitor is approximately 6 meters from the drip line of a tree. | | | | | |

| PART 58 APPENDIX E SITE EVALUATION FORM FOR PM2.5, PM10, PM10-2.5,and Pb | | | | | |
|---|---|---|---|---|---|
| SITE NAME__**Garden Valley**_____ SITE ADDRESS__**946 Banks Lowman Rd., Garden Valley ID 83622**<br>AQS ID__**160150002**_____ EVALUATION DATE__**05/02/2019**<br>EVALUATOR__**Ed Jolly – Idaho DEQ** | | | | | |
| APPLICABLE SECTION | REQUIREMENT | COMMENTS | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 2. HORIZONTAL AND VERTICAL PLACEMENT | 2-15 meters above ground level (AGL) for neighborhood or larger spatial scale, 2-7 meters for microscale spatial scale sites and middle spatial scale $PM_{10-2.5}$ sties. 1 meter vertically or horizontally away from any supporting structure, walls, *etc.*, and away from dusty or dirty areas. If located near the side of a building or wall, then locate on the windward side relative to the prevailing wind direction during the season of highest concentration potential. | | X | | |
| 3. SPACING FROM MINOR SOURCES | (a) For neighborhood or larger spatial scales avoid placing the monitor near local, minor sources. The source plume should not be allowed to inappropriately impact the air quality data collected at a site. Particulate matter sites should not be located in an unpaved area unless there is vegetative ground cover year round. | | X | | |
| 4. SPACING FROM OBSTRUCTIONS | (a) To avoid scavenging, the inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet. | | X | | |
| | (b) The inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. For particle sampling, a minimum of 2 meters of separation from walls, parapets, and structures is required for rooftop site placement. | | X | | |
| 5. SPACING FROM TREES | (a) To reduce possible interference the inlet must be at least 10 meters or further from the drip line of trees. | | X | | |
| | (c) No trees should be between source and probe inlet for microscale sites. | Not a microscale site | | | X |
| 6. SPACING FROM ROADWAYS | Spacing from roadways is dependent on the spatial scale and ADT count. See section 6.3(b) and figure E-1 for specific requirements. | | X | | |
| Are there any changes that might compromise original siting criteria?<br>No. | | | | | |
| Other Comments: | | | | | |

| PART 58 APPENDIX E SITE EVALUATION FORM FOR PM2.5, PM10, PM10-2.5,and Pb | | | | | |
|---|---|---|---|---|---|
| SITE NAME__**Grangeville**_____ SITE ADDRESS__**USFS Compound – Grangeville ID 83530**<br>AQS ID__**160490002**_____ EVALUATION DATE__**05/03/2019**<br>EVALUATOR__**Zac Bishop – Idaho DEQ** | | | | | |
| APPLICABLE SECTION | REQUIREMENT | COMMENTS | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 2. HORIZONTAL AND VERTICAL PLACEMENT | 2-15 meters above ground level (AGL) for neighborhood or larger spatial scale, 2-7 meters for microscale spatial scale sites and middle spatial scale $PM_{10-2.5}$ sties. 1 meter vertically or horizontally away from any supporting structure, walls, *etc.*, and away from dusty or dirty areas. If located near the side of a building or wall, then locate on the windward side relative to the prevailing wind direction during the season of highest concentration potential. | | X | | |
| 3. SPACING FROM MINOR SOURCES | (a) For neighborhood or larger spatial scales avoid placing the monitor near local, minor sources. The source plume should not be allowed to inappropriately impact the air quality data collected at a site. Particulate matter sites should not be located in an unpaved area unless there is vegetative ground cover year round. | | X | | |
| 4. SPACING FROM OBSTRUCTIONS | (a) To avoid scavenging, the inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet. | | X | | |
| | (b) The inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. For particle sampling, a minimum of 2 meters of separation from walls, parapets, and structures is required for rooftop site placement. | | X | | |
| 5. SPACING FROM TREES | (a) To reduce possible interference the inlet must be at least 10 meters or further from the drip line of trees. | | X | | |
| | (c) No trees should be between source and probe inlet for microscale sites. | Not a microscale site | | | X |
| 6. SPACING FROM ROADWAYS | Spacing from roadways is dependent on the spatial scale and ADT count. See section 6.3(b) and figure E-1 for specific requirements. | | X | | |
| Are there any changes that might compromise original siting criteria?<br>No. | | | | | |
| Other Comments: | | | | | |

| PART 58 APPENDIX E SITE EVALUATION FORM FOR PM2.5, PM10, PM10-2.5,and Pb | | | | | |
|---|---|---|---|---|---|
| SITE NAME__**Idaho City**_____ SITE ADDRESS__**3851 Hwy 21, Idaho City ID 83631**<br>AQS ID__**160150001**_____ EVALUATION DATE__**05/02/2019**<br>EVALUATOR__**Ed jolly – Idaho DEQ** | | | | | |
| APPLICABLE SECTION | REQUIREMENT | COMMENTS | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 2. HORIZONTAL AND VERTICAL PLACEMENT | 2-15 meters above ground level (AGL) for neighborhood or larger spatial scale, 2-7 meters for microscale spatial scale sites and middle spatial scale $PM_{10-2.5}$ sties. 1 meter vertically or horizontally away from any supporting structure, walls, *etc.*, and away from dusty or dirty areas. If located near the side of a building or wall, then locate on the windward side relative to the prevailing wind direction during the season of highest concentration potential. | | X | | |
| 3. SPACING FROM MINOR SOURCES | (a) For neighborhood or larger spatial scales avoid placing the monitor near local, minor sources. The source plume should not be allowed to inappropriately impact the air quality data collected at a site. Particulate matter sites should not be located in an unpaved area unless there is vegetative ground cover year round. | | X | | |
| 4. SPACING FROM OBSTRUCTIONS | (a) To avoid scavenging, the inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet. | | X | | |
| | (b) The inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. For particle sampling, a minimum of 2 meters of separation from walls, parapets, and structures is required for rooftop site placement. | | X | | |
| 5. SPACING FROM TREES | (a) To reduce possible interference the inlet must be at least 10 meters or further from the drip line of trees. | | X | | |
| | (c) No trees should be between source and probe inlet for microscale sites. | Not a microscale site | | | X |
| 6. SPACING FROM ROADWAYS | Spacing from roadways is dependent on the spatial scale and ADT count. See section 6.3(b) and figure E-1 for specific requirements. | | X | | |
| Are there any changes that might compromise original siting criteria?<br>No. | | | | | |
| Other Comments: | | | | | |

| PART 58 APPENDIX E SITE EVALUATION FORM FOR PM2.5, PM10, PM10-2.5,and Pb | | | | | |
|---|---|---|---|---|---|
| SITE NAME__**Idaho Falls**_____ SITE ADDRESS__**Hickory and Sycamore Streets, Idaho Falls ID 83402**<br>AQS ID__**160190011**_____ EVALUATION DATE__**04/09/2019**<br>EVALUATOR__**Roger Sauer – Idaho DEQ** | | | | | |
| APPLICABLE SECTION | REQUIREMENT | COMMENTS | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 2. HORIZONTAL AND VERTICAL PLACEMENT | 2-15 meters above ground level (AGL) for neighborhood or larger spatial scale, 2-7 meters for microscale spatial scale sites and middle spatial scale $PM_{10-2.5}$ sties. 1 meter vertically or horizontally away from any supporting structure, walls, *etc.*, and away from dusty or dirty areas. If located near the side of a building or wall, then locate on the windward side relative to the prevailing wind direction during the season of highest concentration potential. | | X | | |
| 3. SPACING FROM MINOR SOURCES | (a) For neighborhood or larger spatial scales avoid placing the monitor near local, minor sources. The source plume should not be allowed to inappropriately impact the air quality data collected at a site. Particulate matter sites should not be located in an unpaved area unless there is vegetative ground cover year round. | | X | | |
| 4. SPACING FROM OBSTRUCTIONS | (a) To avoid scavenging, the inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet. | | X | | |
| | (b) The inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. For particle sampling, a minimum of 2 meters of separation from walls, parapets, and structures is required for rooftop site placement. | | X | | |
| 5. SPACING FROM TREES | (a) To reduce possible interference the inlet must be at least 10 meters or further from the drip line of trees. | | X | | |
| | (c) No trees should be between source and probe inlet for microscale sites. | Not a microscale site | | | X |
| 6. SPACING FROM ROADWAYS | Spacing from roadways is dependent on the spatial scale and ADT count. See section 6.3(b) and figure E-1 for specific requirements. | | X | | |
| Are there any changes that might compromise original siting criteria?<br>No. | | | | | |
| Other Comments: | | | | | |

| PART 58 APPENDIX E SITE EVALUATION FORM FOR PM2.5, PM10, PM10-2.5,and Pb | | | | | |
|---|---|---|---|---|---|
| SITE NAME__**Juliaetta**_____ SITE ADDRESS__**3rd Street, Juliaetta, ID 83535**<br>AQS ID__**N/A**_____ EVALUATION DATE__**05/03/2019**<br>EVALUATOR__**Zac Bishop – Idaho DEQ** | | | | | |
| APPLICABLE SECTION | REQUIREMENT | COMMENTS | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 2. HORIZONTAL AND VERTICAL PLACEMENT | 2-15 meters above ground level (AGL) for neighborhood or larger spatial scale, 2-7 meters for microscale spatial scale sites and middle spatial scale $PM_{10-2.5}$ sties. 1 meter vertically or horizontally away from any supporting structure, walls, *etc.*, and away from dusty or dirty areas. If located near the side of a building or wall, then locate on the windward side relative to the prevailing wind direction during the season of highest concentration potential. | | X | | |
| 3. SPACING FROM MINOR SOURCES | (a) For neighborhood or larger spatial scales avoid placing the monitor near local, minor sources. The source plume should not be allowed to inappropriately impact the air quality data collected at a site. Particulate matter sites should not be located in an unpaved area unless there is vegetative ground cover year round. | | X | | |
| 4. SPACING FROM OBSTRUCTIONS | (a) To avoid scavenging, the inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet. | | X | | |
| | (b) The inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. For particle sampling, a minimum of 2 meters of separation from walls, parapets, and structures is required for rooftop site placement. | | X | | |
| 5. SPACING FROM TREES | (a) To reduce possible interference the inlet must be at least 10 meters or further from the drip line of trees. | | X | | |
| | (c) No trees should be between source and probe inlet for microscale sites. | Not a microscale site | | | X |
| 6. SPACING FROM ROADWAYS | Spacing from roadways is dependent on the spatial scale and ADT count. See section 6.3(b) and figure E-1 for specific requirements. | | X | | |
| Are there any changes that might compromise original siting criteria?<br>No. | | | | | |
| Other Comments: | | | | | |

| PART 58 APPENDIX E SITE EVALUATION FORM FOR PM2.5, PM10, PM10-2.5,and Pb | | | | | |
|---|---|---|---|---|---|
| SITE NAME__**Ketchum**_____ SITE ADDRESS__**111 West 8th Street, Ketchum ID 83340**<br>AQS ID__**160130004**_____ EVALUATION DATE__**05/02/2019**<br>EVALUATOR__**Chad Silver – Idaho DEQ** | | | | | |
| APPLICABLE SECTION | REQUIREMENT | COMMENTS | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 2. HORIZONTAL AND VERTICAL PLACEMENT | 2-15 meters above ground level (AGL) for neighborhood or larger spatial scale, 2-7 meters for microscale spatial scale sites and middle spatial scale $PM_{10-2.5}$ sties. 1 meter vertically or horizontally away from any supporting structure, walls, *etc.*, and away from dusty or dirty areas. If located near the side of a building or wall, then locate on the windward side relative to the prevailing wind direction during the season of highest concentration potential. | | X | | |
| 3. SPACING FROM MINOR SOURCES | (a) For neighborhood or larger spatial scales avoid placing the monitor near local, minor sources. The source plume should not be allowed to inappropriately impact the air quality data collected at a site. Particulate matter sites should not be located in an unpaved area unless there is vegetative ground cover year round. | | X | | |
| 4. SPACING FROM OBSTRUCTIONS | (a) To avoid scavenging, the inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet. | | X | | |
| | (b) The inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. For particle sampling, a minimum of 2 meters of separation from walls, parapets, and structures is required for rooftop site placement. | | X | | |
| 5. SPACING FROM TREES | (a) To reduce possible interference the inlet must be at least 10 meters or further from the drip line of trees. | | X | | |
| | (c) No trees should be between source and probe inlet for microscale sites. | Not a microscale site | | | X |
| 6. SPACING FROM ROADWAYS | Spacing from roadways is dependent on the spatial scale and ADT count. See section 6.3(b) and figure E-1 for specific requirements. | | X | | |
| Are there any changes that might compromise original siting criteria?<br>No. | | | | | |
| Other Comments: | | | | | |

| PART 58 APPENDIX E SITE EVALUATION FORM FOR PM2.5, PM10, PM10-2.5,and Pb | | | | | |
|---|---|---|---|---|---|
| SITE NAME__**Lancaster**_____ SITE ADDRESS__**West Lancaster Rd., Hayden, ID 83835**<br>AQS ID__**160550003**_____ EVALUATION DATE__**5/8/2019**<br>EVALUATOR__**Jen Lennon – Idaho DEQ** | | | | | |
| APPLICABLE SECTION | REQUIREMENT | COMMENTS | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 2. HORIZONTAL AND VERTICAL PLACEMENT | 2-15 meters above ground level (AGL) for neighborhood or larger spatial scale, 2-7 meters for microscale spatial scale sites and middle spatial scale $PM_{10-2.5}$ sties. 1 meter vertically or horizontally away from any supporting structure, walls, *etc.*, and away from dusty or dirty areas. If located near the side of a building or wall, then locate on the windward side relative to the prevailing wind direction during the season of highest concentration potential. | | X | | |
| 3. SPACING FROM MINOR SOURCES | (a) For neighborhood or larger spatial scales avoid placing the monitor near local, minor sources. The source plume should not be allowed to inappropriately impact the air quality data collected at a site. Particulate matter sites should not be located in an unpaved area unless there is vegetative ground cover year round. | | X* | | |
| 4. SPACING FROM OBSTRUCTIONS | (a) To avoid scavenging, the inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet. | | X | | |
| | (b) The inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. For particle sampling, a minimum of 2 meters of separation from walls, parapets, and structures is required for rooftop site placement. | | X | | |
| 5. SPACING FROM TREES | (a) To reduce possible interference the inlet must be at least 10 meters or further from the drip line of trees. | | X | | |
| | (c) No trees should be between source and probe inlet for microscale sites. | Not a microscale site | | | X |
| 6. SPACING FROM ROADWAYS | Spacing from roadways is dependent on the spatial scale and ADT count. See section 6.3(b) and figure E-1 for specific requirements. | | X | | |
| Are there any changes that might compromise original siting criteria?<br>No. | | | | | |
| Other Comments:<br>*The Water and Sewer District installed a backup generator near the site. The generator only runs once per week for a short dedicated time as part of its maintenance run schedule. Impacts are expected to be minimal. | | | | | |

| PART 58 APPENDIX E SITE EVALUATION FORM FOR PM2.5, PM10, PM10-2.5,and Pb | | | | | |
|---|---|---|---|---|---|
| SITE NAME__**Lewiston**_____ SITE ADDRESS__**1200 29th Street, Lewiston ID 83501**<br>AQS ID__**160690012**_____ EVALUATION DATE__**05/03/2019**<br>EVALUATOR__**Zac Bishop – Idaho DEQ** | | | | | |
| APPLICABLE SECTION | REQUIREMENT | COMMENTS | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 2. HORIZONTAL AND VERTICAL PLACEMENT | 2-15 meters above ground level (AGL) for neighborhood or larger spatial scale, 2-7 meters for microscale spatial scale sites and middle spatial scale $PM_{10-2.5}$ sties. 1 meter vertically or horizontally away from any supporting structure, walls, *etc.*, and away from dusty or dirty areas. If located near the side of a building or wall, then locate on the windward side relative to the prevailing wind direction during the season of highest concentration potential. | | X | | |
| 3. SPACING FROM MINOR SOURCES | (a) For neighborhood or larger spatial scales avoid placing the monitor near local, minor sources. The source plume should not be allowed to inappropriately impact the air quality data collected at a site. Particulate matter sites should not be located in an unpaved area unless there is vegetative ground cover year round. | | X | | |
| 4. SPACING FROM OBSTRUCTIONS | (a) To avoid scavenging, the inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet. | | X | | |
| | (b) The inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. For particle sampling, a minimum of 2 meters of separation from walls, parapets, and structures is required for rooftop site placement. | | X | | |
| 5. SPACING FROM TREES | (a) To reduce possible interference the inlet must be at least 10 meters or further from the drip line of trees. | | X | | |
| | (c) No trees should be between source and probe inlet for microscale sites. | Not a microscale site | | | X |
| 6. SPACING FROM ROADWAYS | Spacing from roadways is dependent on the spatial scale and ADT count. See section 6.3(b) and figure E-1 for specific requirements. | | X | | |
| Are there any changes that might compromise original siting criteria?<br>No. | | | | | |
| Other Comments: | | | | | |

| PART 58 APPENDIX E SITE EVALUATION FORM FOR PM2.5, PM10, PM10-2.5,and Pb | | | | | |
|---|---|---|---|---|---|
| SITE NAME__**McCall**_____ SITE ADDRESS__**500 N. Mission Street, McCall ID 83638**<br>AQS ID__**160850002**_____ EVALUATION DATE__**05/02/2019**<br>EVALUATOR__**Ed Jolly – Idaho DEQ** | | | | | |
| APPLICABLE SECTION | REQUIREMENT | COMMENTS | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 2. HORIZONTAL AND VERTICAL PLACEMENT | 2-15 meters above ground level (AGL) for neighborhood or larger spatial scale, 2-7 meters for microscale spatial scale sites and middle spatial scale $PM_{10-2.5}$ sties. 1 meter vertically or horizontally away from any supporting structure, walls, *etc.*, and away from dusty or dirty areas. If located near the side of a building or wall, then locate on the windward side relative to the prevailing wind direction during the season of highest concentration potential. | | X | | |
| 3. SPACING FROM MINOR SOURCES | (a) For neighborhood or larger spatial scales avoid placing the monitor near local, minor sources. The source plume should not be allowed to inappropriately impact the air quality data collected at a site. Particulate matter sites should not be located in an unpaved area unless there is vegetative ground cover year round. | | X | | |
| 4. SPACING FROM OBSTRUCTIONS | (a) To avoid scavenging, the inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet. | | X | | |
| | (b) The inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. For particle sampling, a minimum of 2 meters of separation from walls, parapets, and structures is required for rooftop site placement. | | X | | |
| 5. SPACING FROM TREES | (a) To reduce possible interference the inlet must be at least 10 meters or further from the drip line of trees. | | | X* | |
| | (c) No trees should be between source and probe inlet for microscale sites. | Not a microscale site | | | X |
| 6. SPACING FROM ROADWAYS | Spacing from roadways is dependent on the spatial scale and ADT count. See section 6.3(b) and figure E-1 for specific requirements. | | X | | |
| Are there any changes that might compromise original siting criteria?<br>No. | | | | | |
| Other Comments:<br>*Small tree is located at 8.7 meters away from monitor. | | | | | |

| PART 58 APPENDIX E SITE EVALUATION FORM FOR PM2.5, PM10, PM10-2.5,and Pb | | | | | |
|---|---|---|---|---|---|
| SITE NAME__**Moscow**_____ SITE ADDRESS__**1025 Plant Sciences Rd., Moscow ID 83843**<br>AQS ID__**160570005**_____ EVALUATION DATE__**05/03/2019**<br>EVALUATOR__**Zac Bishop – Idaho DEQ** | | | | | |
| APPLICABLE SECTION | REQUIREMENT | COMMENTS | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 2. HORIZONTAL AND VERTICAL PLACEMENT | 2-15 meters above ground level (AGL) for neighborhood or larger spatial scale, 2-7 meters for microscale spatial scale sites and middle spatial scale $PM_{10-2.5}$ sties. 1 meter vertically or horizontally away from any supporting structure, walls, *etc.*, and away from dusty or dirty areas. If located near the side of a building or wall, then locate on the windward side relative to the prevailing wind direction during the season of highest concentration potential. | | X | | |
| 3. SPACING FROM MINOR SOURCES | (a) For neighborhood or larger spatial scales avoid placing the monitor near local, minor sources. The source plume should not be allowed to inappropriately impact the air quality data collected at a site. Particulate matter sites should not be located in an unpaved area unless there is vegetative ground cover year round. | | X | | |
| 4. SPACING FROM OBSTRUCTIONS | (a) To avoid scavenging, the inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet. | | X | | |
| | (b) The inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. For particle sampling, a minimum of 2 meters of separation from walls, parapets, and structures is required for rooftop site placement. | | X | | |
| 5. SPACING FROM TREES | (a) To reduce possible interference the inlet must be at least 10 meters or further from the drip line of trees. | | X | | |
| | (c) No trees should be between source and probe inlet for microscale sites. | Not a microscale site | | | X |
| 6. SPACING FROM ROADWAYS | Spacing from roadways is dependent on the spatial scale and ADT count. See section 6.3(b) and figure E-1 for specific requirements. | | X | | |
| Are there any changes that might compromise original siting criteria?<br>No. | | | | | |
| Other Comments: | | | | | |

| PART 58 APPENDIX E SITE EVALUATION FORM FOR PM2.5, PM10, PM10-2.5,and Pb | | | | | |
|---|---|---|---|---|---|
| SITE NAME__**Mt. Hall**_____ SITE ADDRESS__**1275 Idaho 1, Bonners Ferry ID 83805**<br>AQS ID__**N/A**_____ EVALUATION DATE__**5/8/2019**<br>EVALUATOR__**Jen Lennon – Idaho DEQ** | | | | | |
| APPLICABLE SECTION | REQUIREMENT | COMMENTS | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 2. HORIZONTAL AND VERTICAL PLACEMENT | 2-15 meters above ground level (AGL) for neighborhood or larger spatial scale, 2-7 meters for microscale spatial scale sites and middle spatial scale $PM_{10-2.5}$ sties. 1 meter vertically or horizontally away from any supporting structure, walls, *etc.*, and away from dusty or dirty areas. If located near the side of a building or wall, then locate on the windward side relative to the prevailing wind direction during the season of highest concentration potential. | | X | | |
| 3. SPACING FROM MINOR SOURCES | (a) For neighborhood or larger spatial scales avoid placing the monitor near local, minor sources. The source plume should not be allowed to inappropriately impact the air quality data collected at a site. Particulate matter sites should not be located in an unpaved area unless there is vegetative ground cover year round. | | X | | |
| 4. SPACING FROM OBSTRUCTIONS | (a) To avoid scavenging, the inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet. | | X | | |
| | (b) The inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. For particle sampling, a minimum of 2 meters of separation from walls, parapets, and structures is required for rooftop site placement. | | X | | |
| 5. SPACING FROM TREES | (a) To reduce possible interference the inlet must be at least 10 meters or further from the drip line of trees. | | X | | |
| | (c) No trees should be between source and probe inlet for microscale sites. | Not a microscale site | | | X |
| 6. SPACING FROM ROADWAYS | Spacing from roadways is dependent on the spatial scale and ADT count. See section 6.3(b) and figure E-1 for specific requirements. | | X | | |
| Are there any changes that might compromise original siting criteria?<br>No. | | | | | |
| Other Comments: | | | | | |

| PART 58 APPENDIX E SITE EVALUATION FORM FOR PM2.5, PM10, PM10-2.5,and Pb | | | | | |
|---|---|---|---|---|---|
| SITE NAME__**Nampa**_____ SITE ADDRESS__**Nampa Fire Station – 923 1st Street South, Nampa ID 83651**<br>AQS ID__**160270002**_____ EVALUATION DATE__**05/02/2019**<br>EVALUATOR__**Ed Jolly – Idaho DEQ** | | | | | |
| APPLICABLE SECTION | REQUIREMENT | COMMENTS | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 2. HORIZONTAL AND VERTICAL PLACEMENT | 2-15 meters above ground level (AGL) for neighborhood or larger spatial scale, 2-7 meters for microscale spatial scale sites and middle spatial scale $PM_{10-2.5}$ sties. 1 meter vertically or horizontally away from any supporting structure, walls, *etc.*, and away from dusty or dirty areas. If located near the side of a building or wall, then locate on the windward side relative to the prevailing wind direction during the season of highest concentration potential. | | X | | |
| 3. SPACING FROM MINOR SOURCES | (a) For neighborhood or larger spatial scales avoid placing the monitor near local, minor sources. The source plume should not be allowed to inappropriately impact the air quality data collected at a site. Particulate matter sites should not be located in an unpaved area unless there is vegetative ground cover year round. | | X | | |
| 4. SPACING FROM OBSTRUCTIONS | (a) To avoid scavenging, the inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet. | | X | | |
| | (b) The inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. For particle sampling, a minimum of 2 meters of separation from walls, parapets, and structures is required for rooftop site placement. | | X | | |
| 5. SPACING FROM TREES | (a) To reduce possible interference the inlet must be at least 10 meters or further from the drip line of trees. | | X | | |
| | (c) No trees should be between source and probe inlet for microscale sites. | Not a microscale site | | | X |
| 6. SPACING FROM ROADWAYS | Spacing from roadways is dependent on the spatial scale and ADT count. See section 6.3(b) and figure E-1 for specific requirements. | | X | | |
| Are there any changes that might compromise original siting criteria?<br>No. | | | | | |
| Other Comments: | | | | | |

| PART 58 APPENDIX E SITE EVALUATION FORM FOR PM2.5, PM10, PM10-2.5,and Pb | | | | | |
|---|---|---|---|---|---|
| SITE NAME__**N-Core**_____ SITE ADDRESS__**Eagle Road & I-84, Meridian ID 83642**<br>AQS ID__**160010010**_____ EVALUATION DATE__**05/02/2019** EVALUATOR__**Ed Jolly – Idaho DEQ** | | | | | |
| APPLICABLE SECTION | REQUIREMENT | COMMENTS | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 2. HORIZONTAL AND VERTICAL PLACEMENT | 2-15 meters above ground level (AGL) for neighborhood or larger spatial scale, 2-7 meters for microscale spatial scale sites and middle spatial scale $PM_{10-2.5}$ sties. 1 meter vertically or horizontally away from any supporting structure, walls, *etc.*, and away from dusty or dirty areas. If located near the side of a building or wall, then locate on the windward side relative to the prevailing wind direction during the season of highest concentration potential. | | X | | |
| 3. SPACING FROM MINOR SOURCES | (a) For neighborhood or larger spatial scales avoid placing the monitor near local, minor sources. The source plume should not be allowed to inappropriately impact the air quality data collected at a site. Particulate matter sites should not be located in an unpaved area unless there is vegetative ground cover year round. | | X | | |
| 4. SPACING FROM OBSTRUCTIONS | (a) To avoid scavenging, the inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet. | | X | | |
| | (b) The inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. For particle sampling, a minimum of 2 meters of separation from walls, parapets, and structures is required for rooftop site placement. | | X | | |
| 5. SPACING FROM TREES | (a) To reduce possible interference the inlet must be at least 10 meters or further from the drip line of trees. | | X | | |
| | (c) No trees should be between source and probe inlet for microscale sites. | Not a microscale site | | | X |
| 6. SPACING FROM ROADWAYS | Spacing from roadways is dependent on the spatial scale and ADT count. See section 6.3(b) and figure E-1 for specific requirements. | | X | | |
| Are there any changes that might compromise original siting criteria?<br>No. | | | | | |
| Other Comments: | | | | | |

| PART 58 APPENDIX E SITE EVALUATION FORM FOR PM2.5, PM10, PM10-2.5,and Pb | | | | | |
|---|---|---|---|---|---|
| SITE NAME__**Paul**_____ SITE ADDRESS__**201 N. 1st Street West, Paul ID 83347**<br>AQS ID__**N/A**_____ EVALUATION DATE__**05/03/2019**<br>EVALUATOR__**Chad Silver – Idaho DEQ** | | | | | |
| APPLICABLE SECTION | REQUIREMENT | COMMENTS | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 2. HORIZONTAL AND VERTICAL PLACEMENT | 2-15 meters above ground level (AGL) for neighborhood or larger spatial scale, 2-7 meters for microscale spatial scale sites and middle spatial scale $PM_{10-2.5}$ sties. 1 meter vertically or horizontally away from any supporting structure, walls, *etc.*, and away from dusty or dirty areas. If located near the side of a building or wall, then locate on the windward side relative to the prevailing wind direction during the season of highest concentration potential. | | X | | |
| 3. SPACING FROM MINOR SOURCES | (a) For neighborhood or larger spatial scales avoid placing the monitor near local, minor sources. The source plume should not be allowed to inappropriately impact the air quality data collected at a site. Particulate matter sites should not be located in an unpaved area unless there is vegetative ground cover year round. | | X | | |
| 4. SPACING FROM OBSTRUCTIONS | (a) To avoid scavenging, the inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet. | | | X* | |
| | (b) The inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. For particle sampling, a minimum of 2 meters of separation from walls, parapets, and structures is required for rooftop site placement. | | X | | |
| 5. SPACING FROM TREES | (a) To reduce possible interference the inlet must be at least 10 meters or further from the drip line of trees. | | | X** | |
| | (c) No trees should be between source and probe inlet for microscale sites. | Not a microscale site | | | X |
| 6. SPACING FROM ROADWAYS | Spacing from roadways is dependent on the spatial scale and ADT count. See section 6.3(b) and figure E-1 for specific requirements. | | X | | |
| Are there any changes that might compromise original siting criteria?<br>See below. | | | | | |
| Other Comments:<br>*Tree stands 5.1 meters taller than probe inlet. Tree is only located 5.2 meters away from probe inlet.<br>**Tree is located 5.2 meters away from probe inlet. Higher branches overhang probe inlet. DEQ will contact the school where the monitor is located to try to get approval for tree to be trimmed. | | | | | |

| PART 58 APPENDIX E SITE EVALUATION FORM FOR PM2.5, PM10, PM10-2.5,and Pb | | | | | |
|---|---|---|---|---|---|
| SITE NAME__**Porthill**_____ SITE ADDRESS__**Tavern Farm Rd., Porthill ID 83853**<br>AQS ID__**N/A**_____ EVALUATION DATE__**5/8/2019**<br>EVALUATOR__**Jen Lennon – Idaho DEQ** | | | | | |
| APPLICABLE SECTION | REQUIREMENT | COMMENTS | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 2. HORIZONTAL AND VERTICAL PLACEMENT | 2-15 meters above ground level (AGL) for neighborhood or larger spatial scale, 2-7 meters for microscale spatial scale sites and middle spatial scale $PM_{10-2.5}$ sties. 1 meter vertically or horizontally away from any supporting structure, walls, *etc.*, and away from dusty or dirty areas. If located near the side of a building or wall, then locate on the windward side relative to the prevailing wind direction during the season of highest concentration potential. | | X | | |
| 3. SPACING FROM MINOR SOURCES | (a) For neighborhood or larger spatial scales avoid placing the monitor near local, minor sources. The source plume should not be allowed to inappropriately impact the air quality data collected at a site. Particulate matter sites should not be located in an unpaved area unless there is vegetative ground cover year round. | | X | | |
| 4. SPACING FROM OBSTRUCTIONS | (a) To avoid scavenging, the inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet. | | X | | |
| | (b) The inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. For particle sampling, a minimum of 2 meters of separation from walls, parapets, and structures is required for rooftop site placement. | | X | | |
| 5. SPACING FROM TREES | (a) To reduce possible interference the inlet must be at least 10 meters or further from the drip line of trees. | | X | | |
| | (c) No trees should be between source and probe inlet for microscale sites. | Not a microscale site | | | X |
| 6. SPACING FROM ROADWAYS | Spacing from roadways is dependent on the spatial scale and ADT count. See section 6.3(b) and figure E-1 for specific requirements. | | X | | |
| Are there any changes that might compromise original siting criteria?<br>No. | | | | | |
| Other Comments: | | | | | |

| PART 58 APPENDIX E SITE EVALUATION FORM FOR PM2.5, PM10, PM10-2.5,and Pb | | | | | |
|---|---|---|---|---|---|
| SITE NAME__**Potlatch**_____ SITE ADDRESS__**510 Elm Street, Potlatch ID 83855**<br>AQS ID__**N/A**_____ EVALUATION DATE__**05/03/2019**<br>EVALUATOR__**Zac Bishop – Idaho DEQ** | | | | | |
| APPLICABLE SECTION | REQUIREMENT | COMMENTS | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 2. HORIZONTAL AND VERTICAL PLACEMENT | 2-15 meters above ground level (AGL) for neighborhood or larger spatial scale, 2-7 meters for microscale spatial scale sites and middle spatial scale $PM_{10-2.5}$ sties. 1 meter vertically or horizontally away from any supporting structure, walls, *etc.*, and away from dusty or dirty areas. If located near the side of a building or wall, then locate on the windward side relative to the prevailing wind direction during the season of highest concentration potential. | | X | | |
| 3. SPACING FROM MINOR SOURCES | (a) For neighborhood or larger spatial scales avoid placing the monitor near local, minor sources. The source plume should not be allowed to inappropriately impact the air quality data collected at a site. Particulate matter sites should not be located in an unpaved area unless there is vegetative ground cover year round. | | X | | |
| 4. SPACING FROM OBSTRUCTIONS | (a) To avoid scavenging, the inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet. | | X | | |
| | (b) The inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. For particle sampling, a minimum of 2 meters of separation from walls, parapets, and structures is required for rooftop site placement. | | X | | |
| 5. SPACING FROM TREES | (a) To reduce possible interference the inlet must be at least 10 meters or further from the drip line of trees. | | X | | |
| | (c) No trees should be between source and probe inlet for microscale sites. | Not a microscale site | | | X |
| 6. SPACING FROM ROADWAYS | Spacing from roadways is dependent on the spatial scale and ADT count. See section 6.3(b) and figure E-1 for specific requirements. | | X | | |
| Are there any changes that might compromise original siting criteria?<br>No. | | | | | |
| Other Comments: | | | | | |

| PART 58 APPENDIX E SITE EVALUATION FORM FOR PM2.5, PM10, PM10-2.5,and Pb | | | | | |
|---|---|---|---|---|---|
| SITE NAME__**Preston**_____ SITE ADDRESS__**450 East 800 South Preston, ID 83263**<br>AQS ID__**160410002**_____ EVALUATION DATE__**05/02/2019**<br>EVALUATOR__**Marshall Magee – Idaho DEQ** | | | | | |
| APPLICABLE SECTION | REQUIREMENT | COMMENTS | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 2. HORIZONTAL AND VERTICAL PLACEMENT | 2-15 meters above ground level (AGL) for neighborhood or larger spatial scale, 2-7 meters for microscale spatial scale sites and middle spatial scale $PM_{10-2.5}$ sties. 1 meter vertically or horizontally away from any supporting structure, walls, *etc.*, and away from dusty or dirty areas. If located near the side of a building or wall, then locate on the windward side relative to the prevailing wind direction during the season of highest concentration potential. | | X | | |
| 3. SPACING FROM MINOR SOURCES | (a) For neighborhood or larger spatial scales avoid placing the monitor near local, minor sources. The source plume should not be allowed to inappropriately impact the air quality data collected at a site. Particulate matter sites should not be located in an unpaved area unless there is vegetative ground cover year round. | | X | | |
| 4. SPACING FROM OBSTRUCTIONS | (a) To avoid scavenging, the inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet. | | X | | |
| | (b) The inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. For particle sampling, a minimum of 2 meters of separation from walls, parapets, and structures is required for rooftop site placement. | | X | | |
| 5. SPACING FROM TREES | (a) To reduce possible interference the inlet must be at least 10 meters or further from the drip line of trees. | | X | | |
| | (c) No trees should be between source and probe inlet for microscale sites. | Not a microscale site | | | X |
| 6. SPACING FROM ROADWAYS | Spacing from roadways is dependent on the spatial scale and ADT count. See section 6.3(b) and figure E-1 for specific requirements. | | X | | |
| Are there any changes that might compromise original siting criteria?<br>No. | | | | | |
| Other Comments: | | | | | |

| PART 58 APPENDIX E SITE EVALUATION FORM FOR PM2.5, PM10, PM10-2.5,and Pb | | | | | |
|---|---|---|---|---|---|
| SITE NAME__**Rexburg**_____ SITE ADDRESS__**Madison Middle School – 575 W. 7th Street, Rexburg ID 83440**<br>AQS ID__**N/A**_____ EVALUATION DATE__**4/23/2019**<br>EVALUATOR__**Roger Sauer – Idaho DEQ** | | | | | |
| APPLICABLE SECTION | REQUIREMENT | COMMENTS | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 2. HORIZONTAL AND VERTICAL PLACEMENT | 2-15 meters above ground level (AGL) for neighborhood or larger spatial scale, 2-7 meters for microscale spatial scale sites and middle spatial scale $PM_{10-2.5}$ sties. 1 meter vertically or horizontally away from any supporting structure, walls, *etc.*, and away from dusty or dirty areas. If located near the side of a building or wall, then locate on the windward side relative to the prevailing wind direction during the season of highest concentration potential. | | X | | |
| 3. SPACING FROM MINOR SOURCES | (a) For neighborhood or larger spatial scales avoid placing the monitor near local, minor sources. The source plume should not be allowed to inappropriately impact the air quality data collected at a site. Particulate matter sites should not be located in an unpaved area unless there is vegetative ground cover year round. | | X | | |
| 4. SPACING FROM OBSTRUCTIONS | (a) To avoid scavenging, the inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet. | | X | | |
| | (b) The inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. For particle sampling, a minimum of 2 meters of separation from walls, parapets, and structures is required for rooftop site placement. | | X | | |
| 5. SPACING FROM TREES | (a) To reduce possible interference the inlet must be at least 10 meters or further from the drip line of trees. | | X | | |
| | (c) No trees should be between source and probe inlet for microscale sites. | Not a microscale site | | | X |
| 6. SPACING FROM ROADWAYS | Spacing from roadways is dependent on the spatial scale and ADT count. See section 6.3(b) and figure E-1 for specific requirements. | | X | | |
| Are there any changes that might compromise original siting criteria?<br>No. | | | | | |
| Other Comments: | | | | | |

| PART 58 APPENDIX E SITE EVALUATION FORM FOR PM2.5, PM10, PM10-2.5,and Pb | | | | | |
|---|---|---|---|---|---|
| SITE NAME__**Salmon**_____ SITE ADDRESS__**N. Charles Street, Salmon ID 83467**<br>AQS ID__**160590004**_____ EVALUATION DATE__**04/23/2019**<br>EVALUATOR__**Roger Sauer – Idaho DEQ** | | | | | |
| APPLICABLE SECTION | REQUIREMENT | COMMENTS | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 2. HORIZONTAL AND VERTICAL PLACEMENT | 2-15 meters above ground level (AGL) for neighborhood or larger spatial scale, 2-7 meters for microscale spatial scale sites and middle spatial scale $PM_{10-2.5}$ sties. 1 meter vertically or horizontally away from any supporting structure, walls, *etc.*, and away from dusty or dirty areas. If located near the side of a building or wall, then locate on the windward side relative to the prevailing wind direction during the season of highest concentration potential. | | X | | |
| 3. SPACING FROM MINOR SOURCES | (a) For neighborhood or larger spatial scales avoid placing the monitor near local, minor sources. The source plume should not be allowed to inappropriately impact the air quality data collected at a site. Particulate matter sites should not be located in an unpaved area unless there is vegetative ground cover year round. | | X | | |
| 4. SPACING FROM OBSTRUCTIONS | (a) To avoid scavenging, the inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet. | | X | | |
| | (b) The inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. For particle sampling, a minimum of 2 meters of separation from walls, parapets, and structures is required for rooftop site placement. | | X | | |
| 5. SPACING FROM TREES | (a) To reduce possible interference the inlet must be at least 10 meters or further from the drip line of trees. | | X | | |
| | (c) No trees should be between source and probe inlet for microscale sites. | Not a microscale site | | | X |
| 6. SPACING FROM ROADWAYS | Spacing from roadways is dependent on the spatial scale and ADT count. See section 6.3(b) and figure E-1 for specific requirements. | | X | | |
| Are there any changes that might compromise original siting criteria?<br>No. | | | | | |
| Other Comments: | | | | | |

| PART 58 APPENDIX E SITE EVALUATION FORM FOR PM2.5, PM10, PM10-2.5,and Pb | | | | | |
|---|---|---|---|---|---|
| SITE NAME__**Sandpoint**_____ SITE ADDRESS__**U of I Research Center – 2105 N. Boyer Ave., Sandpoint ID 83864**<br>AQS ID__**160170003**_____ EVALUATION DATE__**5/8/2019**<br>EVALUATOR__**Jen Lennon– Idaho DEQ** | | | | | |
| APPLICABLE SECTION | REQUIREMENT | COMMENTS | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 2. HORIZONTAL AND VERTICAL PLACEMENT | 2-15 meters above ground level (AGL) for neighborhood or larger spatial scale, 2-7 meters for microscale spatial scale sites and middle spatial scale $PM_{10-2.5}$ sties. 1 meter vertically or horizontally away from any supporting structure, walls, *etc.*, and away from dusty or dirty areas. If located near the side of a building or wall, then locate on the windward side relative to the prevailing wind direction during the season of highest concentration potential. | | X | | |
| 3. SPACING FROM MINOR SOURCES | (a) For neighborhood or larger spatial scales avoid placing the monitor near local, minor sources. The source plume should not be allowed to inappropriately impact the air quality data collected at a site. Particulate matter sites should not be located in an unpaved area unless there is vegetative ground cover year round. | | X | | |
| 4. SPACING FROM OBSTRUCTIONS | (a) To avoid scavenging, the inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet. | | X | | |
| | (b) The inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. For particle sampling, a minimum of 2 meters of separation from walls, parapets, and structures is required for rooftop site placement. | | X | | |
| 5. SPACING FROM TREES | (a) To reduce possible interference the inlet must be at least 10 meters or further from the drip line of trees. | | X | | |
| | (c) No trees should be between source and probe inlet for microscale sites. | Not a microscale site | | | X |
| 6. SPACING FROM ROADWAYS | Spacing from roadways is dependent on the spatial scale and ADT count. See section 6.3(b) and figure E-1 for specific requirements. | | X | | |
| Are there any changes that might compromise original siting criteria?<br>No. | | | | | |
| Other Comments: | | | | | |

| PART 58 APPENDIX E SITE EVALUATION FORM FOR PM2.5, PM10, PM10-2.5,and Pb | | | | | |
|---|---|---|---|---|---|
| SITE NAME__**Soda Springs**_____SITE ADDRESS__**Caribou Hospital – 300 S. 3rd Street West, Soda Springs ID 83276**<br>AQS ID__**N/A**_____ EVALUATION DATE__**05/02/2019**<br>EVALUATOR__**Clay Woods– Idaho DEQ** | | | | | |
| APPLICABLE SECTION | REQUIREMENT | COMMENTS | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 2. HORIZONTAL AND VERTICAL PLACEMENT | 2-15 meters above ground level (AGL) for neighborhood or larger spatial scale, 2-7 meters for microscale spatial scale sites and middle spatial scale $PM_{10-2.5}$ sties. 1 meter vertically or horizontally away from any supporting structure, walls, *etc.*, and away from dusty or dirty areas. If located near the side of a building or wall, then locate on the windward side relative to the prevailing wind direction during the season of highest concentration potential. | | X | | |
| 3. SPACING FROM MINOR SOURCES | (a) For neighborhood or larger spatial scales avoid placing the monitor near local, minor sources. The source plume should not be allowed to inappropriately impact the air quality data collected at a site. Particulate matter sites should not be located in an unpaved area unless there is vegetative ground cover year round. | | X | | |
| 4. SPACING FROM OBSTRUCTIONS | (a) To avoid scavenging, the inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet. | | X | | |
| | (b) The inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. For particle sampling, a minimum of 2 meters of separation from walls, parapets, and structures is required for rooftop site placement. | | X | | |
| 5. SPACING FROM TREES | (a) To reduce possible interference the inlet must be at least 10 meters or further from the drip line of trees. | | X | | |
| | (c) No trees should be between source and probe inlet for microscale sites. | Not a microscale site | | | X |
| 6. SPACING FROM ROADWAYS | Spacing from roadways is dependent on the spatial scale and ADT count. See section 6.3(b) and figure E-1 for specific requirements. | | X | | |
| Are there any changes that might compromise original siting criteria?<br>No. | | | | | |
| Other Comments: | | | | | |

| PART 58 APPENDIX E SITE EVALUATION FORM FOR PM2.5, PM10, PM10-2.5,and Pb | | | | | |
|---|---|---|---|---|---|
| SITE NAME__**St. Maries**_____ SITE ADDRESS__**USFS Building - St. Maries ID, 83666**<br>AQS ID__**160090010**_____ EVALUATION DATE__**5/8/2019**<br>EVALUATOR__**Jen Lennon – Idaho DEQ** | | | | | |
| APPLICABLE SECTION | REQUIREMENT | COMMENTS | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 2. HORIZONTAL AND VERTICAL PLACEMENT | 2-15 meters above ground level (AGL) for neighborhood or larger spatial scale, 2-7 meters for microscale spatial scale sites and middle spatial scale $PM_{10-2.5}$ sties. 1 meter vertically or horizontally away from any supporting structure, walls, *etc.*, and away from dusty or dirty areas. If located near the side of a building or wall, then locate on the windward side relative to the prevailing wind direction during the season of highest concentration potential. | | X | | |
| 3. SPACING FROM MINOR SOURCES | (a) For neighborhood or larger spatial scales avoid placing the monitor near local, minor sources. The source plume should not be allowed to inappropriately impact the air quality data collected at a site. Particulate matter sites should not be located in an unpaved area unless there is vegetative ground cover year round. | | X | | |
| 4. SPACING FROM OBSTRUCTIONS | (a) To avoid scavenging, the inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet. | | X | | |
| | (b) The inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. For particle sampling, a minimum of 2 meters of separation from walls, parapets, and structures is required for rooftop site placement. | | X | | |
| 5. SPACING FROM TREES | (a) To reduce possible interference the inlet must be at least 10 meters or further from the drip line of trees. | | X | | |
| | (c) No trees should be between source and probe inlet for microscale sites. | Not a microscale site | | | X |
| 6. SPACING FROM ROADWAYS | Spacing from roadways is dependent on the spatial scale and ADT count. See section 6.3(b) and figure E-1 for specific requirements. | | X | | |
| Are there any changes that might compromise original siting criteria?<br>No. | | | | | |
| Other Comments: | | | | | |

| PART 58 APPENDIX E SITE EVALUATION FORM FOR PM2.5, PM10, PM10-2.5,and Pb | | | | | |
|---|---|---|---|---|---|
| SITE NAME__Rock Creek _____ SITE ADDRESS__**650 W. Addison, Twin Falls ID 83301**<br>AQS ID__**160830007**_____ EVALUATION DATE__**05/03/2019**<br>EVALUATOR__**Chad Silver – Idaho DEQ** | | | | | |
| APPLICABLE SECTION | REQUIREMENT | COMMENTS | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 2. HORIZONTAL AND VERTICAL PLACEMENT | 2-15 meters above ground level (AGL) for neighborhood or larger spatial scale, 2-7 meters for microscale spatial scale sites and middle spatial scale $PM_{10-2.5}$ sties. 1 meter vertically or horizontally away from any supporting structure, walls, *etc.*, and away from dusty or dirty areas. If located near the side of a building or wall, then locate on the windward side relative to the prevailing wind direction during the season of highest concentration potential. | | X | | |
| 3. SPACING FROM MINOR SOURCES | (a) For neighborhood or larger spatial scales avoid placing the monitor near local, minor sources. The source plume should not be allowed to inappropriately impact the air quality data collected at a site. Particulate matter sites should not be located in an unpaved area unless there is vegetative ground cover year round. | | X | | |
| 4. SPACING FROM OBSTRUCTIONS | (a) To avoid scavenging, the inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet. | | X | | |
| | (b) The inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. For particle sampling, a minimum of 2 meters of separation from walls, parapets, and structures is required for rooftop site placement. | | X | | |
| 5. SPACING FROM TREES | (a) To reduce possible interference the inlet must be at least 10 meters or further from the drip line of trees. | | X | | |
| | (c) No trees should be between source and probe inlet for microscale sites. | Not a microscale site | | | X |
| 6. SPACING FROM ROADWAYS | Spacing from roadways is dependent on the spatial scale and ADT count. See section 6.3(b) and figure E-1 for specific requirements. | | X | | |
| Are there any changes that might compromise original siting criteria?<br>No. | | | | | |
| Other Comments: | | | | | |

| PART 58 APPENDIX E SITE EVALUATION FORM FOR PM2.5, PM10, PM10-2.5,and Pb | | | | | |
|---|---|---|---|---|---|
| SITE NAME__**Weiser**_____ SITE ADDRESS__**690 W. Indianhead Rd., Weiser ID 83672**<br>AQS ID__**N/A**_____ EVALUATION DATE__**05/02/2019**<br>EVALUATOR__**Ed Jolly – Idaho DEQ** | | | | | |
| APPLICABLE SECTION | REQUIREMENT | COMMENTS | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 2. HORIZONTAL AND VERTICAL PLACEMENT | 2-15 meters above ground level (AGL) for neighborhood or larger spatial scale, 2-7 meters for microscale spatial scale sites and middle spatial scale $PM_{10-2.5}$ sties. 1 meter vertically or horizontally away from any supporting structure, walls, *etc.*, and away from dusty or dirty areas. If located near the side of a building or wall, then locate on the windward side relative to the prevailing wind direction during the season of highest concentration potential. | | X | | |
| 3. SPACING FROM MINOR SOURCES | (a) For neighborhood or larger spatial scales avoid placing the monitor near local, minor sources. The source plume should not be allowed to inappropriately impact the air quality data collected at a site. Particulate matter sites should not be located in an unpaved area unless there is vegetative ground cover year round. | | X | | |
| 4. SPACING FROM OBSTRUCTIONS | (a) To avoid scavenging, the inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet. | | X | | |
| | (b) The inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. For particle sampling, a minimum of 2 meters of separation from walls, parapets, and structures is required for rooftop site placement. | | X | | |
| 5. SPACING FROM TREES | (a) To reduce possible interference the inlet must be at least 10 meters or further from the drip line of trees. | | X | | |
| | (c) No trees should be between source and probe inlet for microscale sites. | Not a microscale site | | | X |
| 6. SPACING FROM ROADWAYS | Spacing from roadways is dependent on the spatial scale and ADT count. See section 6.3(b) and figure E-1 for specific requirements. | | X | | |
| Are there any changes that might compromise original siting criteria?<br>No. | | | | | |
| Other Comments: | | | | | |

| PART 58 APPENDIX E SITE EVALUATION FORM FOR PM2.5, PM10, PM10-2.5,and Pb | | | | | |
|---|---|---|---|---|---|
| SITE NAME__**Pinehurst**_____ SITE ADDRESS__**106 Church Street, Pinehurst ID 83850**<br>AQS ID__**160790017**_____ EVALUATION DATE__**5/8/2019**<br>EVALUATOR__**Jen Lennon – Idaho DEQ** | | | | | |
| APPLICABLE SECTION | REQUIREMENT | COMMENTS | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 2. HORIZONTAL AND VERTICAL PLACEMENT | 2-15 meters above ground level (AGL) for neighborhood or larger spatial scale, 2-7 meters for microscale spatial scale sites and middle spatial scale $PM_{10-2.5}$ sties. 1 meter vertically or horizontally away from any supporting structure, walls, *etc.*, and away from dusty or dirty areas. If located near the side of a building or wall, then locate on the windward side relative to the prevailing wind direction during the season of highest concentration potential. | | X | | |
| 3. SPACING FROM MINOR SOURCES | (a) For neighborhood or larger spatial scales avoid placing the monitor near local, minor sources. The source plume should not be allowed to inappropriately impact the air quality data collected at a site. Particulate matter sites should not be located in an unpaved area unless there is vegetative ground cover year round. | | X | | |
| 4. SPACING FROM OBSTRUCTIONS | (a) To avoid scavenging, the inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet. | | X | | |
| | (b) The inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. For particle sampling, a minimum of 2 meters of separation from walls, parapets, and structures is required for rooftop site placement. | | X | | |
| 5. SPACING FROM TREES | (a) To reduce possible interference the inlet must be at least 10 meters or further from the drip line of trees. | | X | | |
| | (c) No trees should be between source and probe inlet for microscale sites. | Not a microscale site | | | X |
| 6. SPACING FROM ROADWAYS | Spacing from roadways is dependent on the spatial scale and ADT count. See section 6.3(b) and figure E-1 for specific requirements. | | X | | |
| Are there any changes that might compromise original siting criteria?<br>No. | | | | | |
| Other Comments: | | | | | |

| PART 58 APPENDIX E SITE EVALUATION FORM FOR SO2 | | | | | |
|---|---|---|---|---|---|
| SITE NAME__**N-Core**_____ SITE ADDRESS__**Eagle Road & I-84, Meridian ID 83642**_____<br>AQS ID__**160010010**_____ EVALUATION DATE__**05/02/2019**_____EVALUATOR__**Ed Jolly – Idaho DEQ** | | | | | |
| APPLICABLE SECTION | REQUIREMENT | COMMENTS | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 2. HORIZONTAL AND VERTICAL PLACEMENT | 2-15 meters above ground level. 1 meter vertically or horizontally away from any supporting structure, walls, *etc.*, and away from dusty or dirty areas. If located near the side of a building or wall, then locate on the windward side relative to the prevailing wind direction during the season of highest concentration potential. | | X | | |
| 3. SPACING FROM MINOR SOURCES | (a) For neighborhood scale avoid placing the monitor probe inlet near local, minor sources. The source plume should not be allowed to inappropriately impact the air quality data collected at a site. | | X | | |
| 4. SPACING FROM OBSTRUCTIONS | (a) To avoid scavenging, the probe inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet. | | X | | |
| | (b) The probe inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. | | X | | |
| 5. SPACING FROM TREES | (a) To reduce possible interference the probe inlet must be at least 10 meters or further from the drip line of trees. | | X | | |
| | (c) No trees should be between source and probe inlet for microscale sites. | Not a microscale site | | | X |
| 6. SPACING FROM ROADWAYS | There are no roadway spacing requirements for SO2. | | | | X |
| 9. PROBE MATERIAL & RESIDENCE TIME | (a) Sampling train material must be FEP Teflon or borosilicate glass (e.g., Pyrex). | | X | | |
| | (c) Sampling probes for reactive gas monitors at NCore must have a sample residence time less than 20 seconds. | | X | | |
| Are there any changes that might compromise original siting criteria? If so, provide detail in comment section.<br>No. | | | | | |
| Other Comments: | | | | | |

| PART 58 APPENDIX E SITE EVALUATION FORM FOR SO2 | | | | | |
|---|---|---|---|---|---|
| SITE NAME__**Pocatello Sewage Treatment Plant**_____SITE ADDRESS__**Batiste Chubbuck Rd., Pocatello ID 83204**<br>AQS ID__**160050004**_____ EVALUATION DATE__**05/02/2019**_____EVALUATOR__**Marshall Magee – Idaho DEQ** | | | | | |
| APPLICABLE SECTION | REQUIREMENT | COMMENTS | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 2. HORIZONTAL AND VERTICAL PLACEMENT | 2-15 meters above ground level. 1 meter vertically or horizontally away from any supporting structure, walls, *etc.*, and away from dusty or dirty areas. If located near the side of a building or wall, then locate on the windward side relative to the prevailing wind direction during the season of highest concentration potential. | | X | | |
| 3. SPACING FROM MINOR SOURCES | (a) For neighborhood scale avoid placing the monitor probe inlet near local, minor sources. The source plume should not be allowed to inappropriately impact the air quality data collected at a site. | Site is Middle Scale. | | | X |
| 4. SPACING FROM OBSTRUCTIONS | (a) To avoid scavenging, the probe inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet. | | X | | |
| | (b) The probe inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. | | X | | |
| 5. SPACING FROM TREES | (a) To reduce possible interference the probe inlet must be at least 10 meters or further from the drip line of trees. | | X | | |
| | (c) No trees should be between source and probe inlet for microscale sites. | | X | | |
| 6. SPACING FROM ROADWAYS | There are no roadway spacing requirements for SO2. | | | | X |
| 9. PROBE MATERIAL & RESIDENCE TIME | (a) Sampling train material must be FEP Teflon or borosilicate glass (e.g., Pyrex). | | X | | |
| | (c) Sampling probes for reactive gas monitors at NCore must have a sample residence time less than 20 seconds. | | X | | |
| Are there any changes that might compromise original siting criteria? If so, provide detail in comment section.<br>No. | | | | | |
| Other Comments: | | | | | |

| PART 58 APPENDIX E SITE EVALUATION FORM FOR SO2 | | | | | |
|---|---|---|---|---|---|
| SITE NAME__**Soda Springs**_____SITE ADDRESS__**5-mile Road, Soda Springs ID 83276**<br>AQS ID__**160290031**_____ EVALUATION DATE__**05/02/2019**_____EVALUATOR__**Marshall Magee – Idaho DEQ** | | | | | |
| APPLICABLE SECTION | REQUIREMENT | COMMENTS | CRITERIA MET? | | |
| | | | YES | NO | N/A |
| 2. HORIZONTAL AND VERTICAL PLACEMENT | 2-15 meters above ground level. 1 meter vertically or horizontally away from any supporting structure, walls, *etc.*, and away from dusty or dirty areas. If located near the side of a building or wall, then locate on the windward side relative to the prevailing wind direction during the season of highest concentration potential. | | X | | |
| 3. SPACING FROM MINOR SOURCES | (a) For neighborhood scale avoid placing the monitor probe inlet near local, minor sources. The source plume should not be allowed to inappropriately impact the air quality data collected at a site. | Site is Middle-Micro Scale. | | | X |
| 4. SPACING FROM OBSTRUCTIONS | (a) To avoid scavenging, the probe inlet must have unrestricted airflow and be located away from obstacles. The separation distance must be at least twice the height that the obstacle protrudes above the probe inlet. | | X | | |
| | (b) The probe inlet must have unrestricted airflow in an arc of at least 180 degrees. This arc must include the predominant wind direction for the season of greatest pollutant concentration potential. | | X | | |
| 5. SPACING FROM TREES | (a) To reduce possible interference the probe inlet must be at least 10 meters or further from the drip line of trees. | | X | | |
| | (c) No trees should be between source and probe inlet for microscale sites. | | X | | |
| 6. SPACING FROM ROADWAYS | There are no roadway spacing requirements for SO2. | | | | X |
| 9. PROBE MATERIAL & RESIDENCE TIME | (a) Sampling train material must be FEP Teflon or borosilicate glass (e.g., Pyrex). | | X | | |
| | (c) Sampling probes for reactive gas monitors at NCore must have a sample residence time less than 20 seconds. | | X | | |
| Are there any changes that might compromise original siting criteria? If so, provide detail in comment section.<br>See below. | | | | | |
| Other Comments:<br>Site was originally placed in its current location as a result of a combination of monitoring and modeling. Some recent wind roses have shown some variations compared to the original wind roses. | | | | | |

# Appendix E. Public Comments and Responses

Ben Seely, Air Quality Monitoring Supervisor
DEQ State Office
Air Quality Division
1410 N. Hilton
Boise, ID 83706
ben.seely@deq.idaho.gov

June 19, 2019

Mr. Seely,

Thank you for the opportunity to comment on the 2019 Annual Air Quality Monitoring Network Plan.

I really like the difference in formatting this year. It looks sharp and is easier to "enjoy" reading!

On Page 18, you state in part, "The West Silver Valley airshed (including Pinehurst) has been designated as moderate nonattainment area for the annual PM2.5 NAAQS (12 µg/m³)."

The report fails to mention that the West Silver Valley (WSV) airshed Nonattainment Area has substantially met the PM 2.5 NAAQS of 12.0 µg/m3 for the Design Values of 2014-2016, 2015-2017, 2016-2018 and now 2017-2019, when pertinent Exceptional Event days are removed from either wildfire smoke or wind events. It fails to mention that the EPA has already issued a Clean Data Determination (CDD) and it now up to IDEQ to submit its "Request for Redesignation to Attainment" and accompanying "Maintenance Plan". Apparently, it is IDEQ's policy not to mention any of this positive news until it has both submitted these documents to the EPA and received acceptance from the same. I believe these omissions to be misleading to the reader, but understand the policy.

I then must mention this to generate a written record for the public domain.

The same general area, known as "Pinehurst" & "Pinehurst Expansion" was also placed into nonattainment for PM 10 decades ago. Improvements occurred and in 2001, the EPA issued the CDD for both areas. Pinehurst met the requirements as of 12/31/1994 and the Pinehurst Expansion met them as of 12/31/2000. After never informing the concerned local governments or citizens that the air was fine, IDEQ continued to publish its annual reports stating that the two areas were in non-attainment. In a Public Records Request (PRR), IDEQ admitted they never publicly revealed the attainment. It was not until I discovered in 2015 the CDD and noted IDEQ had to submit the Redesignation packet to the EPA, and asked for a copy of it in another PRR, did IDEQ admit they had not yet submitted the packet. Or even started on it, an astonishingly 15 years later, even when their webpage stated that the Redesignation process can take up to TWO (2) years to complete. IDEQ has since completed the process and this is the first issue in many years to cite the areas as being in Attainment with a Limited Maintenance Plan. The areas will now be released of the Maintenance Plan's requirements in the year 2038, if the area continues to meet the NAAQS. IDEQ seemingly had no regard for the stigma that accompanies a nonattainment designation, but did likely have a higher regard for perhaps extra income derived from the EPA for having such a listing. I pray that IDEQ acts in a timelier manner regarding the WSV Nonattainment Area and can state in its 2021 report that the area has achieved attainment and is on a Maintenance Plan.

It must once again be noted that IDEQ switched from the EPA-recommend FRM monitor to the FEM monitor on the first day of the 2011-2013 evaluation period for the new PM 2.5 annual NAAQS. EPA recommended all states to use FRM monitors for NAAQS compliance if the area could possibly go into nonattainment, because the FEM's in use nation-wide, including Pinehurst, failed to meet the Comparability CFRs and tended to read between 2-5 µg/m3 higher than the FRM monitors at the same sites. Having been told Pinehurst's FEM monitors did not meet the Comparability CFRs, IDEQ made a deliberate switch to them from the previously employed FRM monitor. A "lack of resources" was the reason given. On

January 1, 2014 IDEQ switched Pinehurst's reporting monitor to a different FEM (BAM 1020). It failed Comparability by being more than 10% under the FRMs data. The data showed attainment. IDEQ then went back to the FRM in 2016 and has continued its use through today. Again, the WSV Nonattainment Area has officially met the PM 2.5 NAAQS since 2014. I am not a scientist, but it certainly seems that it was IDEQ's decision to use the FEM monitor's data, not poor air quality, that put the WSV into nonattainment. Also, the primary emission source by far was discovered to be Prescribed Burn smoke and not the Residential Wood Stove smoke that IDEQ & the EPA were so sure of. We are however, very grateful for the $2.48 million EPA grant for wood stove replacements and any upcoming prescribed burn emission reduction programs. IDEQ should shift the main focus of the grant funding to this.

Thank you for your time, and again, I appreciate the opportunity to comment.

Respectfully,

Jann Higdem
Research Analyst

STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

1410 North Hilton • Boise, ID 83706 • (208) 373-0502
www.deq.idaho.gov

Brad Little, Governor
John H. Tippets, Director

July 1st, 2019

Jann Higdem
Research Analyst

Subject: Response to comments received on DEQ's 2019 draft Ambient Air Quality Monitoring Network Plan

Dear Ms. Higdem:

Thank you for taking the time and effort to comment on Idaho DEQ's 2019 draft Ambient Air Quality Monitoring Network Plan (ANP). This is DEQ's response to your comments. I will include your letter in the Annual Network Plan.

Section 5 of the ANP, "Network Description and Modifications," provides a description of DEQ's monitoring network, including the attainment status for those areas subject to specific monitoring based on their classification. A clean data determination (CDD) could be considered part of this status description and beneficial for the EPA and the general public reviewing the ANP. I will note which areas have received a CDD in this section. The section will continue to be used to provide a current description of the network. Any pending actions will continue to be conveyed via other avenues, such as webpage links referenced in the ANP or through other DEQ outreach efforts.

In this year's ANP, the $PM_{10}$ attainment status of the Pinehurst and Pinehurst Expansion areas was updated to include the Limited Maintenance Plan designation as this reflects the current status of the area. Regarding the history behind the $PM_{10}$ designation in the Pinehurst and Pinehurst Expansion areas, per your prior requests DEQ has already provided you the history of events and actions, all of which were addressed according to the information and resources available at the time. As stated to you in prior responses, addressing anything beyond the current network status is outside the scope of the ANP as per Section 58.10, Subpart B to 40 CFR Part 58. DEQ does agree this information should be available to the public, and DEQ has web links in the ANP that provide background regulatory information on the individual airsheds and their designations. DEQ has conveyed such information to you in prior responses.

The $PM_{2.5}$ monitor selection for the Pinehurst and Pinehurst Expansion areas was based on the best data available at the time. DEQ followed EPA's recommendation to use FEM level, continuous monitors and furthermore followed their recommendations to closely analyze monitor performance on a case by case basis. Over time DEQ became less comfortable with the performance from the different continuous technologies and reverted back to the FRM monitors. DEQ made this change back to FRMs at NAAQS level monitoring locations throughout the state. Based on EPA's review and interpretations, data that had been gathered from the FEM monitors was worthy of using.

Regarding your last comment on grant funding, the grant for West Silver Valley was written to comprehensively address contributing emissions identified during the nonattainment designation process which included residential wood combustions and open burning.

Lastly, it is important to note again that DEQ, in consultation with the EPA, strives to make the best and most informed decisions with the information available at the time. This is always of highest priority.

Please let me know if you have any questions.

Sincerely,

Ben Seely
Air Quality Monitoring Supervisor
Idaho Department of Environmental Quality
1410 N. Hilton St., Boise, Idaho 83706
Office: (208) 373-0454
http://www.deq.idaho.gov/