AMBIENT AIR MONITORING NETWORK PLAN

2023

STATE OF NEVADA
DIVISION OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY PLANNING

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Acronyms and Abbreviations

AADT	Annual Average Daily Traffic
AQS	Air Quality System
BAQP	Bureau of Air Quality Planning
BAM	Beta Attenuation Monitor
CBSA	Core-Based Statistical Area
CEMS	Continuous Emission Monitoring System
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CSA	Combined Statistical Area
DRR	Data Requirement Rule
FEM	Federal Equivalent Method
FR	Federal Register
FRM	Federal Reference Method
IMPROVE	Interagency Monitoring of Protected Visual Environments
LMP	Limited Maintenance Plan
MADT	Monthly Average Daily Traffic
MSA	Metropolitan Statistical Area
NAAQS	National Ambient Air Quality Standard
NDEP	Nevada Division of Environmental Protection
NO_2	Nitrogen Dioxide
O_3	Ozone
OAQPS	Office of Air Quality Planning and Standards
Pb	Lead
PM	Particulate Matter (2.5 or 10 microns)
POC	Pollutant Occurrence Code
PWEI	Population Weighted Emission Index
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance/Quality Control
QMP	Quality Management Plan
SIP	State Implementation Plan
SLAMS	State and Local Air Monitoring Station
SO_2	Sulfur Dioxide
SPMS	Special Purpose Monitoring Station
TEOM	Tapered Oscillating Microbalance Monitor
USEPA	United States Environmental Protection Agency

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Overview

The monitoring program of the Nevada Division of Environmental Protection Bureau of Air Quality Planning (NDEP-BAQP) operates an ambient air quality monitoring network of gaseous and particulate pollutant monitors in communities throughout Nevada. In the metropolitan areas of Reno and Las Vegas, the Washoe County District Health Department, Air Quality Management Division and the Clark County Department of Environment and Sustainability, Division of Air Quality operate and maintain their respective monitoring networks separate from the NDEP-BAQP. Those agencies submit their Network Plans independently to the United States Environmental Protection Agency (USEPA). There are also several federally recognized tribes that conduct air monitoring within Nevada; these tribes submit their Annual Network Plans directly to the USEPA.

The NDEP Bureaus of Air Quality Planning and Air Pollution Control regulate air quality in Nevada to protect public health and the environment. Monitoring data is a crucial component of regulations used to determine compliance with the USEPA primary and secondary air quality standards. Other important uses of monitoring data include support and issuance of air quality forecasts; support of long-term health assessments; and tracking long-term air quality both to gauge effectiveness of emission control and abatement strategies, and to quantify accuracy of ambient pollutant monitoring.

Goals

The NDEP-BAQP created an ambient air quality monitoring program to provide useful and accurate information on air quality, which is used to evaluate the success of Nevada's air quality programs. The Clean Air Act of 1970 and subsequent amendments require the USEPA to define national ambient air quality standards (NAAQS) for various air pollutants necessary to protect the public from injurious pollution concentrations. Air pollution concentrations that exceed the NAAQS can cause a public health hazard, and/or cause damage to flora, fauna, and personal property.

The NAAQS, published by the USEPA, can be found in Title 40 of the Code of Federal Regulations (CFR) Part 50. The NAAQS for each pollutant define the levels of air quality necessary to protect human health and welfare. An area is considered to be in nonattainment for a pollutant if it has violated the NAAQS for that pollutant. The CFR includes procedures for evaluating measured air quality against the NAAQS. State ambient air quality standards can be found in Nevada Administrative Code 445B.22097.

Background

The State of Nevada has four jurisdictions that independently manage their own air programs as designated by statute: Department of Conservation and Natural Resources, NDEP-BAQP; Washoe County District Health Department, Air Quality Management Division; Clark County Department of Environment and Sustainability, Division of Air Quality; and various tribal agencies.

State agencies that conduct ambient air monitoring using State and Local Air Monitoring Stations (SLAMS) or Special Purpose Monitoring Stations (SPMS) must use Federal Reference Methods (FRM) or Federal Equivalent Methods (FEM) that comply with federal quality assurance requirements listed in 40 CFR 58, Appendix A. In conjunction with the Network Plan, a NDEP-BAQP quality assurance project plan (QAPP) was developed to form the framework for planning, implementing, assessing, and reporting work performed by the NDEP-BAQP and for implementing quality assurance and quality control protocols.

The QAPP defines the policies, procedures, specifications, standards, and documentation necessary to 1) provide data of adequate quality to meet monitoring objectives, and 2) minimize loss of air quality data due to malfunctions or out-of-control conditions. Along with the QAPP, the Quality Management Plan (QMP) describes the organizational structure; functional responsibilities of management and staff; lines of authority; and required interfaces between planning, implementing, assessing, and reporting activities involving environmental data operations. The latest QAPP was submitted to the USEPA in April 2020. An updated version of the QMP will be submitted by NDEP-BAQP Fall of 2023.

Additionally, the NDEP-BAQP has developed ambient monitoring guidelines in order to ensure that ambient air quality data collected at regulated facilities in the State are of the highest quality and conform to federal requirements for quality assurance listed under 40 CFR 58.

Ambient air quality monitoring data must be certified annually as accurate and complete. The certification process begins with the complete submittal of all SLAMS data to the federal Air Quality System (AQS) for the calendar year. The 2021 data was submitted for certification in April 2022 and the 2022 data was submitted April 2023. Submittal of precision and accuracy data into AQS for 2021 and 2022 was accomplished at least quarterly as per 40 CFR 58.16(a).

Network Design

Air quality monitoring is represented by eleven ambient air quality monitoring stations under the jurisdiction of the NDEP-BAQP. Table 1 shows the locations and types of monitors operated by NDEP.

Table 1. NDEP's Ambient Air Monitoring Network

Location	Ozone	PM_{10}	$PM_{2.5}$
Elko		1 (SLAMS)	
Fallon	1 (SLAMS)		
Fernley	1 (SLAMS)		
Carson City Armory	1 (SLAMS)		2 (SLAMS)
Pahrump-Church		1 (SLAMS)	
Pahrump-Manse Elementary		1 (SLAMS)	
Pahrump-Glen Oaks		1 (SLAMS)	
Pahrump-Linda		1 (SLAMS)	
Gardnerville Ranchos			1 (SPMS)
Total	**3**	**5**	**3**

SLAMS – State and Local Air Monitoring Station
SPMS – Special Purpose Monitoring Station

NDEP-BAQP also operates and maintains three meteorological stations; one in Carson City, one in Pahrump, and one mobile tower that can be deployed at locations throughout the State. These meteorological stations are used to confirm local meteorological data.

In addition to the four independent monitoring networks managed by state and local agencies, air quality monitoring is conducted through the Interagency Monitoring of Protected Visual

Environments (IMPROVE) network by the federal land management agencies. There are two IMPROVE monitoring sites in Nevada; one in the Jarbidge Wilderness area and the other at Great Basin National Park, Lehman Caves. The IMPROVE program is a cooperative measurement effort governed by a steering committee composed of representatives from federal and regional-state organizations. The IMPROVE monitoring program was established in 1985 to aid in the creation of state and federal implementation plans for the protection of visibility in federal Class I areas. In order to meet the site objectives, the IMPROVE site must meet the methodologies and quality assurance and quality control (QA/QC) procedures approved by the USEPA Regional Administrator. Utilizing the criteria set for the Jarbidge site, the NDEP-BAQP is able to satisfy the USEPA's regional and transport monitoring requirements. According to 40 CFR Part 58 Appendix D 4.7.3, "each state shall install and operate at least one $PM_{2.5}$ site to monitor for regional background and regional transport." The NDEP-BAQP utilizes the Jarbidge site to meet this particular requirement.

Minimum Monitoring Requirements

The USEPA provides minimum site requirements to monitor for ozone (O_3) and particulate matter (PM) based on metropolitan statistical area (MSA) population (40 CFR Part 58, Appendix D). The NDEP-BAQP's air monitoring network meets or, in most cases, exceeds the minimum network requirements. The monitors currently operating in the NDEP-BAQP monitoring network are located in Carson City (O_3, $PM_{2.5}$), Fallon (O_3), Fernley (O_3), Pahrump (PM_{10}), Elko (PM_{10}), and Gardnerville ($PM_{2.5}$). Based on the MSA population in Carson City, NDEP-BAQP is required to and operates one ozone monitor and two $PM_{2.5}$ monitors. The four PM_{10} monitoring sites in Pahrump were originally established through a Memorandum of Understanding between the NDEP, USEPA, Nye County, and the Town of Pahrump.

According to 40 CFR Part 58 Appendix D, Tables D-4 and D-5, sections 4.2, 4.3.2, 4.3.3, 4.4.2, 4.5, and based on the 2010 Revisions to Lead [Pb] Ambient Air Monitoring Requirements (75 Federal Register [FR] 81126 (Dec. 27, 2010)), 2010 Sulfur Dioxide [SO_2] NAAQS Final Rule (75 FR 35520 (June 22, 2010)), and the 2010 Nitrogen Dioxide [NO_2] NAAQS Final Rule (75 FR 6474, 6502-6517 (Feb. 9, 2010), *as revised by* 78 FR 16184 (Mar. 14, 2013), the NDEP-BAQP is not required to have additional monitoring for these criteria pollutants. Specifically:

- The revised monitoring requirements for the Pb NAAQS now require Pb monitoring near sources such as industrial facilities that emit one-half ton or more of Pb per year and at NCORE sites in Core Based Statistical Areas (CBSA) with populations greater than 500,000 (75 FR 81126 [Dec. 27, 2010]). In 2022, in NDEP-BAQP's jurisdiction, BAQP was not aware of any sources that emit one-half ton or more of Pb per year and NDEP has no CBSAs with populations greater than 500,000. NDEP discontinued monitoring for Pb in 1990.

- NDEP-BAQP does not meet the CBSA of a population of 2.5 million or more persons for near-road NO_2 minimum monitoring requirements or the CBSA of a population of 1,000,000 or more persons for microscale near-road and area-wide NO_2 minimum monitoring requirements. The Regional Administrators, in collaboration with the States, must require a minimum of forty additional NO_2 monitoring stations nationwide in any area, inside or outside of CBSAs, above the minimum monitoring requirements, with a primary focus on siting these monitors in locations to protect susceptible and vulnerable populations. NDEP does not operate any required NO_2 monitors for susceptible and vulnerable populations. Therefore, NO_2 monitoring is not required within the NDEP's jurisdiction.

- Based on the latest Census Bureau population estimates and SO_2 emissions reported to NDEP for each county, the calculated Population Weighted Emission Index (PWEI) for all counties (within NDEP-BAQP's jurisdiction) combined is 1,437 million persons-tons per year. This PWEI value is well below the established 5,000 million persons-tons per year threshold; therefore, SO_2 monitoring is not required within the NDEP's jurisdiction. Since NDEP is not required to monitor for SO_2, we are not required to report SO_2 data to the AQS database.

Based on data obtained through special study monitoring in Carson City and Gardnerville, the NDEP-BAQP has established a $PM_{2.5}$ monitoring network. These sites allow the NDEP-BAQP

to ascertain $PM_{2.5}$ conditions within both areas. The Ranchos monitoring site is currently classified as a SPMS and meets the requirements of Appendix A.

Since the Carson City site is NDEP-BAQP's first $PM_{2.5}$ SLAMS monitor, 40 CFR part 58 Appendix A requires this site to be collocated. NDEP-BAQP has designated the primary $PM_{2.5}$ monitor at this site as a continuous FEM; therefore, the first collocated monitor at this site must be a FRM. NDEP-BAQP uses a MetOne EFRM instrument as the FRM analyzer.

Table 2. Collocation Requirements

Method Code	# Primary Monitors	# Required Collocated Monitors	# Active Collocated FRM Monitors	# Active Collocated FEM Monitors
170	2	1	1	0

Based on 40 CFR 58 Appendix D, the NDEP-BAQP understands that some monitors in the network may not be required (ozone, PM_{10}, $PM_{2.5}$). However, based on data from the various monitoring sites, the NDEP-BAQP believes that it is important to have these monitors to protect public health. Table 3 outlines the monitors within the NDEP-BAQP ambient air monitoring network and their associated parameters. The 2022 population estimates were obtained from the United States Census Bureau.

Table 3. Minimum Monitoring Requirements by Pollutant

Minimum Monitoring Requirements for Ozone (Note: Refer to section 4.1 and Table D-2 of Appendix D to 40 CFR Part 58).

MSA	County(ies)	2022 Estimated Population	8-hr Design Value [ppm], DV Years	Design Value site (name, AQS ID)	# Required Sites	# Active Sites	# Additional Sites Needed
Carson City Metropolitan Statistical Area (MSA)*	Carson City	58,130	0.071, 2020-2022	Carson City Armory 32-510-0020	1	1	0
Fallon Micropolitan Statistical Area (µMSA)*, **	Churchill	25,843	0.068, 2020-2022	Fallon 32-001-0002	0	1	0
Fernley Micropolitan Statistical Area (µMSA)*, **	Lyon	61,585	0.068, 2020-2022	Fernley 32-019-0006	0	1	0

Source-Oriented Pb Monitoring (including airports; Note: Refer to section 4.5 of Appendix D to 40 CFR Part 58).

Source Name	Address	Pb Emissions (tons per year)	Emission Inventory Source & Data Year	Max 3-Month Design Value [µg/m^3]	Design Value date (third month, year)	# Required Monitors	# Active Monitors	# Additional Monitors Needed
No CBSA/source in NDEP-BAQP's jurisdiction	N/A	N/A	N/A	N/A	N/A	0	0	0

Minimum Monitoring Requirements for SO_2 (Note: Refer to section 4.4 of Appendix D to 40 CFR Part 58).

CBSA	County(ies)	2022 Estimated Population	Total SO_2 [tons/year]	Population Weighted Emissions Index [million persons-tons per year]	Data Requirements Rule Source(s) using Monitoring	# Required Monitors	# Active Monitor	# Additional Monitors Needed
No CBSA in NDEP-BAQP's jurisdiction	N/A	N/A	N/A	N/A	N/A	0	0	0

Minimum Monitoring Requirements for NO_2 (Note: Refer to section 4.3 of Appendix D to 40 CFR Part 58).

CBSA	2022 Estimated Population	Max AADT*** counts (year)	# Required Near-road Monitors	# Active Near-road Monitors	# Additional Near-road Monitors Needed	# Required Area-wide Monitors	# Active Area-wide Monitors	# Additional Area-wide Monitors Needed
No CBSA in NDEP-BAQP's jurisdiction	N/A	N/A	0	0	0	0	0	0

Minimum Monitoring Requirements for PM_{10} (Note: Refer to section 4.6 and Table D-4 of Appendix D to 40 CFR Part 58).

MSA	County(ies)	2022 Estimated Population	Max Concentration [µg/m^3]	Max Concentration site (name, AQS ID)	# Required Sites	# Active Sites	# Additional Sites Needed
Elko Micropolitan Statistical Area (µMSA)*, **	Elko	54,046	252	Elko 32-007-0005	0	1	0
Pahrump Micropolitan Statistical Area (µMSA)*, **	Nye	54,738	420	Manse Elementary 32-023-0014	0	4	0

Minimum Monitoring Requirements for $PM_{2.5}$ SLAMS (FRM/FEM/ARM, see 40CFR 58 App D Section 4.7.1 and Table D-5).

MSA	County (ies)	2022 Estimated Population	Annual Design Value [µg/m^3], DV Years	Annual Design Value site (name, AQS ID)	Daily Design Value [µg/m^3], DV years	Daily Design Value site (name, AQS ID)	# Required SLAMS Sites	# Active SLAMS Sites	# Additional SLAMS Sites Needed
Carson City Metropolitan Statistical Area (MSA)*	Carson City	58,130	8.7, 2020-2022	Carson City Armory 32-510-0020	75, 2020-2022	Carson City Armory 32-510-0020	0-1	1	0

Minimum Monitoring Requirements for continuous $PM_{2.5}$ monitors (FEM/ARM and non-FEM, see 40CFR 58 App D Section 4.7.2).

MSA	County (ies)	2022 Estimated Population	Annual Design Value [µg/m^3], DV Years	Annual Design Value site (name, AQS ID)	Daily Design Value [µg/m^3], DV years	Daily Design Value site (name, AQS ID)	# Required Continuous Sites	# Active Continuous Sites	# Additional Continuous Sites Needed
Carson City Metropolitan Statistical Area (MSA)*	Carson City	58,130	8.7, 2020-2022	Carson City Armory 32-510-0020	75, 2020-2022	Carson City Armory 32-510-0020	0-1	1	0

Minimum Monitoring Requirements for CO (Note: Refer to section 4.2 of Appendix D to 40 CFR Part 58).

CBSA	2022 Estimated Population	# Required Near-road Monitors	# Active Near-road Monitors	# Additional Monitors Needed
No CBSA in NDEP-BAQP's jurisdiction****	N/A	0	0	0

Minimum Monitoring Requirements for Near-road NO_2, $PM_{2.5}$, and CO (Note: Refer to 40 CFR Part 58.13 and sections 4.2, 4.3, 4.7 of Appendix D to 40 CFR Part 58).

CBSA	2022 Estimated Population	Max AADT counts (year)	# Required NO_2 Monitors	# Active NO_2 Monitors	# Required $PM_{2.5}$ Monitors	# Active $PM_{2.5}$ Monitors	# Required CO Monitors	# Active CO Monitors	# Additional Monitors Needed
No CBSA in NDEP-BAQP's jurisdiction	N/A	N/A	0	0	0	0	0	0	0

* Except otherwise noted, all the above monitors listed meet the requirements of appendices A, B, C, D and E where applicable.
** These sites do not meet the criteria for an MSA/Source/CBSA as described in 40 CFR Appendix D and are not required.
*** AADT: Annual Average Daily Traffic
**** Although the Lake Tahoe Nevada area is a maintenance area for CO, EPA recently approved NDEP's second maintenance plan, which includes a surrogate method for monitoring CO in the area in the absence of ambient air quality monitoring data. Therefore, NDEP is not required to operate any CO monitors in the maintenance area.

Changes in Monitoring Network

This annual network plan and a five-year network assessment are used to evaluate the need for any changes to the NDEP-BAQP ambient air monitoring network. The NDEP-BAQP is evaluating the need for Pb monitoring based on source emissions submitted to the National Emissions Inventory. This is the only potential change to the NDEP-BAQP monitoring network anticipated in 2023. If there is a change in the monitoring network, it will be submitted to USEPA for approval.

Purpose of Monitors

The purpose of the Nevada Air Monitoring Network is to provide useful and accurate information on air quality, which is used to evaluate the success of the State's air quality programs. To accomplish this task, the NDEP-BAQP utilizes the NAAQS for each criteria pollutant set forth in the Clean Air Act: CO, Pb, NO_2, O_3, coarse and fine particulate matter (PM_{10} and $PM_{2.5}$, respectively), and SO_2. Also, the NDEP-BAQP utilizes the NAAQS of measured criteria pollutants set forth in the Clean Air Act to assess air quality status and potentially classify areas of the state as either attainment or nonattainment.

The NAAQS are broken down into primary and secondary standards. Primary standards are those established to protect public health. Secondary standards are those established to protect the public welfare from adverse pollution effects on soils, water, vegetation, man-made materials, animals, weather, visibility, climate, property, and the economy. The scientific criteria upon which the standards are based are reviewed periodically by the USEPA; the USEPA may reestablish or change the standards according to its findings.

A pollutant measurement that is greater than the ambient air quality standard for its specific averaging time is called an exceedance. An exceedance is not necessarily a violation; for each pollutant, there are specific rules about how many exceedances are allowed within a given time period before a pattern of exceedances is considered to be a violation of the NAAQS. A violation may result in regulatory action to improve the air quality in that area. Exceptions are made to allow for certain limited exceedances of the standard that may occur; for example, during exceptional events, such as an unusual weather pattern or wildfire. Regulatory action is typically reserved for cases where the exceedances are too large or too frequent and cause violation of the NAAQS.

Historically, ambient air quality monitoring by the NDEP-BAQP has looked at trends in air quality to aid in the local planning process. Traffic, wood burning stoves, and growth-related activities have prompted air quality monitoring in specific areas around the State. Data from these sites has led to public education and outreach to communities, identifying the potential

health effects caused by air pollutants in the environment. Ordinances have also been developed and implemented to help control surface area disturbances and other related activities that produce dust.

Overview of Monitored Parameters

O_3

Ground-level ozone, or photochemical smog, is not emitted into the atmosphere as ozone, but rather is formed by the reactions of other pollutants. The primary pollutants entering into this reaction, volatile organic compounds (VOCs) and oxides of nitrogen, create ozone in the presence of sunlight. According to the USEPA, ozone is a strong irritant of the upper respiratory system and causes damage to crops.

PM_{10}

Particulate matter with an aerodynamic diameter of 10 microns or less is emitted from transportation and industrial sources. According to the USEPA, exposure to particle pollution is linked to a variety of significant health problems ranging from aggravated asthma to premature death in people with heart and lung disease.

$PM_{2.5}$

Fine particulate matter with a diameter of 2.5 microns or less is created primarily from industrial processes and fuel combustion. According to the USEPA, these particles are breathed deeply into the lungs. Exposure to fine particle pollution is linked to a variety of significant health problems ranging from aggravated asthma to premature death in people with heart and lung disease.

Figure 1: Locations of monitoring stations maintained in the NDEP-BAQP's network.

Elko: Detailed Site Information

Prior to 1992, the location for this sampler was at the fire station in a commercial area. In November 1992, this continuous PM_{10} monitoring site was relocated to the roof of the State offices at 850 Elm Street in a predominantly residential area. The monitoring objective was to determine typical concentration/population oriented. The manual sampler was replaced with a continuous Tapered Element Oscillating Microbalance (TEOM) PM_{10} monitor in December 1998. In September 2008, the TEOM monitor was closed, and a new Beta Attenuation Monitor (BAM) 1020 monitor was sited at the Elko Grammar School #2.

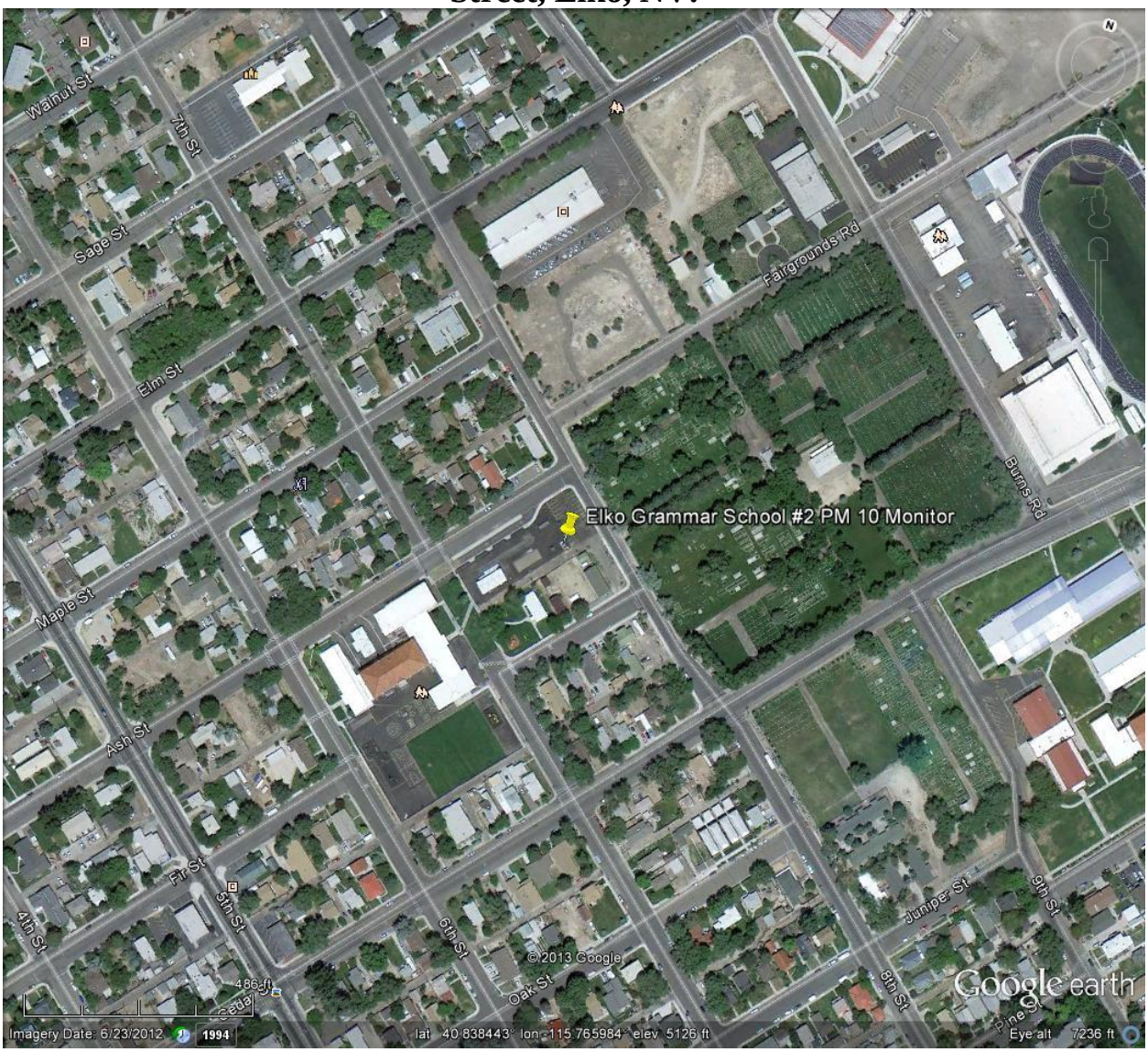
Local site name	**Elko**
AQS ID (XX-XXX-XXXX)	**32-007-0005**
GPS coordinates (decimal degrees)	**+40.838350, -115.766029**
Street Address	**1055 7th Street, Elko, NV 89801**
County	**Elko**
Distance to roadways (meters)	**8th Street – 25 meters***
Traffic count (AADT, year)	**8th Street – 560 AADT (2021) Station #0070203 (100 meters from site)** **Cedar Street – 1700 AADT (2021) Station #0070208 (165 meters from site)**
Groundcover (e.g. paved, vegetative, dirt, sand, gravel)	**Asphalt**
Representative statistical area name (i.e. MSA, CBSA, other)	**Elko Micropolitan Statistical Area**
Pollutant, Pollutant Occurrence Code (POC)	**PM_{10}, 1**
Primary/QA Collocated/Other (provide for all $PM_{2.5}$, PM_{10}, $PM_{10-2.5}$, Pb, and NO_2 monitors. Non-PM, Pb, NO_2 monitors should be listed as "N/A")	**N/A**
Parameter code	**81102**
Basic monitoring objective(s)	**NAAQS**
Site type(s)	**Population Exposure**
Monitor type	**SLAMS**
Network affiliation(s), if applicable (a monitor may have none, one, or multiple)	**N/A**
Instrument manufacturer and model	**Met One BAM 1020**
Method code	**122**
FRM/FEM/ARM/other	**FEM**
Collecting Agency	**NDEP-BAQP**
Analytical Lab (i.e. weigh lab, toxics lab, other)	**N/A**
Reporting Agency	**NDEP-BAQP**
Spatial scale (e.g. micro, neighborhood)	**Neighborhood**
Monitoring start date	**09/25/2008**

Local site name	Elko
(MM/DD/YYYY)	
Current sampling frequency (e.g. 1:3, continuous)	Continuous
Required sampling frequency (e.g. 1:3 excluding exceptional events/1:1 including exceptional events)	N/A
Sampling season (MM/DD-MM/DD)	01/01-12/31
Probe height (meters)	2.6 meters
Distance from supporting structure (meters)	2.6 meters
Distance from obstructions on roof. Include horizontal distance + vertical height above probe for obstructions nearby (meters)	No obstructions on the roof
Distance from obstructions not on roof. Include horizontal distance + vertical height above probe for obstructions nearby (meters)	Horizontal distance: shed to SE = 9 meters Vertical height above probe: shed to SE = 3 meters
Distance from tree drip-lines (meters)	N/A
Distance to furnace or incinerator flue (meters)	N/A
Distance between monitors fulfilling a QA collocation requirement (meters)	N/A
Unrestricted airflow (degrees around probe/inlet or percentage of monitoring path)	360 degrees
Probe material for reactive gases $NO/NO_2/NO_y$, SO_2, O_3; PAMS: VOCs, Carbonyls (e.g. Pyrex, stainless steel, Teflon)	N/A
Residence time for reactive gases $NO/NO_2/NO_y$, SO_2, O_3; PAMS: VOCs, Carbonyls (seconds)	N/A
Will there be changes in the next 18 months? (Y/N)	No
Is it suitable for comparison against the annual $PM_{2.5}$? (Y/N)	N/A
Frequency of flow rate verification for manual PM samplers, including Pb samplers	N/A
Frequency of flow rate verification for automated PM analyzers	Monthly
Frequency of one-point QC check for gaseous instruments	N/A

Local site name	Elko
Date of Annual Performance Evaluation conducted in the past calendar year for gaseous parameters (MM/DD/YYYY)	**N/A**
Date of two semi-annual flow rate audits conducted in the past calendar year for PM monitors (MM/DD/YYYY, MM/DD/YYYY)	**04/04/2022, 10/11/2022**

*Distance is measured to the nearest roadway, not to the nearest NDOT station # reference for AADT.

Figure 2: PM_{10} Monitor located at Elko Grammar School #2, 1055 7th Street, Elko, NV.



Fallon: Detailed Site Information

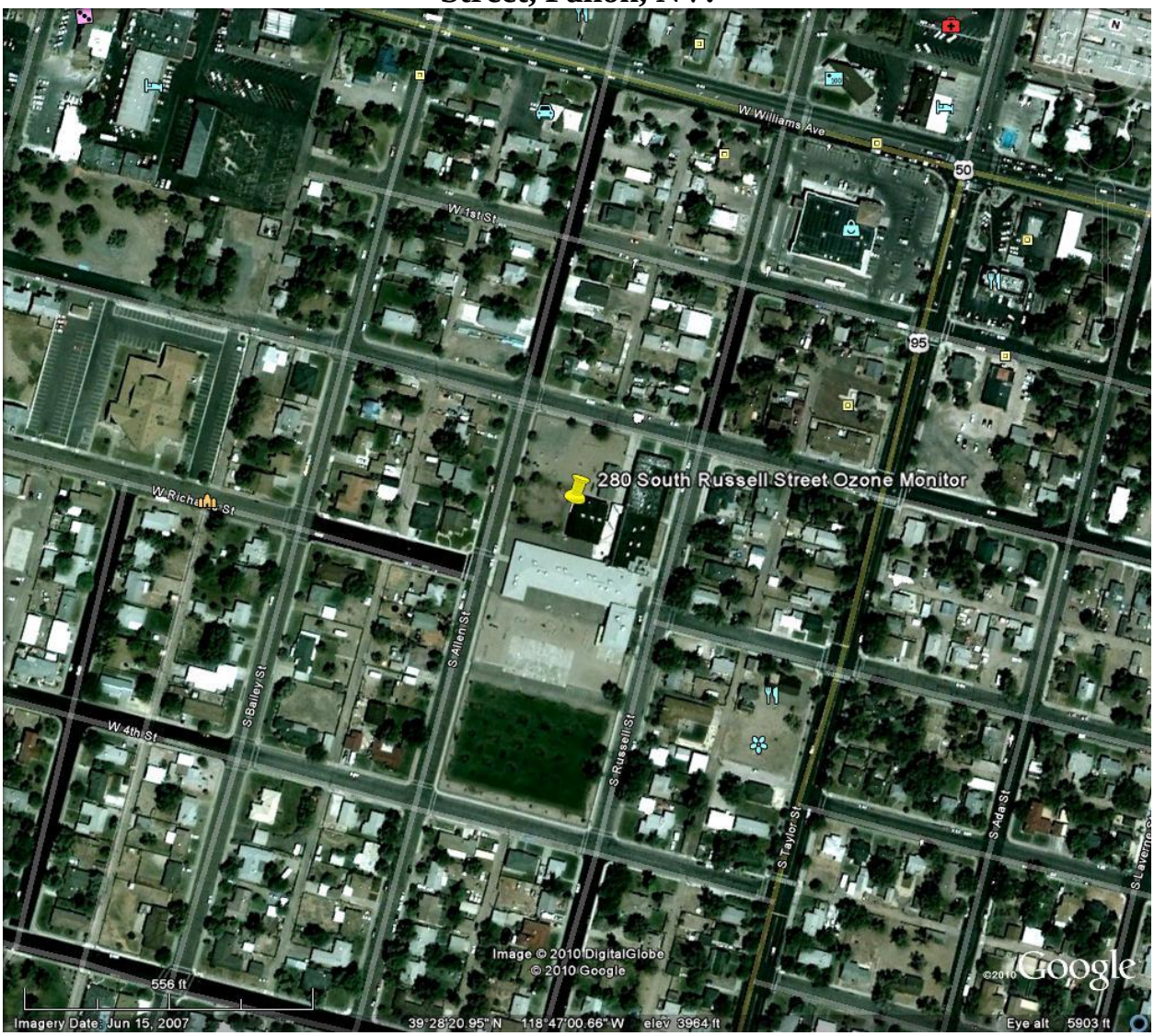
The ozone monitoring site at 280 South Russell Street is at the West End Facility in a residential neighborhood that may be affected by agricultural operations surrounding the City of Fallon. The monitoring objective is to determine typical concentration/population oriented and transport downwind of Reno and Fernley.

Local site name	Fallon
AQS ID (XX-XXX-XXXX)	32-001-0002
GPS coordinates (decimal degrees)	+39.472471, -118.783624
Street Address	280 South Russell Street, Fallon, NV 89406
County	Churchill
Distance to roadways (meters)	S. Allen – 40 meters
Traffic count (AADT, year)	S. Bailey Street – 380 AADT 2021) Station #0010135 (150 meters from site); S. Taylor Street– 10,700 AADT (2021) Station #0010016 (200 meters from site); S. Allen Street – <2,501 (2021, estimated from NDOT for W. Center Street, adjacent to site to the north)
Groundcover (e.g. paved, vegetative, dirt, sand, gravel)	Dirt and gravel
Representative statistical area name (i.e. MSA, CBSA, other)	Fallon Micropolitan Statistical Area
Pollutant, POC	Ozone, 1
Primary/QA Collocated/Other (provide for all $PM_{2.5}$, PM_{10}, $PM_{10-2.5}$, Pb, and NO_2 monitors. Non-PM, Pb, NO_2 monitors should be listed as "N/A")	N/A
Parameter code	44201
Basic monitoring objective(s)	NAAQS
Site type(s)	Population Exposure
Monitor type	SLAMS
Network affiliation(s), if applicable (a monitor may have none, one, or multiple)	N/A
Instrument manufacturer and model	Teledyne API Model 400 Series
Method code	087
FRM/FEM/ARM/other	FEM
Collecting Agency	NDEP-BAQP
Analytical Lab (i.e. weigh lab, toxics lab, other)	N/A
Reporting Agency	NDEP-BAQP
Spatial scale (e.g. micro, neighborhood)	Neighborhood

Local site name	Fallon
Monitoring start date (MM/DD/YYYY)	10/01/1999
Current sampling frequency (e.g. 1:3, continuous)	Continuous
Required sampling frequency (e.g. 1:3 excluding exceptional events/1:1 including exceptional events)	N/A
Sampling season (MM/DD-MM/DD)	01/01-12/31
Probe height (meters)	5.5 meters
Distance from supporting structure (meters)	1.5 meters
Distance from obstructions on roof. Include horizontal distance + vertical height above probe for obstructions nearby (meters)	No obstructions on the roof
Distance from obstructions not on roof. Include horizontal distance + vertical height above probe for obstructions nearby (meters)	Horizontal distance: tree to SW = 16 meters Vertical height above probe: tree to SW = 2.1 meters
Distance from tree drip-lines (meters)	12 meters
Distance to furnace or incinerator flue (meters)	N/A
Distance between monitors fulfilling a QA collocation requirement (meters)	N/A
Unrestricted airflow (degrees around probe/inlet or percentage of monitoring path)	360 degrees
Probe material for reactive gases $NO/NO_2/NO_y$, SO_2, O_3; PAMS: VOCs, Carbonyls (e.g. Pyrex, stainless steel, Teflon)	Teflon
Residence time for reactive gases $NO/NO_2/NO_y$, SO_2, O_3; PAMS: VOCs, Carbonyls (seconds)	8.48 seconds
Will there be changes in the next 18 months? (Y/N)	No
Is it suitable for comparison against the annual $PM_{2.5}$? (Y/N)	N/A
Frequency of flow rate verification for manual PM samplers, including Pb samplers	N/A
Frequency of flow rate verification for automated PM analyzers	N/A
Frequency of one-point QC check for gaseous instruments	Every two weeks

Local site name	Fallon
Date of Annual Performance Evaluation conducted in the past calendar year for gaseous parameters (MM/DD/YYYY)	**11/10/2022**
Date of two semi-annual flow rate audits conducted in the past calendar year for PM monitors (MM/DD/YYYY, MM/DD/YYYY)	**N/A**

Figure 3: Ozone Monitor located at West End Facility, 280 South Russell Street, Fallon, NV.



Fernley Intermediate School: Detailed Site Information

Ozone monitoring is conducted at the Fernley Intermediate School, which is located at 320 Hardie Lane. This is an area of mainly residential and agricultural use. However, there has recently been a large growth of industry both upwind and downwind of this site. Ozone monitoring (SPMS) was previously conducted at the Fernley Volunteer Fire Department starting in October 1997 and discontinued in October 2003. Ozone monitoring began at this site in July 2007. Monitoring for PM_{10} at this site commenced in May 1995 to determine the agricultural and industrial source impacts and population exposure. PM_{10} sampling was discontinued in November 1998.

Local site name	**Fernley**
AQS ID (XX-XXX-XXXX)	**32-019-0006**
GPS coordinates (decimal degrees)	**+39.602787, -119.247741**
Street Address	**320 Hardie Lane, Fernley, NV 89408**
County	**Lyon**
Distance to roadways (meters)	**Hardie Lane – 103 meters***
Traffic count (AADT, year)	**US95A, US50A – 7,450 AADT (2021) Station #0190022 (520 meters from site); SR427, E. Main Street – 10,600 AADT (2021) Station #0190023 (590 meters from site); Hardie Lane – 1,250 AADT (2021) Station #0190119 (525 meters from site)**
Groundcover (e.g. paved, vegetative, dirt, sand, gravel)	**Paved, cement, gravel, and dirt**
Representative statistical area name (i.e. MSA, CBSA, other)	**Reno-Carson City-Fernley Combined Statistical Area (CSA) and Fernley Micropolitan Statistical Area**
Pollutant, POC	**Ozone, 1**
Primary/QA Collocated/Other (provide for all $PM_{2.5}$, PM_{10}, $PM_{10-2.5}$, Pb, and NO_2 monitors. Non-PM, Pb, NO_2 monitors should be listed as "N/A")	**N/A**
Parameter code	**44201**
Basic monitoring objective(s)	**NAAQS**
Site type(s)	**Population Exposure**
Monitor type	**SLAMS**
Network affiliation(s), if applicable (a monitor may have none, one, or multiple)	**N/A**
Instrument manufacturer and model	**Teledyne API Model 400 Series**
Method code	**087**
FRM/FEM/ARM/other	**FEM**
Collecting Agency	**NDEP-BAQP**
Analytical Lab (i.e. weigh lab, toxics lab, other)	**N/A**
Reporting Agency	**NDEP-BAQP**

Local site name	Fernley
Spatial scale (e.g. micro, neighborhood)	Neighborhood
Monitoring start date (MM/DD/YYYY)	07/06/2007
Current sampling frequency (e.g. 1:3, continuous)	Continuous
Required sampling frequency (e.g. 1:3 excluding exceptional events/1:1 including exceptional events)	N/A
Sampling season (MM/DD-MM/DD)	01/01-12/31
Probe height (meters)	6.5 meters
Distance from supporting structure (meters)	1.5 meters
Distance from obstructions on roof. Include horizontal distance + vertical height above probe for obstructions nearby (meters)	No obstructions on the roof
Distance from obstructions not on roof. Include horizontal distance + vertical height above probe for obstructions nearby (meters)	Horizontal distance: tree to W = 14 meters Vertical height above probe: tree to W = 2 meters
Distance from tree drip-lines (meters)	14.6 meters
Distance to furnace or incinerator flue (meters)	N/A
Distance between monitors fulfilling a QA collocation requirement (meters)	N/A
Unrestricted airflow (degrees around probe/inlet or percentage of monitoring path)	360 degrees
Probe material for reactive gases $NO/NO_2/NO_y$, SO_2, O_3; PAMS: VOCs, Carbonyls (e.g. Pyrex, stainless steel, Teflon)	Teflon
Residence time for reactive gases $NO/NO_2/NO_y$, SO_2, O_3; PAMS: VOCs, Carbonyls (seconds)	8.34 seconds
Will there be changes in the next 18 months? (Y/N)	No
Is it suitable for comparison against the annual $PM_{2.5}$? (Y/N)	N/A
Frequency of flow rate verification for manual PM samplers, including Pb samplers	N/A

Local site name	Fernley
Frequency of flow rate verification for automated PM analyzers	N/A
Frequency of one-point QC check for gaseous instruments	Every two weeks
Date of Annual Performance Evaluation conducted in the past calendar year for gaseous parameters (MM/DD/YYYY)	11/07/2022
Date of two semi-annual flow rate audits conducted in the past calendar year for PM monitors (MM/DD/YYYY, MM/DD/YYYY)	N/A

*Distance is measured to the nearest roadway, not to the nearest NDOT station # reference for AADT.

Figure 4: Ozone Monitor located at Fernley Intermediate School, 320 Hardie Lane Fernley, NV.

2601 S. Carson Street: Detailed Site Information

Due to the city of Carson City re-purposing use of the old monitoring location on 3300 East Fifth Street, the SLAMS monitoring site is now adjacent to Hwy 395, in a residential neighborhood and a light industrial area. The collocated $PM_{2.5}$ and ozone monitoring site is located at 2601 S. Carson Street, previous site of the old Army National Guard site. The monitoring objective for $PM_{2.5}$ and ozone is to determine maximum concentration based on Appendix D CFR 58 (4.1) (b) for this site. The primary monitor at this site is the SLAMS BAM 1020 continuous monitor.

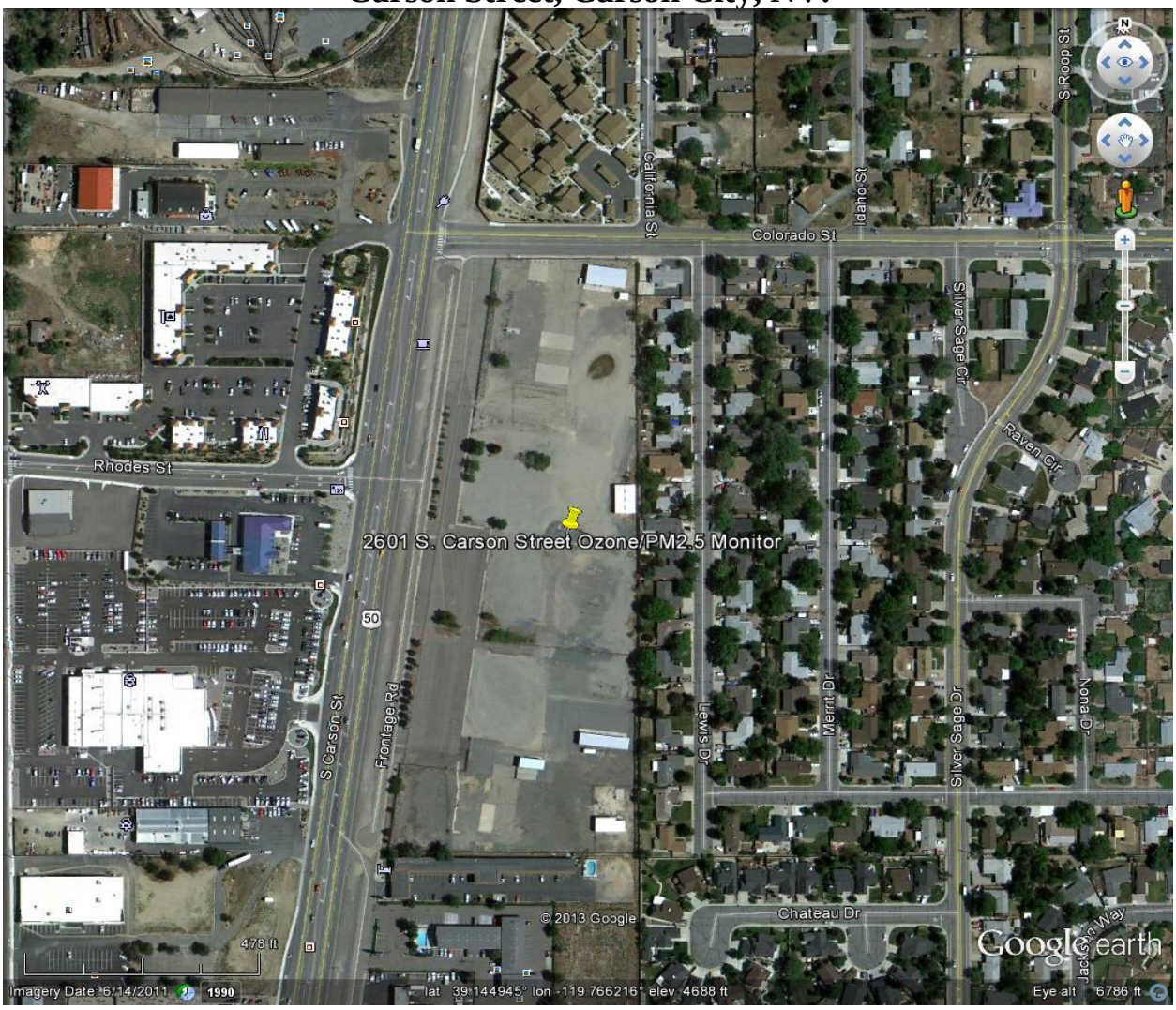
Local site name	**Carson City Armory**		
AQS ID (XX-XXX-XXXX)	**32-510-0020**		
GPS coordinates (decimal degrees)	**+39.1447, -119.7661**		
Street Address	**2601 S. Carson Street, Carson City, NV 89701**		
County	**Carson City**		
Distance to roadways (meters)	**Lewis Drive – 87 meters** **South Carson Street – 105 meters**		
Traffic count (AADT, year)	**Carson Street, SR529 – 18,900 AADT (2021) Station #0250148 (1.1 kilometers from site);** **Colorado Street –2,850 AADT (2021) Station #0250060 (450 meters from site);** **Sonoma Street – 1,550 AADT (2021) Station #0250050 (375 meters from site);** **Lewis Street – 2,501 to 5,000 (2021, estimated from NDOT for Roop Street, two blocks east)**		
Groundcover (e.g. paved, vegetative, dirt, sand, gravel)	**Gravel**		
Representative statistical area name (i.e. MSA, CBSA, other)	**Reno-Carson City-Fernley CSA and Carson City Metropolitan Statistical Area (MSA)**		
Pollutant, POC	**$PM_{2.5}$, 1**	**$PM_{2.5}$, 2**	**Ozone, 1**
Primary/QA Collocated/Other (provide for all $PM_{2.5}$, PM_{10}, $PM_{10-2.5}$, Pb, and NO_2 monitors. Non-PM, Pb, NO_2 monitors should be listed as "N/A")	**Primary**	**QA Collocated**	**N/A**
Parameter code	**88101**	**88101**	**44201**
Basic monitoring objective(s)	**NAAQS**	**NAAQS**	**NAAQS**
Site type(s)	**Highest concentration**	**Highest concentration**	**Max O_3 concentration**
Monitor type(s)	**SLAMS**	**SLAMS**	**SLAMS**
Network affiliation(s), if applicable (a monitor may have none, one, or multiple)	**N/A**	**N/A**	**N/A**
Instrument manufacturer and model	**Met One BAM 1020**	**Met One EFRM, VSCC**	**Teledyne API 400 Series**
Method code	**170**	**521**	**087**

Local site name	Carson City Armory		
FRM/FEM/ARM/other	FEM	FRM	FEM
Collecting Agency	NDEP-BAQP	NDEP-BAQP	NDEP-BAQP
Analytical Lab (i.e. weigh lab, toxics lab, other)	N/A	Desert Research Institute	N/A
Reporting Agency	NDEP-BAQP	NDEP-BAQP	NDEP-BAQP
Spatial scale (e.g. micro, neighborhood)	Neighborhood	Neighborhood	Neighborhood
Monitoring start date (MM/DD/YYYY)	04/01/2013	04/01/2013	04/01/2013
Current sampling frequency (e.g. 1:3, continuous)	Continuous (primary)	1:6	Continuous
Required sampling frequency (e.g. 1:3 excluding exceptional events/1:1 including exceptional events)	Continuous	1:3*	N/A
Sampling season (MM/DD-MM/DD)	01/01-12/31	01/01-12/31	01/01-12/31
Probe height (meters)	4.6 meters	4.6 meters	4.1 meters
Distance from supporting structure (meters)	4.6meters	2.0 meters	2.3 meters
Distance from obstructions on roof. Include horizontal distance + vertical height above probe for obstructions nearby (meters)	No obstructions on the roof	No obstructions on the roof	No obstructions on the roof
Distance from obstruction not on roof. Include horizontal distance + vertical height above probe for obstructions nearby (meters)	Horizontal distance: tree to W = 40 meters Vertical height above probe: tree to W = 4.5 meters Horizontal distance: tree to NW = 44 meters Vertical height above probe: tree to NW = 4.5 meters	Horizontal distance: tree to W = 40 meters Vertical height above probe: tree to W = 4.5 meters Horizontal distance: tree to NW = 44 meters Vertical height above probe: tree to NW = 4.5 meters	Horizontal distance: tree to W = 40 meters Vertical height above probe: tree to W = 4.5 meters Horizontal distance: tree to NW = 44 meters Vertical height above probe: tree to NW = 4.5 meters
Distance from tree drip-lines (meters)	37/44 meters	37/44 meters	37/44 meters
Distance to furnace or incinerator flue (meters)	N/A	N/A	N/A

Local site name	Carson City Armory		
Distance between monitors fulfilling a QA collocation requirement (meters)	**2 meters**	**2 meters**	**N/A**
Unrestricted airflow (degrees around probe/inlet or percentage of monitoring path)	**360 degrees**	**360 degrees**	**360 degrees**
Probe material for reactive gases $NO/NO_2/NO_y$, SO_2, O_3; PAMS: VOCs, Carbonyls (e.g. Pyrex, stainless steel, Teflon)	**N/A**	**N/A**	**Teflon**
Residence time for reactive gases $NO/NO_2/NO_y$, SO_2 O_3; PAMS: VOCs, Carbonyls	**N/A**	**N/A**	**4.94 seconds**
Will there be changes within the next 18 months? (Y/N)	**No**	**No**	**No**
Is it suitable for comparison against the annual $PM_{2.5}$? (Y/N)	**Yes**	**Yes**	**N/A**
Frequency of flow rate verification for manual PM samplers, including Pb samplers	**N/A**	**Monthly**	**N/A**
Frequency of flow rate verification for automated PM analyzers	**Monthly**	**N/A**	**N/A**
Frequency of one-point QC check for gaseous instruments	**N/A**	**N/A**	**Every two weeks**
Date of Annual Performance Evaluation conducted in the past calendar year for gaseous parameters (MM/DD/YYYY)	**N/A**	**N/A**	**11/04/2022**
Date of two semi-annual flow rate audits conducted in the past calendar year for PM monitors (MM/DD/YYYY, MM/DD/YYYY)	**02/14/2022, 09/06/2022**	**02/14/2022, 09/06/2022**	**N/A**

*This requirement is met by the continuous sampling of the primary monitor.

Figure 5: Ozone/$PM_{2.5}$ Monitors located at Carson City Armory, 2601 S. Carson Street, Carson City, NV.



Church: Detailed Site Information

The Church Site began operation in 2004 to complement the existing three other sites in the Pahrump monitoring network. Monitoring is accomplished with a continuous BAM 1020 analyzer located in the southeast corner of the Catholic Church property. This site represents the southern-most monitoring location in Pahrump Valley. The monitoring objective of this site is a significant source of PM_{10}. The surrounding area is characterized by residential use with little commercial use, as well as some native desert with a mix of dirt and paved roads.

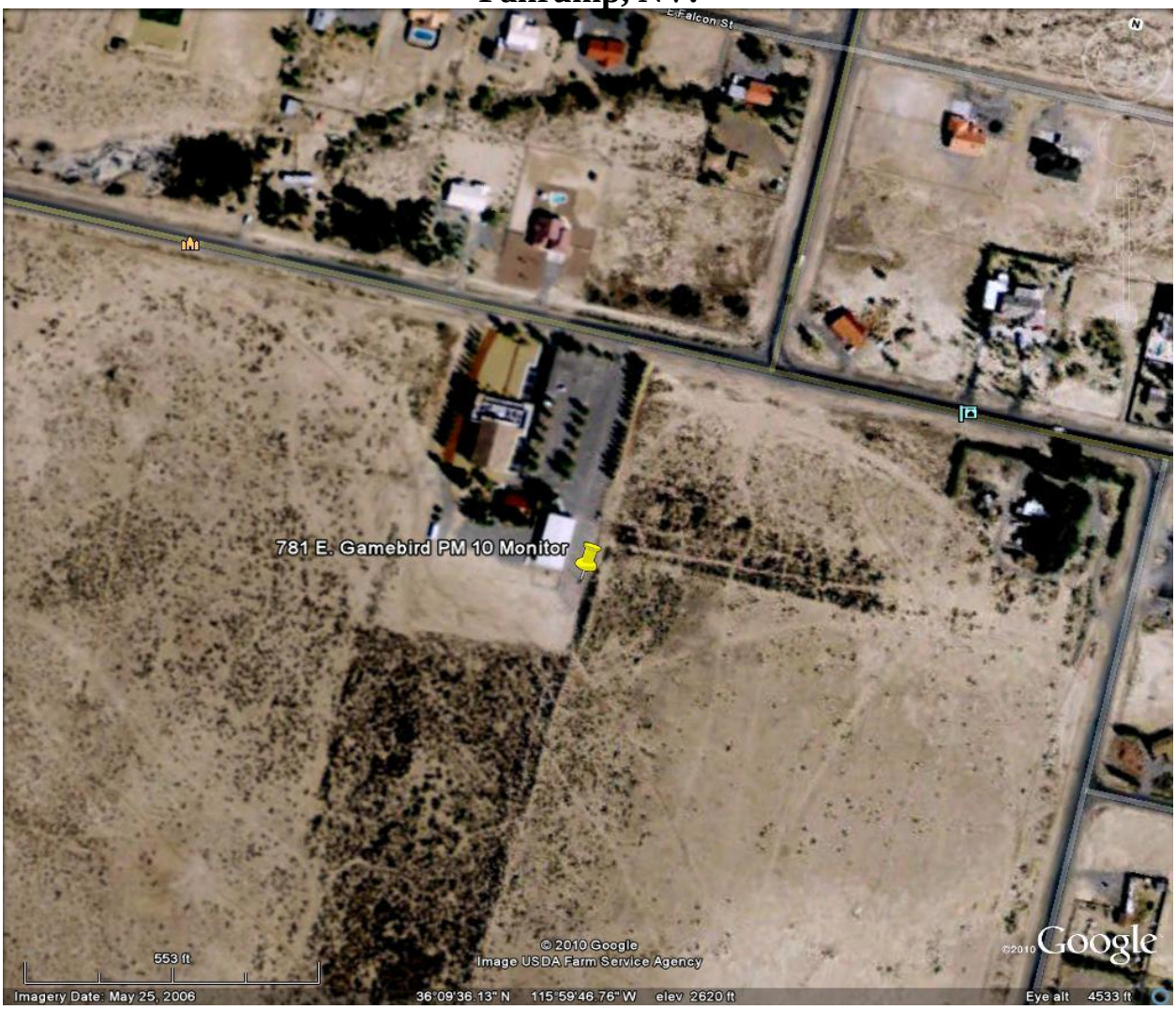
Local site name	Church
AQS ID (XX-XXX-XXXX)	32-023-0013
GPS coordinates (decimal degrees)	+36.159639, -115.996263
Street Address	781 E. Gamebird Road, Pahrump, NV 89048
County	Nye
Distance to roadways (meters)	Gamebird Road – 147 meters
Traffic count (AADT, year)	Pahrump Valley Boulevard – 7,850 AADT (2021) Station #0230025 (5 kilometers from site); Pahrump Valley Boulevard (intersection with Gamebird Road) –14,932 AADT (2022)*
Groundcover (e.g. paved, vegetative, dirt, sand, gravel)	Desert
Representative statistical area name (i.e. MSA, CBSA, other)	Las Vegas – Henderson, NV-AZ CSA and Pahrump Micropolitan Statistical Area
Pollutant, POC	PM_{10}, 1
Primary/QA Collocated/Other (provide for all $PM_{2.5}$, PM_{10}, $PM_{10-2.5}$, Pb, and NO_2 monitors. Non-PM, Pb, NO_2 monitors should be listed as "N/A")	N/A
Parameter code	81102
Basic monitoring objective(s)	NAAQS
Site type(s)	Population Exposure – Dry lake bed 6 miles to the south
Monitor type	SLAMS
Network affiliation(s), if applicable (a monitor may have none, one, or multiple)	N/A
Instrument manufacturer and model	Met One BAM 1020
Method code	122
FRM/FEM/ARM/other	FEM
Collecting Agency	NDEP-BAQP
Analytical Lab (i.e. weigh lab, toxics lab, other)	N/A
Reporting Agency	NDEP-BAQP
Spatial scale (e.g. micro, neighborhood)	Urban

Local site name	Church
Monitoring start date (MM/DD/YYYY)	02/14/2004
Current sampling frequency (e.g. 1:3, continuous)	Continuous
Required sampling frequency (e.g. 1:3 excluding exceptional events/1:1 including exceptional events)	N/A
Sampling season (MM/DD-MM/DD)	01/01-12/31
Probe height (meters)	4 meters
Distance from supporting structure (meters)	4 meters
Distance from obstructions on roof. Include horizontal distance + vertical height above probe for obstructions nearby (meters)	No obstructions on the roof
Distance from obstructions not on roof. Include horizontal distance + vertical height above probe for obstructions nearby (meters)	Horizontal distance: shed to W = 13 meters Vertical height above probe: shed to W = N/A height < probe
Distance from tree drip-lines (meters)	45 meters
Distance to furnace or incinerator flue (meters)	N/A
Distance between monitors fulfilling a QA collocation requirement (meters)	N/A
Unrestricted airflow (degrees around probe/inlet or percentage of monitoring path)	360 degrees
Probe material for reactive gases $NO/NO_2/NO_y$, SO_2, O_3; PAMS: VOCs, Carbonyls (e.g. Pyrex, stainless steel, Teflon)	N/A
Residence time for reactive gases $NO/NO_2/NO_y$, SO_2 O_3; PAMS: VOCs, Carbonyls	N/A
Will there be changes within the next 18 months? (Y/N)	No
Is it suitable for comparison against the annual $PM_{2.5}$? (Y/N)	N/A
Frequency of flow rate verification manual PM samplers, including Pb samplers	N/A
Frequency of flow rate verification for automated PM analyzers	Monthly
Frequency of one-point QC check for gaseous instruments	N/A

Local site name	Church
Date of Annual Performance Evaluation conducted in the past calendar year for gaseous parameters (MM/DD/YYYY)	**N/A**
Date of two semi-annual flow rate audits conducted in the past calendar year for PM monitors (MM/DD/YYYY, MM/DD/YYYY)	**03/09/2022, 10/05/2022**

*This AADT value was estimated by extrapolating between actual 2003 AADT and projected 2025 AADT values as listed in the Pahrump Regional Planning District Adequate Public Facilities Plan and Policy report, dated August 7, 2006.

Figure 6: PM_{10} Monitor located at Church Site, 781 E. Gamebird Road, Pahrump, NV.



Manse Elementary: Detailed Site Information

The Manse site represents the monitoring objective for the highest concentrations of PM_{10} in Pahrump. This site replaces the Community Pool site, which, at the time it was operating, also represented the highest concentrations of PM_{10} in Pahrump. Located at 1020 E. Wilson Road, the Manse Elementary site is located on the roof of the school and monitors for PM_{10} using the continuous BAM 1020 analyzer. The area adjacent to this site is characterized by mostly commercial use with some residential use and is adjacent to the busiest activity area of Pahrump. This site is located downwind from residential construction developments that have cleared large parcels of ground for building, as well as agricultural areas that cultivate large areas of farm-ground and raise livestock. Roads surrounding this site are both paved and dirt.

Local site name	Manse Elementary
AQS ID (XX-XXX-XXXX)	32-023-0014
GPS coordinates (decimal degrees)	+36.212787, -115.994802
Street Address	1020 E. Wilson Road, Pahrump, NV 89048
County	Nye
Distance to roadways (meters)	Chowhand – 77 meters Wilson Road – 50 meters
Traffic count (AADT, year)	SR372, Charles Brown Highway – 10,800 AADT (2021) Station #0230006 (850 meters from site); SR160, Pahrump Valley Highway – 22,400 AADT (2021) Station #0230008 (875 meters from site); Wilson Road (intersection with SR160) –9,150 AADT (2022)*
Groundcover (e.g. paved, vegetative, dirt, sand, gravel)	Gravel
Representative statistical area name (i.e. MSA, CBSA, other)	Las Vegas – Henderson, NV-AZ CSA and Pahrump Micropolitan Statistical Area
Pollutant, POC	PM_{10}, 1
Primary/QA Collocated/Other (provide for all $PM_{2.5}$, PM_{10}, $PM_{10-2.5}$, Pb, and NO_2 monitors. Non-PM, Pb, NO_2 monitors should be listed as "N/A")	N/A
Parameter code	81102
Basic monitoring objective(s)	NAAQS
Site type(s)	Highest Concentration
Monitor type	SLAMS
Network affiliation(s), if applicable (a monitor may have none, one, or multiple)	N/A
Instrument manufacturer and model	Met One BAM 1020
Method code	122
FRM/FEM/ARM/other	FEM
Collecting Agency	NDEP-BAQP
Analytical Lab (i.e. weigh lab, toxics	N/A

Local site name	Manse Elementary
lab, other)	
Reporting Agency	NDEP-BAQP
Spatial scale (e.g. micro, neighborhood)	Middle
Monitoring start date (MM/DD/YYYY)	11/17/2005
Current sampling frequency (e.g. 1:3, continuous)	Continuous
Required sampling frequency (e.g. 1:3 excluding exceptional events/1:1 including exceptional events)	N/A
Sampling season (MM/DD-MM/DD)	01/01-12/31
Probe height (meters)	6 meters
Distance from supporting structure (meters)	2.5 meters
Distance from obstructions on roof. Include horizontal distance + vertical height above probe for obstructions nearby (meters)	No obstructions on the roof
Distance from obstructions not on roof. Include horizontal distance + vertical height above probe for obstructions nearby (meters)	Horizontal distance: tree to W = 12 meters Vertical height above probe: tree to W = 5 meters Horizontal distance: tree to E = 20 meters Vertical height above probe: tree to E = 5 meters
Distance from tree drip–lines (meters)	12 meters
Distance to furnace or incinerator flue (meters)	N/A
Distance between monitors fulfilling a QA collocation requirement (meters)	N/A
Unrestricted airflow (degrees around probe/inlet or percentage of monitoring path)	360 degrees
Probe material for reactive gases $NO/NO_2/NO_y$, SO_2, O_3; PAMS: VOCs, Carbonyls (e.g. Pyrex, stainless steel, Teflon)	N/A
Residence time for reactive gases $NO/NO_2/NO_y$, SO_2, O_3; PAMS: VOCs, Carbonyls (seconds)	N/A
Will there be changes in the next 18 months? (Y/N)	No
Is it suitable for comparison against the annual $PM_{2.5}$? (Y/N)	N/A
Frequency of flow rate verification for	N/A

Local site name	Manse Elementary
manual PM samplers, including Pb samplers	
Frequency of flow rate verification for automated PM analyzers	Monthly
Frequency of one-point QC check for gaseous instruments	N/A
Date of Annual Performance Evaluation conducted in the past calendar year for gaseous parameters (MM/DD/YYYY)	N/A
Date of two semi-annual flow rate audits conducted in the past calendar year for PM monitors (MM/DD/YYYY, MM/DD/YYYY)	03/09/2022, 10/05/2022

*This AADT value was estimated by extrapolating between actual 2003 AADT and projected 2025 AADT values as listed in the Pahrump Regional Planning District Adequate Public Facilities Plan and Policy report, dated August 7, 2006.

Figure 7: PM_{10} Monitor located at Manse Elementary, 1020 E. Wilson Road Pahrump, NV.

Glen Oaks: Detailed Site Information

Monitoring began at the Willow Creek site in 2003. The monitor was located at 1500 Red Butte on the roof of a building in which irrigation equipment for a golf course was housed. The monitoring objective of this site was to measure typical concentrations/population oriented of PM_{10} using the BAM 1020. The surrounding area adjacent to this site was fairway/golf course and residential structures. Due to closure of the golf course, the Willow Creek site was relocated to the Glen Oaks sewage treatment plant in 2009. The Glen Oaks site is a short distance away from the existing golf course site and the monitoring objective did not change.

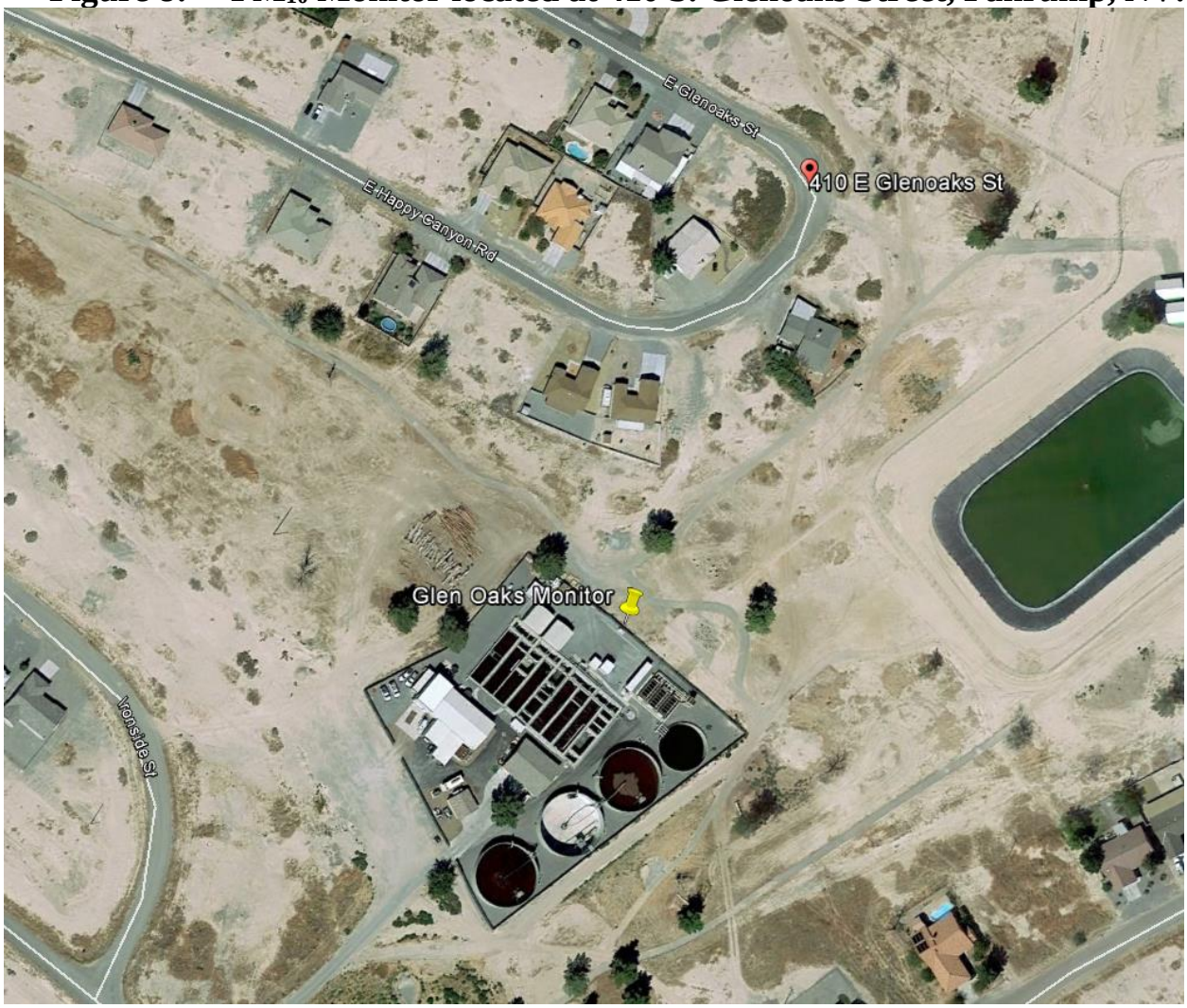
Local site name	**Glen Oaks**
AQS ID (XX-XXX-XXXX)	**32-023-0015**
GPS coordinates (decimal degrees)	**+36.193469, -116.007584**
Street Address	**410 S. Glenoaks Street, Pahrump NV, 89048**
County	**Nye**
Distance to roadways (meters)	**East Glenoaks Street – 104 meters**
Traffic count (AADT, year)	**SR372, Charles Brown Highway – 10,800 AADT (2021) Station #0230006 (1.6 kilometers from site); Calvada Boulevard (intersection with SR160) – 19,880 AADT (2022)***
Groundcover (e.g. paved, vegetative, dirt, sand, gravel)	**Loose soil/dust**
Representative statistical area name (i.e. MSA, CBSA, other)	**Las Vegas – Henderson, NV-AZ CSA and Pahrump Micropolitan Statistical Area**
Pollutant, POC	**PM_{10}, 1**
Primary/QA Collocated/Other (provide for all $PM_{2.5}$, PM_{10}, $PM_{10-2.5}$, Pb, and NO_2 monitors. Non-PM, Pb, NO_2 monitors should be listed as "N/A")	**N/A**
Parameter code	**81102**
Basic monitoring objective(s)	**NAAQS**
Site type(s)	**Population Exposure**
Monitor type	**SLAMS**
Network affiliation(s), if applicable (a monitor may have none, one, or multiple)	**N/A**
Instrument manufacturer and model	**Met One BAM 1020**
Method code	**122**
FRM/FEM/ARM/other	**FEM**
Collecting Agency	**NDEP-BAQP**
Analytical Lab (i.e. weigh lab, toxics lab, other)	**N/A**
Reporting Agency	**NDEP-BAQP**
Spatial scale (e.g. micro, neighborhood)	**Neighborhood**

Local site name	Glen Oaks
Monitoring start date (MM/DD/YYYY)	07/10/2009
Current sampling frequency (e.g. 1:3, continuous)	Continuous
Required sampling frequency (e.g. 1:3 excluding exceptional events/1:1 including exceptional events)	N/A
Sampling season (MM/DD-MM/DD)	01/01-12/31
Probe height (meters)	2.7 meters
Distance from supporting structure (meters)	2.7 meters
Distance from obstructions on roof. Include horizontal distance + vertical height above probe for obstructions nearby (meters)	No obstructions on the roof.
Distance from obstructions not on roof. Include horizontal distance + vertical height above probe for obstructions nearby (meters)	Horizontal distance: shed to W = 11 meters Vertical height above probe: shed to W = N/A height < probe Horizontal distance: tree to N = 30 meters Vertical height above probe: tree to N = 7 meters Horizontal distance: tree to NE = 36 meters Vertical height above probe: tree to NE = 8 meters
Distance from tree drip-lines (meters)	30 meters
Distance to furnace or incinerator flue (meters)	N/A
Distance between monitors fulfilling a QA collocation requirement (meters)	N/A
Unrestricted airflow (degrees around probe/inlet or percentage of monitoring path)	360 degrees
Probe material for reactive gases $NO/NO_2/NO_y$, SO_2, O_3; PAMS: VOCs, Carbonyls (e.g. Pyrex, stainless steel, Teflon)	N/A
Residence time for reactive gases $NO/NO_2/NO_y$, SO_2 O_3; PAMS: VOCs, Carbonyls	N/A
Will there be changes within the next 18 months? (Y/N)	No
Is it suitable for comparison against the annual $PM_{2.5}$? (Y/N)	N/A

Local site name	Glen Oaks
Frequency of flow rate verification for manual PM samplers, including Pb samplers	**N/A**
Frequency of flow rate verification for automated PM analyzers	**Monthly**
Frequency of one-point QC check for gaseous instruments	**N/A**
Date of Annual Performance Evaluation conducted in the past calendar year for gaseous parameters (MM/DD/YYYY)	**N/A**
Date of two semi-annual flow rate audits conducted in the past calendar year for PM monitors (MM/DD/YYYY, MM/DD/YYYY)	**03/08/2022, 10/05/2022**

*This AADT value was estimated by extrapolating between actual 2003 AADT and projected 2025 AADT values as listed in the Pahrump Regional Planning District Adequate Public Facilities Plan and Policy report, dated August 7, 2006.

Figure 8: PM_{10} Monitor located at 410 S. Glenoaks Street, Pahrump, NV.



Linda Street: Detailed Site Information

Monitoring at the Linda Street site was initiated in 2003. The site is located at 8825 North Linda Street. The BAM 1020 is located on the roof of an old railroad box car and represents not only the northern-most site in the Pahrump monitoring network, but the most rural area. There is some residential surrounding this site, but mainly native desert vegetation with little or no surface disturbances. Due to distance from the probe to the nearest roadway, this is a regional scale site. The monitoring objective for this site is upwind background levels of PM_{10} in Pahrump.

Local site name	**Linda Street**
AQS ID (XX-XXX-XXXX)	**32-023-0011**
GPS coordinates (decimal degrees)	**+36.349408, -116.031976**
Street Address	**8825 N. Linda Street, Pahrump, NV 89060**
County	**Nye**
Distance to roadways (meters)	**Linda Street – 53 meters**
Traffic count (AADT, year)	**SR160, Blue Diamond Road – 2,000 AADT (2021) Station #0230009* (4.25 kilometers from site)**
Groundcover (e.g. paved, vegetative, dirt, sand, gravel)	**Desert**
Representative statistical area name (i.e. MSA, CBSA, other)	**Las Vegas – Henderson, NV-AZ CSA and Pahrump Micropolitan Statistical Area**
Pollutant, POC	**PM_{10}, 1**
Primary/QA Collocated/Other (provide for all $PM_{2.5}$, PM_{10}, $PM_{10-2.5}$, Pb, and NO_2 monitors. Non-PM, Pb, NO_2 monitors should be listed as "N/A")	**N/A**
Parameter code	**81102**
Basic monitoring objective(s)	**NAAQS**
Site type(s)	**Upwind Background**
Monitor type	**SLAMS**
Network affiliation(s), if applicable (a monitor may have none, one, or multiple)	**N/A**
Instrument manufacturer and model	**Met One BAM 1020**
Method code	**122**
FRM/FEM/ARM/other	**FEM**
Collecting Agency	**NDEP-BAQP**
Analytical Lab (i.e. weigh lab, toxics lab, other)	**N/A**
Reporting Agency	**NDEP-BAQP**
Spatial scale (e.g. micro, neighborhood)	**Urban**
Monitoring start date (MM/DD/YYYY)	**05/03/2003**

Local site name	Linda Street
Current sampling frequency (e.g. 1:3, continuous)	Continuous
Required sampling frequency (e.g. 1:3 excluding exceptional events/1:1 including exceptional events)	N/A
Sampling season (MM/DD-MM/DD)	01/01-12/31
Probe height (meters)	6 meters
Distance from supporting structure (meters)	2.8 meters
Distance from obstructions on roof. Include horizontal distance + vertical height above probe for obstructions nearby (meters)	No obstructions on the roof
Distance from obstructions not on roof. Include horizontal distance + vertical height above probe for obstructions nearby (meters)	Horizontal distance: hangar to NW = 21 meters Vertical height above probe: hangar to NW = N/A height < probe
Distance from tree drip-lines (meters)	25 meters
Distance to furnace or incinerator flue (meters)	N/A
Distance between monitors fulfilling a QA collocation requirement (meters)	N/A
Unrestricted airflow (degrees around probe/inlet or percentage of monitoring path)	360 degrees
Probe material for reactive gases $NO/NO_2/NO_y$, SO_2, O_3; PAMS: VOCs, Carbonyls (e.g. Pyrex, stainless steel, Teflon)	N/A
Residence time for reactive gases $NO/NO_2/NO_y$, SO_2 O_3; PAMS: VOCs, Carbonyls	N/A
Will there be changes in the next 18 months? (Y/N)	No
Is it suitable for comparison against the annual $PM_{2.5}$? (Y/N)	N/A
Frequency of flow rate verification for manual PM samplers, including Pb samplers	N/A
Frequency of flow rate verification for automated PM analyzers	Monthly
Frequency of one-point QC check for gaseous instruments	N/A

Local site name	Linda Street
Date of Annual Performance Evaluation conducted in the past calendar year for gaseous parameters	**N/A**
Date of two semi-annual flow rate audits conducted in the past calendar year for PM monitors (MM/DD/YYYY, MM/DD/YYYY)	**03/08/2022, 10/05/2022**

*SR160/Pahrump Valley Highway is 1.5 kilometers from the site. There are no estimated traffic counts on any roads closer to the site, and traffic on Pahrump Valley Highway is much heavier than the neighborhood streets adjacent to the site. The residential roads are used by local residents to access their properties. The actual traffic count on Linda Street is likely much lower).

Figure 9: PM_{10} Monitor located at 8825 N. Linda Street, Pahrump, NV.

Ranchos Aspen Park: Detailed Site Information

The Ranchos Aspen Park site is a SPMS site within the NDEP-BAQP network. The monitoring objective is to determine typical concentration/population exposure.

Local site name	Ranchos Aspen Park
AQS ID (XX-XXX-XXXX)	32-005-0007
GPS coordinates (decimal degrees)	+38.897557, -119.732507
Street Address	820 Lyell Way, Gardnerville, NV 89460
County	Douglas
Distance to roadways (meters)	Lyell Way – 18 meters
Traffic count (AADT, year)	Kimmerling Road – 6,150 AADT (2021) Station #0050066 (1.1 kilometers from site)
Groundcover (e.g. paved, vegetative, dirt, sand, gravel)	Gravel
Representative statistical area name (i.e. MSA, CBSA, other)	Reno-Carson City-Fernley CSA and Gardnerville Ranchos Micropolitan Statistical Area
Pollutant, POC	$PM_{2.5}$, 1
Primary/QA Collocated/Other (provide for all $PM_{2.5}$, PM_{10}, $PM_{10-2.5}$, Pb, and NO_2 monitors. Non-PM, Pb, NO_2 monitors should be listed as "N/A")	N/A
Parameter code	88101
Basic monitoring objective(s)	NAAQS
Site type(s)	Population Exposure
Network affiliation(s), if applicable (a monitor may have none, one, or multiple)	N/A
Monitor type(s)	SPMS
Instrument manufacturer and model	Met One BAM 1020
Method code	170
FRM/FEM/ARM/other	FEM
Collecting Agency	NDEP-BAQP
Analytical Lab (i.e. weigh lab, toxics lab, other)	N/A
Reporting Agency	NDEP-BAQP
Spatial scale (e.g. micro, neighborhood)	Neighborhood
Monitoring start date (MM/DD/YYYY)	04/01/2013
Current sampling frequency (e.g. 1:3, continuous)	Continuous

Local site name	Ranchos Aspen Park
Required sampling frequency (e.g. 1:3 excluding exceptional events/1:1 including exceptional events)	N/A
Sampling season (MM/DD-MM/DD)	01/01-12/31
Probe height (meters)	4 meters
Distance from supporting structure (meters)	4 meters
Distance from obstructions on roof. Include horizontal distance + vertical height above probe for obstructions nearby (meters)	No obstructions on the roof
Distance from obstructions not on roof. Include horizontal distance + vertical height above probe for obstructions nearby (meters)	Horizontal distance: tree to S = 11 meters Vertical distance above probe: tree to S = 1.5 meters
Distance from tree drip-lines (meters)	9 meters
Distance to furnace or incinerator flue (meters)	N/A
Distance between monitors fulfilling a QA collocation requirement (meters)	N/A
Unrestricted airflow (degrees around probe/inlet or percentage of monitoring path)	360 degrees
Probe material for reactive gases $NO/NO_2/NO_y$, SO_2, O_3; PAMS: VOCs, Carbonyls (e.g. Pyrex, stainless steel, Teflon)	N/A
Residence time for reactive gases $NO/NO_2/NO_y$, SO_2 O_3; PAMS: VOCs, Carbonyls	N/A
Will there be changes within the next 18 months? (Y/N)	No
Is it suitable for comparison against the annual $PM_{2.5}$? (Y/N)	Yes
Frequency of flow rate verification for manual PM samplers, including Pb samplers	N/A
Frequency of flow rate verification for automated PM analyzers	Monthly
Frequency of one-point QC check for gaseous instruments	N/A

Local site name	Ranchos Aspen Park
Date of Annual Performance Evaluation conducted in the past calendar year for gaseous parameters (MM/DD/YYYY)	N/A
Date of two semi-annual flow rate audits conducted in the past calendar year for PM monitors (MM/DD/YYYY, MM/DD/YYYY)	02/24/2022, 09/02/2022

Figure 10: $PM_{2.5}$ Monitor located at Ranchos Aspen Park, 820 Lyell Way Gardnerville, NV.

IMPROVE Station: Detailed Site Information

According to 40 CFR Part 58 Appendix D 4.7.3, "each state shall install and operate at least one $PM_{2.5}$ site to monitor for regional background and regional transport." The NDEP-BAQP utilizes the Jarbidge site to meet this particular requirement.

Local site name	Jarbidge Wilderness IMPROVE
AQS ID (XX-XXX-XXXX)	32-007-9000
GPS coordinates (decimal degrees)	+41.8926, -115.4261
Street Address	Jarbidge Wilderness, Mahoney Forest Service Station
County	Elko
Distance to roadways (meters)	30 meters
Traffic count (AADT, year)	Negligible (No traffic counts conducted)
Groundcover (e.g. paved, vegetative, dirt, sand, gravel)	Dirt/Grass
Representative statistical area name (i.e. MSA, CBSA, other)	Elko Micropolitan Statistical Area
Pollutant, POC	$PM_{2.5}$, 1
Primary/QA Collocated/Other (provide for all $PM_{2.5}$, PM_{10}, $PM_{10-2.5}$, Pb, and NO_2 monitors. Non-PM, Pb, NO_2 monitors should be listed as "N/A")	N/A
Parameter code	88502
Basic monitoring objective(s)	Research Support
Site type(s)	General/Background
Monitor type	EPA
Network affiliation(s), if applicable (a monitor may have none, one, or multiple)	IMPROVE
Instrument manufacturer and model	Crocker Nuclear Lab, IMPROVE Sampler Version II
Method code	707
FRM/FEM/ARM/other	Other
Collecting Agency	US Forest Service (USFS)
Analytical Lab (i.e. weigh lab, toxics lab, other)	Crocker Nuclear Lab
Reporting Agency	US Forest Service (USFS)
Spatial scale (e.g. micro, neighborhood)	Regional
Monitoring start date (MM/DD/YYYY)	01/1988
Current sampling frequency (e.g. 1:3, continuous)	1:3 Filters Collected Weekly

Local site name	Jarbidge Wilderness IMPROVE
Required sampling frequency (e.g. 1:3 excluding exceptional events/1:1 including exceptional events)	1:3
Sampling season (MM/DD-MM/DD)	01/01-12/31
Probe height (meters)	4 meters
Distance from supporting structure (meters)	2 meters
Distance from obstructions on roof. Include horizontal dist. + vertical height above probe for obstructions nearby (meters)	No obstructions on/near the roof
Distance from obstructions not on roof. Include horizontal distance + vertical height above probe for obstructions nearby (meters)	18 meters Unable to determine obstruction height above probe from AQS or site operator
Distance from tree drip lines (meters)	15 meters
Distance to furnace or incinerator flue (meters)	N/A
Distance between monitors fulfilling a QA collocation requirement (meters)	N/A
Unrestricted airflow (degrees around probe/inlet or percentage of monitoring path)	360 degrees
Probe material for reactive gases $NO/NO_2/NO_y$, SO_2 O_3; PAMS: VOCs, Carbonyls (e.g. Pyrex, stainless steel, Teflon)	N/A
Residence time for reactive gases $NO/NO_2/NO_y$, SO_2 O_3; PAMS: VOCs, Carbonyls	N/A
Will there be changes in the next 18 months? (Y/N)	No
Is it suitable for comparison against the annual $PM_{2.5}$? (Y/N)	No
Frequency of flow rate verification for manual PM samplers, including Pb samplers	Unable to determine from AQS or site operator
Frequency of flow rate verification for automated PM analyzers	N/A
Frequency of one-point QC check for gaseous instruments	N/A

Local site name	Jarbidge Wilderness IMPROVE
Date of Annual Performance Evaluation conducted in the past calendar year for gaseous parameters (MM/DD/YYYY)	N/A
Date of two semi-annual flow rate audits conducted in the past calendar year for PM monitors (MM/DD/YYYY, MM/DD/YYYY)	Unable to determine from AQS or site operator

Figure 11: Mahoney Forest Service IMPROVE Station, Jarbidge, NV

Appendix A – Comment Submittal Information

This 2023 Ambient Air Monitoring Network Plan was posted on the NDEP website for review and comment for thirty (30) days starting May 23, 2023 and ending June 23, 2023.

Comments were directed to:
Elizabeth Grainey (egrainey@ndep.nv.gov)

or mailed to,
Elizabeth Grainey
Ambient Monitoring Program
Bureau of Air Quality Planning
901 S. Stewart Street, Suite 4001
Carson City, Nevada 89701

Appendix B – Lake Tahoe Nevada Carbon Monoxide Area's Second Limited Maintenance Plan, Surrogate Monitoring Report

In 2003, the Lake Tahoe area in Nevada was re-designated from nonattainment to attainment for the 1971 CO NAAQS. Under the CAA, the first 10-year Limited Maintenance Plan (LMP) was approved in 2004. The NDEP-BAQP submitted the second 10-year LMP in 2012 and submitted a revision with supplemental documentation in 2016. The EPA published their approval on June 7, 2017 (82 FR 26351), effective July 7, 2017.

With the second 10-year LMP, a surrogate monitoring approach was implemented in lieu of CO monitoring. The NDEP-BAQP uses monthly average daily traffic (MADT) counts for its surrogate monitoring. The season for MADT runs from October 1 of the current year to March 31 of the following year. To use MADT as a surrogate CO monitoring method, the NDEP-BAQP conducts an annual review of the seasonal traffic volumes in the Tahoe Basin using the data from the Nevada Department of Transportation's permanent automatic traffic recorders in Stateline and Incline Village, Nevada. The NDEP-BAQP compares the latest rolling three-year average of the MADT volumes against the baseline MADT average established by the traffic volume data collected during the 2008-09, 2009-10, and 2010-11 seasons. The baseline traffic volumes calculated by averaging the three winter seasons, 2008-09 through 2010-11 are, 1) Incline Village: 10,260; and 2) Stateline: 24,201.

If the MADT count increases by more than 25 percent (%) when comparing the most recent, consecutive rolling three-year averaging period to the baseline period, at either the Stateline or the Incline Village monitor, then the state will conduct a CO monitoring study alongside the surrogate MADT method during the period October 1 through March 31 immediately following the MADT review, using the Harvey's monitor to determine the actual CO levels in ambient air. The NDEP-BAQP retains the monitoring station at Stateline (located at Harvey's Resort and Hotel on Hwy 50) intact, so that monitoring can be resumed soon after it is triggered. The NDEP-BAQP commits to having the necessary equipment available to meet the timeframe for resumed monitoring.

If the MADT review triggers monitoring, the monitoring data will be submitted to AQS. If the initial or any subsequent monitoring triggered by the annual MADT count analysis results in two or more verified 8-hour average concentrations greater than 85% of the CO NAAQS, excluding exceptional events or events that would otherwise meet the criteria of the Exceptional Events Rule but are below the level of the standard, then the contingency measures process committed to in the first 10-year LMP (Carbon Monoxide Redesignation Request and Limited Maintenance Plan, October 2003. p. 16) will apply. The NDEP will inform USEPA and initiate the contingency process described in Section 4 immediately upon the occurrence of a second verified 8-hour average concentration greater than 85% of the CO NAAQS.

Based on the results of the initial six months of CO monitoring and MADT tracking, the NDEP will determine whether continued CO monitoring is necessary. The NDEP is expecting that fluctuations in the 3-year rolling average seasonal MADT will occur and that such fluctuations should be considered in relation to the monitored CO observations to determine if the CO monitoring can be discontinued and the surrogate approach alone continued. The NDEP recognizes that the priority in establishing appropriate criteria for discontinuing monitoring is to allow fluctuations in MADT to occur, while leaving a sufficient safety buffer between the monitored CO levels and the NAAQS (for instance, to account for variability in climatic conditions). Table 4 shows the decision matrix the NDEP will use in determining whether or not to return to the surrogate method only. Table 4 assumes that monitoring is in effect; Table 4 is used to determine whether or not to continue monitoring.

Table 4. Decision Matrix to Determine Whether to Continue CO Monitoring

Percent Change in the 3-year Rolling Average Seasonal MADT from the Baseline	Second High of the 8-hour Average CO Concentrations as Percent of NAAQS*			
	≤ 50%	> 50 and ≤ 65%	> 65 and ≤ 75%	> 75%
≤ 20%	S	S	S	M
> 20 and ≤ 25%	S	S	M	M
> 25 and ≤ 30%	S	M	M	M
> 30%	S	M	M	M

Key: S=rely on surrogate monitoring only; M=continue to monitor in the following season.
* Exceptional events or events that would otherwise meet the criteria of the Exceptional Events Rule but are below the level of the standard will be excluded from the determination of the second high.

After an initial CO monitoring trigger event and each time CO monitoring is discontinued and the surrogate method only is operative, the MADT threshold for the CO monitoring trigger will be increased by an additional factor of five percent (e.g., 30%, 35%) above the baseline. However, the criteria in Table 4 will not change. The NDEP's annual review and evaluation of MADT for the preceding season will be conducted, even if monitoring is ongoing, and included in the ANP each year through the end of the second 10-year maintenance period (2024). If the MADT count increases by more than the current threshold when compared to the baseline period, monitoring will be resumed or continued during the CO season immediately following the MADT review.

Initial trigger levels are 30,251 for the Stateline MADT and 12,825 for the Incline Village MADT. If the percent increase does not exceed 25%, then it will be assumed that the ambient CO concentrations in the affected area have remained relatively unchanged. The rolling three-year MADT volume for October 2022 – March 2023 is 11,001 for Incline Village (Figure 12) and 22,892 for Stateline (Figure 13). The percent increase of the current 2023 season over the baseline season for Incline Village is 7.2%. Stateline experienced a decrease during the current 2023 season from the baseline season by 5.4%. Neither of these meets the threshold for actual monitoring. Note that, due to circumstances beyond NDEP's control, data was not available for the Incline Village traffic count station for March 2023. According to Stephen Helms, Nevada Department of Transportation (personal communication, May 8, 2023):

> Unfortunately the site went down during March due to the extensive amount of snow which ultimately damaged the equipment and wasn't able to collect any data.

NDEP found no monthly trend when analyzing March MADT counts from 2008 to 2022. Data for March 2023 was estimated by averaging the monthly data for March 2008 through 2022. March 2020 was not included in the average since the MADT count was lower than normal due to COVID-19 shutdowns.

Air quality monitoring was not triggered during the 2023 CO season, therefore contingency measures were not triggered.

Figure 12: Incline Village Monthly Average Daily Traffic Counts

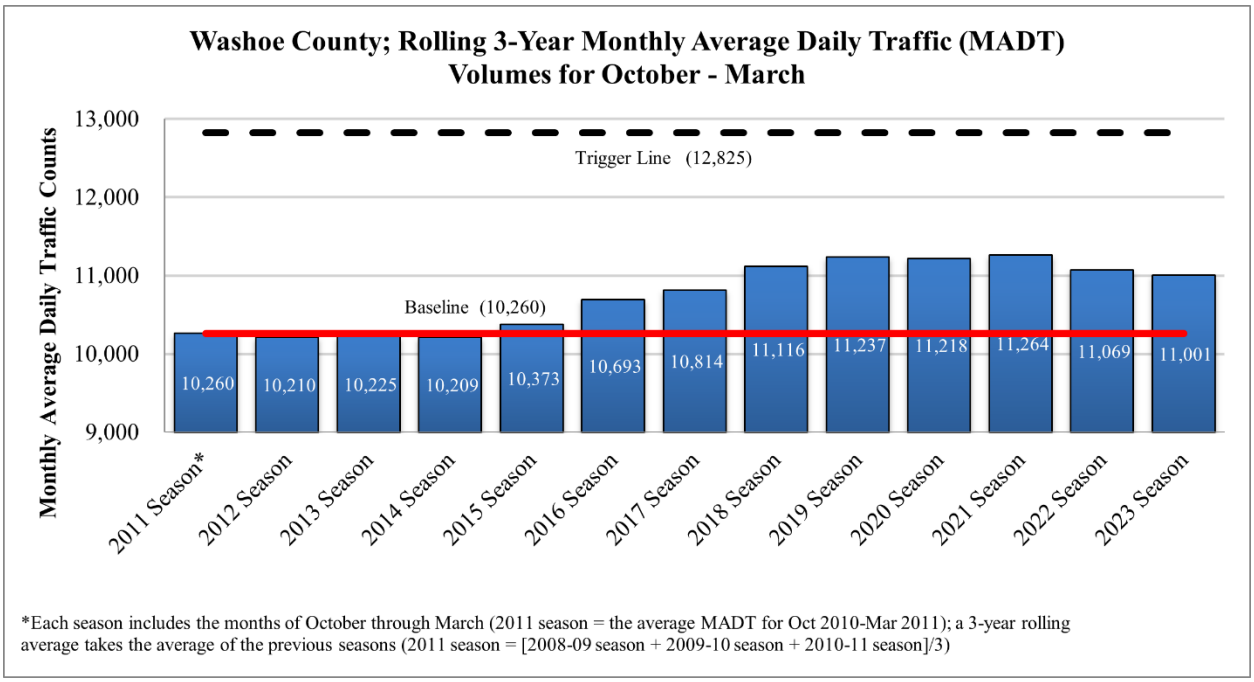
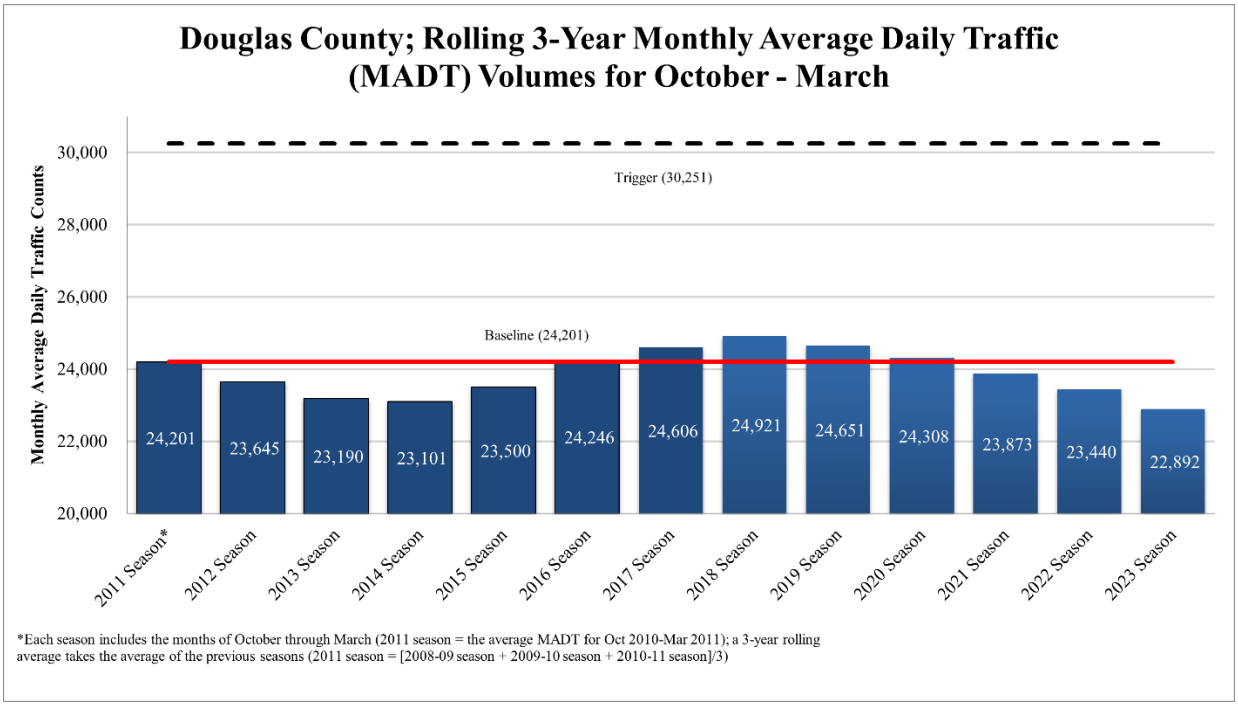


Figure 13: Stateline Monthly Average Daily Traffic Counts



Appendix C – 2023 Annual Emission Report for the 2015 SO_2 Data Requirements Rule, North Valmy Generating Station, Nevada Division of Environmental Protection

INTRODUCTION / HISTORY

On June 22, 2010, the Environmental Protection Agency (EPA) revised the primary National Ambient Air Quality Standard (NAAQS) for sulfur dioxide (SO_2) by promulgating a new primary SO_2 standard at a level of 75 parts per billion (ppb) (196 $\mu g/m^3$), based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. The Primary NAAQS for Sulfur Dioxide, Final Rule[1] was effective on August 23, 2010. (75 FR 35520)

August 21, 2015 the EPA published the final Data Requirements Rule (DRR) (40 CFR Part 51, Subpart BB) for the 2010 1-hour SO_2 primary NAAQS (effective on September 21, 2015).[2] Per the requirements of the DRR (§ 51.1203(b)), the Nevada Division of Environmental Protection (NDEP) sent a list to the EPA identifying one source, North Valmy Generating Station (Valmy) that exceeded 2,000 tons per year (tpy) of SO_2 emissions (January 13, 2016).

Per the DRR for each area identified that would be characterized through air quality modeling, a modeling protocol was required to be submitted to the EPA Regional Administrator by July 1, 2016 (§ 51.1203(d)). June 24, 2016 the NDEP submitted a modeling protocol for Valmy to the EPA. The Modeling Protocol described the NDEP's methodology for conducting the modeling analysis.

The NDEP adopted the modeling approach to characterize the ambient air quality surrounding Valmy, but it firmly believes that modeling is not an appropriate substitute for monitoring for attainment designations (Comments to DDR Docket EPA-HQ-OAR-2013-0711, July 14, 2014), and monitoring data are not available in HA64 to make an attainment or nonattainment designation. Section 107(d)(1)(A)(iii) of the Clean Air Act states that an unclassifiable designation is appropriate for "any area that cannot be classified on the basis of available information as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant."

The DRR also requires for sources proposed to be characterized by modeling, that a modeling analysis be conducted and submitted to the EPA by January 13, 2017 (§ 51.1203(d)(2)) which states that "Modeling analyses shall characterize air quality based on either actual SO_2 emissions from the most recent three years, or on any federally enforceable allowable emission limit or limits established by the air agency or the EPA and that are effective and require compliance by January 13, 2017". The NDEP submitted the modeling analysis to the EPA Region 9 January 4,

[1] https://www.gpo.gov/fdsys/pkg/FR-2010-06-22/pdf/2010-13947.pdf
[2] https://www.gpo.gov/fdsys/pkg/FR-2015-08-21/pdf/2015-20367.pdf

2017 with updated recommendations for the hydrographic area HA64 of the State of Nevada to be designated unclassifiable.

NDEP conducted the modeling for Valmy using meteorological data from years 2012, 2013 and 2014 and actual emissions data, Continuous Emission Monitoring System (CEMS), for Boiler Units #1 and #2 from years 2013, 2014, and 2015. The modeling demonstrated that ambient concentrations of SO_2 at Valmy would be below the 3-year average of the annual (99^{th} percentile) daily maximum 1-hour average concentration less than or equal to 75 ppb. The 4^{th} high max daily 1-hour 3-year average value at Valmy was 166 $\mu g/m^3$ (66 ppb), which equates to 85% of the standard.

Per the SO_2 DRR Subpart BB § 51.1205(b) "Ongoing data requirements, for modeled areas", "For any area where modeling of actual SO_2 emissions serve as the basis for designating such area as attainment for the 2010 SO_2 NAAQS, the air agency shall submit an annual report to the EPA Regional Administrator by July 1 of each year, either as a stand-alone document made available for public inspection, or as an appendix to its Annual Monitoring Network Plan (also due on July 1 each year under 40 CFR 58.10), that documents the annual SO_2 emissions of each applicable source in each such area and provides an assessment of the cause of any emissions increase from the previous year. The first report for each such area is due by July 1 of the calendar year after the effective date of the area's initial designation."

EPA completed the third round of sulfur dioxide designations December 21, 2017 and the entire State of Nevada was designated attainment/unclassifiable based on the modeling analysis.

EMISSION DATA

The initial modeling analysis used annual SO_2 CEMS data from Boilers #1 and #2 from years 2013 through 2015. Boilers #1 and #2 are the main sources of SO_2 emissions at Valmy. Other minor emission units within the facility were modeled using their permitted allowable emissions. No other stationary sources significantly contribute to SO_2 emissions in the area. The table below shows SO_2 CEMS data for Valmy from 2013 through 2022. Annual emissions of SO_2 have shown significant decreases for both Boiler Units #1 and #2 since 2013 and 2014.

Table 5: Annual SO_2 CEMS data (tpy) North Valmy Generating Station Units 1 and 2 for 2013 to 2022 (Air Markets Id 8224)[3]

Year/ Unit (tpy)	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Boiler Unit #1	5,123	6,363	4,470	1,848	1,232	2,357	4,041	1,458	1646	2,722
Boiler Unit #2	1,543	1,454	413	431	356	716	517	461	747	736
Total emissions Units 1 & 2	6,666	7,817	4,883	2,279	1,558	3,073	4,558	1,919	2,393	3,458

The annual emissions of SO_2 for 2022 was 3,458 tons. This amounts to a 45% increase from 2021, which is due to a 26 percent increase in heat input for Unit #1 in 2022 and variation in the SO_2 emissions rate for both Units. However, the 2022 emissions of SO_2 remain substantially less than the 6,455 tons per year average for 2013 through 2015, used for the modeling analysis, which showed that Valmy was below the 1-hour SO_2 NAAQS. Just as in the previous six years, the annual emissions are considerably less than the 2013 through 2015 modeling analysis period. Therefore, the NDEP maintains that no additional modeling is required at this time.

[3] https://ampd.epa.gov/ampd/ (Data taken from the EPA Air Markets Program database and confirmed by review of annual emissions reporting from the source to NDEP)