State of Utah

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DIVISION OF AIR QUALITY
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DAQP-069-21

August 25, 2021

Carl Daly, Acting Director of Air and Radiation Division
U.S. EPA Region 8
1595 Wynkoop Street
Denver, Colorado 80202-1129

Dear Mr. Daly:

Please find enclosed the Annual Monitoring Network Plan 2021 for the state of Utah. This plan is available online through our website (https://deq.utah.gov/division-air-quality/). The Division of Air Quality established a 30-day comment period from June 1, 2021, to June 30, 2021. Comments were received from three reviewers and these comments have been included along with responses from DAQ.

The report includes information on the air monitoring network and plans for future network modifications.

If you have any questions, please contact Kati Chachere, Environmental Scientist, at 385-261-0813 or kchachere@utah.gov.

Sincerely,

Bryce C. Bird
Director

BCB:ABC:jf

Enclosed: Annual Monitoring Network Plan 2021 for Utah

UTAH DEPARTMENT of ENVIRONMENTAL QUALITY

Division of Air Quality

Annual Monitoring Network Plan 2021

Table of Contents

Introduction....3

Statement of Compliance....3

Primary Monitor Designation....4

Network Changes....5

Pending Items....5

Network Map....7

Site Parameters....8

Current Site Addresses....9

Detailed Site Information....11

Introduction

Each year, the Air Monitoring Section of the Utah Division of Air Quality (DAQ) produces a Monitoring Network Plan, as required by federal regulations. The purpose of this document is to acquaint the State of Utah's stakeholders (public, private, government) and other entities of the current status and the upcoming changes to the State's Air Quality Monitoring Network and provides evidence of the Utah Division of Air Quality's federal compliance following the Code of Federal Regulations 40 Code of Federal Register (CFR) § 58. The DAQ continually seeks input from the aforementioned parties on improvements to the current level of service or to provide additional accommodations where requested and needed. The Annual Monitoring Network Plan reflects the necessary network changes DAQ implements to enhance the quality, coverage, reliability, and cost efficiency of the division's monitoring efforts.

In 2020-2021, the Air Quality Monitoring Network underwent the following changes:

- Precision and span checkpoints on all gaseous monitors that were changed to reflect the CFR Appendix A, 3.1.1 have been reporting data through the 2020 pandemic with minimum disruption.
- The Inland Port site finished construction at the end of 2020 and was fully functional by May/June 2021. Gaseous instrumentation has been deployed and connected to the monitoring network. Particulate instrumentation has started to report data.

Statement of Compliance

According to the requirement of 40 CFR § 58, Subpart B, all stations and monitors deployed within Utah's air quality monitoring network meet the requirements of appendices A, C, D, and E of the aforementioned subpart. As of 2021, Utah's Air Quality Monitoring Network has no active Prevention of Serious Deterioration (PSD) air monitoring program stations; appendix B does not apply to any stations or monitors in Utah because this appendix pertains to PSD air monitoring stations.

Primary Monitor Designation

A primary monitor is defined as the one:

> *"identified by the monitoring organization that provides concentration data used for comparison to the NAAQS. For any specific site, only one monitor for each pollutant can be designated in AQS [EPA's data management system] as the primary monitor for a given period of time. The primary monitor identifies the default data source for creating a combined site record for purposes of NAAQS comparisons."* (40 CFR 58.1)

Each year, DAQ carefully chooses and designates suitable primary monitors for each monitoring station and each pollutant according to data completeness and integrity. The primary monitors are designated prior to data certification in Q1 of the following year during the regular QC process.

Federal equivalent method (FEM) $PM_{2.5}$ monitor data was not used prior to January 1, 2015, as it did not meet quality assurance requirements. As of January 1, 2015, FEM $PM_{2.5}$ monitoring was used for data substitution and co-locations as required in 49 CFR Part 50 Appendix N and 40 CFR Part 58 Appendix A 3.2. This table lists the designated Pollutant Occurrence Code (POC) for the primary monitor designations for the year 2020.

Site Name	Site Number	POC
SM	490050007	1
BV	490110004	1
CV	490352005	4
HW	490353006	4
RP	490353010	1
H3	490353013	5
ED	490450004	1
LN	490494001	5
SF	490495010	3
RS	490130002	3
EN	490210005	1
UT	490353015	1
NR	490354002	1
V4	490471004	4
HC	490530007	3
HV	490571003	1

Network Changes

Utah's Air Quality Monitoring Network will undergo several changes during 2021.

- Lake Park Site Installation at Monticello Academy
  The new site that was installed at the Monticello Academy (2782 S Corporate Park Drive, West Valley City, UT, 84120) on March 7, 2020 and became fully functional in Q3 of 2020.

- Inland Port Site Installation at new State Prison
  A new site has been installed at the new State Prison located north of I-80 on the southern border of the Great Salt Lake in Salt Lake County. Power has been installed and network monitoring is currently being configured. It is the DAQ's plan to have this station fully operational in Q2 of 2021. A proposed list of instrumentation at this site includes meteorological variables, fine particulate matter ($PM_{2.5}$), ozone (O_3), oxides of nitrogen (NO_x), and black carbon (BC).

Pending Items

- Relocation of Rose Park Station to New Air Monitoring Center (AMC)
  The monitoring station located in the Rose Park (about 1 mile away) may be moved to the new AMC location. Data correlation and comparison will be conducted for a year and then we will re-evaluate the proposed consolidation in consultation with EPA.

- Relocation of Spanish Fork Site
  Due to construction at the Spanish Fork (SF) airport site, the DAQ will be moving the location of the site, a few hundred feet from its current location to a new location at the same airport. The relocation has been approved by the EPA, the Federal Aviation Administration, and the City of Spanish Fork. Construction of the new location began in March of 2021.

- Second Near Road Site
  A second Near Road site is required in the Salt Lake City Metropolitan Statistical Area (MSA). Sites are being considered and evaluated for this in consultation with EPA. The timing on the site is still uncertain and will depend on a number of factors including budget and resources.

- Relocation of Brigham City Site
  DAQ is currently searching for a suitable site for a replacement for the Brigham City station.

- Future New Sites Due to Increased Population
  The DAQ is waiting for the population census results to determine if new monitoring sites will be needed for cities reaching the population minimums for State and Local Air Monitoring Stations (SLAMS) by the Environmental Protection Agency (EPA) set in the (CFR).

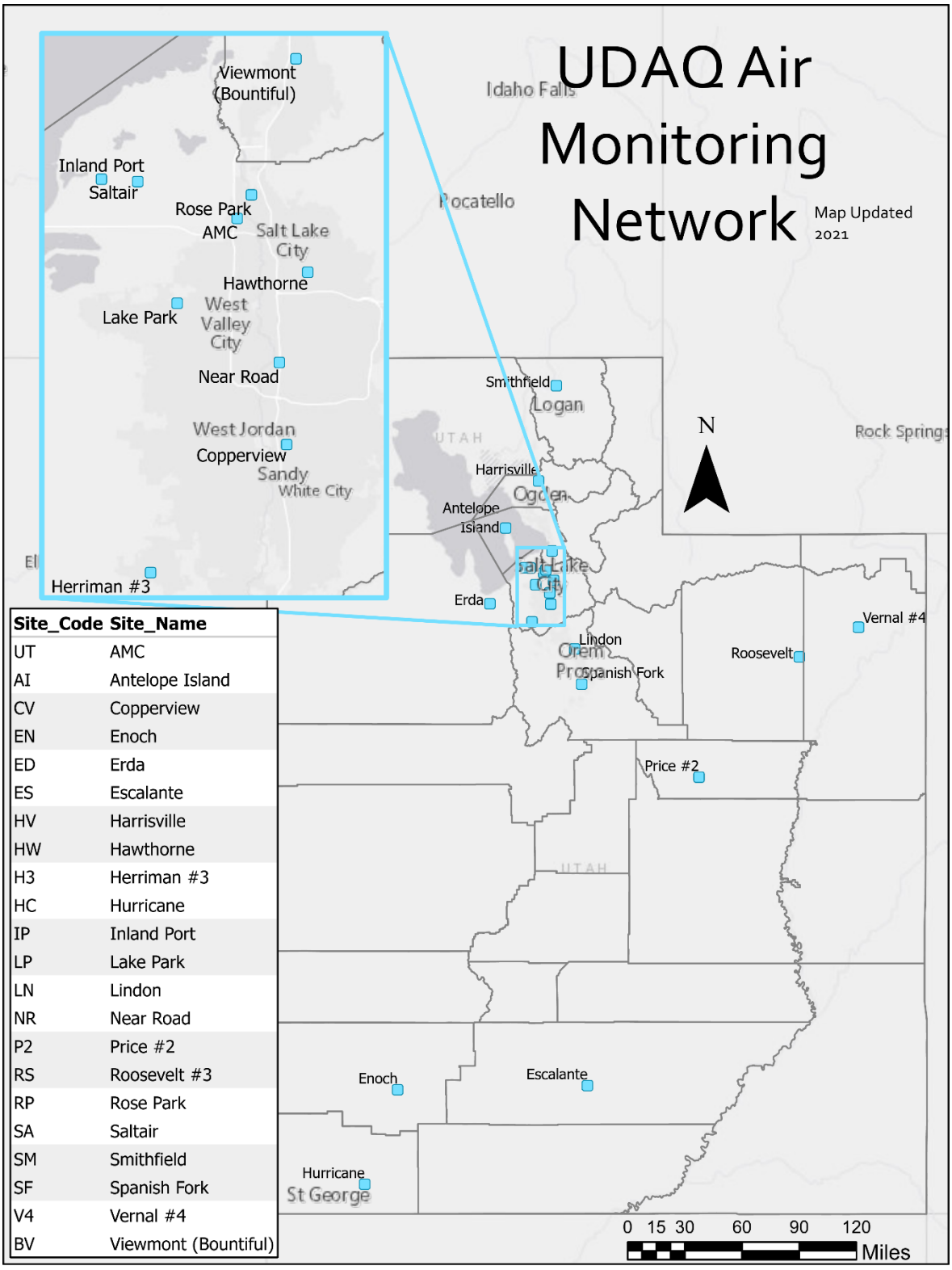
- ### Future New Site in Moab

  The DAQ plans to install a PM2.5 monitor within the City limits of Moab. DAQ is currently searching for a suitable site and is coordinating with the local health department (LHD), local officials and DAQ modelers to select a suitable location.

- ### Future New Sites in the Uinta Basin

  The DAQ is currently searching for suitable sites in the Uinta Basin area for future air monitoring stations in order to meet enhanced monitoring plan (EMP) requirements as the Basin may be redesignated to moderate nonattainment for ozone. Moderate nonattainment areas are required to have in place an EMP as per the Photochemical Assessment Monitoring Stations (PAMS) rule. The DAQ expects the EPA to take the lead on any PAMS requirements in the Basin as the monitors with the highest levels of ozone are not located on state lands. The timing of these sites is currently undetermined.

Current Monitoring Network



Site_Code	Site_Name
UT	AMC
AI	Antelope Island
CV	Copperview
EN	Enoch
ED	Erda
ES	Escalante
HV	Harrisville
HW	Hawthorne
H3	Herriman #3
HC	Hurricane
IP	Inland Port
LP	Lake Park
LN	Lindon
NR	Near Road
P2	Price #2
RS	Roosevelt #3
RP	Rose Park
SA	Saltair
SM	Smithfield
SF	Spanish Fork
V4	Vernal #4
BV	Viewmont (Bountiful)

Site Parameters

County	Site	PM 2.5			PM 10			PM Coarse	Speciation PM 2.5	BC	O_3	NO_x	NO_y	SO_2	CO	NH_3	Toxics PAMS	MET.
		Primary	Co-located	Continuous	Primary	Co-located	Continuous											
Cache	Smithfield	1/1	1/1	X	1/1	1/6	X	X	X	X	X	X						X
Weber	Harrisville	1/1	1/1	X	1/1						X	X			X			X
Davis	Bountiful (Viewmont HS)	1/1	1/1	X	1/1	1/6			X		X	X					X	X
	Antelope Island																	X
Salt Lake	AMC	1/1	1/1	X	1/1						X	X		X	X	X		X
	Hawthorne	1/1	1/1	X	1/1			X	X		X	X	X	X	X	X	X	X
	Herriman #3	1/1		X	1/1	1/1	X	X			X	X						X
	Lake Park	1/1	1/1	X	1/1					X	X	X			X			X
	Near Road	1/1		X							X	X			X			
	Inland Port			X						X	X	X						X
	Rose Park	1/1	1/1	X							X	X		X	X			X
	Saltair																	X
	Copperview	1/1		X							X	X		X	X			X
Tooele	Erda	1/1	1/1	X							X	X						X
Utah	Lindon	1/1	1/6	X	1/1			X	X		X	X			X			X
	Spanish Fork	1/1	1/1	X							X							X
Uintah	Vernal #4	1/1		X							X	X						X
Duchesne	Roosevelt	1/1		X							X	X						X
Carbon	Price #2										X	X						X
Iron	Enoch	1/1		X							X	X						X
Garfield	Escalante										X							
Washington	Hurricane	1/1		X							X	X						X

Current Site Addresses

County	EPA AIRS Code	Station Name - Code	Station Address	UTM Northing	UTM Easting	Elevation (meters)
Cache	490050007	Smithfield (SM)	675 West 220 North, Smithfield	4632671	429270	1377
Weber	490571003	Harrisville (HV)	425 West 2550 North, Harrisville	4572829	417416	1331
Davis	490110004	Bountiful (BV)	171 West 1370 North, Bountiful	4528360	425503	1309
	490116001	Antelope Island (AI)	Great Salt Lake, Davis County	4543850	396506	1359
Salt Lake	490353011	Air Monitoring Center (UT)	240 N 1950 West, Salt Lake City	4514420	420161	1286
	490353006	Hawthorne (HW)	1675 South 600 East, Salt Lake City	4509639	426361	1306
	490353012	Herriman #3 (H3)	14058 Mirabella Drive, Herriman	4483371	412184	1534
	490353005	Lake Park (LP)	2782 S. Corporate Park Dr., West Valley City	4507037	414801	1295
	490354002	Near Road (NR)	4951 South Galleria Dr., Murray	4501725	423823	1295
	490351007	Inland Port (IP)	1480 N 8000 W, Salt Lake City	4518001	408255	1285
	490353010	Rose Park (RP)	1354 West Goodwin Ave., Salt Lake City	4516479	421458	1295
	490352005	Copperview (CV)	8449 South Monroe St., Midvale	4527825	424683	1290
Utah	490494001	Lindon (LN)	50 North Main Street, Lindon	4465692	439400	1442
	490495010	Spanish Fork (SF)	Spanish Fork Airport, Spanish Fork	4443095	443761	1380

Current Site Addresses

County	EPA AIRS Code	Station Name - Code	Station Address	UTM Northing	UTM Easting	Elevation (meters)
Tooele	490450004	Erda (ED)	2163 West Erda Way, Erda	4495298	385355	1320
Duchesne	490130002	Roosevelt (RS)	290 South 1000 West, Roosevelt	4460879	584230	1588
Uintah	490471003	Vernal #4 (V4)	628 North 1700 West, Vernal	4480337	622012	1667
Carbon	490071003	Price #2 (P2)	351 South 2500 East, Price	4382915	519750	1740
Garfield	490170006	Escalante (ES)	755 West Main, Escalante	4181091	445865	1789
Washington	490530007	Hurricane (HC)	147 North 870 West, Hurricane	4117231	295368	992
Iron	490210005	Enoch (EN)	3840 North 325 East, Enoch	4179782	318903	1692

Detailed Site Information

Site:	Air Monitoring Center (UT)	**Longitude:**	-111.9461	**Station Type:**	SLAMS
AQS#:	49-035-3015	**Latitude:**	40.7769	**MSA:**	Salt Lake City
Address:	240 North 1950 West	**Elevation (m):**	1296		
City:	Salt Lake City				
County:	Salt Lake				

Site Objective:
This site is established to replace the Rose Park (RP) site as an area of further investigation of $PM_{2.5}$ Salt Lake County.
Does the site meet the objective?
Yes, all objectives are met.
Site Description:
This site is located at the Air Monitoring Center, in the city of Salt Lake, Salt Lake County.
Can data from this site be used to evaluate NAAQS? Yes

Gaseous/Particulate Parameters:

Parameter	Sampling &Analysis Method	Operating Schedule	Monitoring Objective	Spatial Scale
Trace Nitrogen Dioxide	Instrumental Chemiluminescence	Continuous	Population Exposure	SLAMS - High Neighborhood
Ozone	Instrumental Ultraviolet	Continuous	Population Exposure	SLAMS - High Neighborhood
Carbon Monoxide	Instrumental Gas Phase Correlation	Continuous	Population Exposure	SLAMS - High Neighborhood
Sulfur Dioxide	Pulsed Fluorescence	Continuous	Population Exposure	SLAMS - Population Neighborhood
$PM_{2.5}$	Manual Gravimetric	Daily	Population Exposure	SLAMS - Population Neighborhood
PM_{10}	Manual Gravimetric	Daily	Population Exposure	SLAMS - Population Neighborhood
$PM_{2.5}$ Real Time	Synchronized Ambient Real Time Particulate Monitor	Continuous	Air Quality Index	SLAMS - Population Neighborhood
PM_{coarse}	Manual Gravimetric Subtraction	Daily	Population Exposure	SLAMS - Population Neighborhood

Detailed Site Information

Meteorological Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Tower Height	Spatial Scale
Ambient Pressure	Barometric Pressure Transducer	Continuous	10 meters	Urban
Relative Humidity	Electronic Thin Film	Continuous	10 meters	Urban
Ambient Temperature	Electronic Resistance	Continuous	10 meters	Urban
Wind Direction	Sonic 2D	Continuous	10 meters	Urban
WD Sigma	Electronic EPA Method	Continuous	10 meters	Urban
Wind Speed	Sonic 2D	Continuous	10 meters	Urban

Site:	Antelope Island (AI)	**Longitude:**	-112.2313	**Station Type:**	SPM
AQS#:	49-011-6001	**Latitude:**	41.0393	**MSA:**	Ogden-Clearfield
Address:	Antelope Island	**Elevation (m):**	1359		
City:	N/A				
County:	Davis				

Site Objective:
This site is established to collect meteorological information for air quality modeling inputs.
Does the site meet the objective?
Yes, all objectives are met.
Site Description:
This site is located at Antelope Island State Park, near the ranger residences, in Davis County.
Can data from this site be used to evaluate NAAQS? No

Meteorological Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Tower Height	Spatial Scale
Relative Humidity	Electronic Thin Film	Continuous	6 meters	Urban
Ambient Temperature	Electronic Resistance	Continuous	6 meters	Urban
Wind Direction	Electronic Resistance Level 1	Continuous	6 meters	Urban
WD Sigma	Electronic EPA Method	Continuous	6 meters	Urban

Detailed Site Information

Site:	Bountiful Viewmont (BV)	**Longitude:**	-111.8845	**Station Type:**	SLAMS
AQS#:	49-011-0004	**Latitude:**	40.903	**MSA:**	Ogden-Clearfield
Address:	171 West 1370 North	**Elevation (m):**	1309		
City:	Bountiful				
County:	Davis				

Site Objective:
The Bountiful Viewmont site is established to determine public exposure to air pollution. The site also monitors emissions from nearby oil refineries and local sand and gravel operations. Previous monitoring and saturation studies have recorded high ozone concentrations. This site is chosen for intensive speciation of $PM_{2.5}$ under the EPA Chemical Speciation Network (CSN) and gaseous volatile organic compounds under the EPA National Air Toxics Trends Station (NATTS) Network including hexavalent chromium and carbonyl compounds. Nitrogen dioxide is monitored in support of the ozone monitoring.

Does the site meet the objective?
Yes, all objectives are met.

Site Description:
This site is located near Viewmont High School at the north end of the city of Bountiful, Davis County.

Can data from this site be used to evaluate NAAQS? Yes

Gaseous/Particulate Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Monitoring Objective	Spatial Scale
Trace Nitrogen Dioxide	Instrumental Chemiluminescence	Continuous	Population Exposure	SLAMS - Population Neighborhood
Ozone	Instrumental Ultraviolet	Continuous	Population Exposure	SLAMS - High Neighborhood
$PM_{2.5}$	Manual Gravimetric	Daily	Population Exposure	SLAMS - Population Neighborhood
$PM_{2.5}$ Real Time	Synchronized Hybrid Ambient Real Time Particulate Monitor	Continuous	Air Quality Index	SLAMS - Population Neighborhood
PM_{10}	Manual Gravimetric	1 in 6 days	Population Exposure	SLAMS - Population Neighborhood
$PM_{2.5}$ Speciation	Manual EPA CSN	1 in 6 days	Population Exposure	SLAMS - Population Neighborhood
VOC	Manual EPA NATTS	1 in 6 days	Population Exposure	SLAMS - Population Neighborhood
Semi-volatile Organic Carbons	Manual EPA NATTS	1 in 6 days	Population Exposure	SLAMS - Population Neighborhood
Carbonyl Compounds	Manual EPA NATTS	1 in 6 days	Population Exposure	SLAMS - Population Neighborhood
Black Carbon	Aethalometer	Continuous	Population Exposure	SLAMS - Population Neighborhood

Detailed Site Information

Meteorological Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Tower Height	Spatial Scale
Ambient Pressure	Barometric Pressure Transducer	Continuous	1 meter	Urban
Relative Humidity	Electronic Thin Film	Continuous	10 meters	Urban
Ambient Temperature	Electronic Resistance	Continuous	10 meters	Urban
Wind Direction	Electronic Resistance Level 1	Continuous	10 meters	Urban
WD Sigma	Electronic EPA Method	Continuous	10 meters	Urban
Wind Speed	Electronic Chopped Signal Level 1	Continuous	10 meters	Urban

Detailed Site Information

Site:	Copperview (CV)	**Longitude:**	-111.894127	**Station Type:**	SLAMS
AQS#:	490352005	**Latitude:**	40.597938	**MSA:**	Salt Lake City
Address:	8449 South Monroe St.	**Elevation (m):**	1334		
City:	Midvale				
County:	Salt Lake				

Site Objective:
This site is established to assess population exposure in southeast Salt Lake County.
Does the site meet the objective?
Yes, all objectives are met.
Site Description:
This site is located in a neighborhood area of Midvale in Salt Lake County.
Can data from this site be used to evaluate NAAQS? Yes

Gaseous/Particulate Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Monitoring Objective	Spatial Scale
Trace Carbon Monoxide	Instrumental Gas Phase Correlation	Continuous	Population Exposure	SLAMS - High Neighborhood
Trace Nitrogen Dioxide	Instrumental Chemiluminescence	Continuous	Population Exposure	SLAMS - High Neighborhood
Ozone	Instrumental Ultraviolet	Continuous	Population Exposure	SLAMS - High Neighborhood
Trace Sulfur Dioxide	Pulsed Fluorescence	Continuous	Population Exposure	SLAMS - Population Neighborhood
$PM_{2.5}$	Manual Gravimetric	Daily	Population Exposure	SLAMS - Population Neighborhood
$PM_{2.5}$ Real Time	Continuous Gravimetric	Continuous	Population Exposure	SLAMS - Population Neighborhood

Meteorological Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Tower Height	Spatial Scale
Ambient Temperature	Electronic Resistance	Continuous	10 meters	Urban
Wind Direction	Electronic Resistance Level 1	Continuous	10 meters	Urban
WD Sigma	Electronic EPA Method	Continuous	10 meters	Urban
Wind Speed	Electronic Chopped Signal Level 1	Continuous	10 meters	Urban
Ambient Pressure	Barometric Pressure Transducer	Continuous	10 meters	Urban

Detailed Site Information

Site:	Enoch (EN)	**Longitude:**	-113.055525	**Station Type:**	SLAMS
AQS#:	490210005	**Latitude:**	37.74743	**MSA:**	Not in MSA
Address:	3840 North 325 East	**Elevation (m):**	1692		
City:	Enoch				
County:	Iron				

Site Objective:
This site is established to contain SPM equipment to assess population exposure in Iron County prior to full-scale monitoring.
Does the site meet the objective?
Yes, all objectives are met.
Site Description:
This site is located in a county area near Enoch.
Can data from this site be used to evaluate NAAQS? Yes

Gaseous/Particulate Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Monitoring Objective	Spatial Scale
Trace Nitrogen Dioxide	Instrumental Chemiluminescence	Continuous	SPM	N/A
Ozone	Instrumental Ultraviolet	Continuous	SPM	N/A
$PM_{2.5}$ Real Time	Synchronized Hybrid Ambient Real Time Particulate Monitor	Continuous	SPM	N/A

Meteorological Parameters:

Parameter	Analysis Method	Operating Schedule	Tower Height	Spatial Scale
Ambient Temperature	Electronic Resistance	Continuous	10 meters	Urban
Wind Direction	Electronic Resistance Level 1	Continuous	10 meters	Urban
WD Sigma	Electronic EPA Method	Continuous	10 meters	Urban
Wind Speed	Electronic Chopped Signal Level 1	Continuous	10 meters	Urban

Detailed Site Information

Site:	Erda (ED)	**Longitude:**	-112.3550	**Station Type:**	SLAMS
AQS#:	49-045-0004	**Latitude:**	40.6005	**MSA:**	Salt Lake City
Address:	2163 West Erda Way	**Elevation (m):**	1320		
City:	Erda				
County:	Tooele				

Site Objective:

This site is established to determine population exposure to air pollutants.

Does the site meet the objective?

Yes, all objectives are met.

Site Description:

This site is located in the city of Erda, Tooele County. It is the main monitor for Tooele county.

Can data from this site be used to evaluate NAAQS? Yes

Gaseous/Particulate Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Monitoring Objective	Spatial Scale
Ozone	Instrumental Ultraviolet	Continuous	Population Exposure	SLAMS - Population Neighborhood
Trace Nitrogen Dioxide	Instrumental Chemiluminescence	Continuous	Population Exposure	SLAMS - High Neighborhood
$PM_{2.5}$	Manual Gravimetric	Daily	Population Exposure	SLAMS - Population Neighborhood
$PM_{2.5}$ Real Time	Synchronized Hybrid Ambient Real Time Particulate Monitor	Continuous	Air Quality Index	SLAMS - Population Neighborhood

Meteorological Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Tower Height	Spatial Scale
Relative Humidity	Electronic Thin Film	Continuous	3 meters	Urban
Ambient Temperature	Electronic Resistance	Continuous	10 meters	Urban
Wind Direction	Electronic Resistance Level 1	Continuous	10 meters	Urban
WD Sigma	Electronic EPA Method	Continuous	10 meters	Urban
Wind Speed	Electronic Chopped Signal Level 1	Continuous	10 meters	Urban

Detailed Site Information

Site:	Escalante (ES)	**Longitude:**	-111.614722	**Station Type:**	SPM
AQS#:	49-017-0006	**Latitude:**	37.775556	**MSA:**	N/A
Address:	755 West Main	**Elevation (m):**	1789		
City:	Escalante				
County:	Garfield				

Site Objective:
This site is established to measure ozone near Escalante National Monument.
Does the site meet the objective?
Yes, all objectives are met.
Site Description:
This site is located at the Escalante National Monument visitor's center in Escalante, Garfield County. This site is funded by the Bureau of Land Management.
Can data from this site be used to evaluate NAAQS? Yes

Gaseous/Particulate Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Monitoring Objective	Spatial Scale
Ozone	Instrumental Ultraviolet	Continuous	Population Exposure	Regional

Detailed Site Information

Site:	Harrisville (HV)	**Longitude:**	-111.9865	**Station**	SLAMS
AQS#:	49-057-1003	**Latitude:**	41.3028	**MSA:**	Ogden-Clearfield
Address:	425 West 2550 North	**Elevation (m):**	1331		
City:	Harrisville				
County:	Weber				

Site Objective:
This site is established in response to an ozone saturation study indicating this as a potentially high ozone concentration area.
Does the site meet the objective?
Yes, all objectives are met.
Site Description:
This site is located on the grounds of Majestic Elementary School in the city of Harrisville, Weber County.
Can data from this site be used to evaluate NAAQS? Yes

Gaseous/Particulate Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Monitoring Objective	Spatial Scale
Trace Nitrogen Dioxide	Instrumental Chemiluminescence	Continuous	Population Exposure	SLAMS - Population Neighborhood
Ozone	Instrumental Ultraviolet	Continuous	Population Exposure	SLAMS - Population Neighborhood

Meteorological Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Tower Height	Spatial Scale
Ambient Temperature	Electronic Resistance	Continuous	10 meters	Urban
Wind Direction	Electronic Resistance Level 1	Continuous	10 meters	Urban
WD Sigma	Electronic EPA Method	Continuous	10 meters	Urban
Wind Speed	Electronic Chopped Signal	Continuous	10 meters	Urban

Detailed Site Information

Site:	Hawthorne (HW)	**Longitude:**	-111.8721	**Station Type:**	SLAMS
AQS#:	49-035-3006	**Latitude:**	40.7343	**MSA:**	Salt Lake City
Address:	1675 South 600 East	**Elevation (m):**	1306		
City:	Salt Lake City				
County:	Salt Lake				

Site Objective:
This site is established to represent population exposure in the Salt Lake City area. This site is also designated as the EPA NCORE site for Utah.
Does the site meet objective?
Yes, all current objectives are met. NCORE monitoring began in January 2011.
Site Description:
This site is located at Hawthorne Elementary School in the southeast section of Salt Lake City, Salt Lake County.
Can data from this site be used to evaluate NAAQS? Yes

Gaseous/Particulate Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Monitoring Objective	Spatial Scale
Ammonia	Manual NADP AMoN	Integrated 14 days	Population Exposure	SPM - Transport Regional
Trace Carbon Monoxide	Instrumental Gas Phase Correlation	Continuous	Population Exposure	SLAMS - High Neighborhood
Trace Nitrogen Dioxide	Instrumental Chemiluminescence	Continuous	Population Exposure	SLAMS - High Neighborhood
Trace Nitrogen Dioxide	Instrumental Photolysis	Continuous	Population Exposure	SLAMS - High Neighborhood
Ozone	Instrumental Ultraviolet	Continuous	Population Exposure	SLAMS - High Neighborhood
Trace NO_y	Instrumental Chemiluminescence	Continuous	Population Exposure	SLAMS - Population Neighborhood
Trace Sulfur Dioxide	Pulsed Fluorescence	Continuous	Population Exposure	SLAMS - Population Neighborhood
$PM_{2.5}$	Manual Gravimetric	Daily	Population Exposure	SLAMS - Population Neighborhood
$PM_{2.5}$ Speciation	Manual EPA CSN	1 in 3 days	Population Exposure	SLAMS - Population Neighborhood
$PM_{2.5}$ Real Time NCORE	Synchronized Ambient Real Time Particulate Monitor	Continuous	Air Pollution Index	SLAMS - Population Neighborhood
PM_{10}	Manual Gravimetric	Daily	Population Exposure	SLAMS - Population Neighborhood
PM_{coarse}	Manual Gravimetric Subtraction	Daily	Population Exposure	SLAMS - Population Neighborhood
Organic & Elemental Carbon	NIDR	Continuous	Population Exposure	SLAMS - Population Neighborhood
PAMS C2 to C12	Instrumental Gas Chromatography	Continuous	Ozone Modeling Input	Population Neighborhood
Visibility	Instrumented	Continuous	Public Information	Population Neighborhood

Detailed Site Information

Meteorological Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Tower Height	Spatial Scale
Ambient Pressure	Barometric Pressure Transducer	Continuous	3 meters	Urban
Relative Humidity	Electronic Thin Film	Continuous	10 meters	Urban
Solar Radiation	Electronic EPPLY	Continuous	4 meters	Urban
Ambient Temperature	Electronic Resistance	Continuous	10 meters	Urban
Wind Direction	Electronic Resistance Level 1	Continuous	10 meters	Urban
WD Sigma	Electronic EPA Method	Continuous	10 meters	Urban
Wind Speed	Electronic Chopped Signal Level 1	Continuous	10 meters	Urban
Mix Layer Height (MXLH)	Atmospheric Lidar	Continuous	10 meters	Urban

Detailed Site Information

Site:	Herriman #3 (H3)	**Longitude:**	-112.036305	**Station Type:**	SLAMS
AQS#:	49-035-3012	**Latitude:**	40.496408	**MSA:**	Salt Lake City
Address:	14058 Mirabella Drive	**Elevation (m):**	1534		
City:	Herriman				
County:	Salt Lake				

Site Objective:
This site is established to assess population exposure in southwest Salt Lake County.
Does the site meet objective?
Yes, all objectives are met.
Site Description:
This site is located at Fort Herriman Middle School in southwest Salt Lake County.
Can data from this site be used to evaluate NAAQS? Yes

Gaseous/Particulate Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Monitoring Objective	Spatial Scale
Ozone	Instrumental Ultraviolet	Continuous	Population Exposure	SLAMS - Population Neighborhood
Trace Nitrogen Dioxide	Instrumental Chemiluminescence	Continuous	Population Exposure	SLAMS - Population Neighborhood
$PM_{2.5}$ Real Time	Synchronized Ambient Real Time Particulate Monitor	Continuous	Air Quality Index	SLAMS - Population Neighborhood
PM_{10}	Manual Gravimetric	Daily	Population Exposure	SLAMS - Population Neighborhood
PM_{10} Real Time	Synchronized Ambient Real Time Particulate Monitor	Continuous	Air Quality Index	SLAMS - Population Neighborhood

Meteorological Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Tower Height	Spatial Scale
Ambient Temperature	Instrumental/Electronic Resistance	Continuous	10 meters	Urban
Wind Direction	Electronic Resistance Level 1	Continuous	10 meters	Urban
Wind Speed	Instrumental/Electronic Chopped Signal	Continuous	10 meters	Urban
Barometric Pressure	Pressure Transducer	Continuous	10 meters	Urban
Relative Humidity	Instrumental/Electronic Thin Film	Continuous	10 meters	Urban

Detailed Site Information

Site:	Hurricane (HC)	**Longitude:**	-113.3051	**Station Type:**	SLAMS
AQS#:	49-053-0007	**Latitude:**	37.1791	**MSA:**	St. George
Address:	147 North 870 West	**Elevation (m):**	992		
City:	Hurricane				
County:	Washington				

Site Objective:
This site is established to determine population exposure to ozone in Washington County.
Does the site meet objective?
Yes, all objectives are met.
Site Description:
This site is located behind the Hurricane City offices.
Can data from this site be used to evaluate NAAQS? Yes

Gaseous/Particulate Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Monitoring Objective	Spatial Scale
Ozone	Instrumental Ultraviolet	Continuous	High Winter Ozone Study	Regional
Trace Nitrogen Dioxide	Instrumental Chemiluminescence	Continuous	High Winter Ozone Study	Regional
$PM_{2.5}$ Real Time	Synchronized Hybrid Ambient Real Time Particulate Monitor	Continuous	Air Quality Index	SLAMS - Population Neighborhood

Meteorological Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Tower Height	Spatial Scale
Ambient Temperature	Electronic Resistance	Continuous	10 meters	Regional
Wind Direction	Electronic Resistance Level 1	Continuous	10 meters	Regional
WD Sigma	Electronic EPA Method	Continuous	10 meters	Regional
Wind Speed	Electronic Chopped Signal Level	Continuous	10 meters	Regional
Barometric Pressure	Pressure Transducer	Continuous	2 meters	Regional

Detailed Site Information

Site:	Inland Port (IP)	**Longitude:**	-112.087717	**Station Type:**	SLAMS
AQS#:	49-035-3016	**Latitude:**	40.807897	**MSA:**	Salt Lake City
Address:	1480 N 8000 W	**Elevation (m):**	1285.0		
City:	Salt Lake City				
County:	Salt Lake				

Site Objective:
This site is established to determine population exposure
Does the site meet objective?
Yes, all objectives are met.
Site Description:
This site is located in the new prison site.
Can data from this site be used to evaluate NAAQS? Yes

Gaseous/Particulate Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Monitoring Objective	Spatial Scale
Ozone	Instrumental Ultraviolet	Continuous	High Winter Ozone Study	Regional
Trace Nitrogen Dioxide	Instrumental Chemiluminescence	Continuous	High Winter Ozone Study	Regional
$PM_{2.5}$ Real Time	Synchronized Hybrid Ambient Real Time Particulate Monitor	Continuous	Air Quality Index	Regional

Meteorological Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Tower Height	Spatial Scale
Ambient Temperature	Electronic Resistance	Continuous	10 meters	Regional
Wind Direction	Electronic Resistance Level 1	Continuous	10 meters	Regional
WD Sigma	Electronic EPA Method	Continuous	10 meters	Regional
Wind Speed	Electronic Chopped Signal Level 1	Continuous	10 meters	Regional
Ambient Pressure	Barometric Pressure Transducer	Continuous	10 meters	Regional

Detailed Site Information

Site:	Lindon (LN)	**Longitude:**	-111.7133	**Station Type:**	SLAMS
AQS#:	49-049-4001	**Latitude:**	40.3396	**MSA:**	Provo - Orem
Address:	50 North Main	**Elevation (m):**	1442		
City:	Lindon				
County:	Utah				

Site Objective:
This site is established to determine PM emissions from commercial and industrial sources. Historically, this site has reported the highest PM values in Utah County.
Does the site meet objective?
Yes, all objectives are met.
Site Description:
This site is located at the Lindon Elementary School in the City of Lindon, Utah County.
Can data from this site be used to evaluate NAAQS? Yes

Gaseous/Particulate Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Monitoring Objective	Spatial Scale
$PM_{2.5}$	Manual Gravimetric	Daily	Population Exposure	SLAMS - Population Neighborhood
$PM_{2.5}$	Manual Gravimetric Collocated	1 in 6 days	Precision and Accuracy Assessment	SLAMS - Population Neighborhood
$PM_{2.5}$ Speciation	Manual EPA CSN	1 in 6 days	Population Exposure	SLAMS - Population Neighborhood
$PM_{2.5}$ Real Time	Synchronized Hybrid Ambient Real Time Particulate Monitor	Continuous	Air Quality Index	SLAMS - Population Neighborhood
PM_{10}	Manual Gravimetric	Daily	Population Exposure	SLAMS - Impact Neighborhood
Carbon Monoxide	Instrumental Gas Phase Correlation	Continuous	Population Exposure	SLAMS - Population Neighborhood
Trace Nitrogen Dioxide	Instrumental Chemiluminescence	Continuous	Population Exposure	SLAMS - High Neighborhood
Ozone	Instrumental Ultraviolet	Continuous	Population Exposure	SLAMS - Population Neighborhood
Black Carbon	Aethalometer	Continuous	Population Exposure	SLAMS - Population Neighborhood

Detailed Site Information

Meteorological Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Tower Height	Spatial Scale
Relative Humidity	Electronic Thin Film	Continuous	10 meters	Urban
Ambient Temperature	Electronic Resistance	Continuous	10 meters	Urban
Wind Direction	Electronic Resistance Level 1	Continuous	10 meters	Urban
WD Sigma	Electronic EPA Method	Continuous	10 meters	Urban
Wind Speed	Electronic Chopped Signal Level 1	Continuous	10 meters	Urban

Detailed Site Information

Site:	Lake Park (LP)	**Longitude:**	-112.008576	**Station Type:**	SLAMS
AQS#:	49-035-1007	**Latitude:**	40.709791	**MSA:**	Salt Lake City
Address:	2782 S Corporate Park Dr.	**Elevation (m):**	1295		
City:	West Valley City				
County:	Salt Lake				

Site Objective:
This site is established to determine potential impact of the Inland Port on the Salt Lake Valley Airshed.
Does the site meet objective?
Yes, all objectives are met.
Site Description:
This site is located near the parking lot of Monticello Academy in the City of West Valley City, Salt Lake County.
Can data from this site be used to evaluate NAAQS? Yes

Gaseous/Particulate Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Monitoring Objective	Spatial Scale
$PM_{2.5}$ Real Time	Synchronized Hybrid Ambient Real Time Particulate Monitor	Continuous	Air Quality Index	SLAMS - High Neighborhood
$PM_{2.5}$	Manual Gravimetric	Daily	Population Exposure	SLAMS - Population Neighborhood
PM_{10}	Manual Gravimetric	Daily	Population Exposure	SLAMS - High Neighborhood
Sulfur Dioxide	Pulsed Fluorescence	Continuous	Population Exposure	SLAMS - Population Neighborhood
Ozone	Instrumental Ultraviolet	Continuous	Population Exposure	SLAMS - Population Neighborhood
Nitrogen Dioxide	Instrumental Chemiluminescence	Continuous	Population Exposure	SLAMS - High Neighborhood

Meteorological Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Tower Height	Spatial Scale
Ambient Temperature	Electronic Resistance	Continuous	10 meters	Urban
Wind Direction	Electronic Resistance Level 1	Continuous	10 meters	Urban
WD Sigma	Electronic EPA Method	Continuous	10 meters	Urban
Wind Speed	Electronic Chopped Signal	Continuous	10 meters	Urban

Detailed Site Information

Site:	Near Road (NR)	**Longitude:**	-111.9011881	**Station Type:**	SLAMS
AQS#:	49-035-4002	**Latitude:**	40.662878	**MSA:**	Salt Lake City
Address:	4951 South Galleria Dr	**Elevation (m):**	1295		
City:	Murray				
County:	Salt Lake				

Site Objective:
This site is established to monitor vehicular contribution to air pollution.
Does the site meet objective?
Yes, all objectives are met.
Site Description:
This site is located on I-15 as it crosses 5000 S in Murray, UT.
Can data from this site be used to evaluate NAAQS?: Yes

Gaseous/Particulate Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Monitoring Objective	Spatial Scale
Trace Nitrogen Dioxide	Instrumental Chemiluminescence	Continuous	Population Exposure	SLAMS - Population Neighborhood
Carbon Monoxide Trace	Instrumental Gas Phase Correlation	Continuous	Population Exposure	SLAMS -Population Neighborhood
Ozone	Instrumental Ultraviolet	Continuous	Population Exposure	SLAMS - Population Neighborhood
$PM_{2.5}$ Real Time	Synchronized Hybrid Ambient Real Time Particulate Monitor	Continuous	Population Exposure	SLAMS - Population Neighborhood
Sulfur Dioxide	Pulsed Fluorescence	Continuous	Population Exposure	SLAMS - Population Neighborhood

Detailed Site Information

Site:	Price #2 (P2)	**Longitude:**	-110.77	**Station Type:**	SPM
AQS#:	49-007-1003	**Latitude:**	39.5958	**MSA:**	Price
Address:	351 South Weasel Run Road	**Elevation (m):**	1740		
City:	Price				
County:	Carbon				

Site Objective:
This site is established in response to a three-state ozone study. It is funded by the Bureau of Land Management.
Does the site meet objective?
Yes, all objectives are met.
Site Description:
This site is located in a farm field 3.6 Km east of Price.
Can data from this site be used to evaluate NAAQS? Yes

Gaseous/Particulate Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Monitoring Objective	Spatial Scale
Ozone	Instrumental Ultraviolet	Continuous	High Ozone Winter Study	Regional
Nitrogen Dioxide	Instrumental Chemiluminescence	Continuous	High Ozone Winter Study	Regional

Meteorological Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Tower Height	Spatial Scale
Ambient Temperature	Electronic Resistance	Continuous	10 meters	Regional
Wind Direction	Electronic Resistance Level 1	Continuous	10 meters	Regional
WD Sigma	Electronic EPA Method	Continuous	10 meters	Regional
Wind Speed	Electronic Chopped Signal Level 1	Continuous	10 meters	Regional
Relative Humidity	Electronic Thin Film	Continuous	10 meters	Regional

Detailed Site Information

Site:	Roosevelt (RS)	**Longitude:**	-110.009	**Station Type:**	SPM
AQS#:	49-013-0002	**Latitude:**	40.2941	**MSA:**	N/A
Address:	290 South 1000 West	**Elevation (m):**	1588		
City:	Roosevelt				
County:	Duchesne				

Site Objective:
This site is established to determine maximum ozone and $PM_{2.5}$ concentrations in Duchesne County.
Does the site meet objective?
Yes, all objectives are met.
Site Description:
This site is located in the city park northwest section of Roosevelt.
Can data from this site be used to evaluate NAAQS? Yes

Gas/Particulate Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Monitoring Objective	Spatial Scale
Ozone	Instrumental Ultraviolet	Continuous	High Ozone Winter Study	Regional
Trace Nitrogen Dioxide	Instrumental Chemiluminescence	Continuous	High Ozone Winter Study	Regional
$PM_{2.5}$ Real Time	Synchronized Hybrid Ambient Real Time Particulate Monitor	Continuous	Population Exposure	Regional
$PM_{2.5}$ Real Time	Synchronized Hybrid Ambient Real Time Particulate Monitor, Collocated	Continuous	Population Exposure	Regional

Meteorological Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Tower Height	Spatial Scale
Ambient Temperature	Electronic Resistance	Continuous	10 meters	Urban
Wind Direction	Sonic Method	Continuous	10 meters	Urban
WD Sigma	Electronic EPA Method	Continuous	10 meters	Urban
Wind Speed	Sonic Method	Continuous	10 meters	Urban
Relative Humidity	Electronic Thin Film	Continuous	10 meters	Urban
Ambient Temperature	Electronic Resistance	Continuous	2 meters	Urban
Temperature Difference	Math Channel	Continuous	10-2 meters	Urban

Detailed Site Information

Site:	Rose Park (RP)	**Longitude:**	-111.9309	**Station Type:**	SLAMS
AQS#:	49-035-3010	**Latitude:**	40.7955	**MSA:**	Salt Lake City
Address:	1354 West Goodwin Avenue	**Elevation (m):**	1295		
City:	Salt Lake City				
County:	Salt Lake				

Site Objective:
This site is established to better represent $PM_{2.5}$ exposure in this area of Salt Lake City.
Does the site meet objective?
Yes, all objectives are met.
Site Description:
This site is located in the community of Rose Park at the north end of Salt Lake City, Salt Lake County.
Can data from this site be used to evaluate NAAQS? Yes

Gas/Particulate Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Monitoring Objective	Spatial Scale
Ozone	Instrumental Ultraviolet	Continuous	High Winter Ozone Study	Regional
Trace Nitrogen Dioxide	Instrumental Ultraviolet	Continuous	High Winter Ozone Study	SLAMS - Population Neighborhood
Sulfur Dioxide	Pulsed Fluorescence	Continuous	Population Exposure	SLAMS - Population Neighborhood
Carbon Monoxide	Instrumental Gas Phase Correlation	Continuous	Population Exposure	SLAMS - Population Neighborhood
$PM_{2.5}$	Manual Gravimetric	Daily	Population Exposure	SLAMS - Population Neighborhood
$PM_{2.5}$	Manual Gravimetric Co-located	1 in 6 days	Precision and Accuracy Assessment	SLAMS - Population Neighborhood
$PM_{2.5}$ Real Time	Synchronized Hybrid Ambient Real Time Particulate Monitor	Continuous	Air Quality Index	SLAMS - Population Neighborhood

Detailed Site Information

Meteorological Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Tower Height	Spatial Scale
Ambient Temperature	Electronic Resistance	Continuous	10 meters	Urban
Wind Direction	Electronic Resistance Level 1	Continuous	10 meters	Urban
WD Sigma	Electronic EPA Method	Continuous	10 meters	Urban
Wind Speed	Electronic Chopped Signal Level 1	Continuous	10 meters	Urban
Relative Humidity	Electronic Thin Film	Continuous	10 meters	Urban

Detailed Site Information

Site:	Saltair (SA)	**Longitude:**	-112.0498	**Station Type:**	SPM
AQS#:	49-035-3005	**Latitude:**	40.8061	**MSA:**	Salt Lake City
Address:	6640 West 1680 North	**Elevation (m)**	1282		
City:	Salt Lake City				
County:	Salt Lake				

Site Objective:
This site is established to collect meteorological information for air quality models.
Does the site meet objective?
Yes, all objectives are met.
Site Description:
The site is located west of the Salt Lake Airport in Salt Lake County.
Can data from this site be used to evaluate NAAQS? No

Meteorological Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Tower Height	Spatial Scale
Relative Humidity	Electronic Thin Film	Continuous	10 meters	Urban
Solar Radiation	Electronic LiCor	Continuous	2 meters	Urban
Ambient Temperature	Electronic Resistance	Continuous	10 meters	Urban
Wind Direction	Electronic Resistance Level 1	Continuous	10 meters	Urban
WD Sigma	Electronic EPA Method	Continuous	10 meters	Urban
Wind Speed	Electronic Chopped Signal Level 1	Continuous	10 meters	Urban

Detailed Site Information

Site:	Smithfield (SM)	**Longitude:**	-111.851944	**Station Type:**	SLAMS
AQS#:	49-005-0007	**Latitude:**	41.842778	**MSA:**	Logan
Address:	675 West 220 North	**Elevation (m):**	1377		
City:	Smithfield				
County:	Cache				

Site Objective:
This site is established to replace the Logan site and determine general population exposure.
Does the site meet objective?
Yes, all objectives are met.
Site Description:
This site is located at Birch Creek Elementary School in Cache County. It is approximately 7 miles north of Logan.
Can data from this site be used to evaluate NAAQS? Yes

Gaseous/Particulate Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Monitoring Objective	Spatial Scale
Trace Nitrogen Dioxide	Instrumental Chemiluminescence	Continuous	Population Exposure	SLAMS - Population Neighborhood
Black Carbon	Aethalometer	Continuous	General/Background	SLAMS - Population Neighborhood
Ozone	Instrumental Ultraviolet	Continuous	Population Exposure	SLAMS - Population Neighborhood
$PM_{2.5}$	Manual Gravimetric	Daily	Population Exposure	SLAMS - Population Neighborhood
$PM_{2.5}$	Manual Gravimetric	1 in 6 days	Precision and Accuracy Assessment	SLAMS - Population Neighborhood
$PM_{2.5}$ Real Time	Synchronized Hybrid Ambient Real Time Particulate Monitor, Collocated	Continuous	Air Quality Index	SLAMS - Population Neighborhood
$PM_{2.5}$ Real Time	Synchronized Hybrid Ambient Real Time Particulate Monitor	Continuous	Air Quality Index	SLAMS - Population Neighborhood
PM_{10}	Manual Gravimetric	Daily	Population Exposure	SLAMS - Population Neighborhood
PM_{10}	Manual Gravimetric Co-located	1 in 6 days	Precision and Accuracy Assessment	SLAMS - Population Neighborhood

Detailed Site Information

Meteorological Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Tower Height	Spatial Scale
Relative Humidity	Electronic Thin Film	Continuous	10 meters	Urban
Ambient Temperature	Electronic Resistance	Continuous	10 meters	Urban
Wind Direction	Electronic Resistance Level 1	Continuous	10 meters	Urban
WD Sigma	Electronic EPA Method	Continuous	10 meters	Urban
Wind Speed	Electronic Chopped Signal Level 1	Continuous	10 meters	Urban

Detailed Site Information

Site:	Spanish Fork (SF)	**Longitude:**	-111.6603	**Station Type:**	SLAMS
AQS#:	49-049-5010	**Latitude:**	40.1364	**MSA:**	Provo - Orem
Address:	312 West 2050 North	**Elevation**	1380		
City:	Spanish Fork				
County:	Utah				

Site Objective:
This site is established to determine the boundary of the high ozone and $PM_{2.5}$ concentrations in Utah County.
Does the site meet objective?
Yes, all objectives are met.
Site Description:
This site is located at the Spanish Fork airport in the city of Spanish Fork, Utah County.
Can data from this site be used to evaluate NAAQS? Yes

Gas/Particulate Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Monitoring Objective	Spatial Scale
Ozone	Instrumental Ultraviolet	Continuous	Population Exposure	SLAMS - Population Neighborhood
Trace Nitrogen Dioxide	Instrumental Chemiluminescence	Continuous	Population Exposure	SLAMS - Population Neighborhood
$PM_{2.5}$	Manual Gravimetric	Daily	Population Exposure	SLAMS - Transport Regional
$PM_{2.5}$ Real Time	Continuous Gravimetric	Continuous	Air Quality Index	SLAMS - Transport Regional

Meteorological Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Tower Height	Spatial Scale
Ambient Temperature	Electronic Resistance	Continuous	10 meters	Urban
Wind Direction	Electronic Resistance Level 1	Continuous	10 meters	Urban
WD Sigma	Electronic EPA Method	Continuous	10 meters	Urban
Wind Speed	Electronic Chopped Signal	Continuous	10 meters	Urban

Detailed Site Information

Site:	Vernal #4 (V4)	**Longitude:**	-109.560733	**Station Type:**	SLAMS
AQS#:	49-047-1003	**Latitude:**	40.464971	**MSA:**	NA
Address:	628 North 1700 West	**Elevation (m):**	1667		
City:	Vernal				
County:	Uintah				

Site Objective:
This site is established was set up in response to an ozone study.
Does the site meet objective?
Yes, all objectives are met.
Can data from this site be used to evaluate NAAQS? Yes

Gaseous/Particulate Parameters

Parameter	Sampling & Analysis Method	Operating Schedule	Tower Height	Spatial Scale
Ozone	Instrumental Ultraviolet	Continuous	High Winter Ozone Study	Regional
Trace Nitrogen Dioxide	Instrumental Chemiluminescence	Continuous	High Winter Ozone Study	Regional
$PM_{2.5}$ Real Time	Synchronized Hybrid Ambient Real Time Particulate Monitor	Continuous	Air Quality Index	SLAMS - Population Neighborhood

Meteorological Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Tower Height	Spatial Scale
Relative Humidity	Electronic Thin Film	Continuous	10 meters	Regional
Ambient Temperature	Electronic Resistance	Continuous	10 meters	Regional
Wind Direction	Electronic Resistance Level 1	Continuous	10 meters	Regional
WD Sigma	Electronic EPA Method	Continuous	10 meters	Regional
Wind Speed	Electronic Chopped Signal Level 1	Continuous	10 meters	Regional
Barometric Pressure	Pressure Transducer	Continuous	2 meters	Regional

Response to Comments for the 2021 Annual Air Monitoring Network Plan –

There were 3 commenters that provided a number of comments. One was a typo that was caught and has been corrected. The rest were basically suggestions on what could be done to improve the air monitoring network. By and large we agree with all comments as they indicate a desire to increase the air monitoring conducted and the data collected. Universally, we are constrained by fiscal limitations and competing needs for scarce resources. If resources were not an issue we would implement all suggestions as they are generally sound. However, in light of limited resources, we are required to be judicious in our use of the resources that we have at hand. With this in mind, individual comments and responses follow.

1. Add co-located PM2.5 monitors to the Near Road and Copperview monitoring sites.

Response – Generally we agree and if these sites are to continue to operate into 2022 then they could have a collocated particulate monitor.

2. Increase PM2.5 speciation at the Hawthorne monitoring site to daily during each wintertime PM2.5 season.

Response – Having more speciation data is generally a good thing, however, it is unclear that this increase is required with particulate numbers dropping and EPA poised to re-designate the Wasatch Front Non-Attainment Area (NWF NAA) to attainment. The change to daily sampling is relatively costly and would require a significant portion of the ongoing air monitoring resources.

3. Add a new PM2.5 speciation site in the western part of the Salt Lake City Non-Attainment Area (ALC NAA).

Response - Similar to #2 above additional speciation data from the western part of Salt Lake County may be desirable, however there are other areas in the state that do not have any speciation data. Adding a new speciation site in those areas may be a better use of resources if the required resources can be found.

4. Add one more Photochemical Assessment Monitoring Station (PAMS) monitor for Volatile Organic Compound (VOC) monitoring in the NWF NAA.

Response – It is unclear at this time how many PAMS monitoring sites are required in an area and what benefit having several of these sites in the same air shed would provide. PAMS monitoring is enormously expensive and would require considerable additional resources. The current site meets all regulatory requirements at this time. Additional PAMS sites may also be

required/desired in the Uinta Basin for the ozone state implementation plan. It is uncertain at this time who, if anyone, will be providing the funding for the PAMS monitoring activities in the Basin. Hopefully, EPA will provide that monitoring. In any event, resources are insufficient to add an additional PAMS site and keep the rest of the monitoring network intact.

5. Add one or more additional Mix Layer Height instruments to a monitor location within the NWF NAA.

Response – It is unclear the value of an additional ceilometer to measure mixing height. The single ceilometer at the HW site meets current PAMS requirements. While it may be "nice" to have another instrument of this type along the Wasatch Front, resources are scarce and may not support it. In addition, modelers and forecasters have not determined that an additional ceilometer would be beneficial or the best separation distance between like instruments to provide the most benefit if resources are found that would allow the addition of additional instruments.

6. When the time comes to replace your NOx analyzers in the Uinta Basin, it would be great to replace them with instruments with photolytic NO2 converters.

Response – We will evaluate the possibility of moving to photolytic converters at the next change out opportunity. While there are benefits to using this type of instrument there are also downsides related to performance and stability. However, these past issues do not forecast future performance.