UTAH DEPARTMENT of ENVIRONMENTAL QUALITY

Division of Air Quality

Annual Monitoring Network Plan 2018

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Introduction

Each year the Air Monitoring Section of the Utah Division of Air Quality (DAQ) produces a Monitoring Network Plan. The purpose of the document is to apprise the stakeholder: public, private, government, and other entities of the current state and the upcoming changes to the State's Air Quality Monitoring Network. 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 Division's monitoring efforts.

In 2018, the Air Quality Monitoring Network underwent following changes:

- Magna station relocated
- North Provo station discontinued
- Copperview station is due to begin operation
- Spanish Fork station is due for relocation (still in operation)

Additionally, the air monitoring section is still in the process of locating a suitable location for the EPA's Near Road Monitoring program.

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 the appendices A, C, D, and E of the aforementioned subpart. As of 2018, Utah air quality monitoring network has no active Prevention of Serious Deterioration (PSD) air monitoring program 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 as 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, Utah 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.

Network Changes

Utah air quality monitoring network will undergo several changes during 2018. Most of these changes involve relocation of several of the stations currently in the network. The stations that are to be moved are Magna and Spanish Fork. A new station (Copperview) will begin monitoring in the summer 2018. North Provo station was removed and is no longer a part of the air quality monitoring network. Several stations received additional PM samplers and gaseous analyzers. These stations are Lindon, Spanish Fork, and Copperview

Magna Station Relocation

Air pollution data collection at the Magna station discontinued in the Q1 of 2018. The station will be moved from its previous location at 2935 South 8560 West, Magna to 9228 West 2700 South, Magna. The monitoring activities at the new location are expected to resume in Q3 of 2018.

In addition to moving the relocation, high-volume lead (Pb) samplers as well as PM_{10} and $PM_{2.5}$ sequential samplers will be removed. Instead, continuous PM samplers and ozone, sulfur dioxide (SO_2), and nitrogen oxides (NOx) analyzers will be installed at the new location.

Spanish Fork Station Relocation

The Spanish Fork station is located in the south-west corner of the Spanish Fork Airport at 2050 North 300 West, Spanish Fork and is expected to be moved from its current location to a new one on the airport premises. The move is the consequence of the current construction and upgrading efforts at the airport, and the new location is yet to be determined. Additionally, a continuous $PM_{2.5}$ monitor was added to Spanish Fork station in Q1 of 2018.

Copperview Station Initialization

The Copperview monitoring station was installed on the premises of the Copperview Elementary School at 8449 South Monroe St., Midvale in 2017. Final instrument and hardware installation is expected to be completed by Q2 of 2018 after which the station will begin continuous operation. The station will house trace level CO, Ozone, NOx, NOy, continuous $PM_{2.5}$, and standard meteorological sensors (wind direction and speed, temperature).

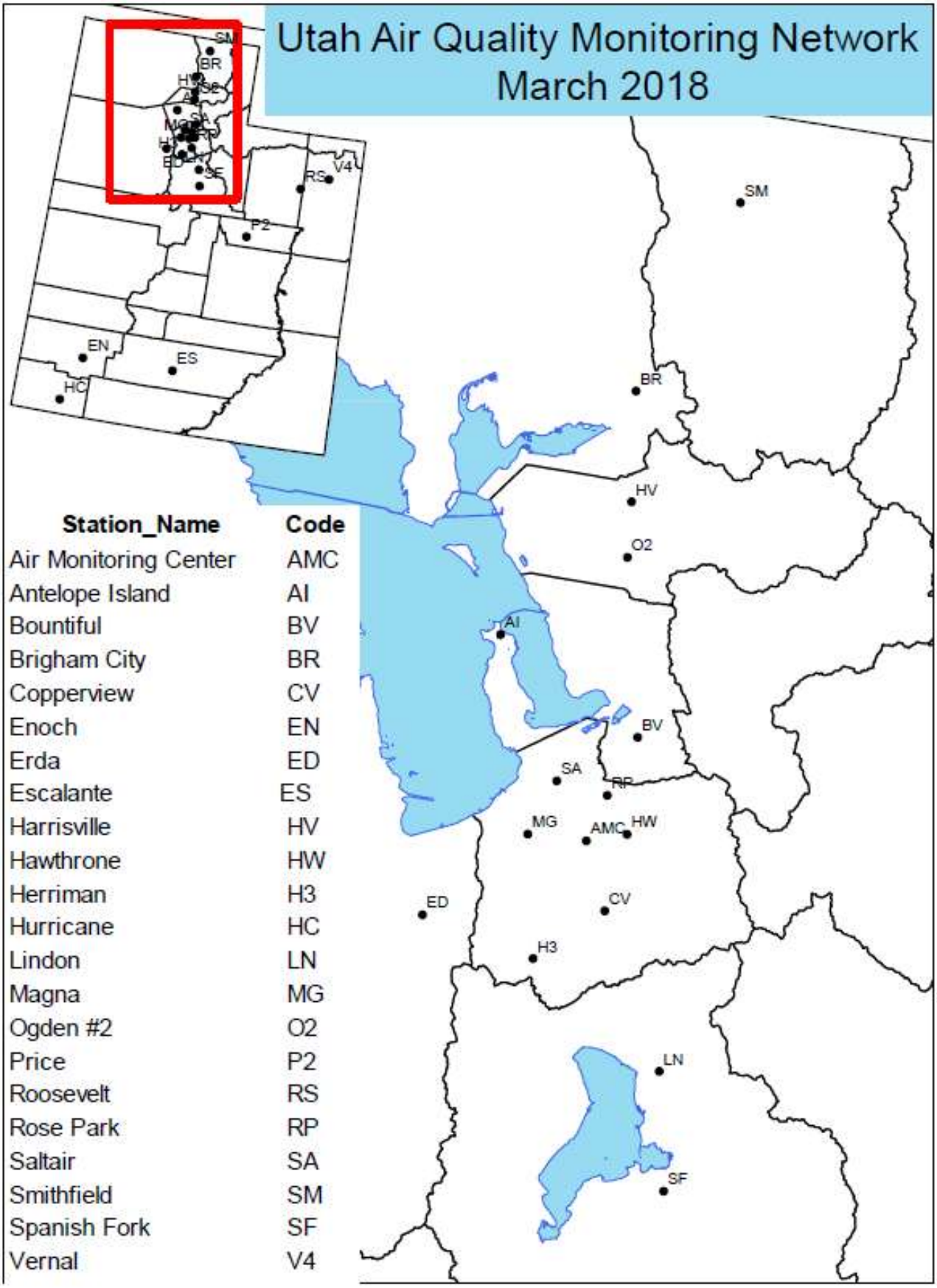
North Provo Station Removal

Because of the increased access difficulty to the station and upon the recommendation from the 2017 Network Efficiency Report, the North Provo station was permanently discontinued. As of Q1 of 2018 all of the instruments at the station were taken offline. Complete station removal will be finished by the end of Q2 of 2018.

Pending Items

DAQ is still in search of a suitable site for the federal near-road monitoring program site. There are no estimates when the location will be found at this time.

Utah Air Quality Monitoring Network
March 2018



Station_Name	Code
Air Monitoring Center	AMC
Antelope Island	AI
Bountiful	BV
Brigham City	BR
Copperview	CV
Enoch	EN
Erda	ED
Escalante	ES
Harrisville	HV
Hawthrone	HW
Herriman	H3
Hurricane	HC
Lindon	LN
Magna	MG
Ogden #2	O2
Price	P2
Roosevelt	RS
Rose Park	RP
Saltair	SA
Smithfield	SM
Spanish Fork	SF
Vernal	V4

Site Parameters

County	Site	PM 2.5			PM 10			PM Coarse	Speciation PM 2.5	Lead	O_3	NO_x	NO_y	SO_2	CO	Hg	NH_3	Toxics PAMS	MET.
		Primary	Co-located	Real-time	Primary	Co-located	Real-time												
Cache	Smithfield	1/1	1/6	X	1/1	1/6	X	X			X	X							X
Box Elder	Brigham City	1/1		X							X								X
Weber	Ogden #2	1/1		X	1/1		X	X			X	X			X				X
	Harrisville										X								X
Davis	Bountiful	1/1		X	1/1	1/6			X		X	X						X	X
	Antelope Island																		X
Salt Lake	AMC															X	X		X
	Hawthorne	1/1		X	1/1			X	X		X	X	X	X	X				X
	Herriman			X	1/1		X	X			X	X							X
	Magna	*1/1*		*X*	*1/1*		*X*			*X*	*X*	*X*		*X*					*X*
	Rose Park	1/1	1/6	X			X	X											X
	Saltair																		X
	Copperview	*X*		*X*							*X*	*X*	*X*	*X*	*X*				*X*
Tooele	Erda	1/1		X							X	X							X
Utah	Lindon	1/1	1/6	X	1/1		X	X	X										X
	Spanish Fork	1/1		X							X								X
Uintah	Vernal			X							X	X							X
Duchesne	Roosevelt			X							X	X							X
Carbon	Price #2										X	X							X
Garfield	Escalante										X								
Washington	Hurricane			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
Box Elder	490030003	Brigham City - BR	140 West Fishburn Dr., Brigham City	4593978	415045	1334
Weber	490571003	Harrisville - HV	425 West 2550 North, Harrisville	4572829	417416	1331
	490116001	Antelope Island - AI	Great Salt Lake	4543850	396506	1359
	490570002	Ogden #2 - O2	228 East 32nd Street, Ogden	4562188	418249	1316
Davis	490110004	Bountiful - BV	171 West 1370 North, Bountiful	4528360	425503	1309
Salt Lake	490353011	Air Monitoring Center, AMC	2861 West Parkway Blvd., West Valley	4507220	418827	1292
	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	Saltair - SA	Great Salt Lake	4517750	411449	1282
	490351007	Magna - MG	2935 South 8560 West, Magna	4507397	406134	1317
	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 – V4	628 North 1700 West, Vernal	4480337	622012	1667
Carbon	490071003	Price #2 - P2	351 South 2500 East, Price	4382915	519750	1740
Garfield	490170004	Escalante - ES	755 West Main, Escalante	4181091	445865	1789
Washington	490530007	Hurricane - HC	147 North 870 West, Hurricane	4117231	295368	992

Detailed Site Information

Site:	Air Monitoring Center (AMC)	**Longitude:**	-111.9612	**Station Type:**	SPM
AQS#:	49-035-3011	**Latitude:**	40.7118	**MSA:**	Salt Lake City
Address:	2861 West Parkway Blvd.	**Elevation (m):**	1292		
City:	West Valley				
County:	Salt Lake				

Site Objective:
This site is established to determine Mercury in Wet Deposition and Dry Deposition.
Does the site meet the objective:
Yes, all objectives are met.
Site Description:
The site is located at the Air Monitoring Center, in the city of West Valley, Salt Lake County.
Can data from this site be used to evaluate NAAQS?: No

Gaseous/Particulate Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Monitoring Objective	Spatial Scale
Dry Dep. Mercury	Cold Vapor Atomic Absorption	Continuous	Population Exposure	SPM- Transport Regional
Wet Dep. Mercury	Manual NADP MDN	Integrated 7 days	Population Exposure	SPM- Transport Regional
Ammonia	Manual NADP AMoN	Integrated 14 days	Population Exposure	SPM- Transport Regional

Meteorological Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Tower Height	Spatial Scale
Ambient Pressure	Barometric Pressure Transducer	Continuous	2 meters	Urban
Relative Humidity	Elec. Thin Film	Continuous	4 meters	Urban
Leaf Wetness		Continuous	4 meters	Urban
Ambient Temperature	Elec. Resistance	Continuous	4 meters	Urban
Wind Direction	Sonic 2D	Continuous	4 meters	Urban
WD Sigma	Elec. EPA Method	Continuous	4 meters	Urban
Wind Speed	Sonic 2D	Continuous	4 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:
The site is on 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	Elec. Thin Film	Continuous	6 meters	Urban
Ambient Temperature	Elec. Resistance	Continuous	6 meters	Urban
Wind Direction	Elec. Resistance Level 1	Continuous	6 meters	Urban
WD Sigma	Elec. EPA Method	Continuous	6 meters	Urban
Wind Speed	Elec. Chopped Signal Level 1	Continuous	6 meters	Urban

Site:	Bountiful Viewmont (BV)	**Longitude:**	-111.8845	**Station Type:**	SLAMS
AQS#:	49-011-0004	**Latitude:**	40.903	**MSA:**	Ogden-Clearfield
Address:	1380 North 200 West	**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 Network (NTTN) 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:

The 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
Nitrogen Dioxide	Instrumental Chemiluminescence	Continuous	Population Exposure	SLAMS- Population Neighborhood
Ozone	Instrumental Ultra Violet	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} Metals	Manual Gravimetric	1 in 6 days	Population Exposure	SLAMS- Population Neighborhood
PM_{10} Metals Co-located	Manual Gravimetric	6 samples/year	Population Exposure	SLAMS- Population Neighborhood
$PM_{2.5}$ Speciation	Manual EPA CSN	1 in 6 days	Population Exposure	SLAMS- Population Neighborhood
VOC	Manual EPA NTTN	1 in 6 days	Population Exposure	SLAMS- Population Neighborhood
Semi-volatile	Manual EPA NTTN	1 in 6 days	Population Exposure	SLAMS- Population Neighborhood
Carbonyl compounds	Manual EPA NTTN	1 in 6 days	Population Exposure	SLAMS- Population Neighborhood
Black Carbon	Aethalometer	Continuous	Population Exposure	SLAMS- Population Neighborhood

Meteorological Parameters:

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

Site:	Brigham City (BR)	**Longitude:**	-112.0176	**Station Type:**	SLAMS
AQS#:	49-003-0003	**Latitude:**	41.4929	**MSA:**	Ogden-Clearfield
Address:	140 West Fishburn Dr.	**Elevation (m):**	1334		
City:	Brigham City				
County:	Box Elder				

Site Objective:
This site is established to determine the boundary of ozone concentrations greater than the NAAQS and $PM_{2.5}$ comparison to Cache County.

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

Site Description:
The site is located in a neighborhood area of Brigham City in Box Elder 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 Ultra Violet	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	Elec. Resistance	Continuous	10 meters	Urban
Wind Direction	Elec. Resistance Level 1	Continuous	10 meters	Urban
WD Sigma	Elec. EPA Method	Continuous	10 meters	Urban
Wind Speed	Elec. Chopped Signal Level 1	Continuous	10 meters	Urban

Site:	Copperview (CV)	**Longitude:**	-111.894127	**Station Type:**	SLAMS
AQS#:	490352005	**Latitude:**	40.597938	**MSA:**	Salt Lake City
Address:	140 West Fishburn Dr.	**Elevation (m):**	1334		
City:	Brigham City				
County:	Salt Lake				

Site Objective:
Site established to assess population exposure in southeast Salt Lake County.

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

Site Description:
The 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
Carbon Monoxide, Trace	Instrumental Gas Phase	Continuous	Population Exposure	SLAMS-High Neighborhood
Nitrogen Dioxide	Instrumental	Continuous	Population Exposure	SLAMS-High Neighborhood
Ozone	Instrumental Ultra Violet	Continuous	Population Exposure	SLAMS-High Neighborhood
NOy Trace Level	Instrumental	Continuous	Population Exposure	SLAMS- Population Neighborhood
SO2 Trace Level	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	Elec. Resistance	Continuous	10 meters	Urban
Wind Direction	Elec. Resistance Level 1	Continuous	10 meters	Urban
WD Sigma	Elec. EPA Method	Continuous	10 meters	Urban
Wind Speed	Elec. Chopped Signal Level 1	Continuous	10 meters	Urban

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

Site Objective:
Site 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:
The site is located in a country area near Enoch.

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

Gaseous/Particulate Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Monitori Objective	Spatial Scale
Nitrogen Dioxide	Instrumental	Continuous	SPM	NA
Ozone	Instrumental Ultra	Continuous	SPM	NA
$PM_{2.5}$ Real Time	Continuous Gravimetric	Continuous	SPM	NA

Meteorological Parameters:

Parameter	Analysis Method	Schedule	Height	Scale
Ambient Temperature	Elec. Resistance	Continuous	10 meters	Urban
Wind Direction	Elec. Resistance Level 1	Continuous	10 meters	Urban
WD Sigma	Elec. EPA Method	Continuous	10 meters	Urban
Wind Speed	Elec. Chopped Signal	Continuous	10 meters	Urban

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:

The site is located in the city of Erda, Tooele County. It is the main monitor for the 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 Ultra Violet	Continuous	Population Exposure	SLAMS- Population Neighborhood
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	Elec. Thin Film	Continuous	3 meters	Urban
Ambient Temperature	Elec. Resistance	Continuous	10 meters	Urban
Wind Direction	Elec. Resistance Level 1	Continuous	10 meters	Urban
WD Sigma	Elec. EPA Method	Continuous	10 meters	Urban
Wind Speed	Elec. Chopped Signal Level 1	Continuous	10 meters	Urban

Site:	Escalante (ES)	**Longitude:**	-111.614722	**Station Type:**	SPM
AQS#:	49-017-0004	**Latitude:**	37.775556	**MSA:**	NA
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:
The 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 Ultra Violet	Continuous	Population Exposure	Regional

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:
The 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
Ozone	Instrumental Ultra Violet	Continuous	Population Exposure	SLAMS- Population Neighborhood

Meteorological Parameters:

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

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. The Hawthorne site is also designated as the EPA NCORE site for Utah.

Does the site meet the objective:
Yes, all current objectives are met. NCore monitoring began in January 2011.

Site Description:
The 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
Carbon Monoxide, Trace	Instrumental Gas Phase Correlation	Continuous	Population Exposure	SLAMS-High Neighborhood
Nitrogen Dioxide	Instrumental Chemiluminescence	Continuous	Population Exposure	SLAMS-High Neighborhood
Ozone	Instrumental Ultra Violet	Continuous	Population Exposure	SLAMS-High Neighborhood
NOy Trace Level	Instrumental Chemiluminescence	Continuous	Population Exposure	SLAMS- Population Neighborhood
SO2 Trace Level	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	Continuous Gravimetric	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

Meteorological Parameters:

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

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:
Site established to assess population exposure in southwest Salt Lake County.
Does the site meet the objective:
Yes, all objectives are met.
Site Description:
The 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 Ultra Violet	Continuous	Population Exposure	SLAMS- Population Neighborhood
Nitrogen Dioxide	Instrumental Chemiluminescence	Continuous	Population Exposure	SLAMS- Population Neighborhood
$PM_{2.5}$ Real Time	Continuous Gravimetric	Continuous	Air Quality Index	SLAMS- Population Neighborhood
PM_{10}	Manual Gravimetric	Daily	Population Exposure	SLAMS- Population Neighborhood
PM_{10} Real Time	Continuous Gravimetric	Continuous	Air Quality Index	SLAMS- Population Neighborhood

Meteorological Parameters:

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

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 the 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 Ultra Violet	Continuous	High Winter Ozone Study	Regional
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	Elec. Resistance	Continuous	10 meters	Regional
Wind Direction	Elec. Resistance Level 1	Continuous	10 meters	Regional
WD Sigma	Elec. EPA Method	Continuous	10 meters	Regional
Wind Speed	Elec. Chopped Signal Level 1	Continuous	10 meters	Regional
Barometric Pressure	Pressure Transducer	Continuous	2 meters	Regional

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 the objective:
Yes, all objectives are met.
Site Description:
The 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
$PM_{2.5}$	Manual Gravimetric Co-located	1 in 6 days	Precision and Accuracy Assessment	SLAMS- Population
$PM_{2.5}$ Speciation	Manual EPA CSN	1 in 6 days	Population Exposure	SLAMS- Population
$PM_{2.5}$ Real Time	Continuous Gravimetric	Continuous	Air Quality Index	SLAMS- Population
PM_{10}	Manual Gravimetric	Daily	Population Exposure	SLAMS-Impact Neighborhood
PM_{10} Real Time	Continuous Gravimetric	Continuous	Air Quality Index	SLAMS-Impact Neighborhood
Carbon Monoxide	Instrumental Gas Phase	Continuous	Population Exposure	SLAMS- Population
Nitrogen Dioxide	Instrumental	Continuous	Population Exposure	SLAMS-High Neighborhood
Ozone	Instrumental Ultra Violet	Continuous	Population Exposure	SLAMS- Population

Meteorological Parameters:

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

Site:	Magna (MG)	**Longitude:**	-112.0947	**Station Type:**	SLAMS
AQS#:	49-035-1001	**Latitude:**	40.7068	**MSA:**	Salt Lake City
Address:	2935 South 8560 West	**Elevation (m):**	1317		
City:	Magna				
County:	Salt Lake				

Site Objective:
This site is established to determine particulate matter and Pb concentrations from Kennecott smelter.

Does the site meet the objective:
Yes, all objectives are met.
Site Description:
The site is located on the roof of Brockbank Junior High School in the city of Magna in western 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
$PM_{2.5}$	Manual Gravimetric	Daily	Population Exposure	SLAMS- Population Neighborhood
PM_{10}	Manual Gravimetric	Daily	Population Exposure	SLAMS-High Neighborhood
Pb	Manual Gravimetric	1 in 6 days	Population Exposure	SLAMS-High Neighborhood
Pb Co-located	Manual Gravimetric	1 in 12 days	Population Exposure	SLAMS-High Neighborhood

Meteorological Parameters:

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

Site:	Ogden #2 (O2)	**Longitude:**	-111.9751	**Station Type:**	SLAMS
AQS#:	49-057-0002	**Latitude:**	41.207	**MSA:**	Ogden-Clearfield
Address:	228 East 32nd Street	**Elevation (m):**	1316		
City:	Ogden				
County:	Weber				

Site Objective:
This site is established replace the original Ogden site to determine population exposure to air pollutants.

Does the site meet the objective:
Yes, all objectives are met.
Site Description:
The site is located in the city of Ogden in Weber 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
Carbon Monoxide	Instrumental Gas Phase Correlation	Continuous	Population Exposure	SLAMS-Population Neighborhood
Ozone	Instrumental Ultra Violet	Continuous	Population Exposure	SLAMS-Population Neighborhood
Nitrogen Dioxide	Instrumental Chemiluminescence	Continuous	Population Exposure	SLAMS-High Neighborhood
$PM_{2.5}$	Manual Gravimetric	Daily	Population Exposure	SLAMS-High Neighborhood
$PM_{2.5}$ Real Time	Continuous Gravimetric	Continuous	Air Quality Index	SLAMS-High Neighborhood
PM_{10}	Manual Gravimetric	Daily	Population Exposure	SLAMS-High Neighborhood
PM_{10} Real Time	Continuous Gravimetric	Continuous	Air Quality Index	SLAMS-High Neighborhood

Meteorological Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Tower Height	Spatial Scale
Relative Humidity	Elec. Thin Film	Continuous	10 meters	Urban
Ambient Temperature	Elec. Resistance	Continuous	10 meters	Urban
Wind Direction	Elec. Resistance Level 1	Continuous	10 meters	Urban

WD Sigma	Elec. EPA Method	Continuous	10 meters	Urban
Wind Speed	Elec. Chopped Signal Level 1	Continuous	10 meters	Urban

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 the 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 Ultra Violet	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	Elec. Resistance	Continuous	10 meters	Regional
Wind Direction	Elec. Resistance Level 1	Continuous	10 meters	Regional
WD Sigma	Elec. EPA Method	Continuous	10 meters	Regional
Wind Speed	Elec. Chopped Signal Level 1	Continuous	10 meters	Regional

Site:	Roosevelt (RS)	**Longitude:**	-110.009	**Station Type:**	SPM
AQS#:	49-013-0002	**Latitude:**	40.2941	**MSA:**	NA
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 the objective:

Yes, all objectives are met.

Site Description:
The site is located in the city park North West 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 Ultra Violet	Continuous	High Ozone Winter Study	Regional
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

Meteorological Parameters:

Parameter	Sampling & Analysis Method	Operating Schedule	Tower Height	Spatial Scale
Ambient Temperature	Elec. Resistance	Continuous	10 meters	Urban
Wind Direction	Sonic Method	Continuous	10 meters	Urban
WD Sigma	Elec. EPA Method	Continuous	10 meters	Urban
Wind Speed	Sonic Method	Continuous	10 meters	Urban
Relative Humidity	Elec. Thin Film	Continuous	10 meters	Urban

Ambient Temperature	Elec. Resistance	Continuous	2 meters	Urban
Temperature Difference	Math Channel	Continuous	10-2 meters	Urban

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 the objective:
Yes, all objectives are met.
Site Description:
The 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
$PM_{2.5}$	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

Meteorological Parameters:

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

Site:	Saltair (SA)	**Longitude:**	-112.0497	**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 the 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	Elec. Thin Film	Continuous	10 meters	Urban
Solar Radiation	Elec. LiCor	Continuous	2 meters	Urban
Ambient Temperature	Elec. Resistance	Continuous	10 meters	Urban
Wind Direction	Elec. Resistance Level 1	Continuous	10 meters	Urban
WD Sigma	Elec. EPA Method	Continuous	10 meters	Urban
Wind Speed	Elec. Chopped Signal Level 1	Continuous	10 meters	Urban

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:

Site established to replace Logan site and determine general population exposure.

Does the site meet the 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
Nitrogen Dioxide	Instrumental Chemiluminescence	Continuous	Population Exposure	SLAMS- Population Neighborhood
Ozone	Instrumental Ultra Violet	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	Continuous Gravimetric	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
PM_{10} Real Time	Continuous Gravimetric	Continuous	Air Quality Index	SLAMS- Population Neighborhood

Meteorological Parameters:

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

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 (m):**	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 the objective:
Yes, all objectives are met.
Site Description:
The 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 Ultra Violet	Continuous	Population Exposure	SLAMS-Population Neighborhood
$PM_{2.5}$	Manual Gravimetric	Daily days	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	Elec. Resistance	Continuous	10 meters	Urban
Wind Direction	Elec. Resistance Level 1	Continuous	10 meters	Urban
WD Sigma	Elec. EPA Method	Continuous	10 meters	Urban
Wind Speed	Elec. Chopped Signal Level 1	Continuous	10 meters	Urban

Site:	Vernal (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 the 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 Ultra Violet	Continuous	High Winter Ozone	Regional
Nitrogen Dioxide	Instrumental Ultra Violet	Continuous	High Winter Ozone	Regional
$PM_{2.5}$ Real Time	Instrumental Ultra Violet	Continuous	Air Quality Index	SLAMS-Population

Meteorological Parameters:

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