



Division of Air Quality

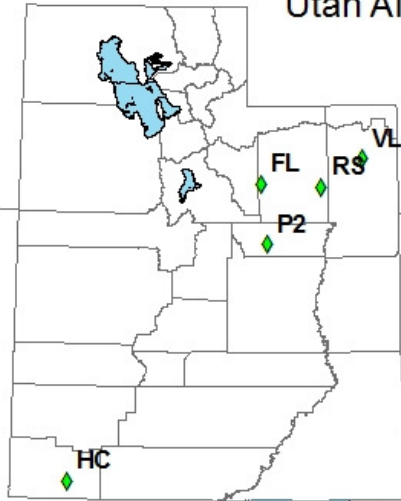
Annual Monitoring Plan 2013



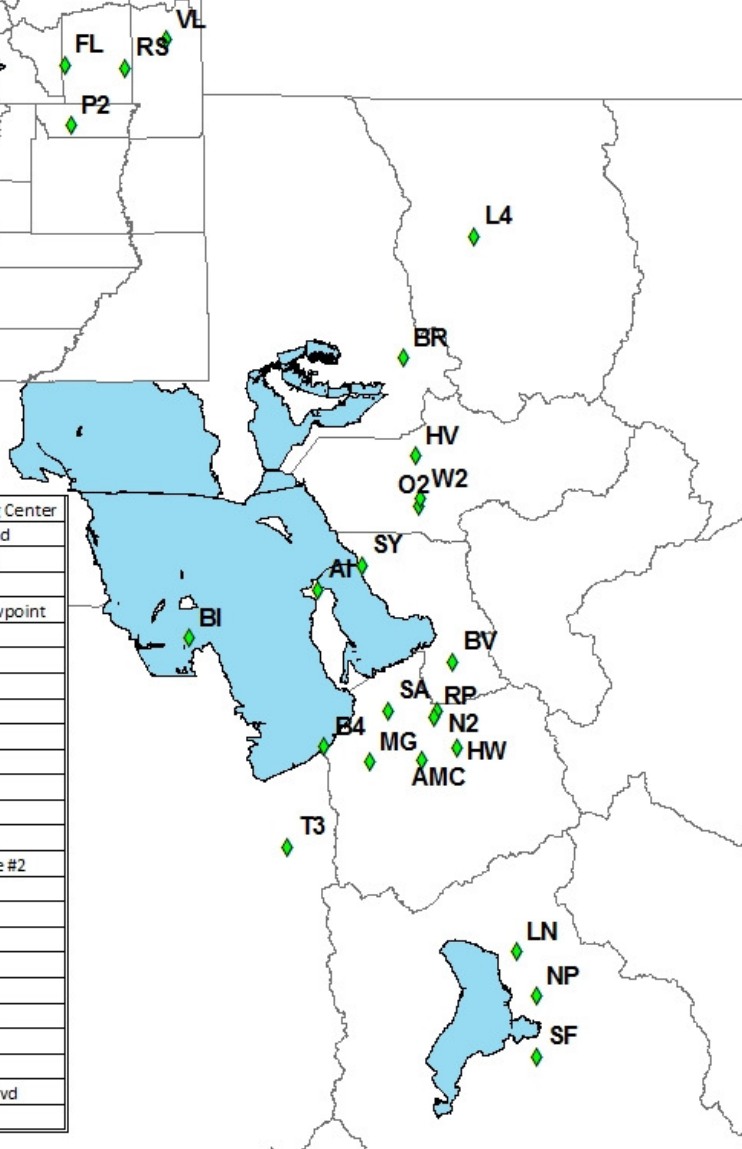
Table of Contents

| | |
|---------------------------------------|-----------------|
| Site Map..... | 3 |
| Site Parameters..... | 4 |
| Site address..... | 5 to 6 |
| Detailed site information..... | 7 to 35 |
| Planned network changes..... | 36 to 37 |

Utah Air Quality Monitoring Network March, 2013



| | |
|-----|-----------------------|
| AMC | Air Monitoring Center |
| AI | Antelope Island |
| BI | Badger Island |
| B4 | Beach #4 |
| BV | Bountiful Viewpoint |
| BR | Brigham City |
| FL | Fruitland |
| HV | Harrisville |
| HW | Hawthorne |
| HC | Hurricane |
| LN | Lincoln |
| L4 | Logan #4 |
| MG | Magna |
| NP | North Provo |
| N2 | North Salt Lake #2 |
| O2 | Ogden #2 |
| P2 | Price #2 |
| RS | Roosevelt |
| RP | Rose Park |
| SA | Saltair |
| SF | Spanish Fork |
| SY | Syracuse |
| T3 | Tooele #3 |
| W2 | Washington Blvd |
| VL | Vernal |



| County/site | PM 2.5 | co-PM2.5 | Real Time PM2.5 | PM 10 | co-PM10 | Real Time PM 10 | PM coarse | Spec. PM2.5 | Lead | O3 | NO2 | NOY | SO2 | CO | Toxics PAMS | Met |
|---------------------|--------|----------|-----------------|--------|---------|-----------------|-----------|-------------|------|----|-----|-----|-----|----|-------------|-----|
| Cache | | | | | | | | | | | | | | | | |
| Logan | 1/1 | 1/12 | X | 1/3 | | | | | | X | X | | | | | X |
| Box Elder | | | | | | | | | | | | | | | | |
| Brigham City | 1/3 | | X | | | | | | | X | X | | | | | X |
| Weber | | | | | | | | | | | | | | | | |
| Ogden 2 Wash Blvd. | 1/3 | | X | 1/3 | | X | | | | X | XX | | | X | | X |
| Harrisville | 1/3 | | | | | | | | | X | | | | | | |
| Davis | | | | | | | | | | | | | | | | |
| Syracuse | | | | | | | | | | | | | | | | X |
| Antelope | | | | | | | | | | | | | | | | X |
| Bountiful | 1/3 | | | | | | | X | | X | X | | X | X | X | X |
| Salt Lake | | | | | | | | | | | | | | | | |
| NSL 2 | | | | 1/1 | 1/12 | X | | | | | | | X | | | X |
| Rose Park | 1/1 | 1/12 | | | | | | | | | | | | | | |
| Hawthorne | 1/1 | | X | 1/1 | | X | 1/1 | X | | X | X | X | X | X | X | X |
| Magna | 1/3 | | | 1/3 | | | | | XX | | | | X | | | X |
| Beach | | | | | | | | | | X | | | X | | | X |
| AMC | | | | | | | | | | | | | | | | X |
| Saltair | | | | | | | | | | | | | | | | X |
| W Jordan | | | | | | | | | | | | | | | | X |
| Tooele | | | | | | | | | | | | | | | | |
| Tooele | 1/3 | | | | | | | | | X | | | | | | X |
| Badger I | | | | | | | | | | | | | | | | X |
| Utah | | | | | | | | | | | | | | | | |
| N Provo | 1/1 | | X | 1/3 | 1/12 | X | | | | X | X | | | X | | X |
| Lindon | 1/1 | 1/12 | X | 1/3 | | X | | X | | | | | | | | X |
| Spanish Fork | 1/3 | | | | | | | | | X | | | | | | X |
| Washington | | | | | | | | | | | | | | | | |
| Hurricane | coming | | X | coming | | X | | | | X | X | | | | | X |
| Uintah Basin | | | | | | | | | | | | | | | | |
| Vernal | | | X | | | | | | | X | X | | | | | X |
| Roosevelt | | | X | | | | | | | X | X | | | | | X |
| Fruitland | | | | | | | | | | X | | | | | | X |
| Price | | | ? | | | | | | | X | X | | | | | X |

| County | EPA AIRS Code | Station Name - Code | Station Address | UTM Coord. | UTM Coord. | Elevation (meters) |
|------------------|---------------|----------------------|--------------------------------------|------------|------------|--------------------|
| | | | | Northing | Easting | |
| Cache County | 490050004 | Logan - L4 | 125 West Center St., Logan City | 4620024 | 00430337 | 1380 |
| Box Elder County | 490030003 | Brigham City - BR | 140 West Fishburn, Brigham City | 4593750 | 00415018 | 1334 |
| Weber County | 490571003 | Harrisville - HV | 425 West 2550 North, Harrisville | 4572719 | 00417376 | 1331 |
| | 490570006 | Washington Blvd - W2 | 2540 Washington Blvd., Ogden City | 4563387 | 00418734 | 1314 |
| | 490570002 | Ogden #2 - O2 | 228 East 32nd Street, Ogden City | 4561914 | 00418278 | 1316 |
| Davis County | 490110004 | Bountiful - BV | 171 W. 1370 N, Bountiful | 4528150 | 00425503 | 1309 |
| | | Antelope Island - AI | Great Salt Lake | 4543920 | 00396410 | 1349 |
| | | Syracuse - SY | Great Salt Lake | 4549000 | 00406230 | 1285 |
| Salt Lake County | 490353006 | Hawthorne - HW | 1675 S. 600 E., Salt Lake City | 4509446 | 00426434 | 1306 |
| | 490352004 | Beach - B4 | 1200 South 12100 West, Magna | 4509782 | 00397751 | 1284 |
| | 490351001 | Magna - MG | 2935 South 8560 West, Magna | 4506581 | 00407608 | 1317 |
| | 490350012 | North Salt Lake - N2 | 1795 North 1000 West, Salt Lake City | 4517371 | 00422374 | 1286 |

| | | | | | | |
|-------------------|-----------|-------------------|--|---------|----------|------|
| | 490353010 | Rose Park - RP | 1400 West Goodwin Ave., Salt Lake City | 4506036 | 00418241 | 1295 |
| | 490353005 | Saltair -SA | 6640 West 1680 North, Salt Lake City | 4517720 | 00411600 | 1282 |
| Utah County | 490494001 | Lindon - LN | 50 North Main Street, Lindon | 4465406 | 00439413 | 1442 |
| | 490490002 | North Provo - NP | 1355 North 200 West, Provo City | 4455894 | 00443606 | 1402 |
| | 490495010 | Spanish Fork - SF | 312 West 2050 North, Spanish Fork | 4442904 | 00443807 | 1380 |
| Tooele County | 490490003 | Tooele - T3 | 434 North 50 West, Tooele | 4488683 | 00390013 | 1511 |
| | | Badger Island -BI | Great Salt Lake | 4533480 | 00368360 | 1282 |
| Duchesne County | 490131001 | Fruitland - FL | 6200 South 4500 West, Fruitland, UT | 4450945 | 00513573 | 2023 |
| | 490130002 | Roosevelt - RS | 290 South 1000 West, Roosevelt, UT | 4460894 | 00584228 | 1587 |
| Uintah County | 490471003 | Vernal - VL | 220 South 1000 East, Vernal, UT | 4479027 | 00626371 | 1605 |
| Carbon County | 490071003 | Price - P2 | 351 South 2500 East, Price, UT | 4382922 | 00519748 | 1740 |
| Washington County | 490530007 | Hurricane - HC | 147 North 870 West, Hurricane, UT | 4117218 | 00295359 | 992 |

| | | |
|---|----------------------------|----------------------------|
| Site: Air Monitoring Center (AM) | 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

Gas/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 day | Population Exposure | SPM- Transport Regional |
| Ammonia | Manual NADP AMoN | Integrated 14 day | 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)
AQS#: 49-011-6001
Address: Antelope Island
City: Not in a city
County: Davis

Longitude: 112.2313
Latitude: 41.0393
Elevation (M): 1359

Station Type: SPM
MSA: Salt Lake City

Site Objective:

This site is established to collect meteorological information for air quality modeling.

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: | Badger Island (BI) | Longitude: | 112.5620 | Station Type: | SPM |
| AQS#: | 49-045-6001 | Latitude: | 40.9420 | MSA: | Salt Lake City |
| Address: | Badger Island | Elevation (M): | 1282 | | |
| City: | Not in a city | | | | |
| County: | Tooele | | | | |

Site Objective:

This site is established to collect meteorological information for air quality modeling.

Does the site meet the objective:

Yes, all objectives are met.

Site Description:

The site is located on the south end of the Great Salt Lake on the remnants of Badger Island in Tooele County.

Can data from this site be used to evaluate NAAQS ?: No

Meteorological parameters:

| Parameter | Sampling & Analysis Method | Operating Schedule | Tower Height | Spatial Scale |
|---------------------|---------------------------------------|---------------------------|---------------------|----------------------|
| Precipitation | Tipping cup | Continuous | 2 meters | Urban |
| 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: Beach #4 (B4) | Longitude: 112.2103 | Station Type: SLAMS |
| AQS#: 49-035-2004 | Latitude: 40.7342 | MSA: Salt Lake City |
| Address: 12100 West 1200 South | Elevation (M): 1284 | |
| City: Magna | | |
| County: Salt Lake | | |

Site Objective:

This site is established to determine SO₂ concentrations from the Kennecott Copper smelter. Ozone is monitored based on an ozone saturation study and the interaction with the Great Salt Lake.

Does the site meet the objective:

Yes, all objectives are met.

Site Description:

The site is located at the Great Salt Lake Marina on the south east end of the Great Salt Lake.

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

Gas/Particulate parameters:

| Parameter | Sampling & Analysis Method | Operating Schedule | Monitoring Objective | Spatial Scale |
|------------------|---------------------------------------|---------------------------|-----------------------------|-------------------------|
| Sulfur Dioxide | Instrumental Pulsed Florescent | Continuous | Industrial Exposure | SLAMS-High Neighborhood |
| Ozone | Instrumental Ultra Violet | Seasonal | 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: Bountiful Viewmont (BV) | Longitude: 111.8845 | Station Type: SLAMS |
| AQS#: 49-011-0004 | Latitude: 40.903 | MSA: Salt Lake City |
| 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 the ambient air near the 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

Gas/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 | Seasonal | Population Exposure | SLAMS-High Neighborhood |
| Sulfur Dioxide | Instrumental Pulsed Florescent | Continuous | Industrial Exposure | SLAMS-Impact Neighborhood |
| PM _{2.5} | Manual Gravimetric | 1 in 3 days | Population Exposure | 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 |
| Hexavalent Chromium | 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 | Not in an MSA, but is in the Salt Lake-Ogden-Clearfield CSA |
| Address: 140 West Fishburn Dr. | Elevation (M): 1334 | MSA: |
| City: Brigham City | | |
| County: Box Elder | | |

Site Objective:

This site is established to determine the boundary of ozone concentrations greater than the NAAQS and PM2.5 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

Gas/Particulate parameters:

| Parameter | Sampling & Analysis Method | Operating Schedule | Monitoring Objective | Spatial Scale |
|-----------------------------|---------------------------------------|---------------------------|-----------------------------|--------------------------------|
| Ozone | Instrumental Ultra Violet | Seasonal | Population Exposure | SLAMS- Population Neighborhood |
| PM _{2.5} | Manual Gravimetric | 1 in 3 days | Population Exposure | SLAMS- Population Neighborhood |
| PM _{2.5} Real time | Instrumental TEOM FDMS | 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: Fruitland (FL) | Longitude: -110.8403 | Station Type: Slams |
| AQS#: 49-013-1001 | Latitude: 40.2087 | MSA: Not in an MSA |
| Address: 6200 South 45000 West | Elevation (M): 2021 | |
| City: Fruitland | | |
| County: Duchesne | | |

Site Objective:

This site is established in response to a three state ozone study. This site is funded by and operated for 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 400 meters south of Utah highway 40. 0.4km SE of Fruitland

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

Gas/Particulate parameters:

| | Sampling & Analysis Method | Operating Schedule | Monitoring Objective | Spatial Scale |
|------------------|---|-------------------------------|---------------------------------|--------------------------|
| Parameter | | | | |
| Ozone | Instrumental Ultra Violet | Continuous | High ozone winter study | Regional |
| Nitrogen Dioxide | Instrumental Chemiluminescence | Continuous | High ozone winter study | Regional |

Meteorological parameters:

| | Sampling & Analysis Method | Operating Schedule | Tower Height | Spatial Scale |
|---------------------|---|-------------------------------|-------------------------|--------------------------|
| Parameter | | | | |
| 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: Harrisville (HV)
AQS#: 49-057-1003
Address: 425 West 2550 North
City: Harrisville
County: Weber

Longitude: 111.9865
Latitude: 41.3028
Elevation (M): 1331

Station Type: Slams
MSA: Ogden-Clearfield

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 an elementary school in the city of Harrisville, Weber County.

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

Gas/Particulate parameters:

| Parameter | Sampling & | Operating | Monitoring | Spatial |
|-------------------|---------------------------|-------------|---------------------|--------------------------------|
| | Analysis Method | Schedule | Objective | Scale |
| Ozone | Instrumental Ultra Violet | Seasonal | Population Exposure | SLAMS- Population Neighborhood |
| PM _{2.5} | Manual Gravimetric | 1 in 3 days | Population Exposure | SLAMS- Population Neighborhood |

Meteorological parameters:

| Parameter | Sampling & | Operating | Tower | Spatial |
|---------------------|------------------------------|------------|-----------|---------|
| | 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 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 the population exposure in the Salt Lake City area. The Hawthorne site is also the EPA NCore site for Utah.

Does the site meet the objective:

Yes, all current objectives are met. Ncore monitoring began 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

Gas/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 N-core | Instrumental TEOM FDMS | Continuous | Air Pollution Index | SLAMS- Population Neighborhood |
| PM ₁₀ | Manual Gravimetric | Daily | Population Exposure | SLAMS- Population Neighborhood |
| PM ₁₀ Real time N-core | Instrumental TEOM FDMS | Continuous | Air Pollution Index | SLAMS- Population Neighborhood |
| PM _{coarse} | Manual Gravimetric subtraction | Daily | Population Exposure | SLAMS- Population Neighborhood |
| | Instrumental Semi-continuous | | | SLAMS- Population Neighborhood |
| Organic & Elemental Carbon | NIDR | Continuous | Population Exposure | |
| PAMS C2 to C 12 | 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: Hurricane (HC)
AQS#: 49-053-0007
Address: 147 North 870 West
City: Hurricane
County: Washington

Longitude: 113.3052
Latitude: 37.179
Elevation (M): 992

Station Type: SLAMS
MSA: St. George

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. This site replaces Santa Clara.

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 winter ozone study | Regional |
| Nitrogen Dioxide | Instrumental Chemiluminescence | Continuous | High winter ozone study | Regional |
| PM _{2.5} | Teom 1405 df | Continuous | AQI | SLAMS- Population Neighborhood |
| PM ₁₀ | Teom 1405 df | Continuous | AQI | 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)
AQS#: 49-049-4001
Address: 50 North Main
City: Lindon
County: Utah

Longitude: 111.7133
Latitude: 40.3396
Elevation (M): 1402

Station Type: SLAMS
MSA: Provo-Orem

Site Objective:

This site is established to determine particulate matter from commercial and industrial sources. Historically, this site has reported the highest particulate matter 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

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 12 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 | Instrumental TEOM FDMS | Continuous | Air Pollution Index | SLAMS- Population Neighborhood |
| PM ₁₀ | Manual Gravimetric | Daily | Population Exposure | SLAMS-Impact Neighborhood |
| PM ₁₀ Real time | Instrumental TEOM | Continuous | Air Pollution Index | SLAMS-Impact 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: Logan #4 (L4) | Longitude: 111.8382 | Station Type: SLAMS |
| AQS#: 49-005-0004 | Latitude: 41.731 | MSA: Logan |
| Address: 125 West Center Street | Elevation (M): 1380 | |
| City: Logan | | |
| County: Cache | | |

Site Objective:

This site is established to determine general population exposure based on increased population.

Does the site meet the objective:

Yes, all objectives are met.

Site Description:

The site is located downtown in the City of Logan, Cache 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 |
|-----------------------------|---------------------------------------|---------------------------|-----------------------------------|--------------------------------|
| 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 co-located | 1 in 12 days | Precision and accuracy assessment | SLAMS- Population Neighborhood |
| PM _{2.5} Real time | Instrumental TEOM FDMS | Continuous | Air Pollution Index | SLAMS- Population Neighborhood |
| PM ₁₀ | Manual Gravimetric | 1 in 3 days | Population Exposure | SLAMS- High 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: 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 SO₂, particulate matter, and lead (Pb) concentrations from the 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, located in western 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 |
|-------------------|---------------------------------------|---------------------------|-----------------------------|--------------------------------|
| Sulfur Dioxide | Instrumental Pulsed Florescent | Continuous | Industrial Exposure | SLAMS-Impact Neighborhood |
| PM _{2.5} | Manual Gravimetric | 1 in 3 days | Population Exposure | SLAMS- Population Neighborhood |
| PM ₁₀ | Manual Gravimetric | 1 in 3 days | Population Exposure | SLAMS-High Neighborhood |
| Pb | Manual Gravimetric/EPA method 6020A | 1 in 6 days | Population Exposure | SLAMS-High Neighborhood |
| Pb co-located | Manual Gravimetric/EPA method 6020A | 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: North Provo (NP)
AQS#: 49-049-0002
Address: 1355 North 200 West
City: Provo
County: Utah

Longitude: 111.6633
Latitude: 40.2538
Elevation (M): 1402

Station Type: SLAMS
MSA: Provo-Orem

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 at north end of the City of Provo, Utah County. It is located on the grounds of the Dale Rex Army National Guard Armory.

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 |
| Nitrogen Dioxide | Instrumental Chemiluminescence | Continuous | Population Exposure | SLAMS- High 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} Real time | Instrumental TEOM FDMS | Continuous | Air Pollution Index | SLAMS- Population Neighborhood |
| PM ₁₀ | Manual Gravimetric | 1 in 3 days | Population Exposure | SLAMS- Population Neighborhood |
| PM ₁₀ | Manual Gravimetric co-located | 1 in 12 days | Precision and accuracy assessment | SLAMS- Population Neighborhood |
| PM ₁₀ Real time | Instrumental TEOM FDMS | Continuous | Air Pollution Index | 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: North Salt Lake #2 (N2) **Longitude:** 111.921 **Station Type:** SLAMS
AQS#: 49-035-0012 **Latitude:** 40.8055 **MSA:** Salt Lake City
Address: 1795 North Warm Springs Rd. **Elevation (M):** 1286
City: Salt Lake
County: Salt Lake

Site Objective:

This site is established to determine SO₂ concentrations near the petroleum refineries.

Does the site meet the objective:

Yes, all objectives are met.

Site Description:

The site is located in the City of Salt Lake, in 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 |
|----------------------------|--------------------------------|--------------------|-----------------------------------|-------------------|
| Sulfur Dioxide | Instrumental Pulsed Florescent | Continuous | Industrial Exposure | SLAMS-High Middle |
| PM ₁₀ | Manual Gravimetric | Daily | Industrial Exposure | Neighborhood |
| PM ₁₀ | Manual Gravimetric | 1 in 12 days | Precision and accuracy assessment | Industrial |
| PM ₁₀ Real time | Instrumental TEOM | Continuous | Air Pollution Index | Industrial |

Meteorological parameters:

| Parameter | Sampling & Analysis Method | Operating Schedule | Tower Height | Spatial Scale |
|---------------------|------------------------------|--------------------|--------------|---------------|
| 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: Ogden #2 (O2)
AQS#: 49-057-0002
Address: 228 East 32nd Street
City: Ogden
County: Weber

Longitude: 111.9751
Latitude: 41.207
Elevation (M): 1316

Station Type: SLAMS
MSA: Ogden-Clearfield

Site Objective:

This site is established to replace the original Ogden site to determine population exposure to pollution.

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 | Instrumental TEOM FDMS | Continuous | Air Pollution Index | SLAMS-High Neighborhood |
| PM ₁₀ | Manual Gravimetric | Daily | Population Exposure | SLAMS-High Neighborhood |
| PM ₁₀ Real time | Instrumental TEOM | Continuous | Air Pollution 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: | -110.7702 | Station Type: | Slams |
| AQS#: | 49-007-1003 | Latitude: | 39.5958 | MSA: | Not in an MSA |
| Address: | 351 South Weasel Run Road | Elevation (M): | 1738 | | |
| City: | Price | | | | |
| County: | Carbon | | | | |

Site Objective:

This site is established in response to a three state ozone study. This site 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

Gas/Particulate parameters:

| | Sampling & Analysis Method | Operating Schedule | Monitoring Objective | Spatial Scale |
|------------------|---------------------------------------|---------------------------|-----------------------------|----------------------|
| Parameter | | | | |
| Ozone | Instrumental Ultra Violet | Continuous | High ozone winter study | Regional |
| Nitrogen Dioxide | Instrumental Chemiluminescence | Continuous | High ozone winter study | Regional |

Meteorological parameters:

| | Sampling & Analysis Method | Operating Schedule | Tower Height | Spatial Scale |
|---------------------|---------------------------------------|---------------------------|---------------------|----------------------|
| Parameter | | | | |
| 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)
AQS#: 49-013-0002
Address: 1000 West 290 South
City: Roosevelt
County: Duchesne

Longitude: 110.009
Latitude: 40.2943
Elevation (M): 1588

Station Type: SLAMS
MSA: Not in MSA

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 | Seasonal | High ozone winter study | Regional |
| Ozone | Chemiluminescence | Seasonal | High ozone winter study | Regional |
| Nitrogen Dioxide | Instrumental Chemiluminescence | Continuous | High ozone winter study | SLAMS- Population Neighborhood |
| PM _{2.5} Real time | Instrumental Thermo 5030 Sharp | 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 |
| WD Sigma | Elec. EPA method | Continuous | 10 meters | Urban |
| Wind Speed | Sonic Method | Continuous | 10 meters | Urban |
| Wind Direction | 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 define 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

| Parameter | Sampling & Analysis Method | Gas/Particulate parameters: | | Spatial Scale |
|-------------------|---------------------------------------|------------------------------------|-----------------------------------|--------------------------------|
| | | Operating Schedule | Monitoring Objective | |
| PM _{2.5} | Manual Gravimetric | Daily | Population Exposure | SLAMS- Population Neighborhood |
| PM _{2.5} | Manual Gravimetric co-located | 1 in 12 days | Precision and accuracy assessment | SLAMS- Population Neighborhood |

| | | | | | |
|-----------------|----------------------|-----------------------|----------|----------------------|----------------|
| 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 modeling.

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: Santa Clara (SC)
AQS#: 49-053-0006
Address: 1215 North Lava Flow Drive
City: Santa Clara
County: Washington

Longitude: 113.6363
Latitude: 37.1291
Elevation (M): 823

Station Type: SLAMS
MSA: St. George

Site Objective:

This site is established to determine population exposure to ozone in Washington County. This site closed Aug. 2012. Site replaced by Hurricane based on ozone saturation study.

Does the site meet the objective:

Yes, all objectives are met.

Site Description:

The site is located on the grounds of the Snow Canyon Middle School in the city of Santa Clara in Washington 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 |
|------------------|--------------------------------|--------------------|----------------------|--------------------------------|
| Nitrogen Dioxide | Instrumental Chemiluminescence | Seasonal | Population Exposure | SLAMS- Population Neighborhood |
| Ozone | Instrumental Ultra Violet | Seasonal | Population Exposure | SLAMS- Population 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: Spanish Fork (SF)
AQS#: 49-049-5010
Address: 312 West 2050 North
City: Spanish Fork
County: Utah

Longitude: 111.6603
Latitude: 40.1364
Elevation (M): 1380

Station Type: SLAMS
MSA: Provo-Orem

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 | Seasonal | Population Exposure | SLAMS- Population Neighborhood |
| PM _{2.5} | Manual Gravimetric | 1 in 3 days | Population Exposure | 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: Syracuse (SY)
AQS#: 49-011-6002
Address: 4700 West 1700 South
City: Syracuse
County: Davis

Longitude: 112.1185
Latitude: 41.0886
Elevation (M): 1284

Station Type: SPM
MSA: Ogden-Clearfield

Site Objective:

This site is established to collect meteorological information for air quality modeling.

Does the site meet the objective:

Yes, all objectives are met.

Site Description:

The site is located in the city of Syracuse near the causeway to Antelope Island State Park, 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 | 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: Tooele #3 (T3)
AQS#: 49-045-0003
Address: 434 North 50 West
City: Tooele
County: Tooele

Longitude: 112.2997
Latitude: 40.5393
Elevation (M): 1511

Station Type: SLAMS
MSA: Salt Lake City

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 Tooele, Tooele 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 | Seasonal | Population Exposure | SLAMS- Population Neighborhood |
| PM _{2.5} | Manual Gravimetric | 1 in 3 days | Population Exposure | SLAMS- Population Neighborhood |
| PM _{2.5} Real time | Instrumental TEOM FDMS | Continuous | Air Pollution 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: Vernal (VL)
AQS#: 49-047-1003
Address: 220 South 1000 East
City: Vernal
County: Uintah

Longitude: 109.51
Latitude: 40.4523
Elevation (M): 1603

Station Type: Slams
MSA: Not in an MSA

Site Objective:

This site is established in response to an ozone study.

Does the site meet the objective:

Yes, all objectives are met.

Site Description:

This site is located in a farm field adjacent to 1000 East.

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

Gas/Particulate parameters:

| Parameter | Sampling & | Operating | Monitoring | Spatial |
|-----------------------------|--------------------------------|------------|-------------------------|--------------------------------|
| | Analysis Method | Schedule | Objective | 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 | Thermo Sharp 5030 | Continuous | AQI | SLAMS- Population Neighborhood |

Meteorological parameters:

| Parameter | Sampling & | Operating | Tower | Spatial |
|---------------------|------------------------------|------------|-----------|----------|
| | Analysis Method | Schedule | Height | 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: Washington Boulevard #2 (W2) **Longitude:** 111.9703 **Station Type:** SLAMS
AQS#: 49-057-0006 **Latitude:** 41.2201 **MSA:** Ogden-Clearfield
Address: 2540 South Washington Blvd **Elevation (M):** 1316
City: Ogden
County: Weber

Site Objective:

This site is established to monitor ground level, mid-block, mid-sidewalk exposure to carbon monoxide.

Does the site meet the objective:

Yes, all objectives are met.

Site Description:

The site is located downtown 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-High Microscale |

| | | |
|--------------------------------------|----------------------------|----------------------------|
| Site: West Jordan (WJ) | Longitude: 112.001 | Station Type: SPM |
| AQS#: 49-035-3009 | Latitude: 40.6112 | MSA: Salt Lake City |
| Address: 4540 West 8700 South | Elevation (M): 1414 | |
| City: West Jordan | | |
| County: Salt Lake | | |

Site Objective:

This site is established to collect meteorological information for air quality modeling.

Does the site meet the objective:

Yes, all objectives are met.

Site Description:

The site is located in the city of West Jordan, 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 |
| 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 |

Planned network changes SFY2014

Several changes are proposed for the Utah monitoring network in the upcoming 18 months. Many items are “housekeeping” while others are planned to improve the data available for health advisories, characterization of urban and rural areas, and modeling of high pollution periods. All the identified changes are subject to available monies, personnel and consultation with EPA. Items are not listed in any particular order and should be considered as a whole.

- Establish a new monitoring site in the southeast area of Salt Lake County. This site is intended to supply data for the increasing population in the southern end of the Salt Lake valley and provide information for the computer modeling to better refine pollution forecasting models. We are currently looking in the Draper area, but this location may be changed depending on the most current modeled needs and location availability. This site is expected to be a multi pollutant site with a wide range of parameters being monitored.
- Establish a new monitoring site in the southwestern section of Salt Lake County. This site is intended to supply data for the increasing population in the Herriman, Day Break, Transverse Mountain areas. This site will primarily monitor particulates and ozone.
- EPA NO₂ Near-Road monitoring program requires a monitor to be located near a high traffic road section. Current proposed location for a near-road monitoring site for Salt Lake County is on the west side of I-15 near 4900 South. This monitoring site has been identified, but will not be implemented until funding and resources are available to establish and operate the site. Other monitoring objectives have a higher priority for scarce resources.
- Establish a new monitoring site in Erda, northern Tooele County. This site would replace the Beach (B4) monitoring station as well as the Tooele (T3) monitoring station. Recent ozone studies indicate the Erda site is higher than both the Beach site and the Tooele site for ozone.
- Our previous years of monitoring SO₂ and new regulations show a need to adjust our network of SO₂ monitors. To that end, we propose to shut down SO₂ monitors in the following locations; North Salt Lake (N2), Beach (B4), Bountiful (BV) and Magna (MG). Review of our data show that 75% of the data collected are below the detection limit of the instruments and the historical reasons used to establish these monitoring locations are no longer valid. We will continue to monitor for SO₂ with a trace level instrument at the Hawthorne (HW) station as part of the NCORE monitoring effort.
- Hexavalent chromium has been discontinued as part of the National Air Toxics program at the Bountiful (BV) site. This change is recommended by the NATS due to low monitored concentrations. The DAQ concurs with the recommendation and will stop monitoring Cr⁺⁶ on June 30, 2013.
- The Price (P2) and Fruitland (FL) sites were established as part of a three- state study to monitor for a period of three years. The three years of monitoring for these sites will be finished at the end of 2013. Unless an additional need and funding is identified, these sites will be shut down on Dec. 31, 2013.
- Monitoring shelters at Logan (L4), North Salt Lake (N2), and Rose Park (RP) need to be upgraded as resources permit. These three shelters are old and need major repairs to continue to meet

monitoring requirements. We will look at each site to ensure siting criteria continues to be met before replacing shelters. In the case of the Logan monitor we are looking for a new site for this monitor. Siting of the current location is not optimal and if a better location can be found the station will be moved as part of the upgrade. The other monitoring sites will also be evaluated against siting criteria as well.

- To meet EPA monitoring requirements, we will commence PM_{2.5} and PM₁₀ monitoring at Hurricane (HC) starting Jan. 2014. We need to establish a 3-year baseline record of particulate levels in the St. George/Washington County MSA.
- The Spanish Fork (SF) station will need to be moved due to airport construction. Once the airport determines the extent of their renovations, we will determine if it is possible to keep the station at the airport or if a new location will need to be found.
- Our own network review has determined that the North Provo (NP) and Lindon (LN) stations are duplicative and there is little value to keeping both stations. We have evaluated each parameter and will be closing the North Provo station and moving any needed monitoring to the Lindon station. That will leave two stations in Utah County which meets all federal monitoring requirements and the needs of DAQ.
- Review of the meteorological sites in our network indicates that the West Jordan (WJ) site provides data of little value, based on other data collected. We will shut this station down.
- All stations will be reviewed this year to ensure that they continue to meet required siting criteria. Any sites that do not meet applicable criteria will be evaluated for future actions.
- The Tooele (T3) station will be shut down and all required parameters moved to Erda. Currently the Tooele site does not monitor high values for any of its parameters. Ozone saturation studies indicated Erda would be a better site for monitoring ozone allowing better notification of the community during high pollution episodes.
- The Harrisville (HV) station currently samples for PM_{2.5}. Sampled concentrations are lower than at other sites within the same CBSA, so we will discontinue monitoring for PM_{2.5} at this location.
- The Washington Blvd. (W2) CO monitor is no longer relevant. It was originally installed to evaluate urban street canyons decades ago, but that is no longer an issue, and monitoring data there has been near zero; therefore the continuation of monitoring at this location is unnecessary. Monitoring for CO will continue at the Ogden (O2) site for Weber county.