Utah Division of Air Quality

Ogden Sampler Overturned by High Winds

PM10 & PM2.5 Exceptional Event - High Wind

Hawthorne, North Salt Lake, Ogden, Cottonwood and Rose Park Monitoring Stations

Event Date – April 27, 2010

Table of Contents

Introduction

The Code of Federal Regulations (CFR) provides the definition and criteria for determining whether air quality data is impacted by an exceptional event. The 40 CFR 50.1 (j) definition states that "exceptional event means an event that affects air quality, is not reasonably controllable or preventable, is an event caused by human activity that is unlikely to recur at a particular location or a natural event, and is determined by the Administrator in accordance with 40 CFR 50.14 to be an exceptional event." The demonstration to justify data exclusion as outlined in 40 CFR 50.14(c)(3)(iv-v) specifies that evidence must be provided that:

1. The event meets the definition of an exceptional event;
2. The event is associated with a measured concentration in excess of normal historical fluctuations, including background;
3. There is a clear causal relationship between the measurements under consideration and the event that is claimed to have affected air quality in the area;
4. There would have been no exceedance or violation but for the event; and
5. The demonstration must include a public comment process and documentation of such to the Environmental Protection Agency (EPA).

This report documents that the event meets the above criteria and provides analyses to demonstrate that:

I. The natural dust event was not reasonably controllable or preventable;
II. Reasonable controls, based on EPA guidance, are in place for anthropogenic sources through regulatory structures and programs sponsored by state, federal and local agencies as described in the Mitigation section;
III. There is a clear-causal connection between the high wind event and the exceedance at the Lindon monitoring station;
IV. The measured concentration was beyond normal historical levels; and
V. The exceedance would not have occurred "but for" the high winds.

Conceptual Model

On April 27, 2010, Utah experienced a meteorological event in association with the passage of a storm pattern. This event entrained particulates into the air by high winds through a mechanism of surface erosion occurring from the west and south of the Wasatch Front.

The Salt Lake Tribune reported maximum winds at Ogden Peak at 95 mph and wind speeds in the 50's along the Wasatch Front.

Winds shake up Utah; rain, snow on the way
By Erin Alberty
The Salt Lake Tribune
Updated: 04/27/2010 11:01:53 PM MDT
Wind tore across Utah on Tuesday night, causing black outs and toppling a tractor-trailer.
The most powerful gusts were clocked at 95 mph on Ogden Peak, according to National Weather Service Data. Throughout northern mountains, winds surpassed 70 mph, with speeds in the 50s in the cities along the Wasatch Front. A semi toppled in the wind on Interstate 80 near the border between Salt Lake and Tooele counties, troopers said. The storm also cut power to swaths of southern Salt Lake County, with 7,500 customers without electricity in Millcreek and another 4,000 in Murray and Holladay, according to Rocky Mountain Power reports.

The National Weather Service is forecasting rain and snow today for northern Utah. Salt Lake, Utah, Davis, Weber, Tooele and Cache counties should experience winds and colder temperatures. Rain and snow showers are forecast for Wasatch and Summit counties this morning, continuing into the evening.
Winds are expected to reach 35 to 45 mph in southwestern Utah today, with rain and snow likely this evening.

The USGS released Image 1 highlighting dust streaks in the southwest deserts. USGS forecasters believe that a greater contribution was made from the "'hard pan desert across the west central and southwest portion of the state", according to personal communications with Randy Graham of the USGS.

Image 1 – Dust Streaks

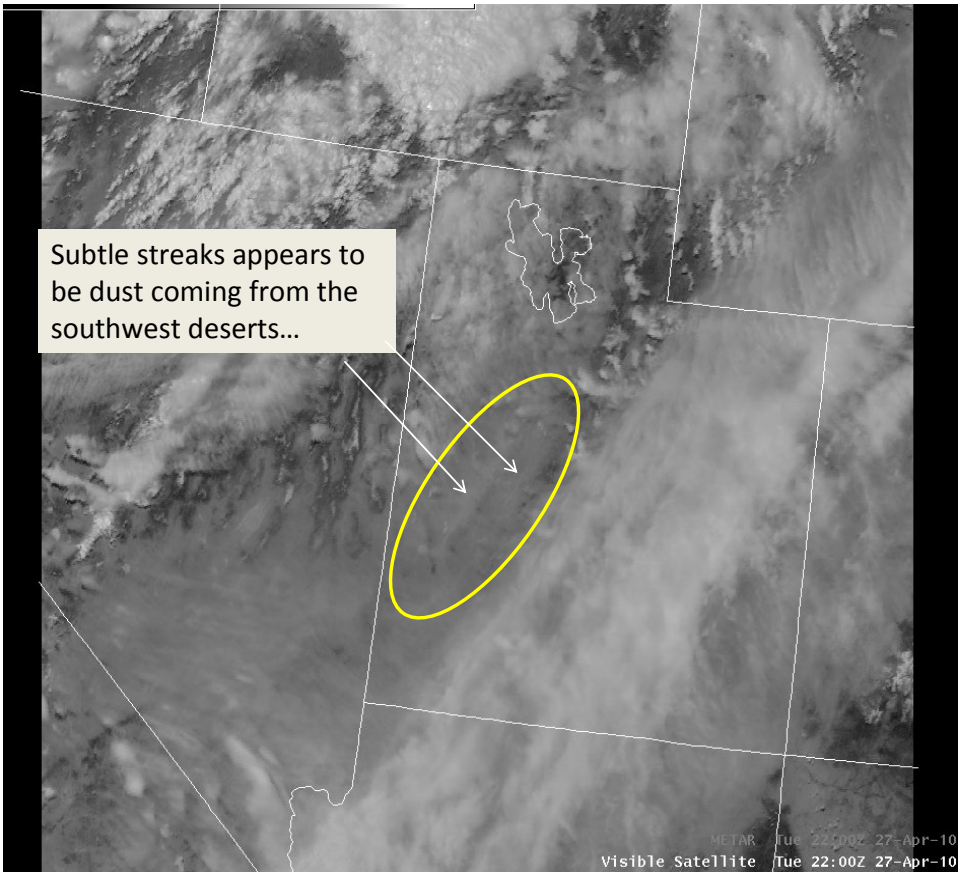
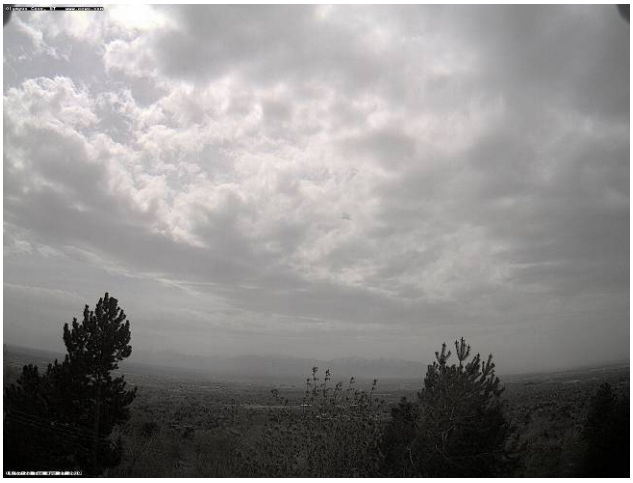


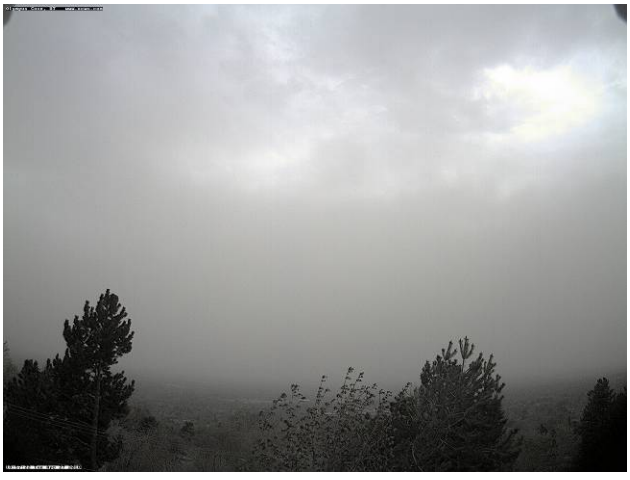
Photo Documentation

Clear view of valley at 8 a.m.

Dust storm at 3 p.m.



Wind storm persists into evening (7 p.m.)



Affect Air Quality

The high wind dust storm caused elevated PM10 and PM2.5 levels across the Utah monitoring network.

Table 1 – Ambient Air Quality Exceedances

Monitoring Station	PM10 (µg/m^3)	PM2.5 (µg/m^3)	Lat.	Long.
Cottonwood		59.3	40.64405	-111.84976
Hawthorne	278	47.1	40.73436	-111.87201
North Salt Lake	298		40.80536	-111.92101
Ogden	197		41.20693	-111.97509
Rose Park		45	40.79554	-111.93098

Figures 1 and 2 present the daily trends for PM10 and PM2.5 24-hr values.

Figure 1 – PM10 24-hr Values

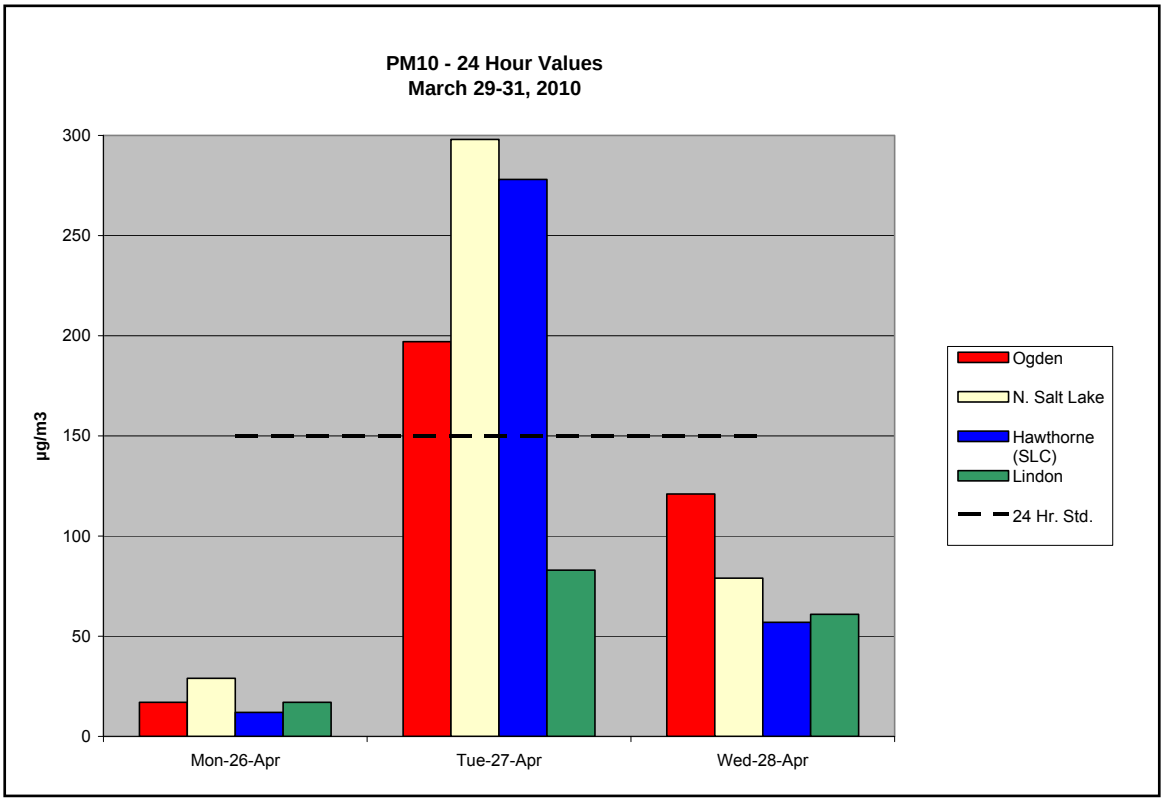


Figure 2 – PM2.5 24-hr Values

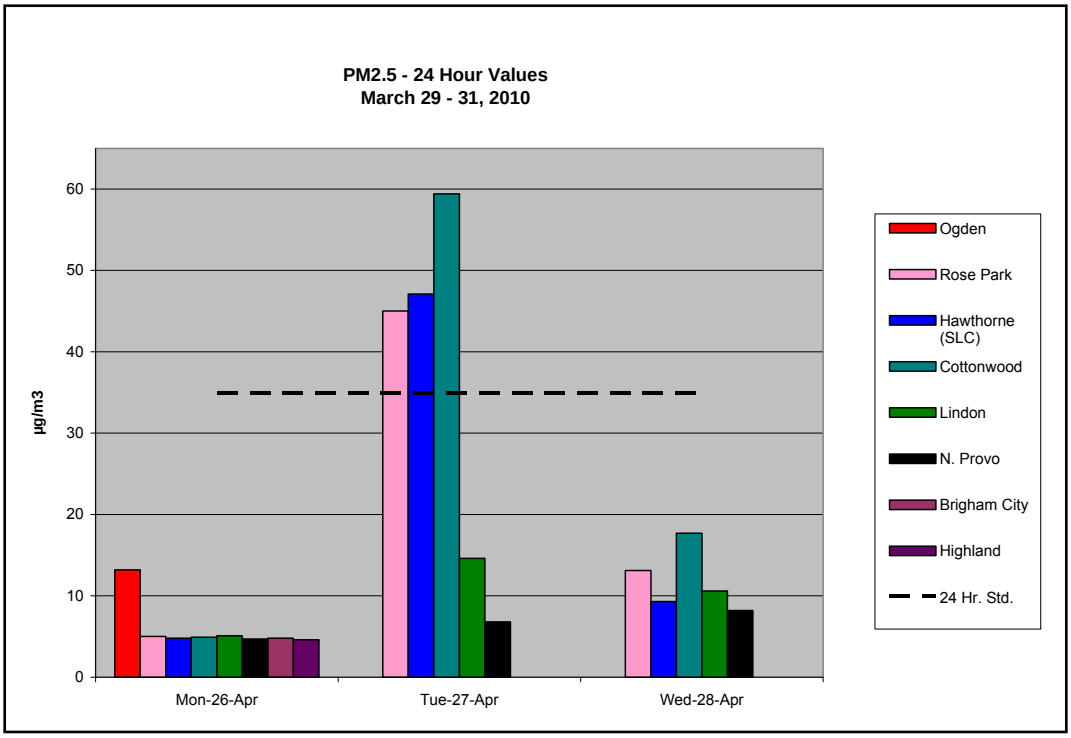
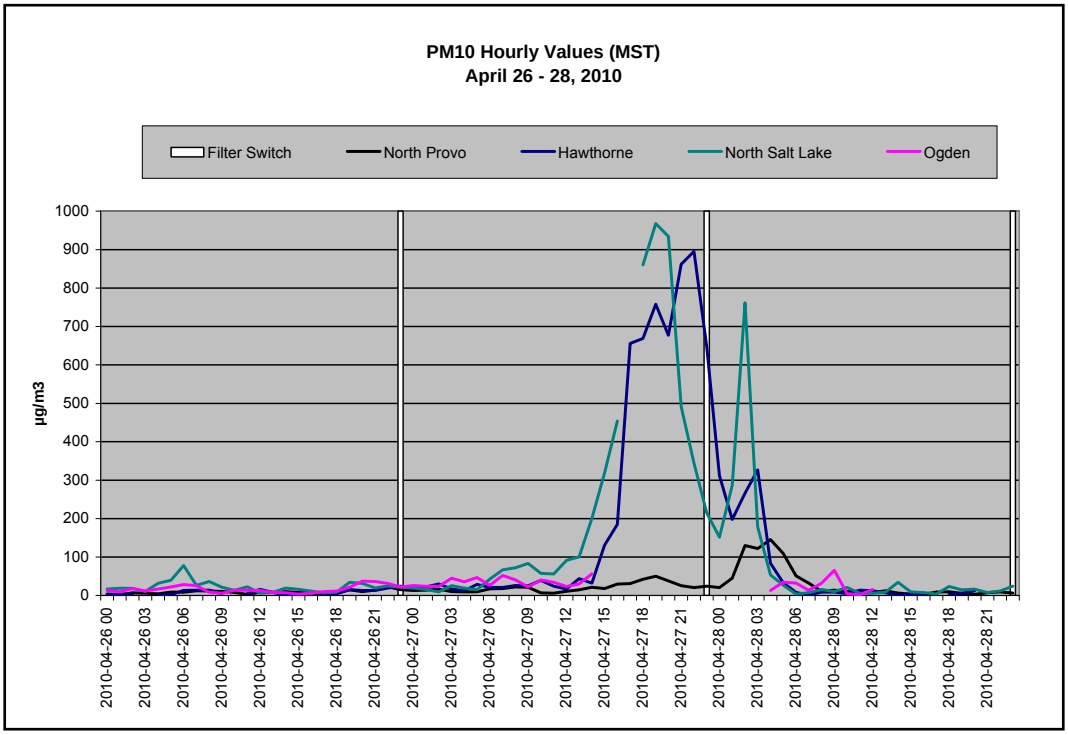


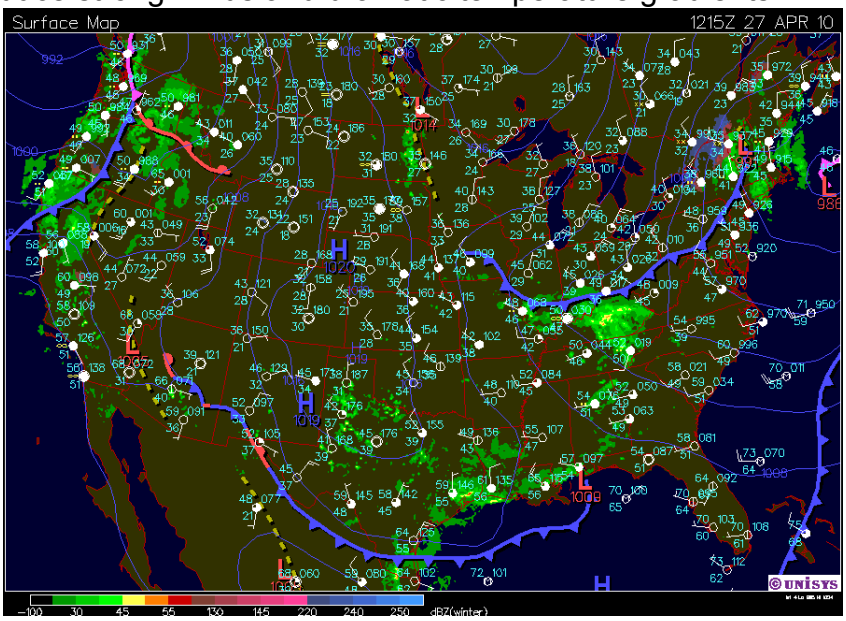
Figure 3 shows the hourly measurements for PM10, at available TEIOM monitors, before, during and after the wind storm. The hourly data is presented in Appendix 1. The impact of the storm started around 3 p.m., continuing through the evening hours.

Figure 3 – PM10 Hourly Values



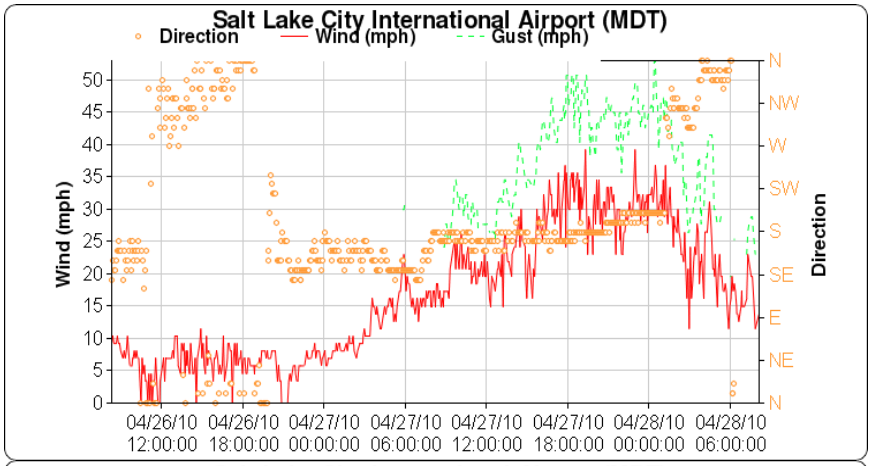
Not Reasonably Controllable or Preventable & Natural Event

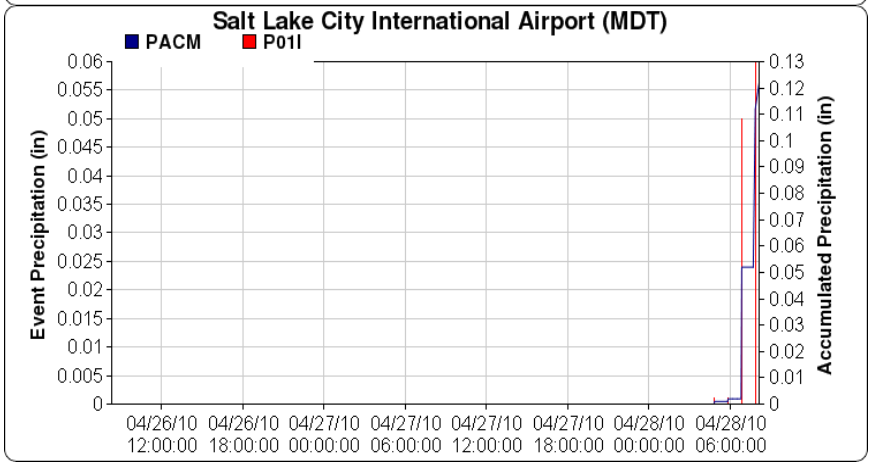
Rapidly developed cold fronts produce strong winds and dramatic temperature gradients over the Intermountain West. This seasonal spring occurrence creates the potential for wind eroded surface soils in the Utah and Nevada deserts. Soil particles are susceptible to erosion when rapid heating releases it's adhesion to the strata and surface wind velocities are sufficient to suspend them into the air mass.



This storm displayed classical signs of a leading dry line, depicted by the yellow broken line in front of the cold front that had yet to reach Utah on the morning of April 27.

The winds at the Salt Lake airport incrementally increased on Tuesday morning until noon, when they leveled off between 15-25 mph, than increased again late afternoon reaching 38 mph, with gusts of 50 mph. According to the National Weather Service, 50 mph winds were common across the Wasatch Front with much higher wind speeds measured at higher elevations. A high wind advisory was issued for Wednesday as well, with winds ranging from 12-32 mph, with gusts of 42 mph at the airport. Precipitation on Wednesday decreased suspended particulate matter despite high winds.





Control Analysis

The Exceptional Events Rule

Preamble states that, “where high wind events results in exceedances or violations of the particulate matter standards, EPA proposed that they be treated as natural events if…, and if anthropogenic activities which contribute to particulate matter emissions in conjunction with the high wind event are reasonably well-controlled.”

The State of Utah has developed a comprehensive program of controls for airborne fugitive dust implemented through existing Utah air quality rules, stationary source permitting, and State Implementation Plans (SIP) (approved by EPA). This system of control techniques for fugitive dust has been in place since 1992, when the current Utah PM10 SIP was developed. The SIP requires control measures for both specific and general PM10 fugitive dust sources along the Wasatch Front. The SIP process introduced Reasonably Available Control Technology (RACT) and Best Available Control Measures (BACM) for sources that existed prior to the SIP process and required Best Available Control Technology (BACT) for new sources and modifications of existing sources. BACT requirements are enforced through Utah administrative rule R307-401. Since 1992, the state has implemented and continually updated two administrative rules that control fugitive dust throughout the state. R307-205 and R307-309 which, taken together, apply to all significant fugitive dust sources in the state. These rules require each significant fugitive dust source to develop and implement a site-specific fugitive dust control plan. In effect, an approved dust plan defines BACM for a source, and provides a flexible mechanism for controlling airborne dust. Under the Utah SIP requirements and the Air Quality Rules, all eligible sources in Utah are subject to emission controls defined by RACT, BACT or BACM.

Control strategies contained in the SIP have been successful as evident by the fact that excluding data impacted by exceptional events, Utah would be in compliance with the PM10 national ambient standard.

Utah is currently engaged in SIP development for PM2.5.

Additional Rules

R307-202 Emission Standards: General Burning, prohibits burning of trash and other waste and salvage operations by open burning. Persons/agencies wishing to open burn tree cuttings, slash in forest areas etc., must seek a permit from DEQ that include control measures.

R307-204 Emission Standards: Smoke Management, establishes rules and procedures to mitigate the impact on public health and visibility of prescribed fire and wildfire.

R307-206 Emission Standards: Abrasive Blasting, establishes work practice and emission standards to control particulates. R307-30-6, a more stringent version applies in nonattainment areas.

R307-207 Emission Standards: Residential Fireplaces and Stoves, establishes emission standards for opacity. R307-302, a more stringent version applies in nonattainment areas.

Additional Anthropogenic Sources

Agricultural practices, by their nature, require dry field conditions which may generate fugitive dust. Agricultural practices are under the purview of the U.S. Department of Agriculture (USDA). Recognizing the problems associated with soil erosion on agricultural cropland, rangeland and other environmentally sensitive cropland areas, the USDA included conservation provisions in the Farm Security and Rural Investment Act of 2002 (Farm Bill). The conservation provisions of the legislation are designed to assist farmers and ranchers with a number of voluntary programs including cost-share, land rental, incentive payments, and technical assistance. The conservation programs of the Farm Bill are administered by the Natural Resources Conservation Service (NRCS).

The Farm Bill legislation created and reauthorized three programs that are designed to reduce erodible land:

- Conservation Reserve Program (CRP)
- Environmental Quality Incentives Program (EQIP)

The CRP encourages farmers to enter into contracts with USDA to place erodible cropland and other environmentally sensitive land into long-term conservation reserve. The reserves are generally 10 to 15 years in duration and the reserve is established by the implementation of environmental practices to reduce soil erosion.

The CRP systematically reduces soil erosion by planting vegetative cover on highly erodible lands (HEL). In Utah, HEL soils are normally on steeper valley side slopes subject to erosion from washing or open areas vulnerable to high wind events. In exchange, landowners receive annual rental payments for the land and cost-sharing assistance for the established practices. In the early years of the program, the emphasis was on HEL soils. Since 1996, there is an additional authorization to address wild life habitat and air quality. The more recent authorization includes additional conservation practices including windbreaks, riparian buffers and wetland mitigation which are instrumental in reducing soil erosion. Further consideration is also given to air quality where eligible parcels located in or adjacent to nonattainment areas received a higher score in the evaluation process.

The EQIP is a voluntary program that assists farmers and ranchers, who face existing soil and water resource degradation. The EQIP promotes agricultural production in a manner that allows producers to meet federal, state and local environmental requirements. Some of the stated aims of the program are as follows:

- Reduction of non-point source pollution, such as nutrients, pesticides;
- Reduction of emissions including particulate matter, nitrogen oxides, ozone precursors, and volatile organic compounds that can contribute to degradation air quality standards; and
- Reduction in soil erosion and sedimentation on agricultural lands.

In general, NRCS programs encourage agricultural practices that improve topsoil and prevent wind blown dust during high-wind events. Notable examples of techniques and practices advocated include:

- Planting of cover crops and perennials to protect agricultural soils with emphasis on HEL soils;

- NRCS encourages the use of perennial crops and existing weeds on corners and non-utilized areas of agricultural land to resist soil erosion;
- NRCS "costs shares" on conservation practices with local farmers to prevent soil erosion; and
- NRCS works with Utah State University to identify agricultural techniques and practices to minimize soil erosion.

A primary aim of this process is to reduce soil erosion on agricultural land, which in turn reduces wind blown dust during high-wind events. This program is open to attainment and nonattainment areas in Utah. There are 1,133,687 acres in this program in Utah.

Utah Initiatives

Utah Clean Diesel Program

Agriculture: Diesel engines are a major source of pollution, emitting particulates, amongst other pollutants. DAQ applied for and received $750,000 from the American Recovery and Reinvestment Act to replace 11 agricultural vehicles and equipment, repower 21 engines in agricultural vehicles and equipment, and install 30 Auxiliary Power Units on agricultural vehicles. DAQ collaborated with the Utah Department of Agriculture and Food and Utah State University to identify agricultural operators whose operations are negatively impacting non-attainment areas in the state. The project's scope of replacing, repowering, and installing more fuel efficient technology on agricultural vehicles and equipment will ensure that stricter emissions standards requirements are met and yield more diesel fuel conservation.

School Bus Project: In 2007, DAQ started the Utah Clean School Bus Project in conjunction with Utah Office of Education, local school districts, county and municipal governments, as well as community and non-profit organizations. This coalition is working together to secure funding sources for school districts to purchase emission reducing technologies for buses statewide. The application of these technologies is expected to reduce particulate matter by 30%. A total of 1,179 buses have been retrofitted.

Clean Diesel Trucking Initiative: DAQ initiated the Clean Diesel Grant Program to install APUs (Auxiliary Power Units) on 48 long-haul tractors that will reduce diesel emissions and fuel usage from diesel-powered, long-haul trucks that travel and idle within the non-attainment areas of the Wasatch Front. The funding was provided by a State allocation of $352,941 through EPA's National Clean Diesel Campaign and a State match of $235,294, for a total of $588,235. EPA awarded DAQ a grant in 2010 to continue installation of APUs.

Clean Fuel Vehicle Tax Credit and Loan Program

The Utah Clean Fuels and Vehicle Technology Grant and Loan Program, funded through the Clean Fuels and Vehicle Technology Fund, provides grants to assist businesses and government entities in covering:

1) The cost of converting a vehicle to operate on clean fuels.
2) The incremental cost of purchasing an Original Equipment Manufacturer (OEM) clean fuel vehicle.

3) The cost of retrofitting diesel vehicles with EPA verified closed crankcase filtration devices, diesel oxidation catalysts, and/or diesel particulate filters.

The Clean-Fuels Grant and Loan Program also provides loans for the cost of converting a vehicle to operate on a clean fuel, for the purchase of OEM clean fuel vehicle, and for the purchase of fueling equipment for public/private sector business and government vehicles. Finally, the program can provide grants and loans to serve as matching funds for federal and non-federal grants for the purpose of converting vehicles to operate on a clean fuel, purchasing OEM clean fuel vehicles, or retrofitting diesel vehicles.

Natural Area Sources

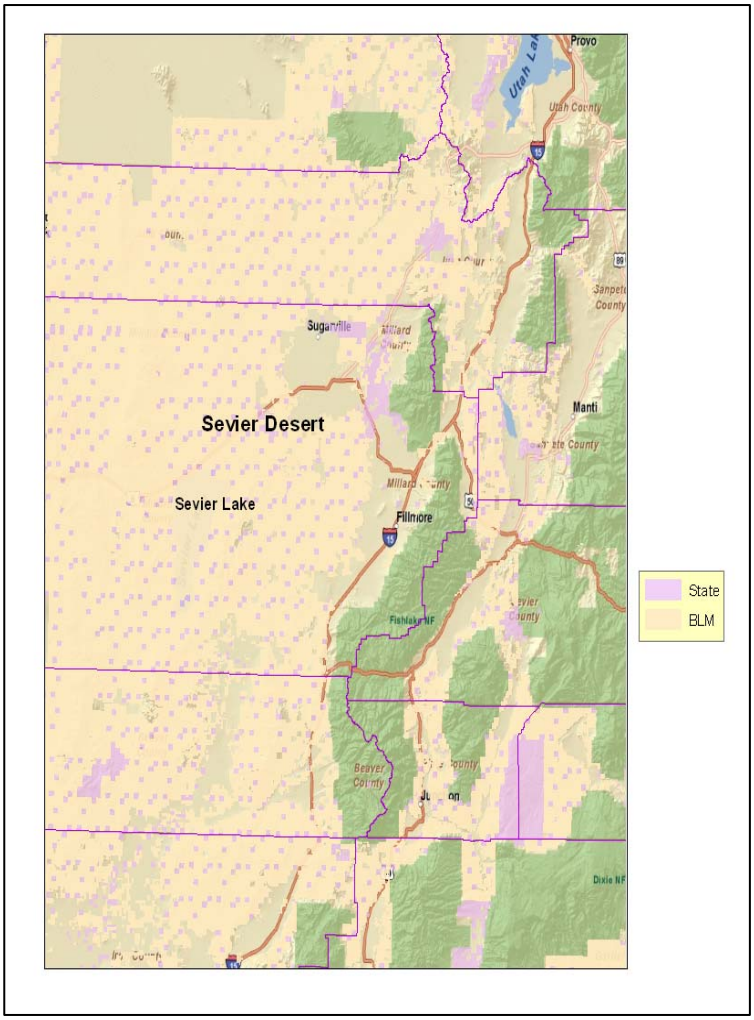
Draft EPA guidance on high wind exceptional events issued May 2011, states that it is unreasonable to expect states to have controls in place where states do not have jurisdiction. However, EPA believes that these major source areas should be discussed in exceptional events demonstrations.

The major natural dust sources during this event were the south and southwest desert areas and not urban based pollution sources, confirmed by PM-course particle size composition of 86% for Hawthorne and visual confirmation from satellite imagery.

Sevier Desert Region

BLM is the dominant land owner for the entire region. The state of Utah owns small, mostly noncontiguous parcels of land throughout the region that by themselves, are not a major dust source.

The Sevier Desert region contains many low lying areas with dry lake beds (playa). The playa areas consist of silt and clay lake bed deposits with particle sizes ranging from 1 to 62.5 micrometers. The evaporate material is high in magnesium, sulfur and chloride ions. The lake beds have been mostly dry throughout recorded history and are a source of wind-blown dust in dust storms that frequently impact the Wasatch Front.

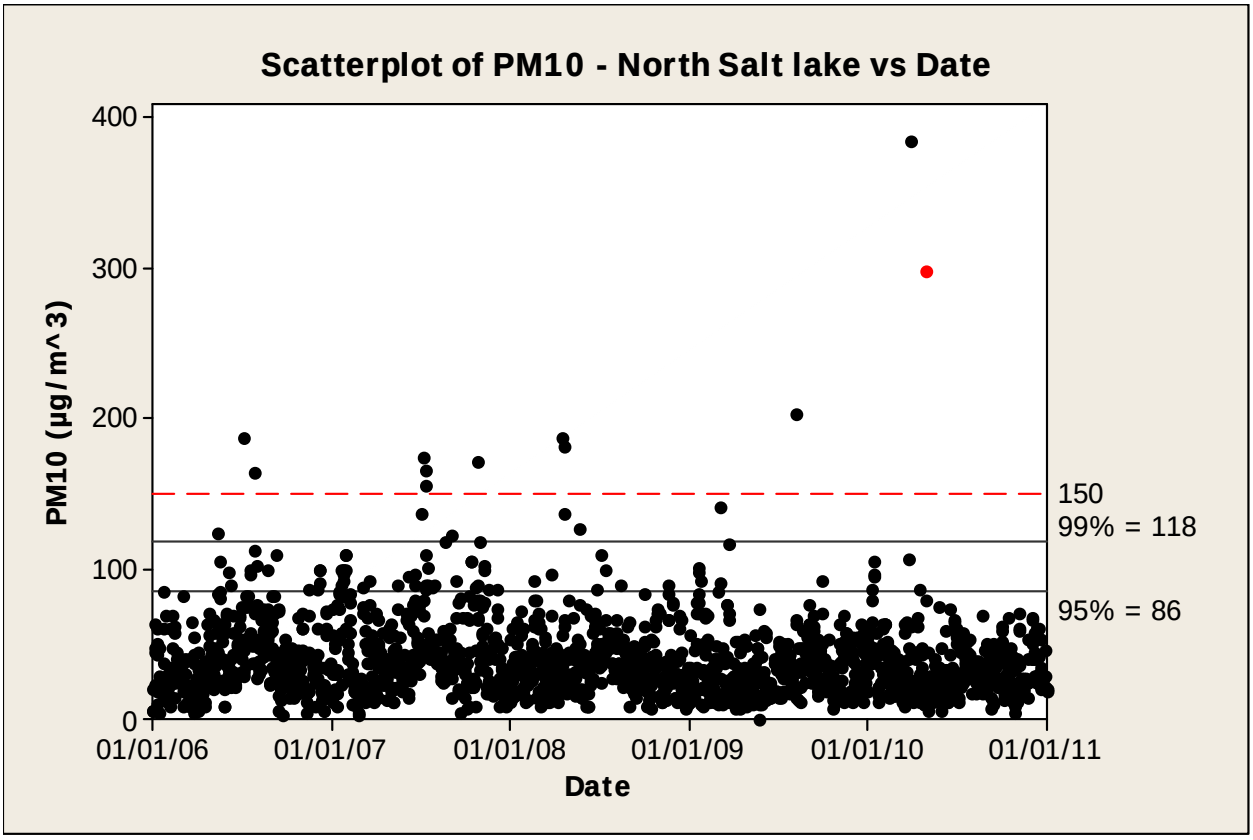


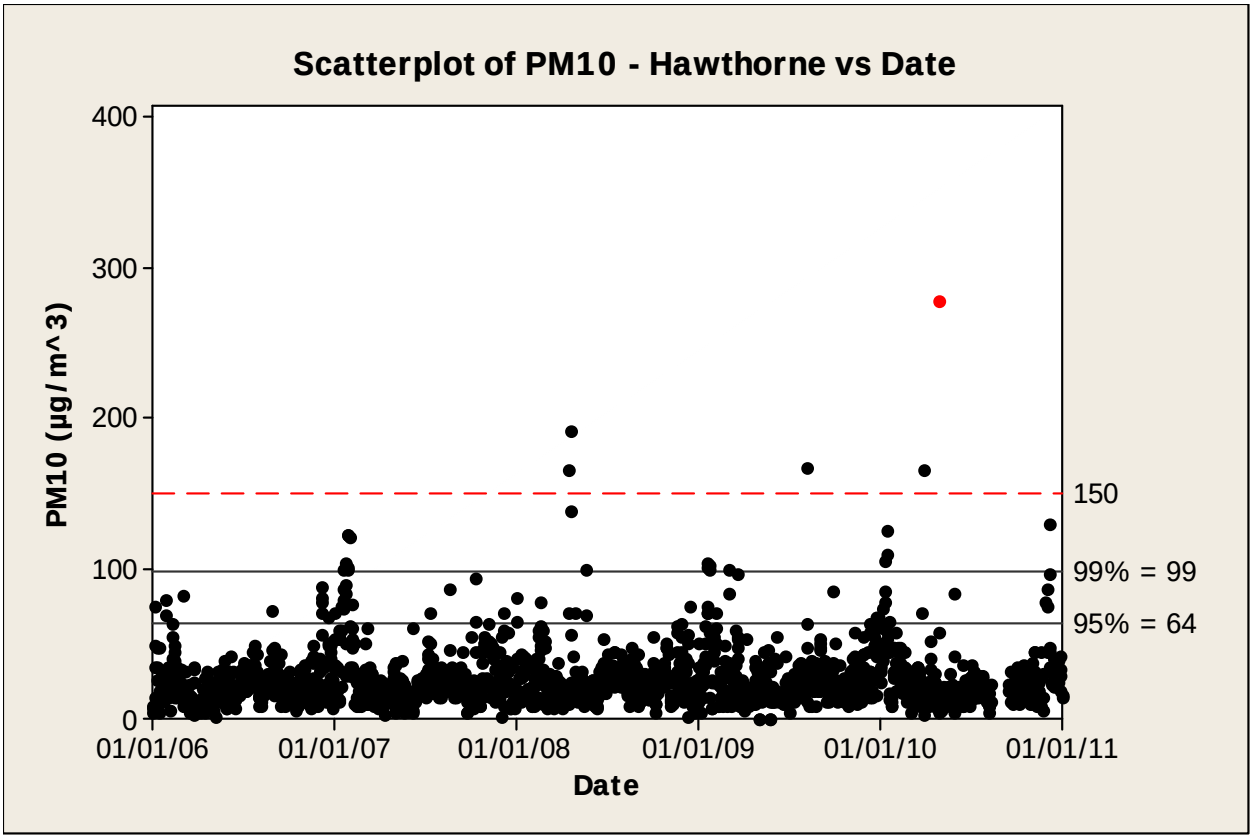
Historical Fluctuation

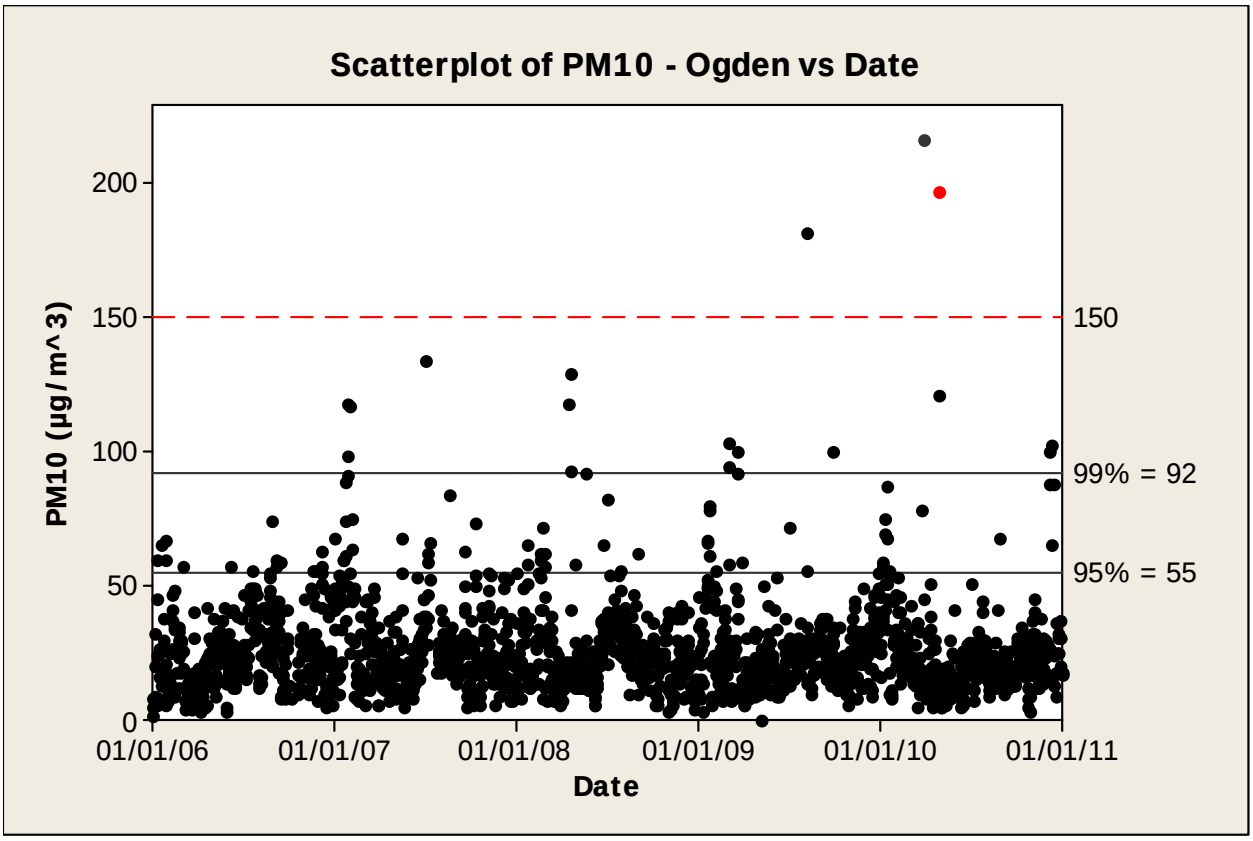
Time Series - Concentration

Ambient air quality standard: red dotted line.
Event concentration: red data point.
Site specific values at 99 and 95 percentile posted to the side.

PM10 Time Series Plots

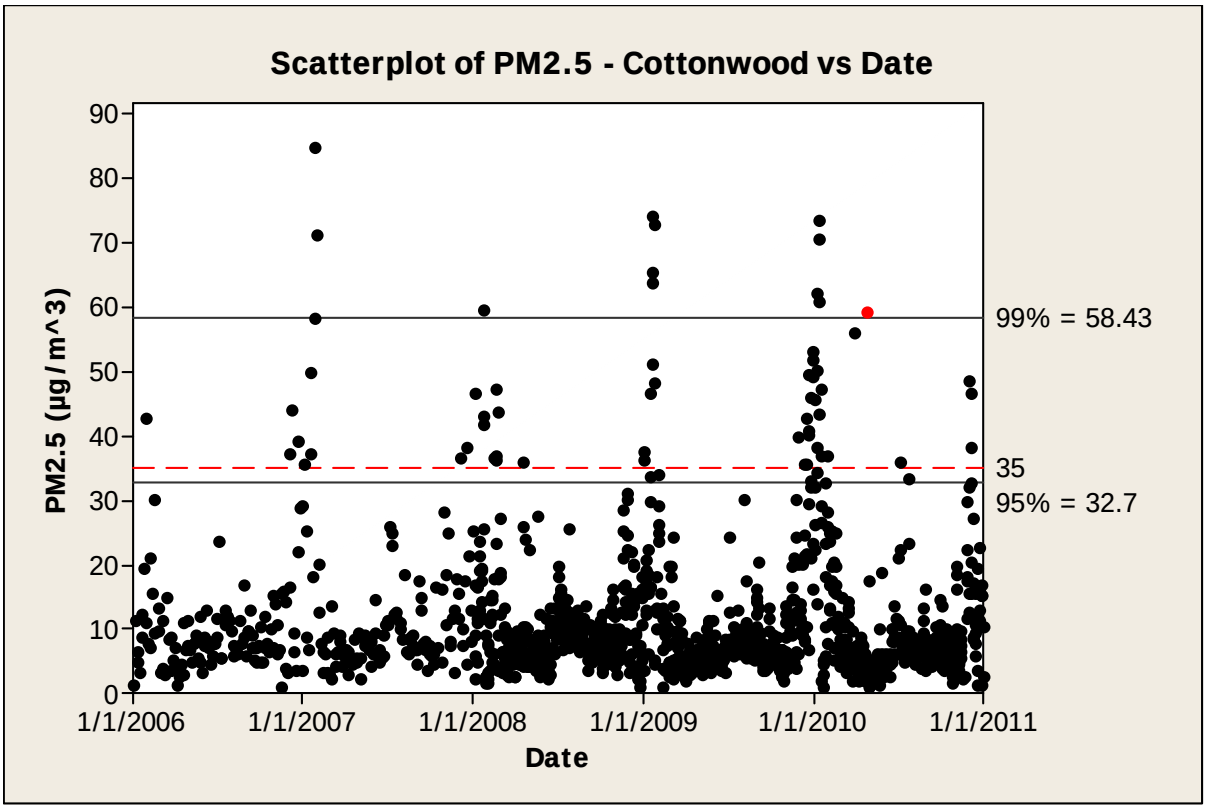


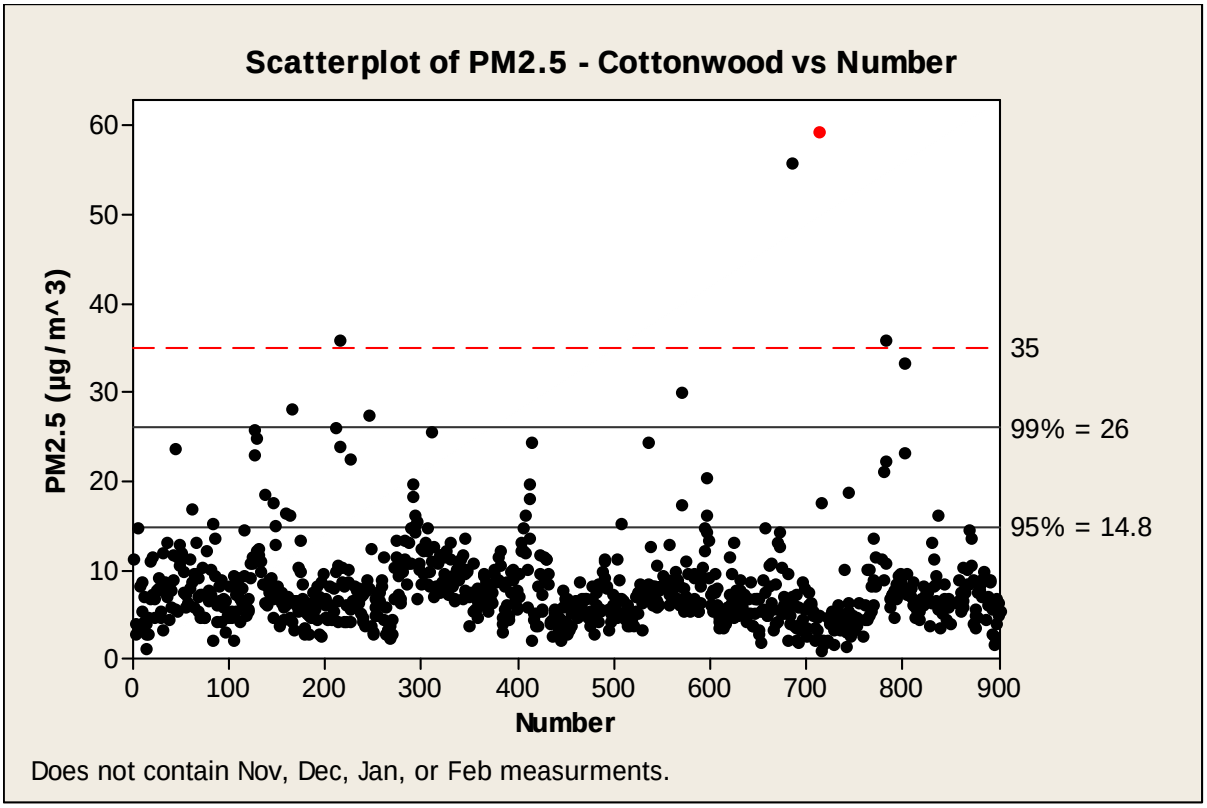

Scatterplot of PM10 - Hawthorne vs Date
PM10 (µg/m^3)
400
300
200
100
0
150
99% = 99
95% = 64
01/01/06
01/01/07
01/01/08
01/01/09
01/01/10
01/01/11
Date


Scatterplot of PM10 - Ogden vs Date
PM10 (µg/m^3)
200
150
100
50
0
150
99% = 92
95% = 55
01/01/06
01/01/07
01/01/08
01/01/09
01/01/10
01/01/11
Date

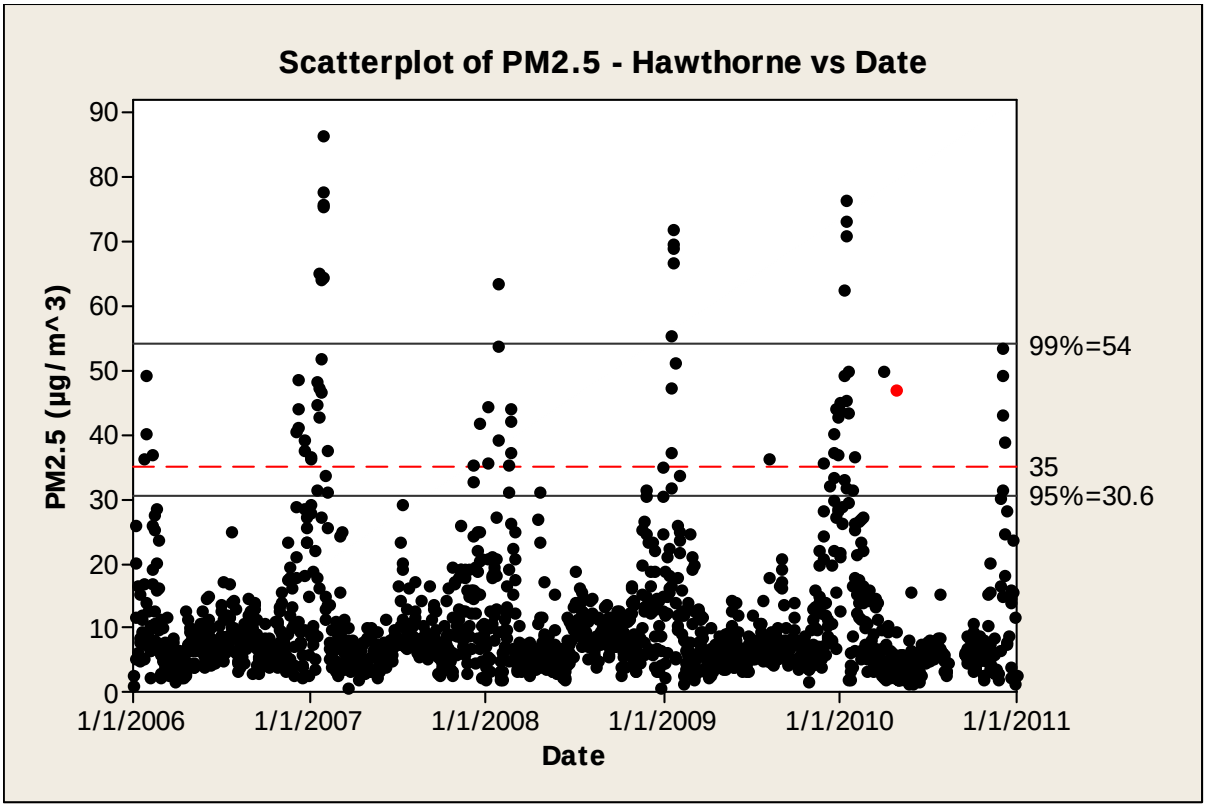
PM2.5 Time Series Plots

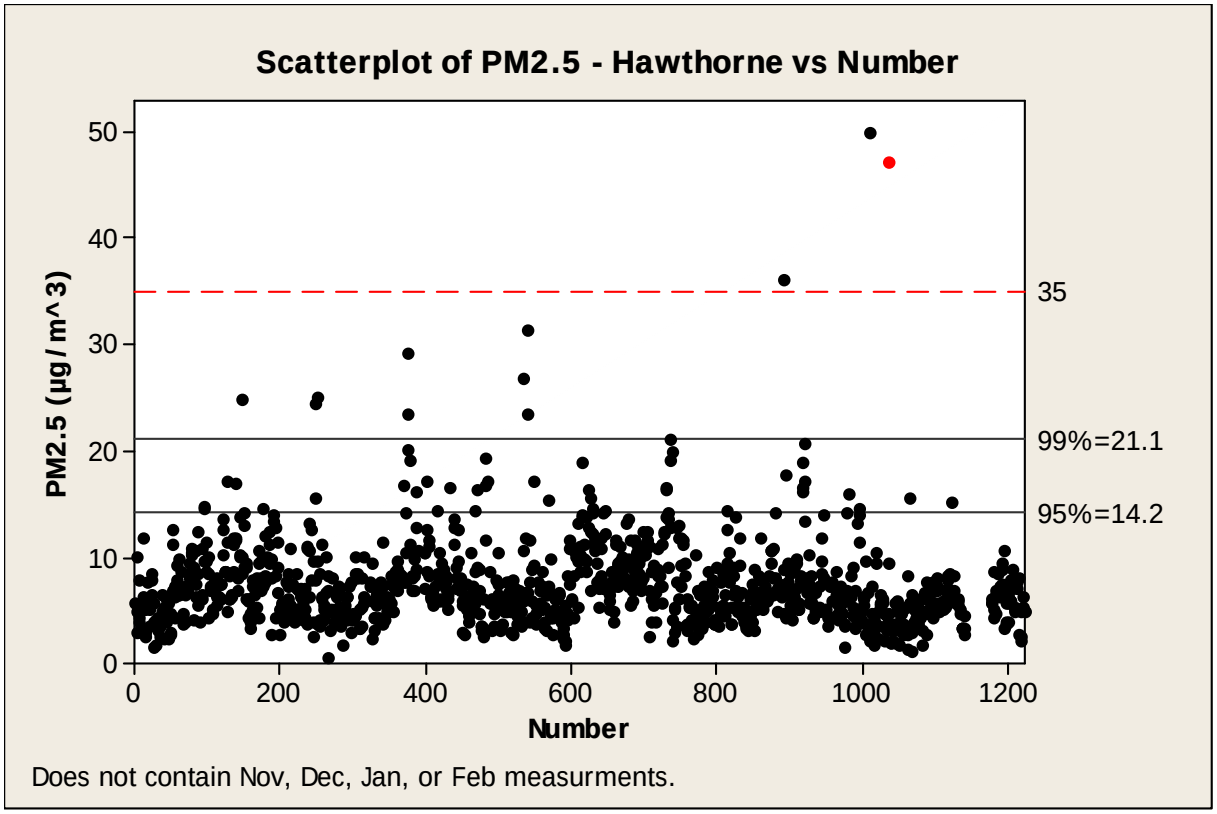
Winter time inversions influence PM2.5 historical data to the degree that we must evaluate the time series with and without inversion measurements.



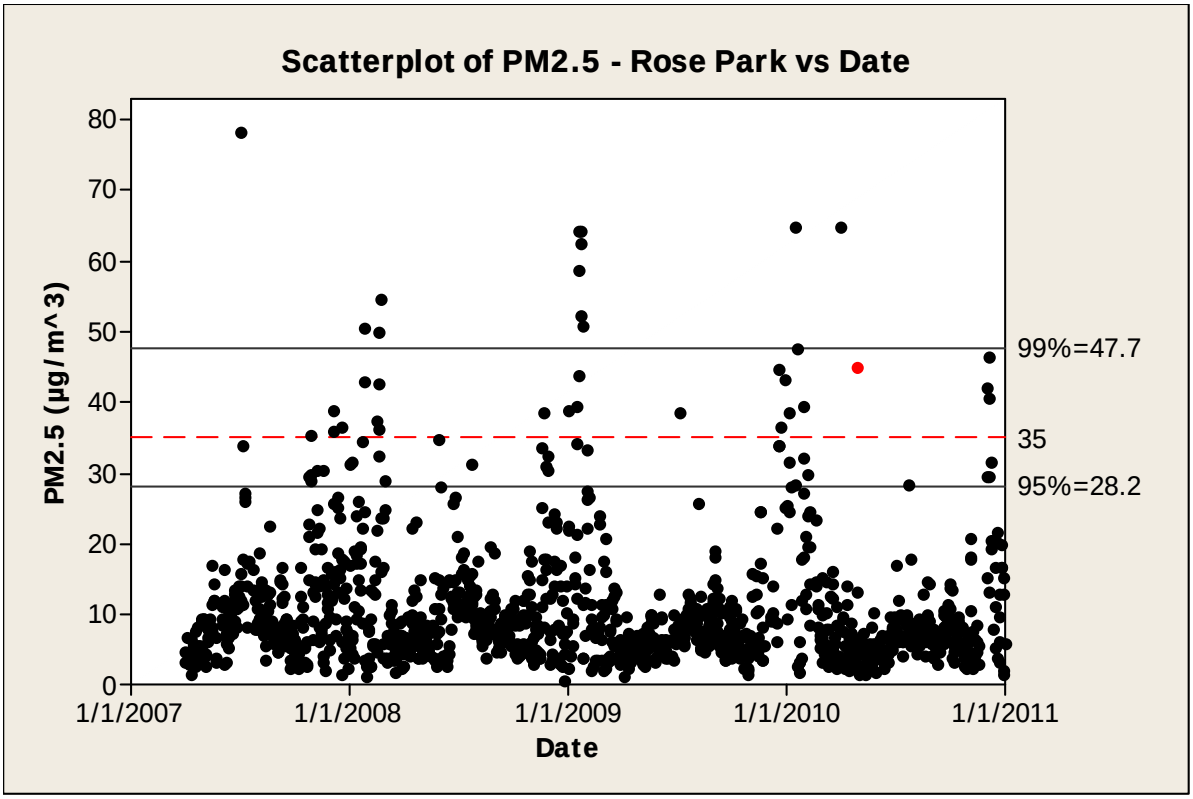


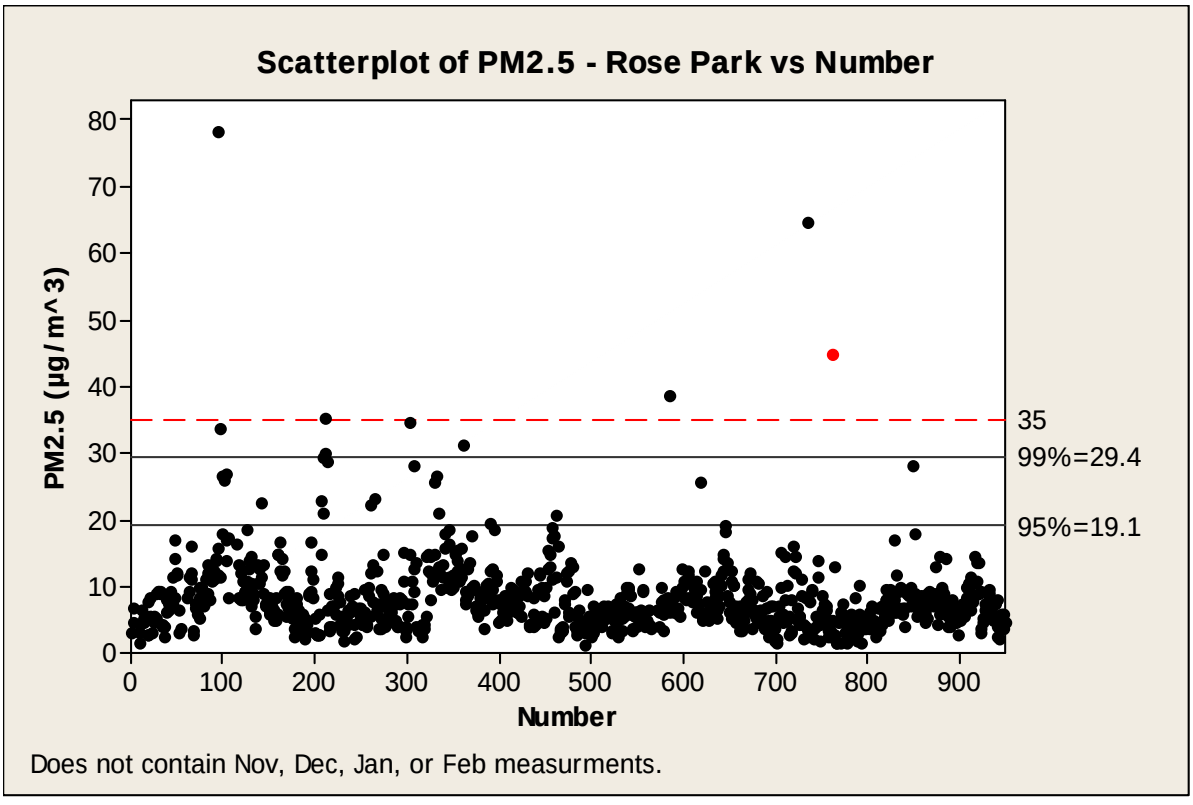
Does not contain Nov, Dec, Jan, or Feb measurments.





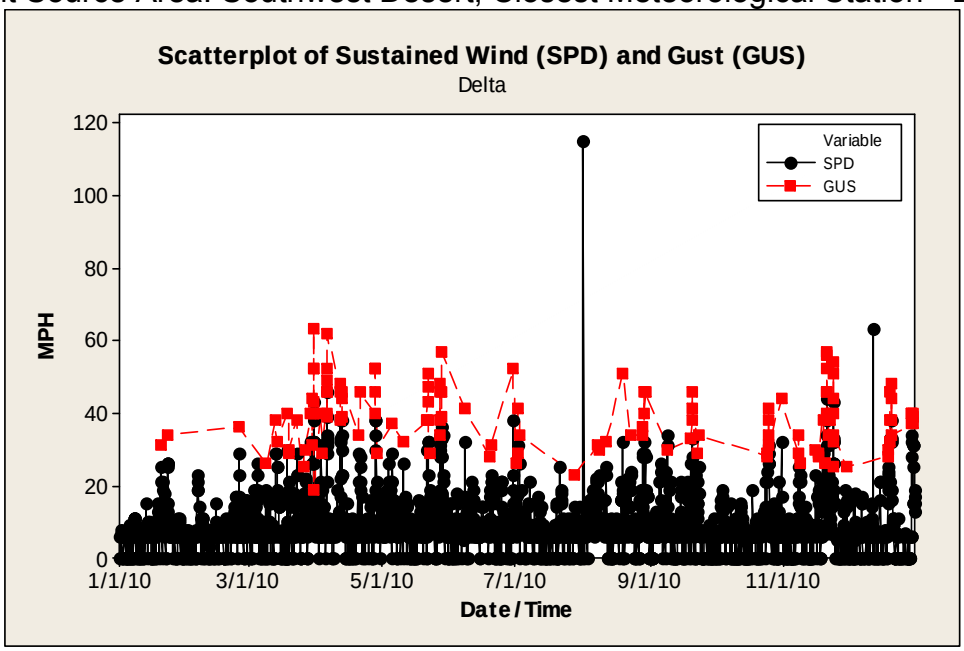
Does not contain Nov, Dec, Jan, or Feb measurments.


Scatterplot of PM2.5 - Rose Park vs Date
PM2.5 (µg/m^3)
80
70
60
50
40
30
20
10
0
1/1/2007
1/1/2008
1/1/2009
1/1/2010
1/1/2011
Date
99%=47.7
35
95%=28.2


Scatterplot of PM2.5 - Rose Park vs Number
PM2.5 (µg/m^3)
80
70
60
50
40
30
20
10
0
0
100
200
300
400
500
600
700
800
900
Number
35
99%=29.4
95%=19.1
Does not contain Nov, Dec, Jan, or Feb measurments.

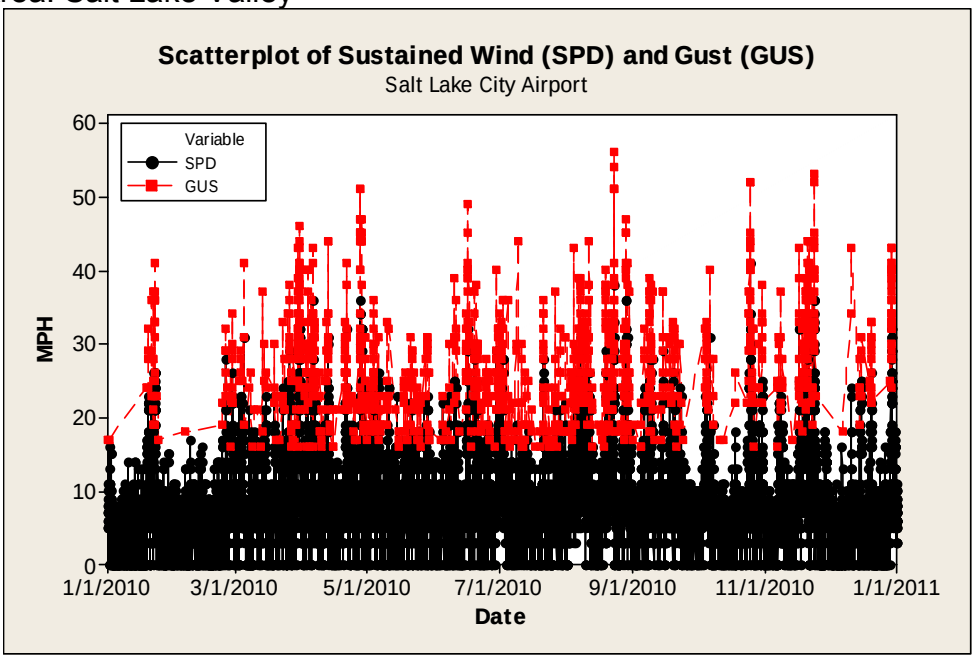
Wind Speed

Predominant Source Area: Southwest Desert, Closest Meteorological Station - Delta, Utah



4/27/2010
Max sustained Wind = 38mph
Max Wind Gust = 46 mph

Receptor Area: Salt Lake Valley



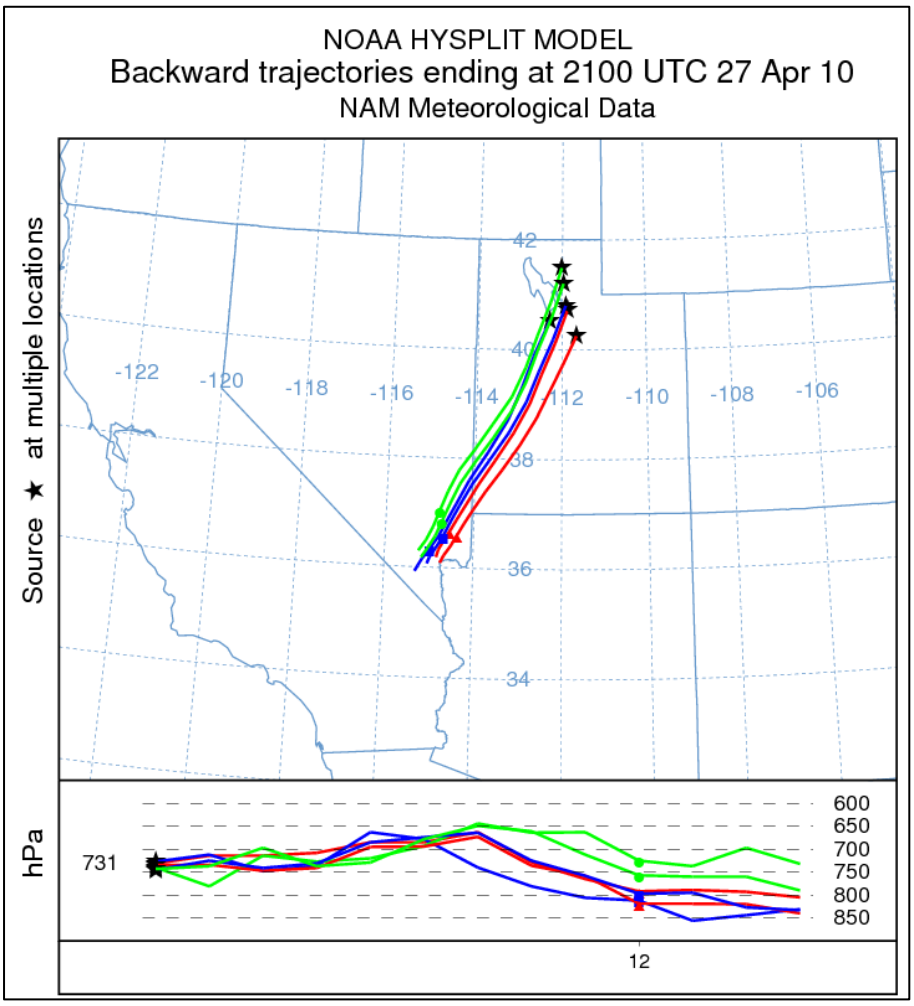
4/27-28/2010
Max sustained Wind = 36mph
Max Wind Gust = 51 mph

Clear Causal Relationship

Trajectory and Impacted Area

Backwards trajectory analysis using the NOAA HYSPLIT model was used to project the winds over a 12-hr period. 1000 meters was selected to represent the steering height of the air mass over the complex terrain.

Image 2 – Storm Trajectory

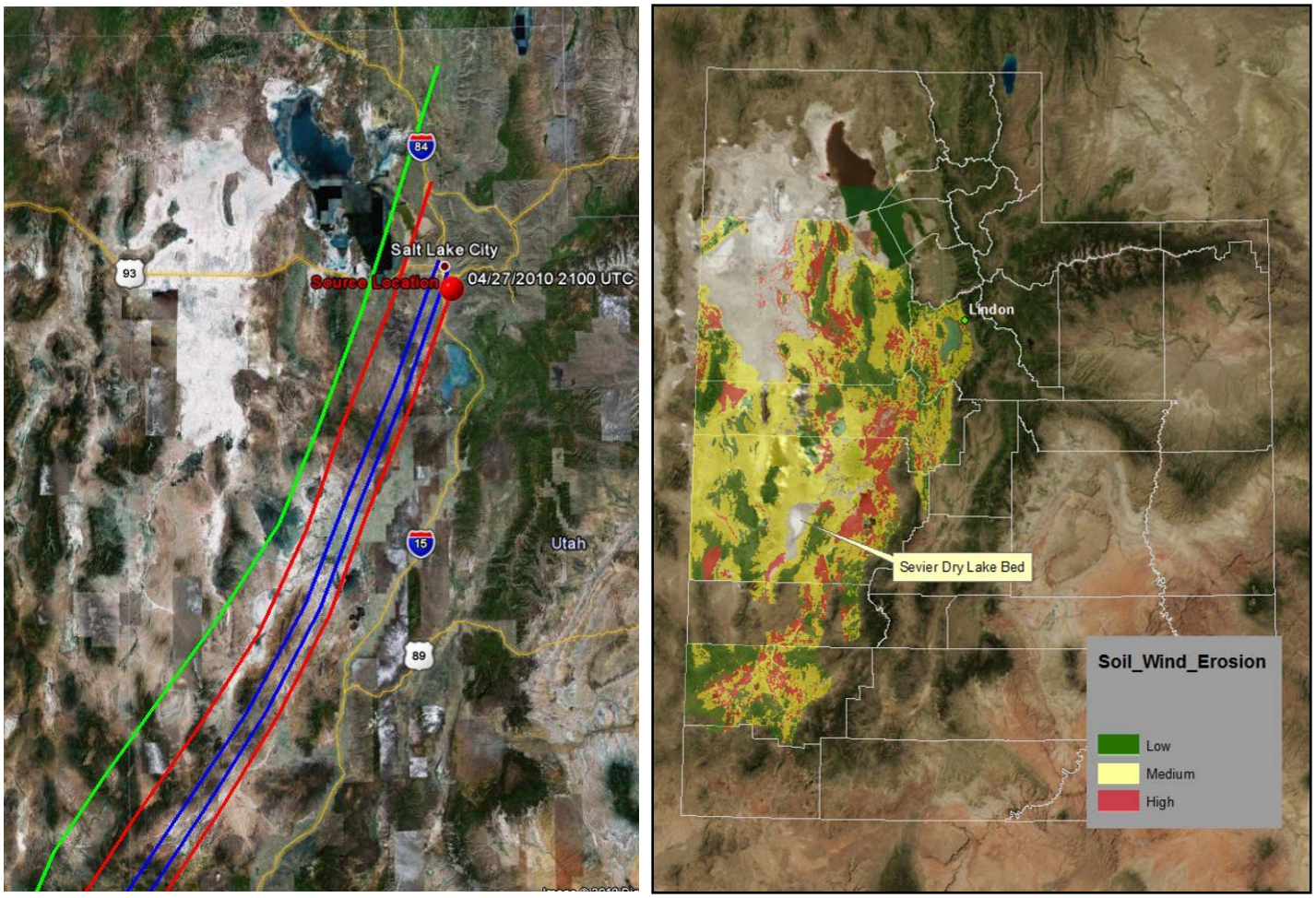


This wind trajectory is typical for spring time storms, where they cross the Utah border from southern Nevada, cross the south-southwest desert areas and travel northward along the Wasatch Front.

Wind Erosion Prone Soils in Utah

The U. S. Department of Agriculture, Natural Resources Conservation Service (NRCS), developed a wind erosion GIS map (right side of Image 3) of MLRA 28A for the DEQ using the Wind Erodibility Index, that assigns an erosion rate to soil. The NRCS categorized soil wind erosion into three categories; low, medium and high erodibility. The desert areas, such as the Sevier dry lake bed and areas around the Great Salt Lake are not defined because the NRCS does not have data for these regions, however these areas are known to have a high erosion potential (shown in white on left side of Image 3) and are often major contributors to Utah dust storms. A significant portion of southern and western Utah is defined as having medium to high erosion potential. The trajectory of this storm shows that the storm traveled over major erosion prone areas, including the Sevier Desert.

Image 3 – Trajectory Over Wind Erosion Prone Soils

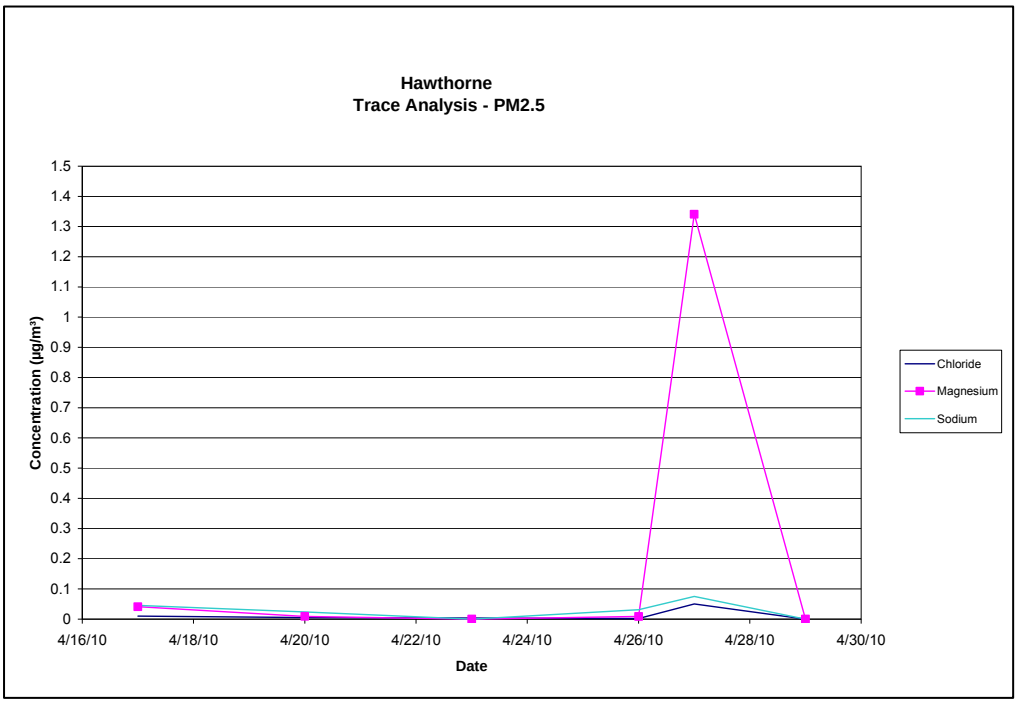


Speciation

Satellite imagery and trajectory modeling indicates that desert dust, including salt playa, was the predominate cause of the exceedances. Plotting PM2.5 filter speciation for common salts, we see the levels before the event are nearly absent, an increase during the event and an immediate decline. The temperatures during that week fluctuated around the

freezing point so any influence from road salting would be defined before the event, which apparently is negligible, if any.

Figure 4 PM2.5 Trace Analysis



Elevated salt ions on the event day, with subsequent reduction of wind speed, provides a weight of evidence that the elevated PM on the event day is related to dust from the desert regions.

Speciation data can be found in Appendix 1.

Coarse Mass Analysis

Comparison of nitrate, sulfate and crustal mineral (SiO_2, Al_2O_3, CaO, Fe_2O_3, K_2O, MgO, FeO, Na_2O, TiO_2, SO_2, P_2O_5 and Ba) fraction before, during and after the event, shows that the crustal fraction is always elevated during the event, while nitrate and sulfates are reduced during the event, which are predominately localized anthropogenic sources. This analysis further supports the weight of evidence that the PM was mostly desert dust.

Table 2 – Coarse Mass Analysis (PM2.5)

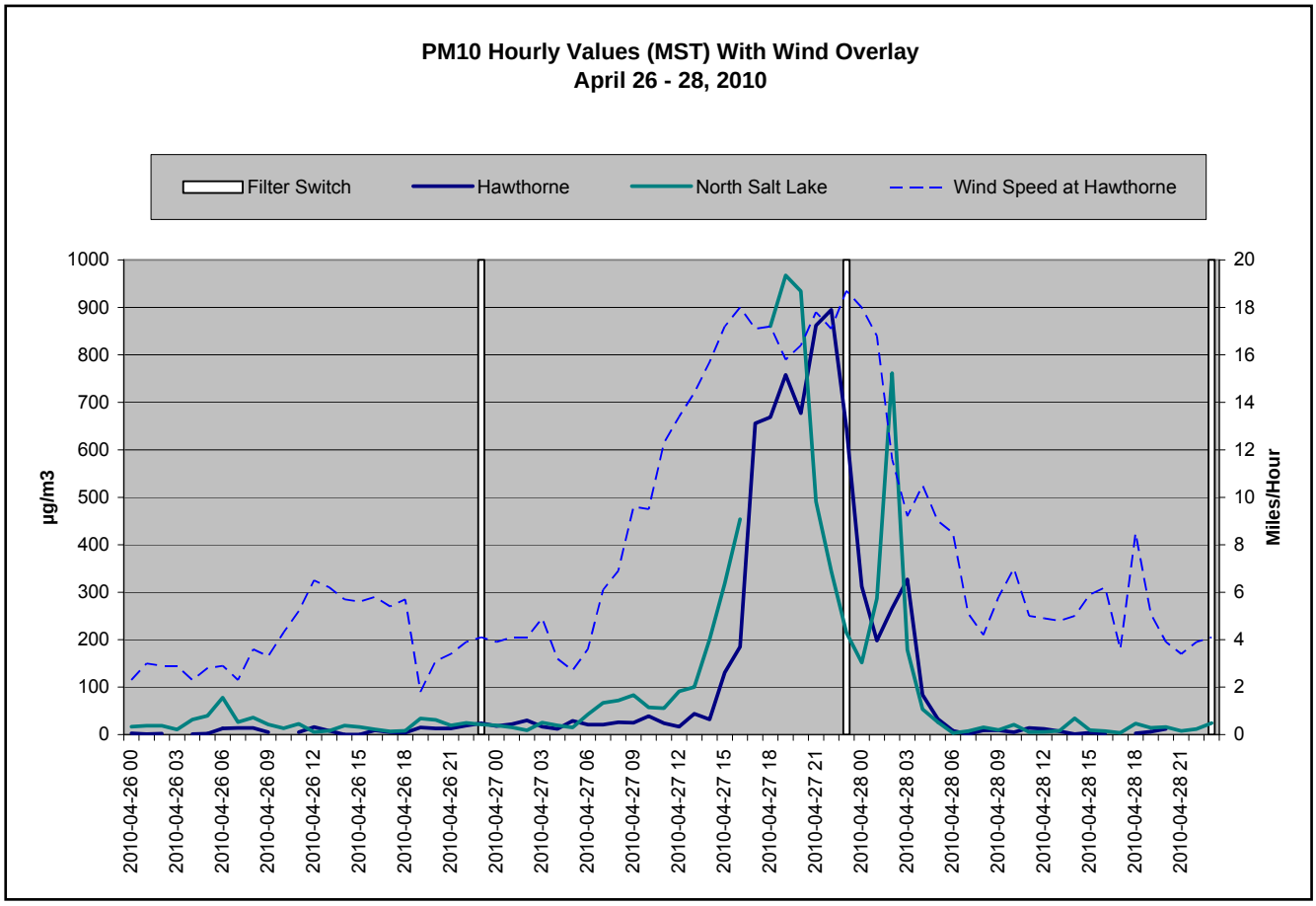
	Hawthorne 4-26-10 Pre-event	Hawthorne 4-27-10 Event Day	Hawthorne 4/29/10 Post-event
Nitrate	10.3%	0.9%	12.3%
Sulfate	18.2%	1.8%	9.7%
Crustal Mineral	19.1%	44.5%	7.5%

No Exceedance or Violation But For the Event

Wind Storm Event

Figure 5 is a plot of the wind speed measured at the Hawthorne monitoring station along with PM10 hourly values. The wind data is presented in Appendix 2.

Figure 5 – Hourly PM10 Values with Wind Overlay



The hourly PM10 pattern across the network mirrored each other before, during and after the event, demonstrating that PM10 levels at all stations before and after the wind event were substantially below the level that would generate a reading above the 24-hr standard. PM10 levels tracked well with increased wind speed on April 27. PM10 levels remained at normal levels mid day on the 28th despite lingering wind, attributable to the precipitation measured at the Salt Lake City airport.

There were no smoke reports or other complaints at the time that would impact the network to this degree. Anthropogenic emissions remained well below the 24-hr standard before and after the event based on Figure 5, with excursions directly associated with gusting winds. If not for the high wind dust storm event crossing desert regions, PM levels would not have exceeded the 24-hr standards.

Clear Causal Relationship and But For the Event Summary

A "clear and casual relationship" and "but for the event" demonstration has been made based on:

- The cold front produced storms with high winds and dust clouds that is a natural event;
- PM concentration patterns correspond directly to the storm event winds showing a direct relationship;
- Backwards trajectory modeling is consistent with dust cloud sources visible in the satellite image; and
- There were no unusual local anthropogenic emissions reported before, during, and after the event.

Mitigation

The Exceptional Events Rule requires states to "take appropriate and reasonable actions to protect public health from exceedances or violations of the national ambient air quality standards." The intent of this section is to describe the State of Utah's dust control and public health protection programs.

Division of Air Quality Community Outreach

Clean Utah

DEQ is committed to working with businesses to ensure the ongoing protection of public health and the environment. Clean Utah is a program that encourages and rewards business and other permit holders for going beyond compliance to preserve and protect Utah's environment. Compliance assistance include: common compliance problems, permitting information, spill reporting, small business assistance, and providing tools for business, for example: pollution prevention and best management practices (please refer to sample pamphlet below).

Smoking Vehicles

Vehicles emitting excessive smoke contribute to airborne particles. Five local health departments (Cache, Davis, Salt Lake, Utah and Weber Counties) operate smoking vehicle education and notification programs. People who spot a vehicle producing excessive smoke can report it through their respective county health department.

Utah Clean City

Utah's Clean Cities Coalition is one of 85 coalitions around the country that's part of the U.S. Department of Energy's strategy to reduce America's dependence on imported foreign oil. The Utah coalition sponsored Idle Free Awareness Week which included educating school bus drivers on the air quality value of limiting idling.

Variable Message Signage

The Utah Department of Transportation (UDOT), in conjunction with the DEQ air quality forecasting program, issues air quality warnings on electronic message boards placed

along Utah's highways. The signage asks drivers to limit their driving on high alert days. An informal study conducted this winter by UDOT during 6-days with and without air quality alerts indicates that there was a 3-5% auto traffic reduction (per Glen Blackwelder, UDOT Traffic Operations Engineer).

Choose Clean Air

An interactive source of information about ways individuals can help improve air quality by making smart choices in their personal lives can be found on the DEQ website. The site includes 50 suggestions for daily life.

The UDEQ also offers an electronic mail server (Listserv). Subscribers are automatically notified by e-mail when unhealthy air pollution levels are forecast for the Wasatch Front.

Dust Control Education

The DEQ website includes a page on dust control and the aggregate industry. The page is intended to educate the public about dust, control methods and community aggregate locations near them by providing links to aggregate firms Approval Orders containing fugitive dust control conditions.

Utah Air Quality Public Notifications

In order to improve the presentation of air quality information to the public, DAQ has improved our air quality forecasting web page. The web page now shows the air quality forecast for today and the next two days. The Air Monitoring Center (AMC) provides air pollution information based on daily air quality status. The AMC data is used to determine the relationship of existing pollutant concentrations to the National Ambient Air Quality Standards. There is a three tiered air quality alert system: Green, Yellow (alert days), and Red (actions days) that is used to implement winter and summer controls on the use of wood and coal burning stoves, fire places, and motor vehicles. There are five health advisory categories: good, moderate, unhealthy advisories A and B, and very unhealthy. The AMC advisory is calculated for five major pollutants including ground-level ozone, particulate pollution (particulate matter), carbon monoxide, sulfur dioxide, and nitrogen dioxide. The new index now also incorporates recommendations for actions to take on days when concentrations are in the red zone, to mitigate the effects of pollution for affected groups and recommendations for industry and citizens that help reduce pollution levels. The outreach program information consolidated in the three day forecast includes the Summer and Winter Control Programs and Choose Clean Air information.

The web site includes additional information on wind blown dust.

News Release to Media

In additional to web site alerts, DEQ also notifies the media in order to maximize public distribution.

Representative County Dust Control Programs

Salt Lake County

Salt Lake Valley Health Department regulates fugitive dust under section R307-309 of the Utah Air Conservation Rules. The County enforces fugitive dust from construction,

aggregate industries, sand blasting, painting and burning. The web site includes information on reporting violations. County inspectors actively inspect dust prone activities.

Davis County
Davis, like Salt Lake County, enforces fugitive dust through Utah R307-309 and also maintains a fugitive dust web page and violation reporting. Inspectors have been known to park themselves all day long on Beck Street to enforce compliance. Beck Street contains refineries and very large aggregate industries that are a source of fugitive dust.

Weber County
Weber County has its own Excavation Ordinance for construction that includes dust control. Application must be made and approved before construction. An application fee includes the cost for reviewing engineering plans and site inspection.

Cache County
Cache County maintains zoning ordnances that include dust controls.

Public Comment

The documentation was made available for public comment through the Utah Bulletin and on the DAQ web page from November 15, 2011 to December 15, 2011. A copy of the notice follows. Public comments are attached to the documentation cover letter.

The comment period will close at 5:00 p.m. on December 15, 2011. Comments postmarked on or before that date will be accepted. Comments may be submitted by electronic mail to jkarmazyn@utah.gov or may be mailed to: Joel Karmazyn, Utah Division of Air Quality, PO Box 144820, 195 N 1950 W, Salt Lake City, UT 84114-4820

Environmental Quality
Air Quality

Notice of Public Comment Period For High Wind Exceptional Events -- Event Date: 04/27/2010

Federal regulations, 40 Code of Federal Regulations (CFR) Part 50, allow states to exclude air quality data that exceed or violate a National Ambient Air Quality Standard (NAAQS) if they can demonstrate that an "exceptional event" has caused the exceedance or violation. Exceptional events are unusual or naturally occurring events that can affect air quality but are not reasonably controllable or preventable using techniques implemented to attain and maintain the NAAQS.

Exceptional events may be caused by human activity that is unlikely to recur at a particular location, or may be due to a natural event. The Environmental Protection Agency (EPA) defines a "natural event" as an event in which human activity plays little or no direct causal role to the event in question. For example, a natural event could include such things as high winds, wild fires, and seismic/volcanic activity. In addition, the EPA will allow states to exclude data from regulatory determinations on a case-by-case basis for monitoring stations that measure values that exceed or violate the NAAQS due to emissions from fireworks displays from cultural events.

Federal regulations (40 CFR Part 50.14(c)(3)(i)) require that all relevant flagged data, the reasons for the data being flagged, and a demonstration that the flagged data are caused by exceptional events be made available by the State for 30 days of public review and comment. These comments will be considered in the final demonstration of the event that is submitted to EPA. The following monitoring stations air quality exceedance has been attributed to a high wind exceptional event: Hawthorne, North Salt Lake, Ogden, Cottonwood, and Rose Park.

The documentation for public review and comment to support removing this data from use in regulatory determinations is available at http://www.airquality.utah.gov/Public-Interest/Public-Commen-Hearings/Exceptional_Events/Exceptional_Events.htm or at the Multi Agency State Office Building, 195 North 1950 West, Salt Lake City. In compliance with the American with Disabilities Act, individuals with special needs (including auxiliary communicative aids and services) should contact Brooke Baker, Office of Human Resources at 801-536-4412 (TDD 536-4414).

The comment period will close at 5:00 p.m. on December 15, 2011. Comments postmarked on or before that date will be accepted. Comments may be submitted by electronic mail to jkarmazyn@utah.gov or may be mailed to: Joel Karmazyn, Utah Division of Air Quality, PO Box 144820, 195 N 1950 W, Salt Lake City, UT 84114-4820.

Environmental Quality
Water Quality

Notice to Extend the Public Comment Period on the Amendment to Rule R317-8, Utah Pollutant Discharge Elimination System (UPDES), under DAR No. 35238 from the October 1, 2011, Bulletin

The Division of Water Quality is extending the deadline for public comments on the amendment to Rule R317-8, Utah Pollutant Discharge Elimination system (UPDES), from 11/01/2011 to 12/31/2011. The proposed amendment is under DAR No. 35238 and was published in the October 1, 2011, issue of the Bulletin, 2011-19, pg. 31.

These amendments relate to the establishment and administration of a new program to permit the application of pesticides in Utah under the UPDES Program.

Appendix 1

Speciation Data

LOCATION_NAME	AIRS_CODE	SAMPLE_TYPE	DATE	UNITS	Chloride	Magnesium	Sodium
Hawthorne	490353006	ROUTINE	4/17/10	ug/m^3	0.009703	0.0409916	0.045333
Hawthorne	490353006	ROUTINE	4/20/10	ug/m^3	0.005378	0.0090622	0.023759
Hawthorne	490353006	ROUTINE	4/23/10	ug/m^3	0.003388	0	0
Hawthorne	490353006	ROUTINE	4/26/10	ug/m^3	0.001987	0.0088133	0.03101
Hawthorne		Special	4/27/10	ug/m^3	0.0504	1.341	0.075
Hawthorne	490353006	ROUTINE	4/29/10	ug/m^3	0	0	0

Client: U005 - Utah DEQ
Report Number: 11-275

Lab ID: 11-X1244
Site: Hawthorne (HW)
Sample Date: 4/27/10
Mass: 1131. +- 10. µg
Volume: 24.00 +- 2.400 m³
Deposit Area: 11.3 cm²
Size Fraction: PM2.5
Suspended
Particulates: 47.12 +- 4.73 µg/m³

Analyte	µg/filter	percent	µg/m³
XRF			
Na	0.0000 ± 1.114	0.0000 ± 0.0985	0.0000 ± 0.0464
Mg	32.18 ± 3.562	2.845 ± 0.3159	1.341 ± 0.2000
Al	87.50 ± 7.004	7.736 ± 0.6230	3.646 ± 0.4670
Si	214.2 ± 14.63	18.94 ± 1.305	8.927 ± 1.081
P	1.270 ± 0.1435	0.1123 ± 0.0127	0.0529 ± 0.0080
S	5.908 ± 0.5424	0.5223 ± 0.0482	0.2462 ± 0.0334
Cl	0.5130 ± 0.0893	0.0454 ± 0.0079	0.0214 ± 0.0043
K	27.43 ± 1.414	2.425 ± 0.1268	1.143 ± 0.1286
Ca	97.74 ± 4.979	8.642 ± 0.4468	4.073 ± 0.4571
Ti	3.191 ± 0.1650	0.2822 ± 0.0148	0.1330 ± 0.0150
V	0.0904 ± 0.0192	0.0080 ± 0.0017	0.0038 ± 0.0009
Cr	0.0655 ± 0.0136	0.0058 ± 0.0012	0.0027 ± 0.0006
Mn	0.6938 ± 0.0441	0.0613 ± 0.0039	0.0289 ± 0.0034
Fe	33.01 ± 1.653	2.918 ± 0.1484	1.375 ± 0.1538
Co	0.0000 ± 0.0260	0.0000 ± 0.0023	0.0000 ± 0.0011
Ni	0.0339 ± 0.0124	0.0030 ± 0.0011	0.0014 ± 0.0005
Cu	0.0599 ± 0.0124	0.0053 ± 0.0011	0.0025 ± 0.0006
Zn	0.1887 ± 0.0237	0.0167 ± 0.0021	0.0079 ± 0.0013
Ga	0.0124 ± 0.0102	0.0011 ± 0.0009	0.0005 ± 0.0004
Ge	0.0113 ± 0.0090	0.0010 ± 0.0008	0.0005 ± 0.0004
As	0.0000 ± 0.0136	0.0000 ± 0.0012	0.0000 ± 0.0006
Se	0.0079 ± 0.0079	0.0007 ± 0.0007	0.0003 ± 0.0003
Br	0.0768 ± 0.0079	0.0068 ± 0.0007	0.0032 ± 0.0005
Rb	0.1198 ± 0.0102	0.0106 ± 0.0009	0.0050 ± 0.0007
Sr	0.3786 ± 0.0215	0.0335 ± 0.0019	0.0158 ± 0.0018
Y	0.0260 ± 0.0102	0.0023 ± 0.0009	0.0011 ± 0.0004
Zr	0.0881 ± 0.0136	0.0078 ± 0.0012	0.0037 ± 0.0007
Mo	0.0102 ± 0.0170	0.0009 ± 0.0015	0.0004 ± 0.0007
Pd	0.0429 ± 0.0667	0.0038 ± 0.0059	0.0018 ± 0.0028
Ag	0.1638 ± 0.0678	0.0145 ± 0.0060	0.0068 ± 0.0029
Cd	0.2136 ± 0.0678	0.0189 ± 0.0060	0.0089 ± 0.0030
In	0.0170 ± 0.0734	0.0015 ± 0.0065	0.0007 ± 0.0031
Sn	0.2712 ± 0.0836	0.0240 ± 0.0074	0.0113 ± 0.0037
Sb	0.2475 ± 0.1028	0.0219 ± 0.0091	0.0103 ± 0.0044
Ba	0.2192 ± 0.1435	0.0194 ± 0.0127	0.0091 ± 0.0060
La	0.0000 ± 0.1085	0.0000 ± 0.0096	0.0000 ± 0.0045
Hg	0.0000 ± 0.0226	0.0000 ± 0.0020	0.0000 ± 0.0009
Pb	0.0746 ± 0.0226	0.0066 ± 0.0020	0.0031 ± 0.0010
IC			
Cl	1.210 ± 0.0605	0.1070 ± 0.0024	0.0504 ± 0.0056
Br	0.0000 ± 0.5000	0.0000 ± 0.0063	0.0000 ± 0.0208
NO3	10.06 ± 0.5030	0.8895 ± 0.0101	0.4192 ± 0.0469
SO4	20.85 ± 1.042	1.844 ± 0.0186	0.8688 ± 0.0971
Na	1.800 ± 0.0900	0.1592 ± 0.0030	0.0750 ± 0.0084
NH4	4.770 ± 0.2385	0.4218 ± 0.0057	0.1988 ± 0.0222
K	3.370 ± 0.1685	0.2980 ± 0.0045	0.1404 ± 0.0157

Analysis performed by: ***CHESTER LabNet***
12242 SW Garden Place ♦ Tigard, OR 97223 ♦ (503) 624-2183 ♦ www.chesterlab.net

Appendix 2

PM10 Hourly Concentrations and Wind Speed

Date-Hour	Hawthorne ($\mu g/m^3$)	North Salt Lake ($\mu g/m^3$)	Ogden ($\mu g/m^3$)	North Provo ($\mu g/m^3$)	Hawthorne Wind (MPH)
2010-04-26 00	3	16.7	12.7	3.8	2.3
2010-04-26 01	1	18.8	9.7	2.7	3
2010-04-26 02	2	18.5	17.8	6.4	2.9
2010-04-26 03		10.5	11.7	5.9	2.9
2010-04-26 04	1	31.8	17	4.3	2.3
2010-04-26 05	2	39.5	21.9	8.7	2.8
2010-04-26 06	13	77.9	28.3	8.1	2.9
2010-04-26 07	14	26.2	25.2	12.1	2.3
2010-04-26 08	14	36.2	8.3	11.8	3.6
2010-04-26 09	5	21.4	6	10.5	3.3
2010-04-26 10		13.5	13.9	7.9	4.3
2010-04-26 11	5	22.7	13.2	2.7	5.2
2010-04-26 12	16	5.6	12.8	8.4	6.5
2010-04-26 13	8	7.9	7.9	8.2	6.2
2010-04-26 14	0	19	7.2	10	5.7
2010-04-26 15	0	15.8	3.3	7.5	5.6
2010-04-26 16	9	11	6.3	6.9	5.8
2010-04-26 17	5	6.7	10.2	0.9	5.4
2010-04-26 18	4	8.1	11.4	6.4	5.7
2010-04-26 19	15	34	21.3	14.6	1.8
2010-04-26 20	13	31.1	37.2	10.2	3.1
2010-04-26 21	13	19.6	36.5	13.9	3.4
2010-04-26 22	19	24.5	31.3	22.7	3.9
2010-04-26 23	24	21.1	22.3	15.3	4.1
2010-04-27 00	18	19.2	25.7	12.8	3.9
2010-04-27 01	22	15.4	23.6	14.1	4.1
2010-04-27 02	30	9.1	23.5	16.5	4.1
2010-04-27 03	17	25.4	45.2	10.2	4.9
2010-04-27 04	12	19.2	35.4	9.3	3.2
2010-04-27 05	29	15.1	46.7	9.7	2.7
2010-04-27 06	21	42.6	26.4	17.1	3.6
2010-04-27 07	21	66.8	52.2	17.8	6.1
2010-04-27 08	26	72.1	40.6	22.3	6.9
2010-04-27 09	25	83.1	22	21.1	9.6
2010-04-27 10	39	57.3	40.4	6.7	9.5
2010-04-27 11	24	55.6	33.9	6	12.3
2010-04-27 12	17	91.5	23.3	10.9	13.4
2010-04-27 13	44	100.3	29.8	14.8	14.4
2010-04-27 14	32	200.6	56.3	21.5	15.7
2010-04-27 15	131	318.6		18.2	17.2
2010-04-27 16	185	453.8		29.6	18
2010-04-27 17	656			30.9	17.1
2010-04-27 18	669	860.3		42.1	17.2
2010-04-27 19	758	967.6		50.1	15.8
2010-04-27 20	677	934.5		37.9	16.4
2010-04-27 21	862	491.1		25.5	17.8
2010-04-27 22	895	344.1		20.5	17.1
2010-04-27 23	646	214.5		24.2	18.7
2010-04-28 00	312	151.7		20.6	18

Date-Hour	Hawthorne ($\mu g/m^3$)	North Salt Lake ($\mu g/m^3$)	Ogden ($\mu g/m^3$)	North Provo ($\mu g/m^3$)	Hawthorne Wind (MPH)
2010-04-28 01	198	286.7		45	16.8
2010-04-28 02	266	761.7		130	11.6
2010-04-28 03	327	178.4		122.2	9.2
2010-04-28 04	84	53.6	12.7	145.4	10.5
2010-04-28 05	33	26.5	34.6	108.9	9
2010-04-28 06	8	3.3	32.2	51	8.5
2010-04-28 07	1	7.5	13.2	32.3	5.1
2010-04-28 08	9	15.4	31.7	10.8	4.2
2010-04-28 09	9	9.9	65.5	13.8	5.8
2010-04-28 10	5	20.9	4.8	10.4	7
2010-04-28 11	14	5.2	1.6	8.5	5
2010-04-28 12	12	5.7	15.4	7.1	4.9
2010-04-28 13	7	8.3		12.1	4.8
2010-04-28 14	1	34.2		6.3	5
2010-04-28 15	4	9.4		3.4	5.9
2010-04-28 16	2	7.4		2.9	6.2
2010-04-28 17		3.9		8.8	3.6
2010-04-28 18	3	23.5		9.7	8.5
2010-04-28 19	6	14.5		5.3	5.1
2010-04-28 20	12	16.1		2.8	3.9
2010-04-28 21		7.7		7.3	3.4
2010-04-28 22		11.5		9.4	3.9
2010-04-28 23	7	24.4		6.3	4.1