Department of Environmental Quality

To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.

Matthew H. Mead, Governor

John Corra, Director

February 29, 2012

Mr. James Martin
Regional Administrator
Region 8
U.S. Environmental Protection Agency
1595 Wynkoop St.
Denver, CO 80202-1129

RE: Docket ID No. EPA-HQ-OAR-2008-0476, Federal Register Vol. 76, No. 244, December 20, 2011. Attainment/Nonattainment Designations for Ozone National Ambient Air Quality Standards

The State of Wyoming has reviewed EPA's December 8, 2011 preliminary assessment of the State's ozone designation recommendation, submitted on March 12, 2009. EPA's stated intention of support was greeted as good news, and we hope that we can continue to work together with EPA on solving ozone problems in the West.

As part of the State's review, we also looked at comments posted on the EPA docket for State ozone designation recommendations. While most of the comments seemed to be supportive overall of our recommendation, we would like to take this opportunity to address some of the comments requesting a larger sized nonattainment area.

American Lung Association (ALA) Comments

The ALA (January 19, 2012) requested full counties be designated, rather than the partial counties indicated in the State's recommendation, because of potential growth in oil and natural gas sources. When the State put the recommendation together, a lot of technical work was focused on defining an appropriate boundary. The State modeled numerous sources surrounding the Upper Green River Basin (UGRB) and feels very strongly that the boundary proposed in the recommendation represents the extent of the emissions contributing to elevated ozone in the UGRB. Because the State has some of the same concerns regarding new development, the need for additional ozone monitoring is periodically reviewed and often required as a stipulation of the development. Since the designation recommendation was submitted to EPA in 2009, additional monitoring stations have been deployed in SW Wyoming to assess new energy impacts, and the State has not discovered any additional areas with violating monitors. SW Wyoming is now one of the most heavily ozone-monitored areas in the country.

Wyoming Outdoor Council (WOC) Comments

The WOC (February 2, 2012) and other included signers requested that the nonattainment area be expanded to specifically include the Moxa Arch oil and gas field, largely because of its size and preliminary BLM proposals for infill development of the field. As was mentioned above, the State did perform extensive meteorological modeling to determine the southern boundary of the nonattainment area. The results of that modeling are included in the designation submittal with trajectory analyses from the Moxa Arch field shown specifically in Figures S.7-18, S.7-24, S.7-29, S.7-34, S.7-39 and S.7-45 of the Technical Support Document (TSD) which accompanied the designation submittal. This modeling shows that air flow from the Moxa Arch field does not move up into the UGRB on days when the monitors are showing elevated ozone concentrations. Latitude and longitude coordinates for the trajectory point used in the modeling are included in Attachment 3 of this letter. It is important to remember that monitors in the UGRB do not show elevated ozone throughout the year. Elevated ozone in the UGRB is associated with distinct, localized meteorological conditions: very light low-level winds, cold temperatures, surface-based temperature inversions, sunshine and significant snow cover.

Since the 2009 designation submittal, the Department of Environmental Quality/Air Quality Division (DEQ/AQD) also installed a new monitoring station directly east of the Moxa Arch field in order to assess air emissions from the field. A map showing the location of the Moxa Arch field, the proposed nonattainment boundary, the trajectory point used in the meteorological modeling and the Moxa Arch monitoring station is included as Attachment 2 of this document. DEQ/AQD has also provided in Attachment 1 of this letter a list of monitored ozone concentrations recorded in the first quarter of 2011 for six of the key monitoring locations in and around the UGRB. The first quarter was selected since it represents the highest recorded ozone levels for the year and some of the highest recorded ozone levels since 2005. The thirteen days selected show ozone readings as high as 123 ppb at the Boulder Monitor but no exceedances of the 2008 ozone standard at the Moxa Arch location. The list clearly supports the State's contention that emissions from the Moxa Arch field are not contributing to the high level ozone that is seen in the central portion of the proposed nonattainment area.

Also, in response to the WOC letter, the DEQ/AQD has provided daily wind roses associated with the monitored values discussed in the preceding paragraph. The wind roses, shown in Attachment 1 of this letter, also support the previous assertion that air emissions associated with the Moxa Arch field are not moving up into the UGRB during ozone episodes.

As for potential future development in the Moxa field, the DEQ/AQD is restricted in discussing the estimated emissions associated with the proposed BLM development project because the Draft Environmental Impact Statement has not yet been released to the public. However, if the project does move forward, it could be a couple years before infill drilling would begin in the field. In that same time frame EPA is committed to complete the next ozone standard review. The 2013/14 ozone standard will have another designation process associated with it, and states will once again be asked to make recommendations to EPA on which areas of the state are

attaining the standard. The State of Wyoming believes that the 2013/14 designation process is the more appropriate time for the State of Wyoming to assess the impacts associated with future development in this area. Furthermore, all new development in this area will have to comply with "Concentrated Development Area" BACT (Best Available Control Technology) established by DEQ/AQD at a minimum, so stringent controls will be required through permitting regardless of designation.

Finally, in defense of the proposed nonattainment boundary, the DEQ/AQD has also looked at a relative first quarter comparison of the emission totals of the Moxa Arch field to first quarter emission totals of the UGRB. In comparison to the 1,917 tons of NO_x and 24,514 tons of VOCs in the UGRB, the emissions from the Moxa Arch field are only 104 tons of NO_x and 2,385 tons of VOCs (shown in Attachment 3). This comparison does not provide the State with a compelling reason to increase the size of the nonattainment area.

DEQ/AQD Review of EPA's TSD

While the State appreciates EPA's support of the area designation and boundary for the UGRB nonattainment area, there are a few sections of the EPA TSD that require clarification or minor revision.

The DEQ/AQD identified the longest elevated ozone event to have occurred on February 19-23, 2008. EPA has identified the same event to have occurred on February 19-24, 2008. The DEQ/AQD requests that EPA correct these dates in the TSD, particularly on page 10, paragraph 5, where the DEQ/AQD is meant to be directly quoted.

The DEQ/AQD requests clarification of the total vehicle miles presented on page 9, Table 7. The EPA presented the miles in millions. However, the DEQ/AQD calculated a significantly lower number, as can be seen on page 21, Table 5.4-1 of Wyoming's recommendation document. The DEQ/AQD would appreciate a more thorough explanation of how commuting patterns were calculated so the discrepancy in numbers can be better understood.

On the second paragraph of page 14 in EPA's TSD, there is a portion that is intended to be a direct quote from DEQ/AQD's recommendation document:

An extensive series of CalDESK forward trajectory analyses were conducted for high ozone days throughout the winter days of 2008. The analyses consistently showed that emissions from large point sources south of the state recommended nonattainment area boundary did not enter the area impacted by winter ozone. The boundary was therefore defined to include those point and area emissions sources consistently constrained and transported within the ozone impacted area by local winds, and to exclude more remote sources which were never seen to transport into the ozone impacted area.

This language was not included in DEQ/AQD's TSD, and therefore the DEQ/AQD is requesting that EPA remove the italics that indicate State language.

Thank you for your review and consideration of our comments. If you or your staff have any questions concerning this letter or the attachments, please feel free to contact me or Steve Dietrich with the Air Quality Division (307-777-7391).

Sincerely,

John V. Corra
Director

cc: Governor Matthew H. Mead
Steve Dietrich, AQD Administrator
Darla Potter, AQD
Christine Anderson, AQD
Carissa Krey, AQD

Attachment 1

1st Quarter 2011
13 days in Upper Green River Basin
8-hour average daily max > 75 ppb

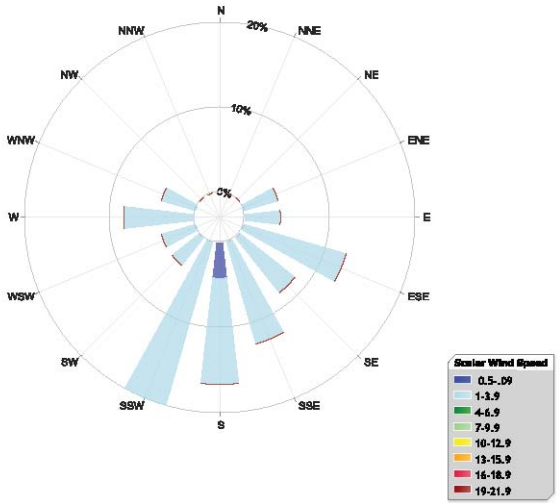
Highest 8-hour average daily max (ppb)

Date	Wy Range	Pinedale	Daniel	Boulder	Juel Springs	Moxa Arch
2/14/2011	64	59	63	87	67	58
2/15/2011	80	51	74	53	59	54
2/21/2011	50	46	46	76	52	45
3/1/2011	66	83	69	120	73	71
3/2/2011	79	89	75	123	94	72
3/3/2011	66	70	71	84	65	50
3/5/2011	66	80	63	103	76	55
3/6/2011	61	57	77	63	59	53
3/9/2011	55	76	56	74	67	52
3/10/2011	83	62	84	68	69	63
3/12/2011	57	56	56	121	85	53
3/14/2011	57	65	79	78	68	51
3/15/2011	63	65	67	75	85	51

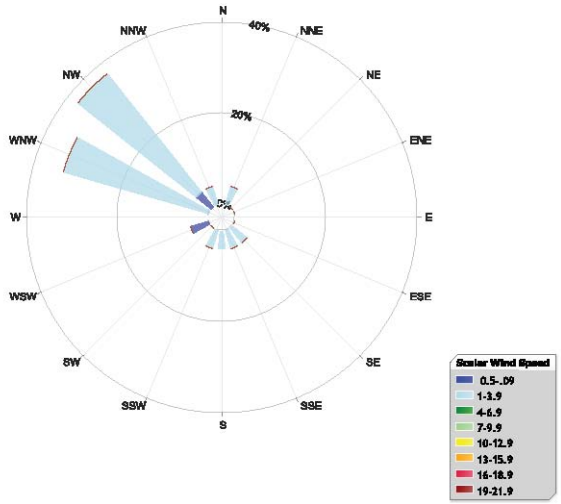
Highest 8-hour average daily max (ppb)

Date	Wy Range	Pinedale	Daniel	Boulder	Juel Springs	Moxa Arch
2/14/2011	64	59	63	87	67	58

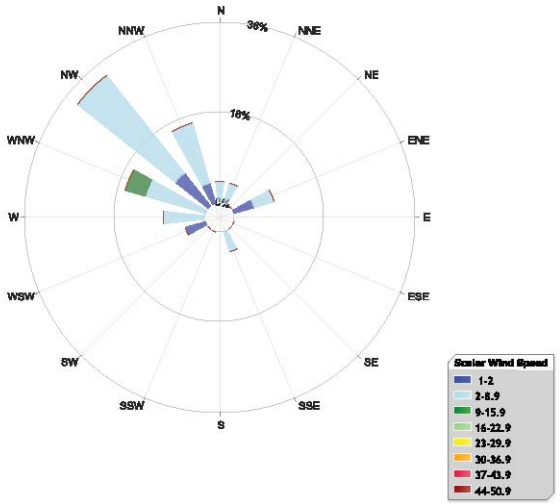
Wyoming Range
2/14/2011 - 2/14/2011
Created: 2/22/2012



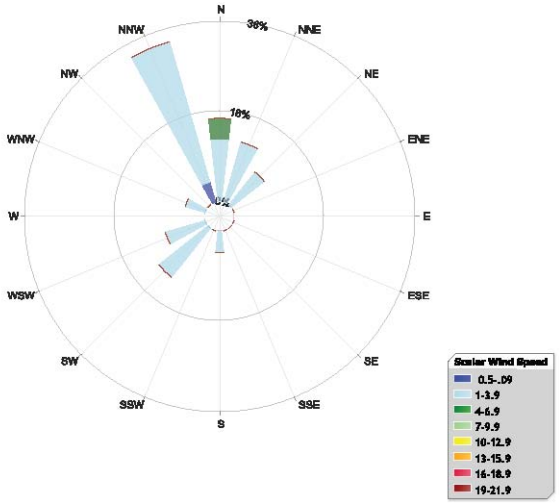
Pinedale - MSI data
2/14/2011 - 2/14/2011
Created: 2/22/2012



Daniel South
2/14/2011 - 2/14/2011
Created: 2/22/2012



Boulder
2/14/2011 - 2/14/2011
Created: 2/22/2012



Juel Spring - MSI data
2/14/2011 - 2/14/2011
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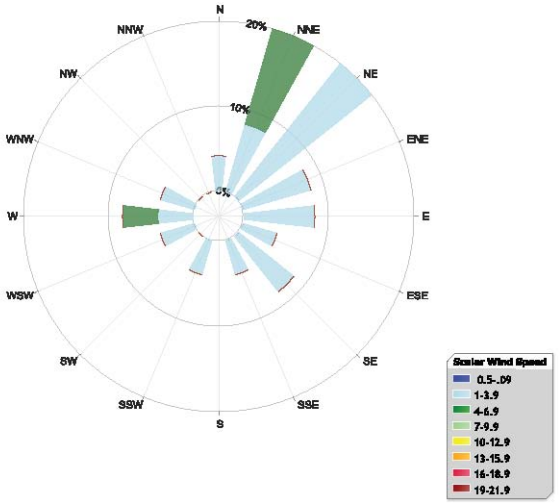
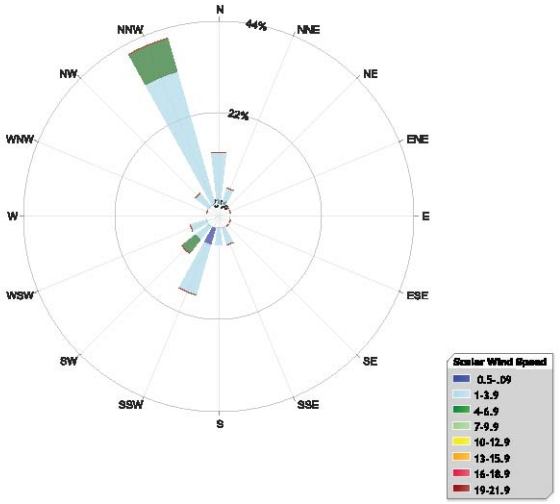


Moxa
2/14/2011 - 2/14/2011
Created: 2/21/2012

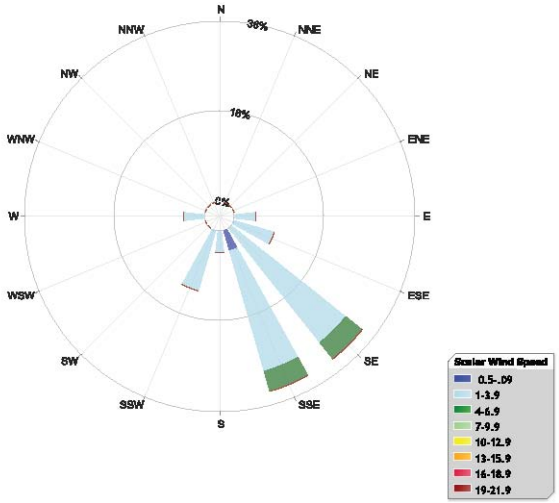


Scalar Wind Speed (meters/second)

Highest 8-hour average daily max (ppb)

Date	Wy Range	Pinedale	Daniel	Boulder	Juel Springs	Moxa Arch
2/15/2011	80	51	74	53	59	54

Wyoming Range
2/15/2011 - 2/15/2011
Created: 2/22/2012



Pinedale - MSI data
2/15/2011 - 2/15/2011
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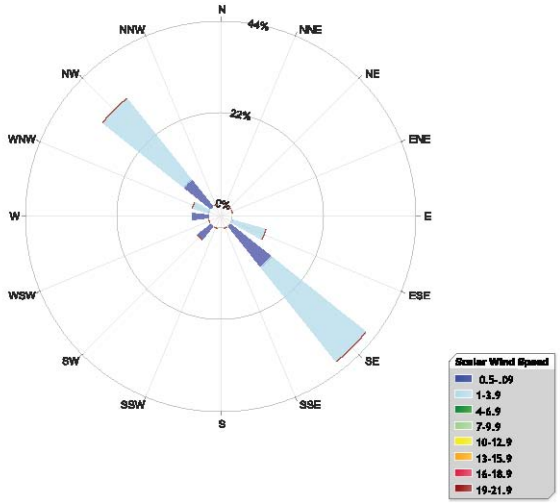
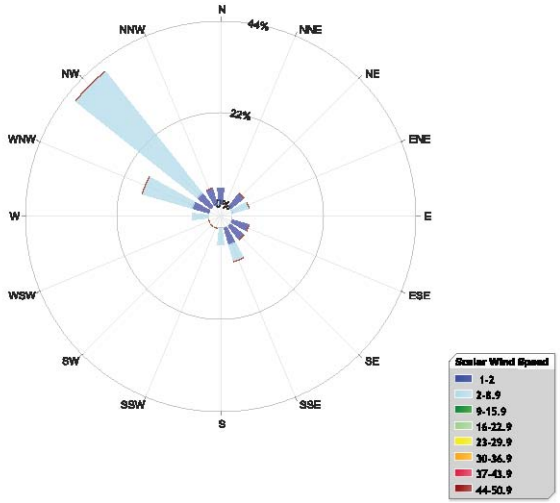
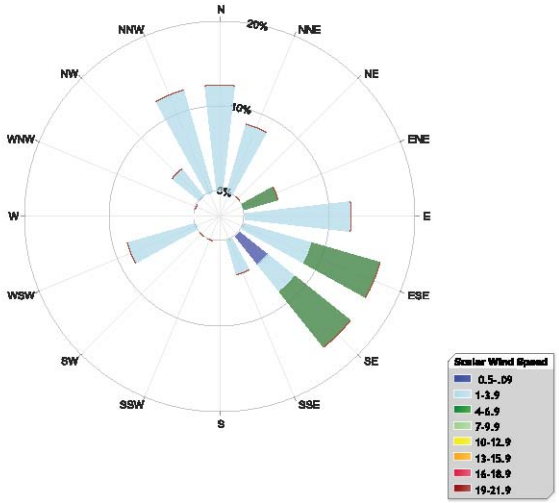


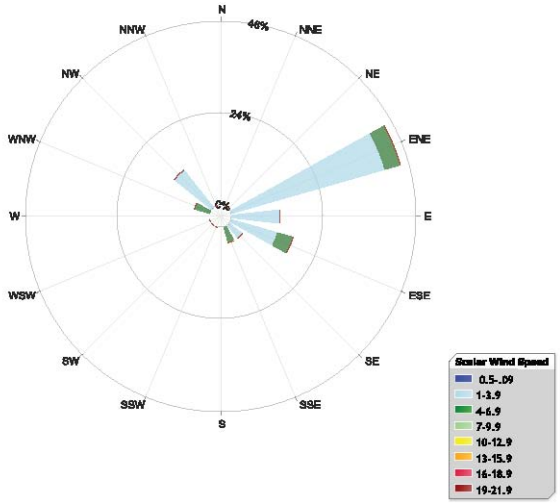
Daniel South
2/15/2011 - 2/15/2011
Created: 2/22/2012



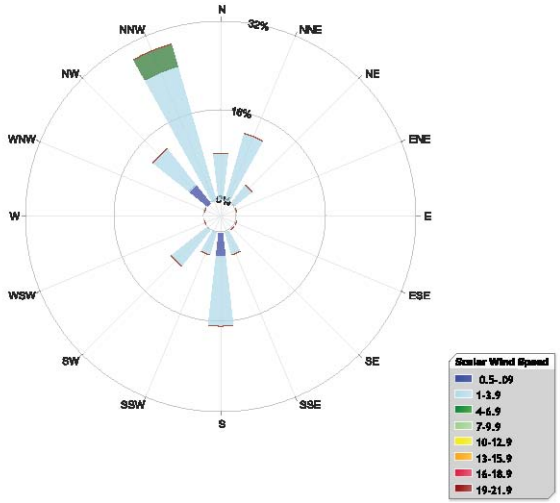
Boulder
2/15/2011 - 2/15/2011
Created: 2/22/2012



Juel Spring - MSI data
2/15/2011 - 2/15/2011
Created: 2/22/2012



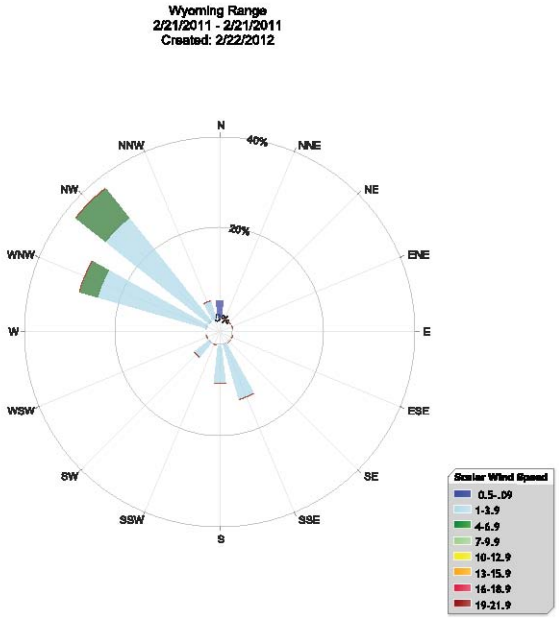
Moxa
2/15/2011 - 2/15/2011
Created: 2/21/2012

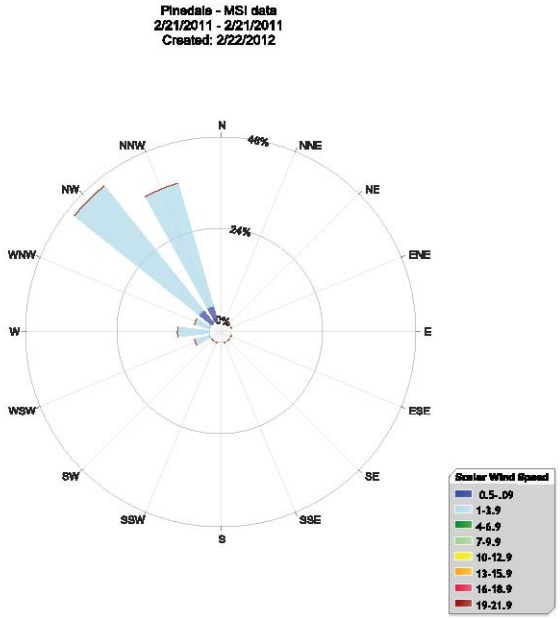


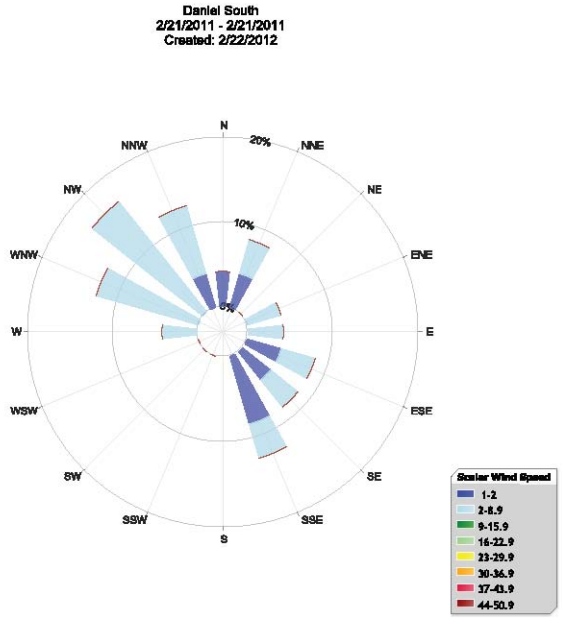
Scalar Wind Speed (meters/second)

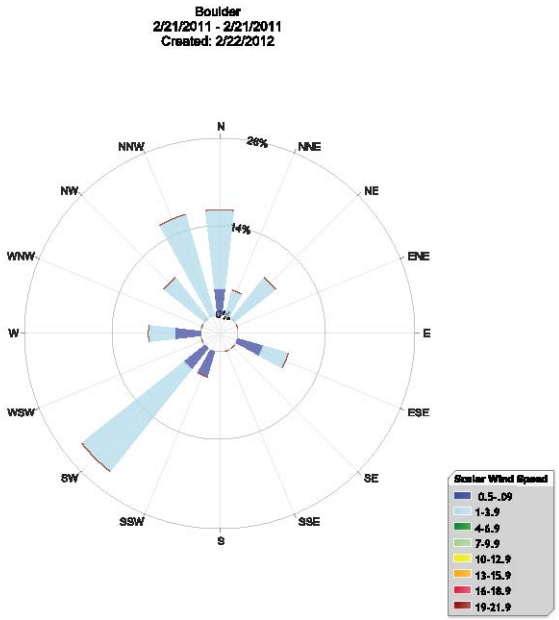
Highest 8-hour average daily max (ppb)

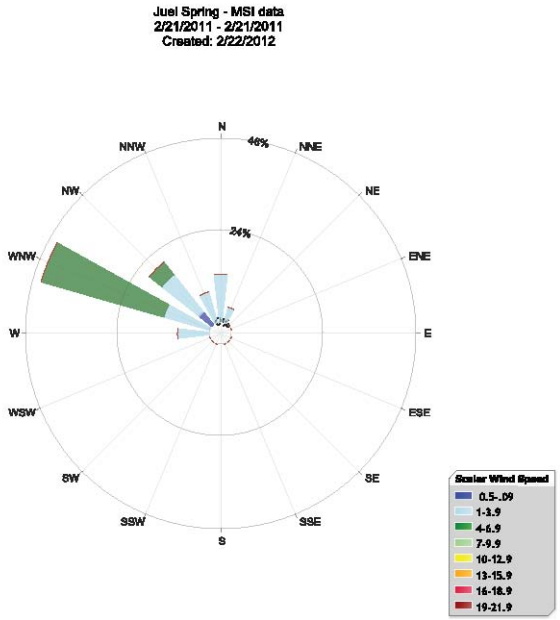
Date	Wy Range	Pinedale	Daniel	Boulder	Juel Springs	Moxa Arch
2/21/2011	50	46	46	76	52	45

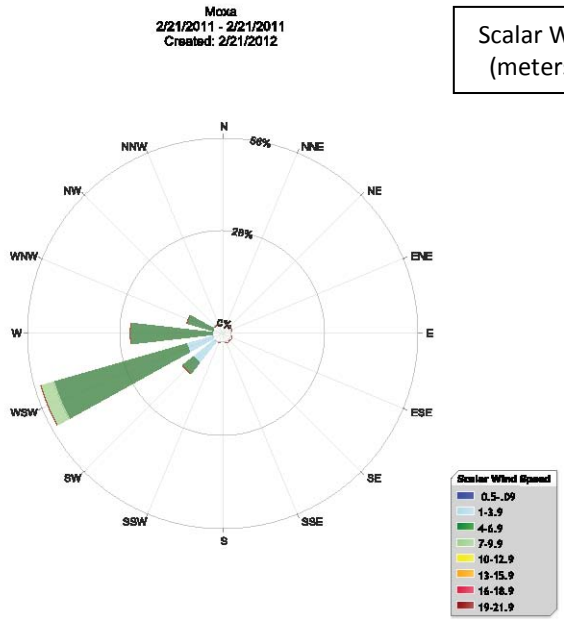








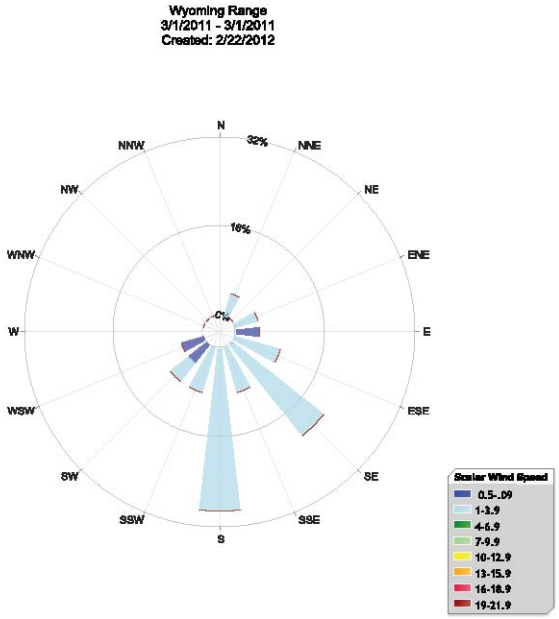


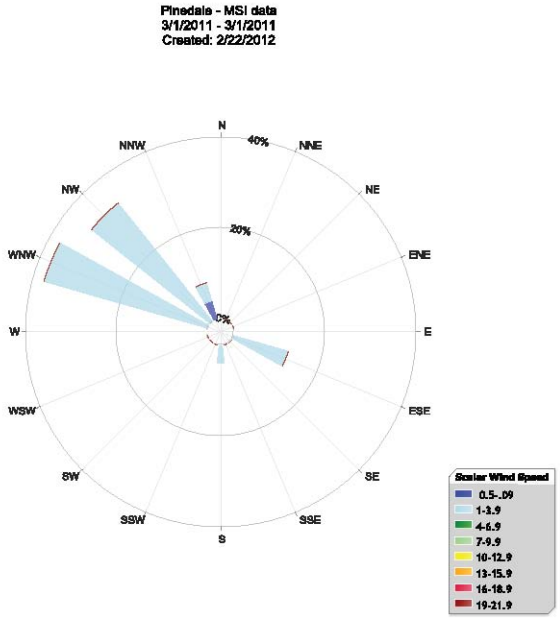


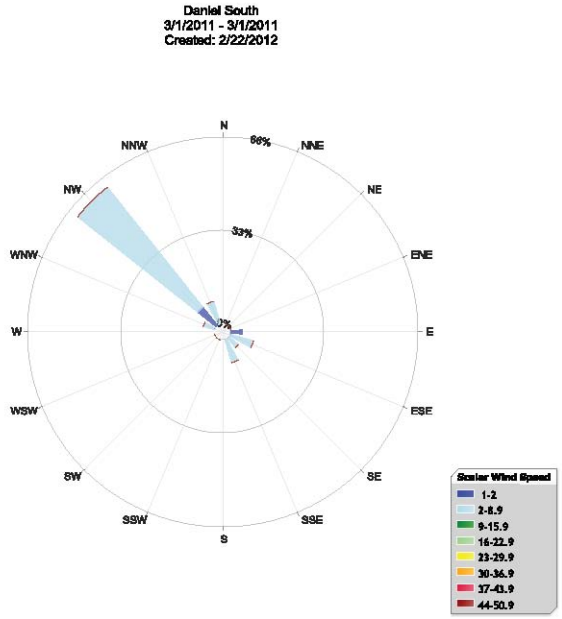
Scalar Wind Speed (meters/second)

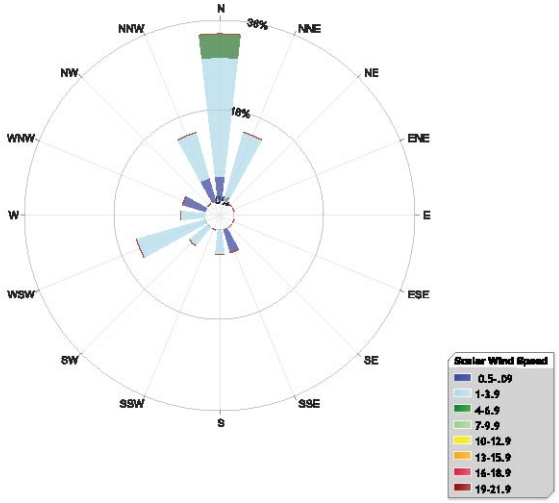
Highest 8-hour average daily max (ppb)

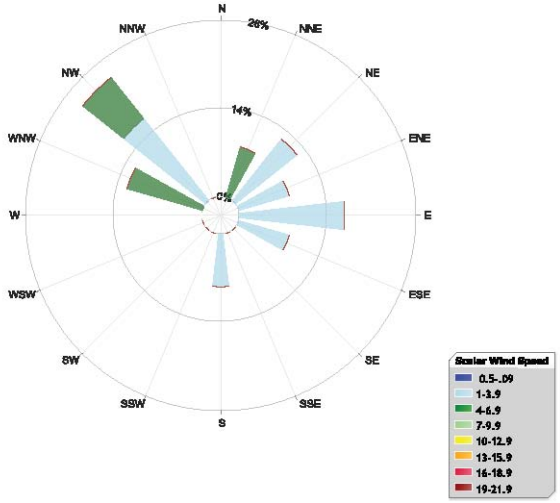
Date	Wy Range	Pinedale	Daniel	Boulder	Juel Springs	Moxa Arch
3/1/2011	66	83	69	120	73	71

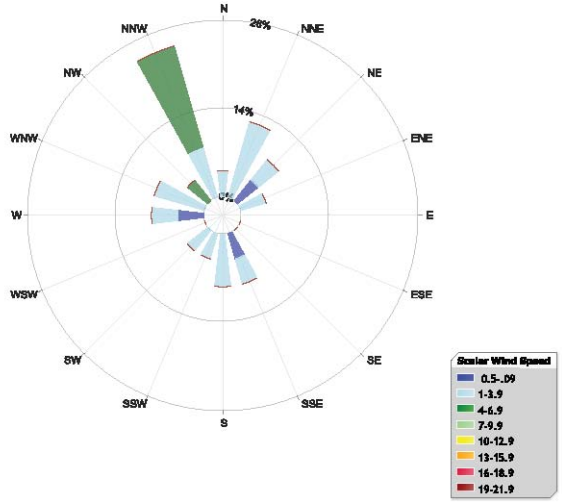








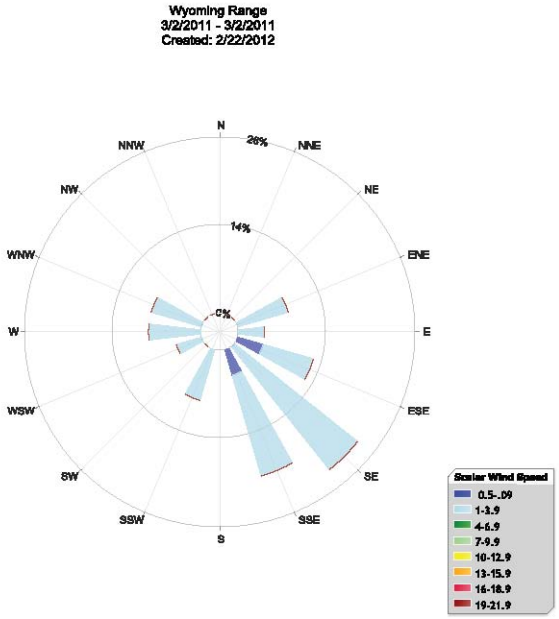


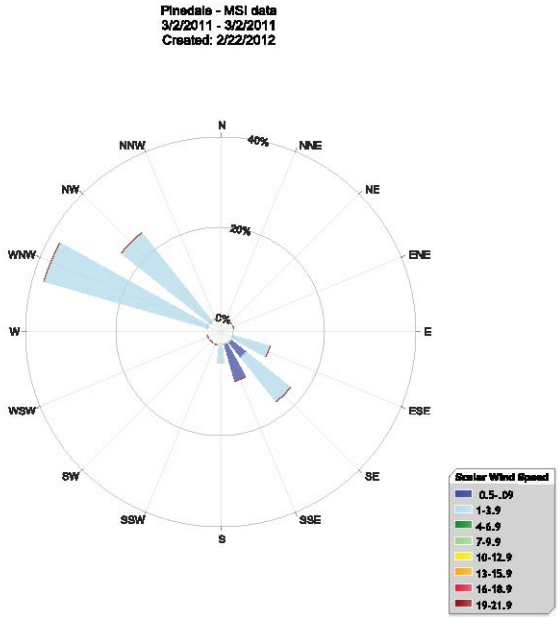


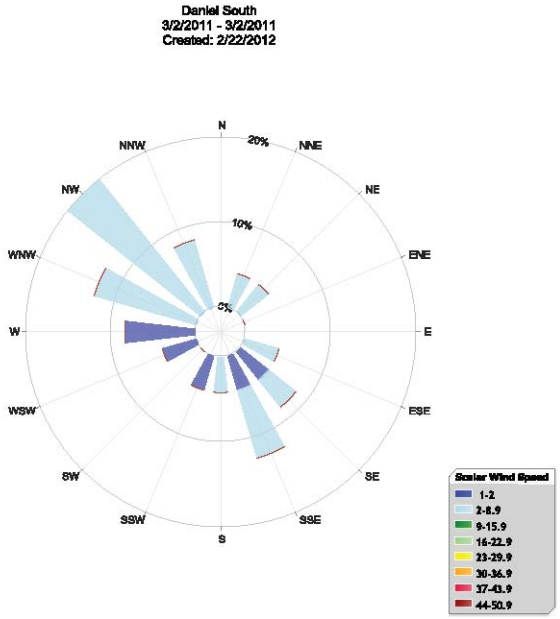
Scalar Wind Speed (meters/second)

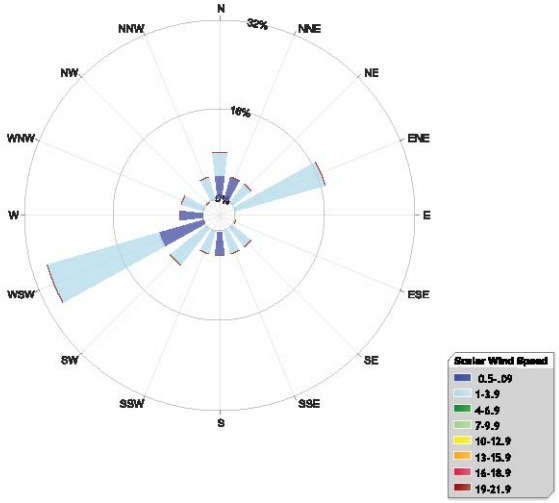
Highest 8-hour average daily max (ppb)

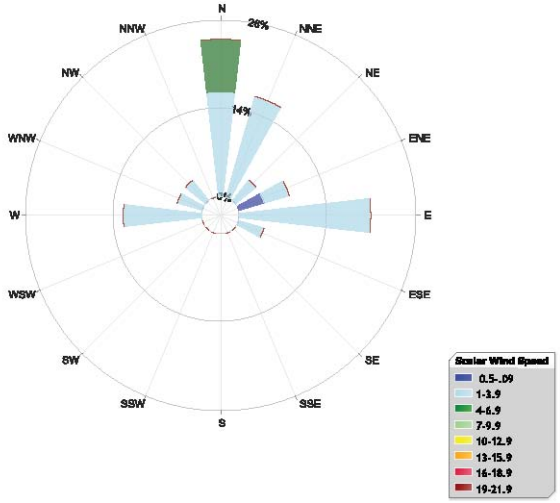
Date	Wy Range	Pinedale	Daniel	Boulder	Juel Springs	Moxa Arch
3/2/2011	79	89	75	123	94	72

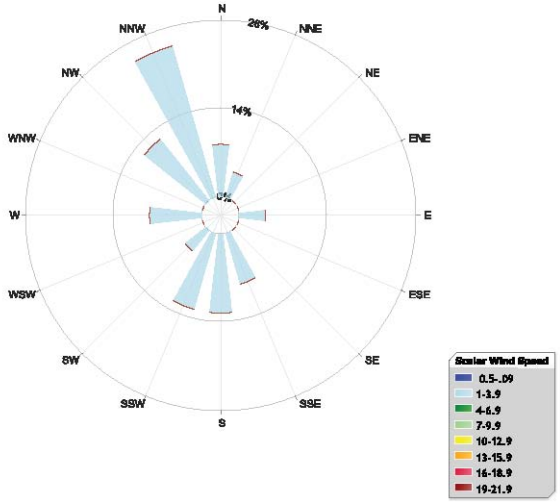










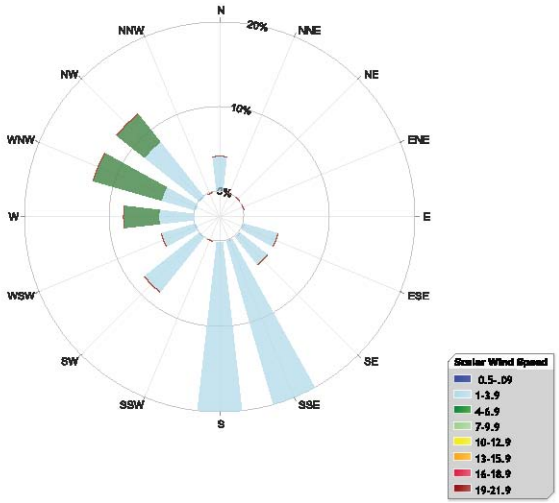


Scalar Wind Speed (meters/second)

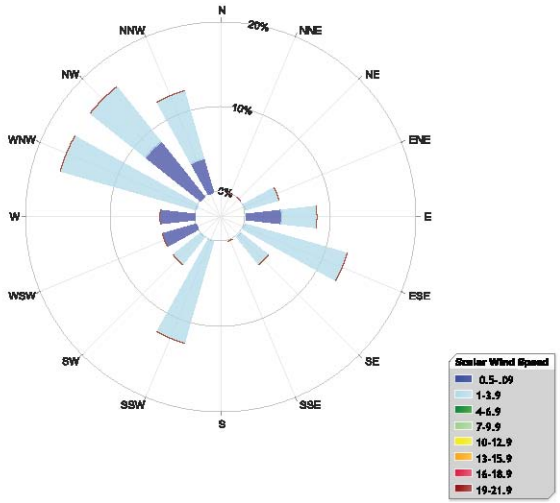
Highest 8-hour average daily max (ppb)

Date	Wy Range	Pinedale	Daniel	Boulder	Juel Springs	Moxa Arch
3/3/2011	66	70	71	84	65	50

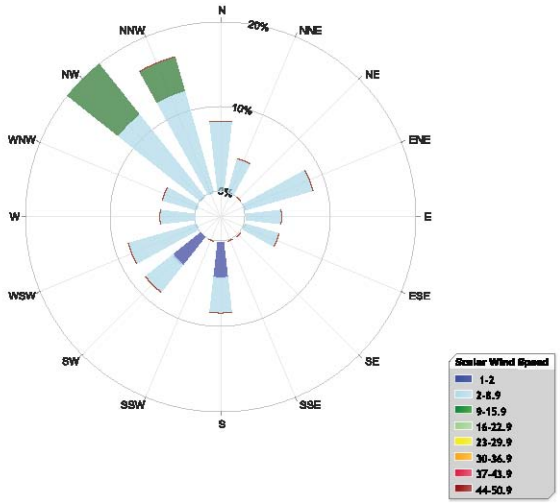
Wyoming Range
3/3/2011 - 3/3/2011
Created: 2/22/2012



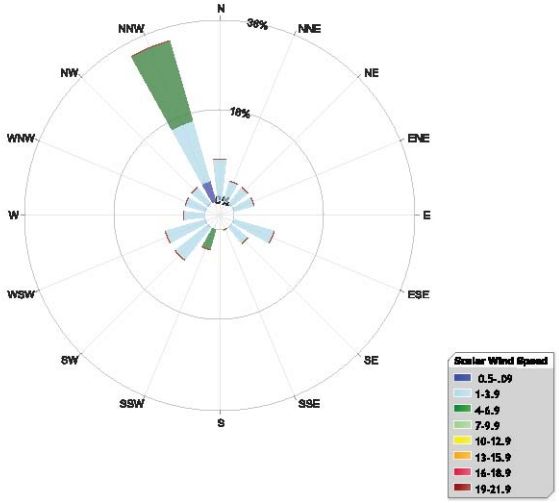
Pinedale - MSI data
3/3/2011 - 3/3/2011
Created: 2/22/2012



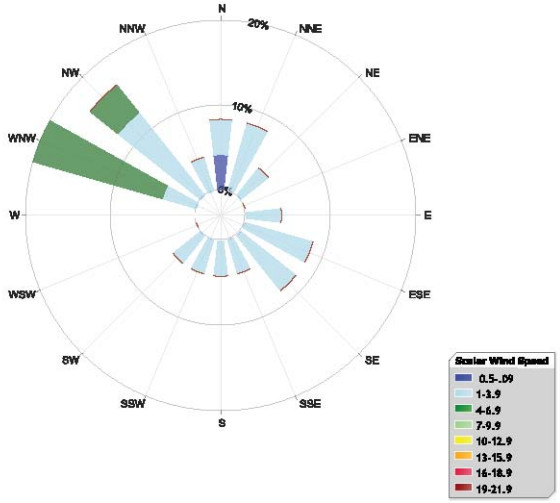
Daniel South
3/3/2011 - 3/3/2011
Created: 2/22/2012



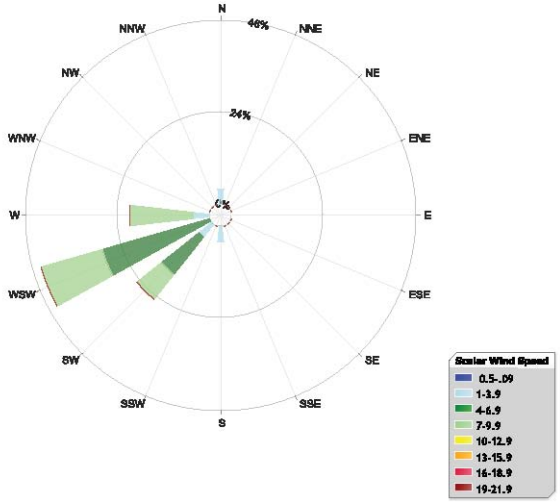
Boulder
3/3/2011 - 3/3/2011
Created: 2/22/2012



Juel Spring - MSI data
3/3/2011 - 3/3/2011
Created: 2/22/2012



Moxa
3/3/2011 - 3/3/2011
Created: 2/21/2012

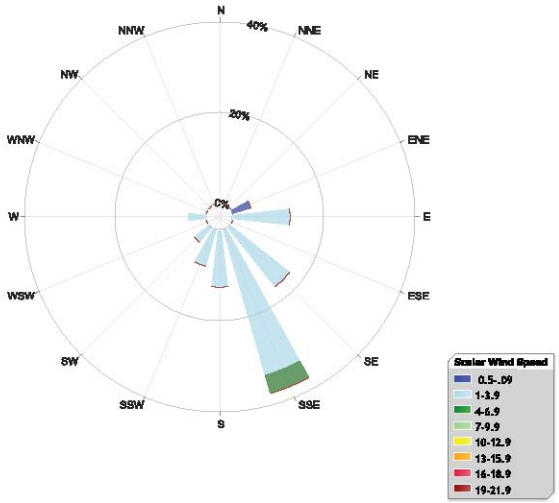


Scalar Wind Speed (meters/second)

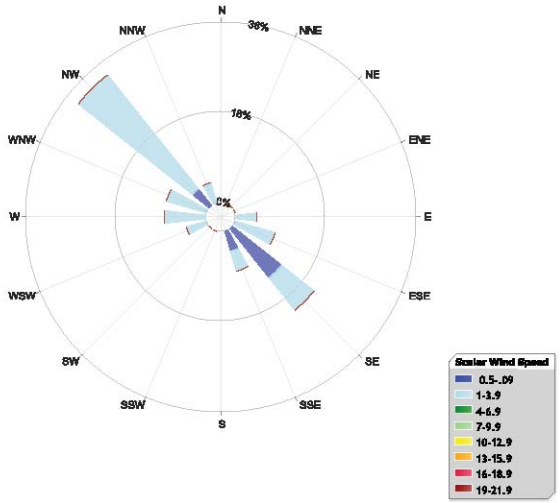
Highest 8-hour average daily max (ppb)

Date	Wy Range	Pinedale	Daniel	Boulder	Juel Springs	Moxa Arch
3/5/2011	66	80	63	103	76	55

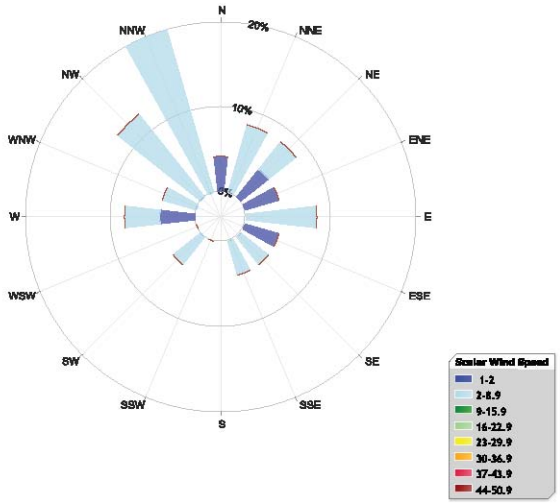
Wyoming Range
3/5/2011 - 3/5/2011
Created: 2/22/2012



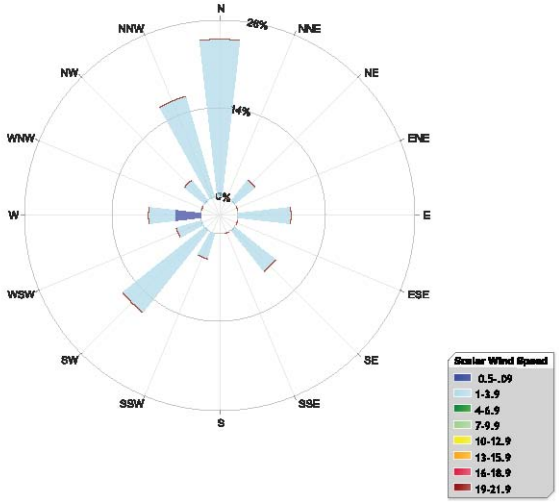
Pinedale - MSI data
3/5/2011 - 3/5/2011
Created: 2/22/2012



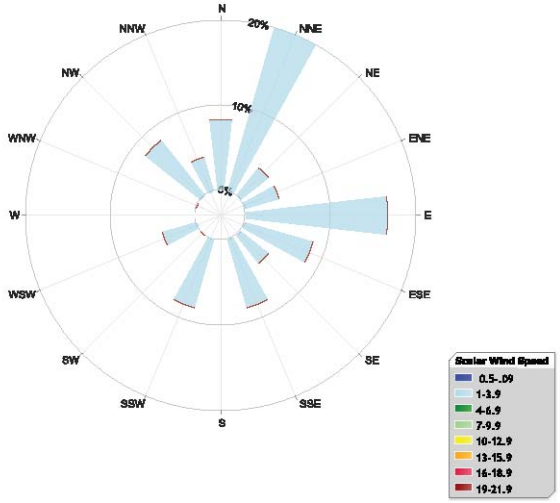
Daniel South
3/5/2011 - 3/5/2011
Created: 2/22/2012



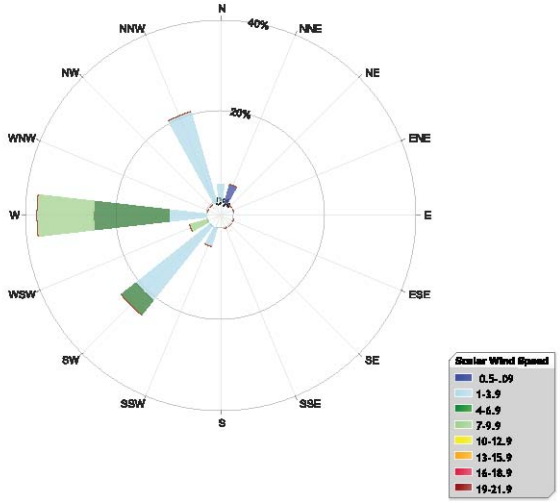
Boulder
3/5/2011 - 3/5/2011
Created: 2/22/2012



Juel Spring - MSI data
3/5/2011 - 3/5/2011
Created: 2/22/2012



Moxa
3/5/2011 - 3/5/2011
Created: 2/21/2012

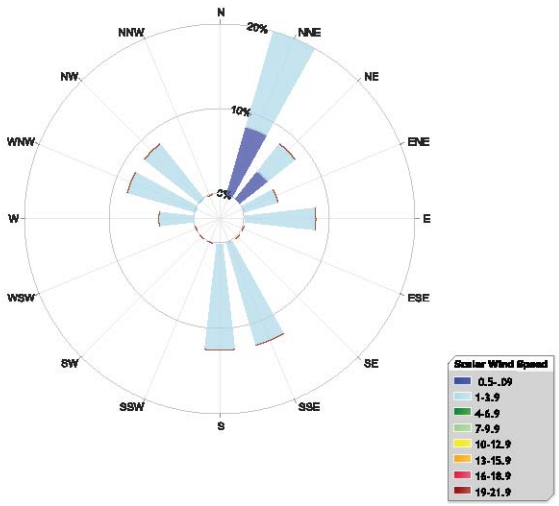


Scalar Wind Speed (meters/second)

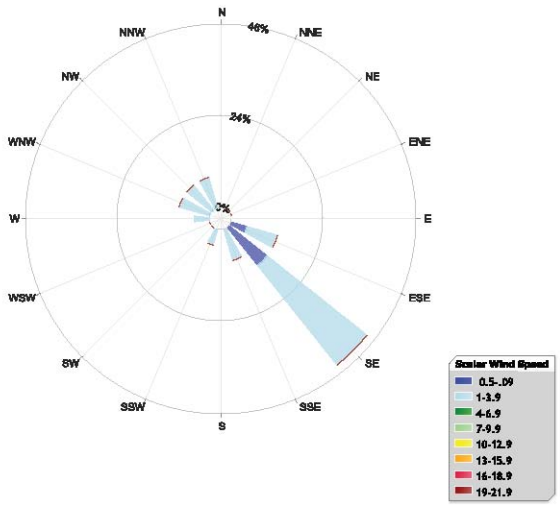
Highest 8-hour average daily max (ppb)

Date	Wy Range	Pinedale	Daniel	Boulder	Juel Springs	Moxa Arch
3/6/2011	61	57	77	63	59	53

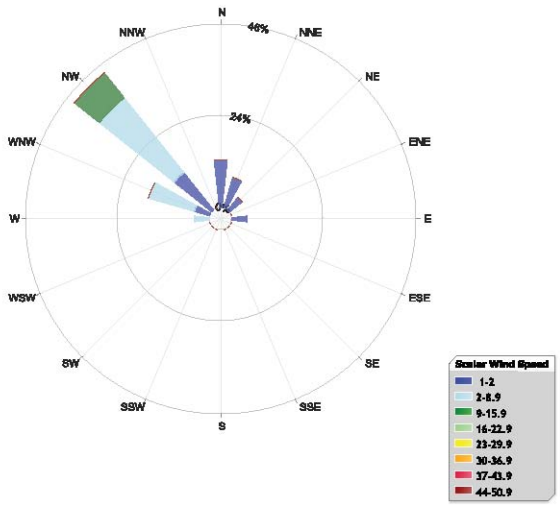
Wyoming Range
3/6/2011 - 3/6/2011
Created: 2/22/2012



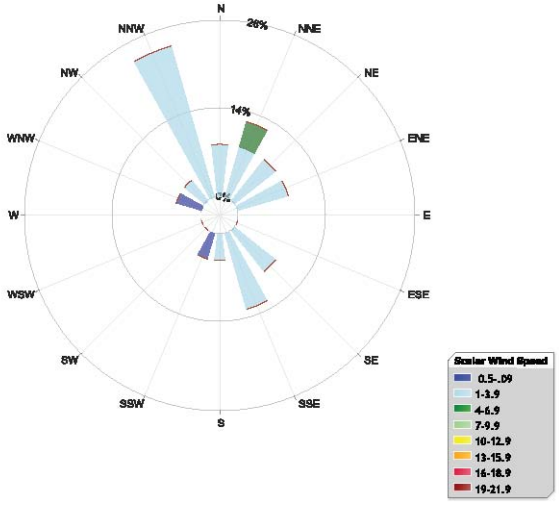
Pinedale - MSI data
3/6/2011 - 3/6/2011
Created: 2/22/2012



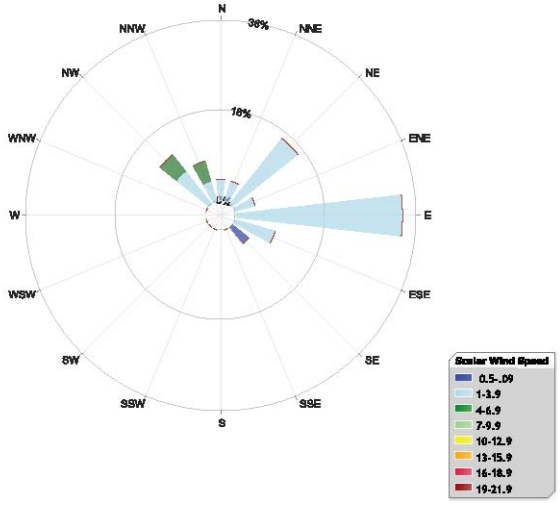
Daniel South
3/6/2011 - 3/6/2011
Created: 2/22/2012



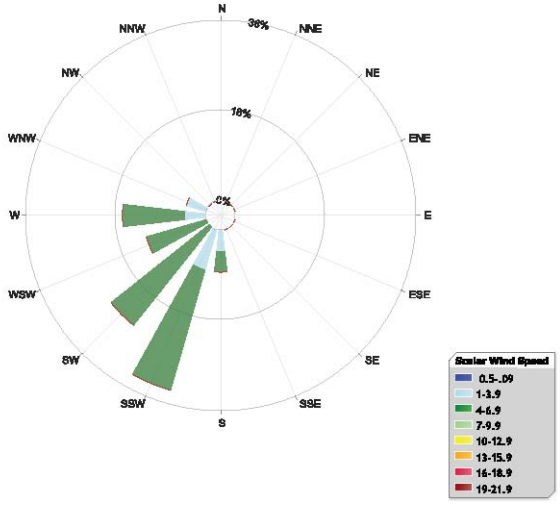
Boulder
3/6/2011 - 3/6/2011
Created: 2/22/2012



Juel Spring - MSI data
3/6/2011 - 3/6/2011
Created: 2/22/2012



Moxa
3/6/2011 - 3/6/2011
Created: 2/21/2012

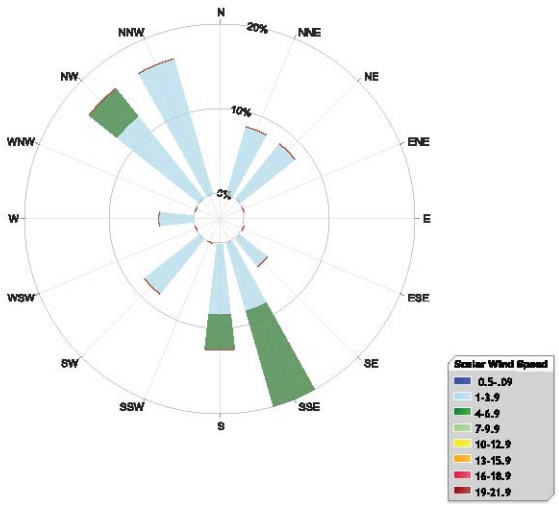


Scalar Wind Speed (meters/second)

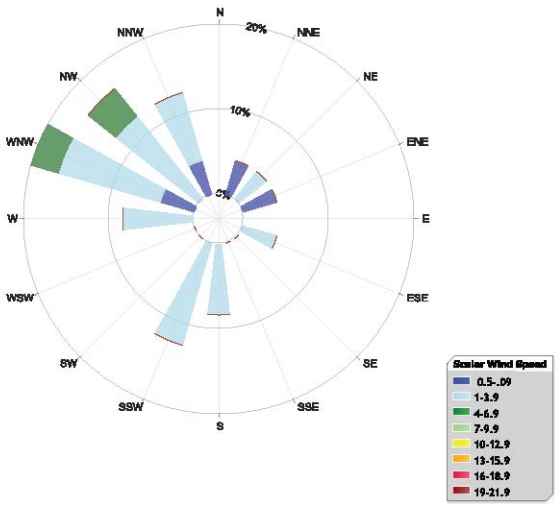
Highest 8-hour average daily max (ppb)

Date	Wy Range	Pinedale	Daniel	Boulder	Juel Springs	Moxa Arch
3/9/2011	55	76	56	74	67	52

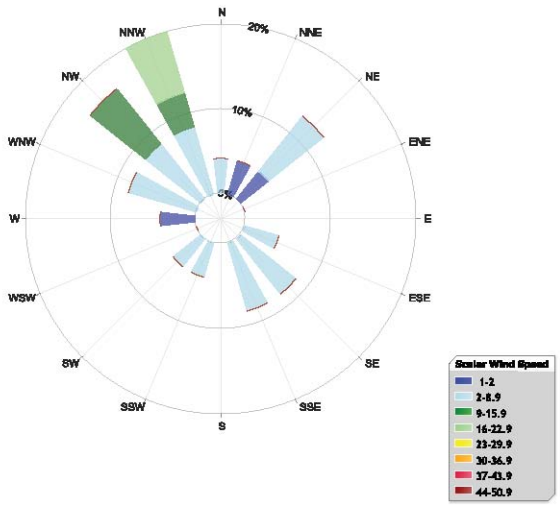
Wyoming Range
3/9/2011 - 3/9/2011
Created: 2/22/2012



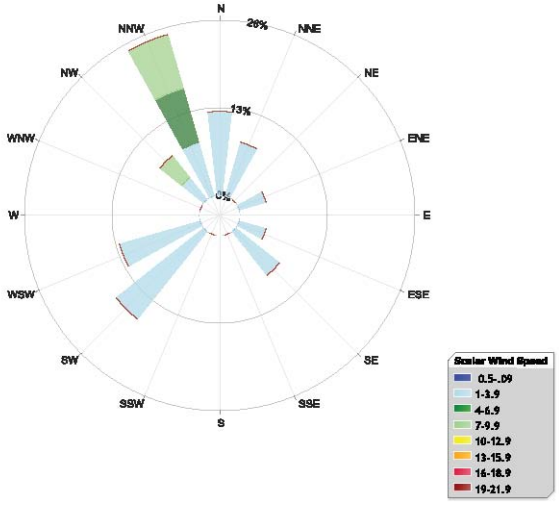
Pinedale - MSI data
3/9/2011 - 3/9/2011
Created: 2/22/2012



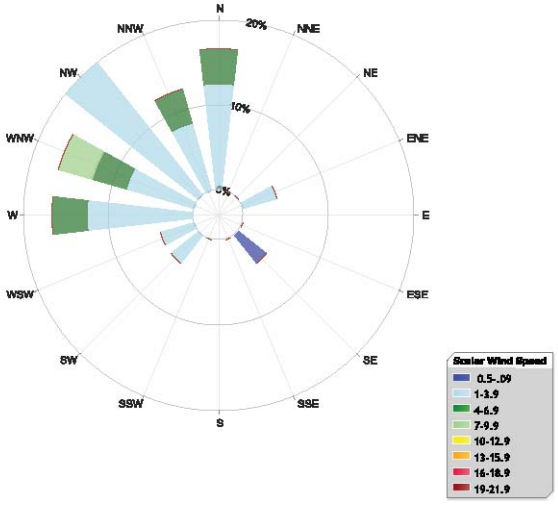
Daniel South
3/9/2011 - 3/9/2011
Created: 2/22/2012



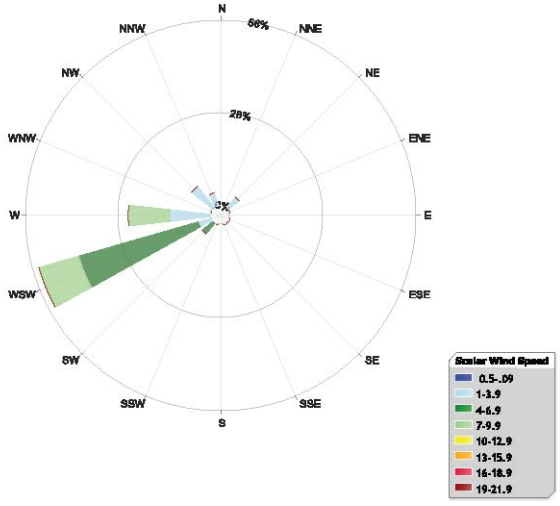
Boulder
3/9/2011 - 3/9/2011
Created: 2/22/2012



Juel Spring - MSI data
3/9/2011 - 3/9/2011
Created: 2/22/2012



Moxa
3/9/2011 - 3/9/2011
Created: 2/21/2012

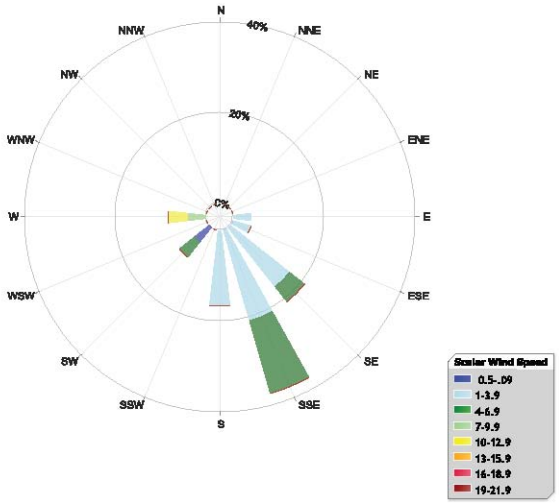


Scalar Wind Speed (meters/second)

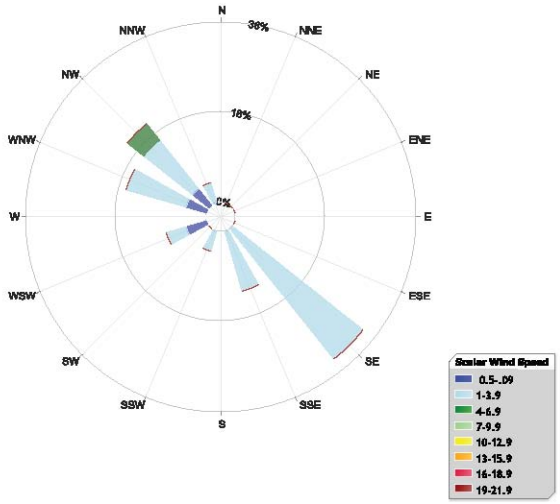
Highest 8-hour average daily max (ppb)

Date	Wy Range	Pinedale	Daniel	Boulder	Juel Springs	Moxa Arch
3/10/2011	83	62	84	68	69	63

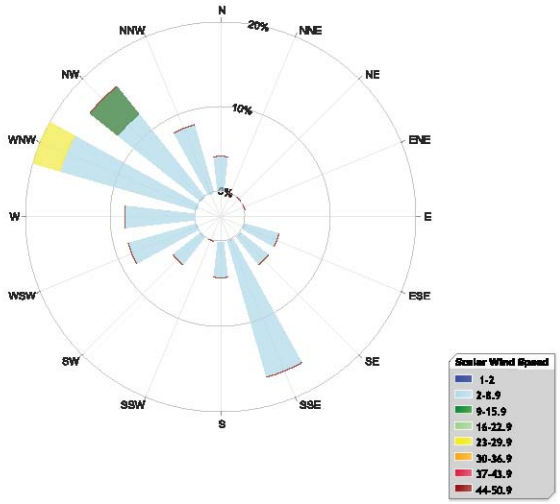
Wyoming Range
3/10/2011 - 3/10/2011
Created: 2/22/2012



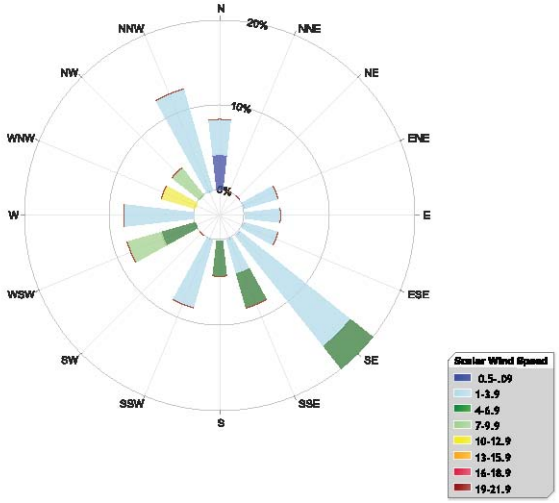
Pinedale - MSI data
3/10/2011 - 3/10/2011
Created: 2/22/2012



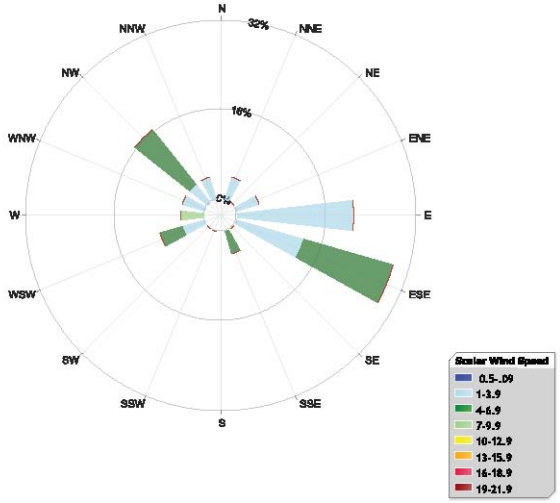
Daniel South
3/10/2011 - 3/10/2011
Created: 2/22/2012



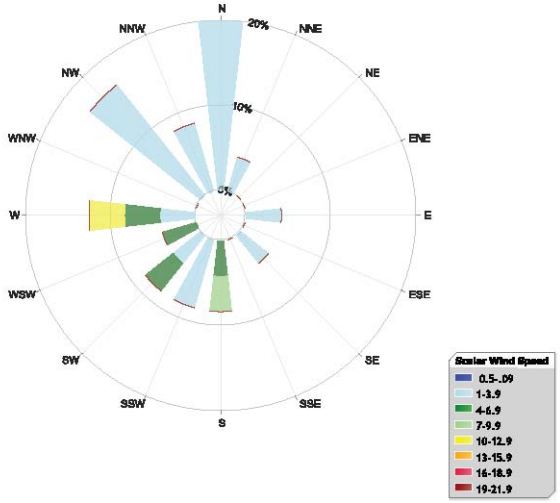
Boulder
3/10/2011 - 3/10/2011
Created: 2/22/2012



Juel Spring - MSI data
3/10/2011 - 3/10/2011
Created: 2/22/2012



Moxa
3/10/2011 - 3/10/2011
Created: 2/21/2012

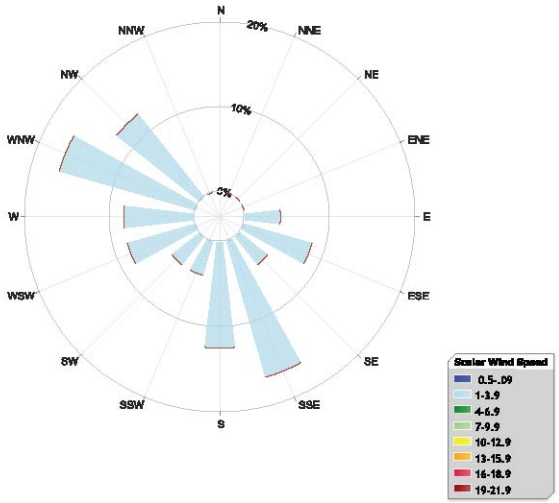


Scalar Wind Speed (meters/second)

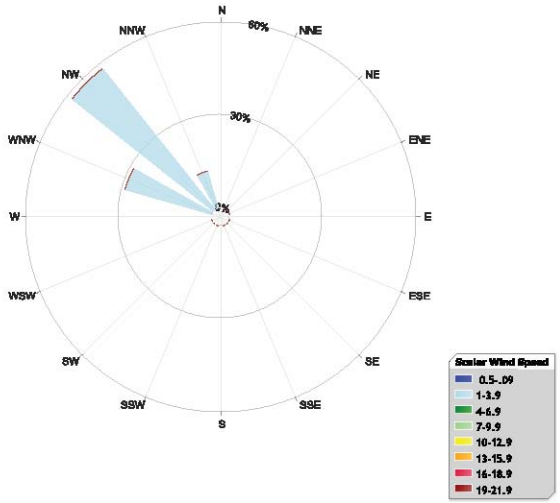
Highest 8-hour average daily max (ppb)

Date	Wy Range	Pinedale	Daniel	Boulder	Juel Springs	Moxa Arch
3/12/2011	57	56	56	121	85	53

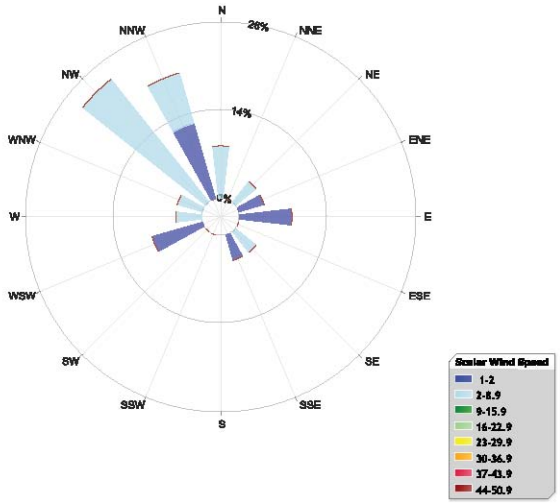
Wyoming Range
3/12/2011 - 3/12/2011
Created: 2/22/2012



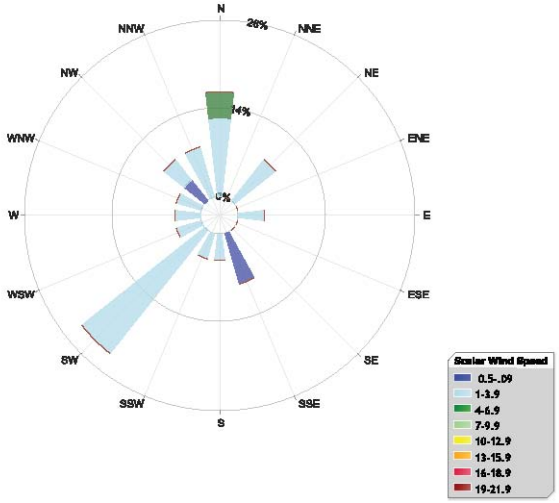
Pinedale - MSI data
3/12/2011 - 3/12/2011
Created: 2/22/2012



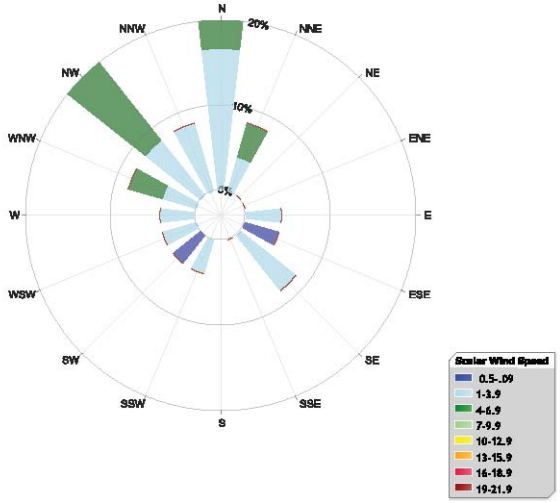
Daniel South
3/12/2011 - 3/12/2011
Created: 2/22/2012



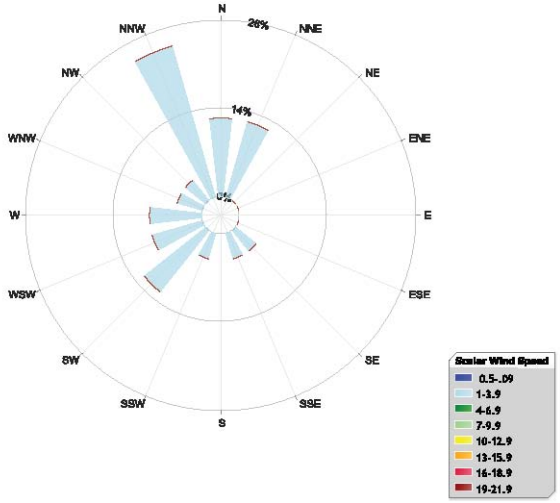
Boulder
3/12/2011 - 3/12/2011
Created: 2/22/2012



Juel Spring - MSI data
3/12/2011 - 3/12/2011
Created: 2/22/2012



Moxa
3/12/2011 - 3/12/2011
Created: 2/23/2012

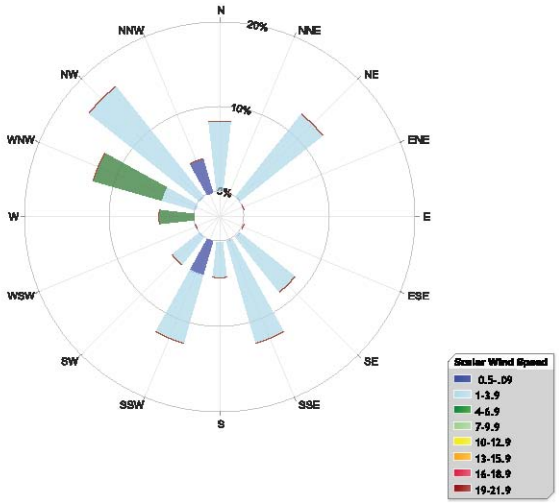


Scalar Wind Speed (meters/second)

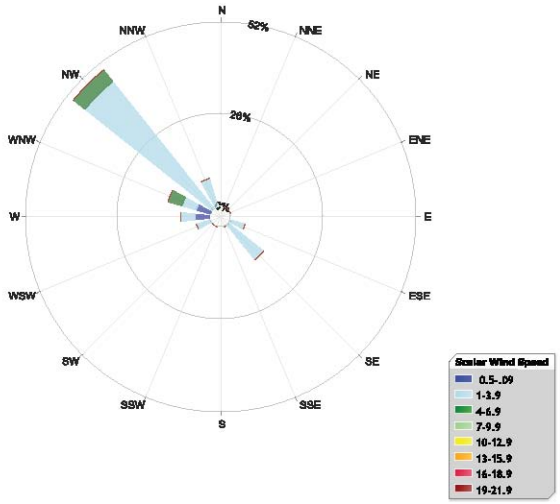
Highest 8-hour average daily max (ppb)

Date	Wy Range	Pinedale	Daniel	Boulder	Juel Springs	Moxa Arch
3/14/2011	57	65	79	78	68	51

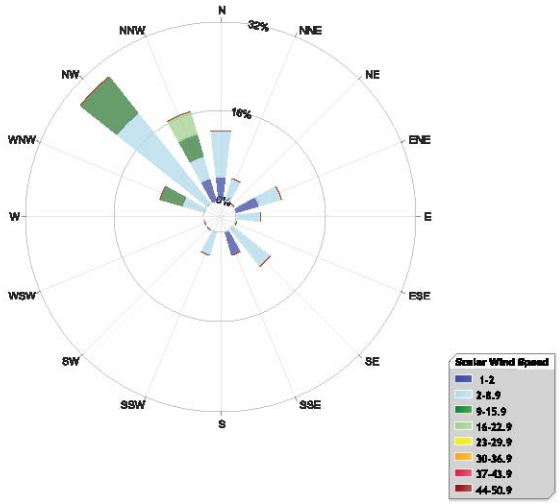
Wyoming Range
3/14/2011 - 3/14/2011
Created: 2/22/2012



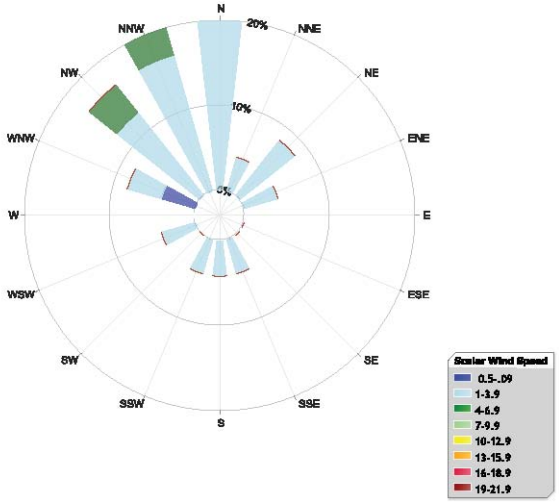
Pinedale - MSI data
3/14/2011 - 3/14/2011
Created: 2/22/2012



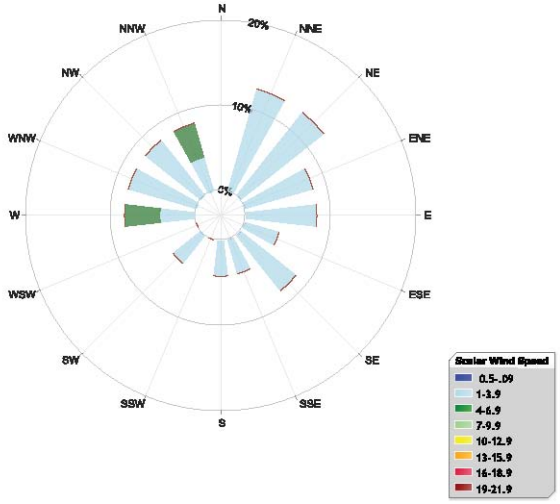
Daniel South
3/14/2011 - 3/14/2011
Created: 2/22/2012



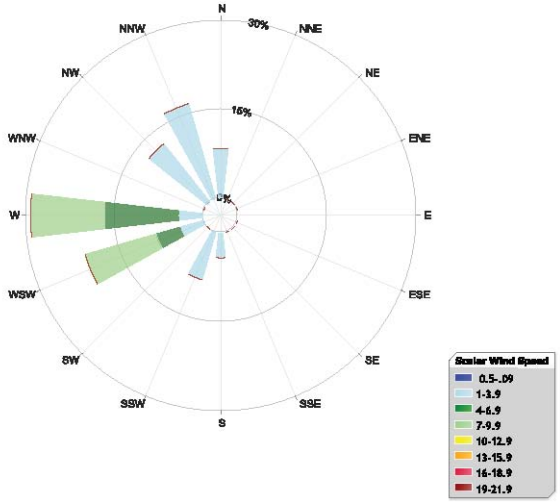
Boulder
3/14/2011 - 3/14/2011
Created: 2/22/2012



Juel Spring - MSI data
3/14/2011 - 3/14/2011
Created: 2/22/2012



Moxa
3/14/2011 - 3/14/2011
Created: 2/21/2012

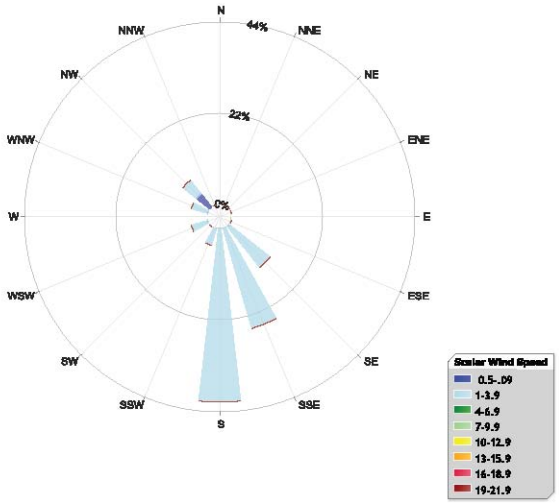


Scalar Wind Speed (meters/second)

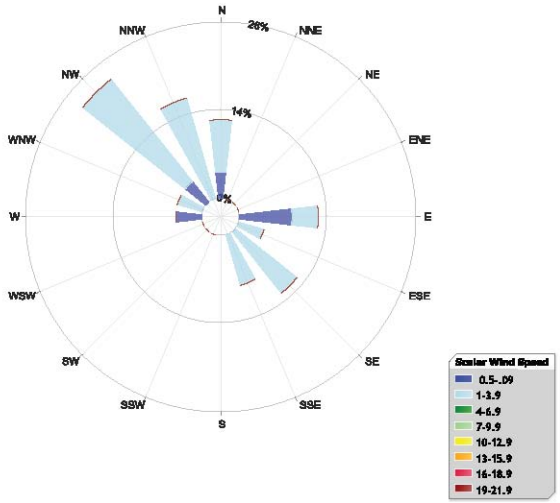
Highest 8-hour average daily max (ppb)

Date	Wy Range	Pinedale	Daniel	Boulder	Juel Springs	Moxa Arch
3/15/2011	63	65	67	75	85	51

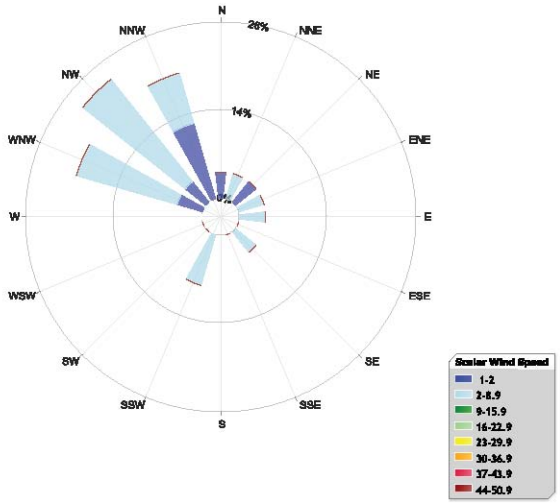
Wyoming Range
3/15/2011 - 3/15/2011
Created: 2/22/2012



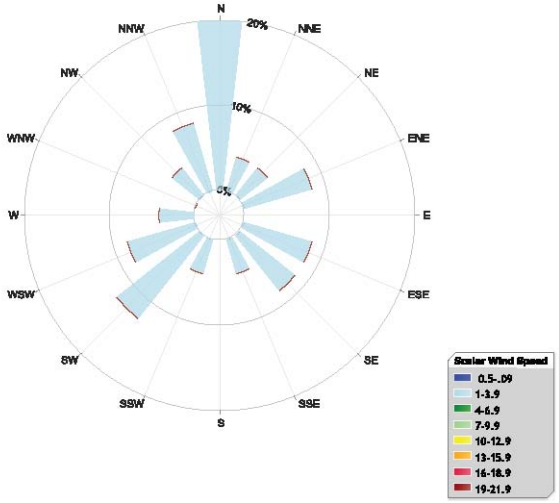
Pinedale - MSI data
3/15/2011 - 3/15/2011
Created: 2/22/2012



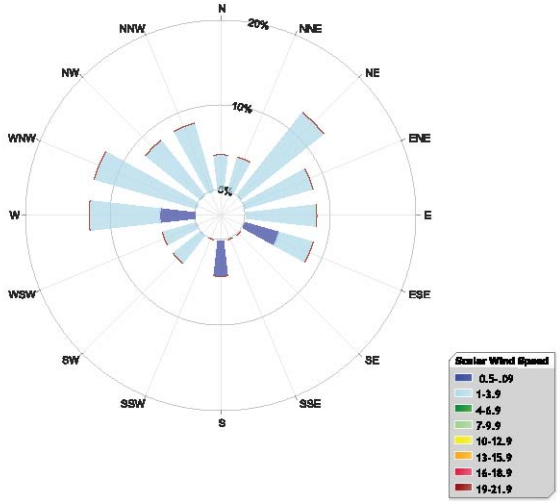
Daniel South
3/15/2011 - 3/15/2011
Created: 2/22/2012



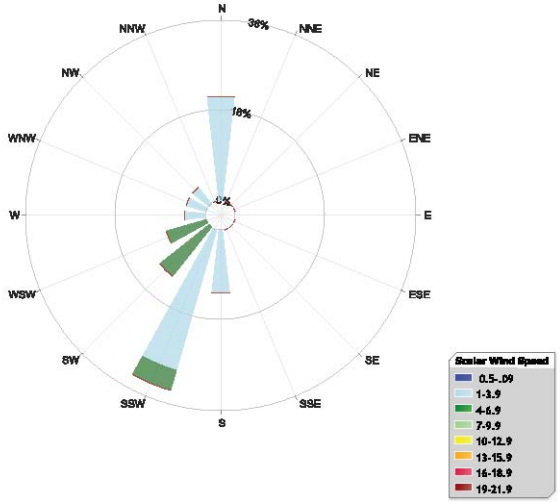
Boulder
3/15/2011 - 3/15/2011
Created: 2/22/2012



Juel Spring - MSI data
3/15/2011 - 3/15/2011
Created: 2/22/2012

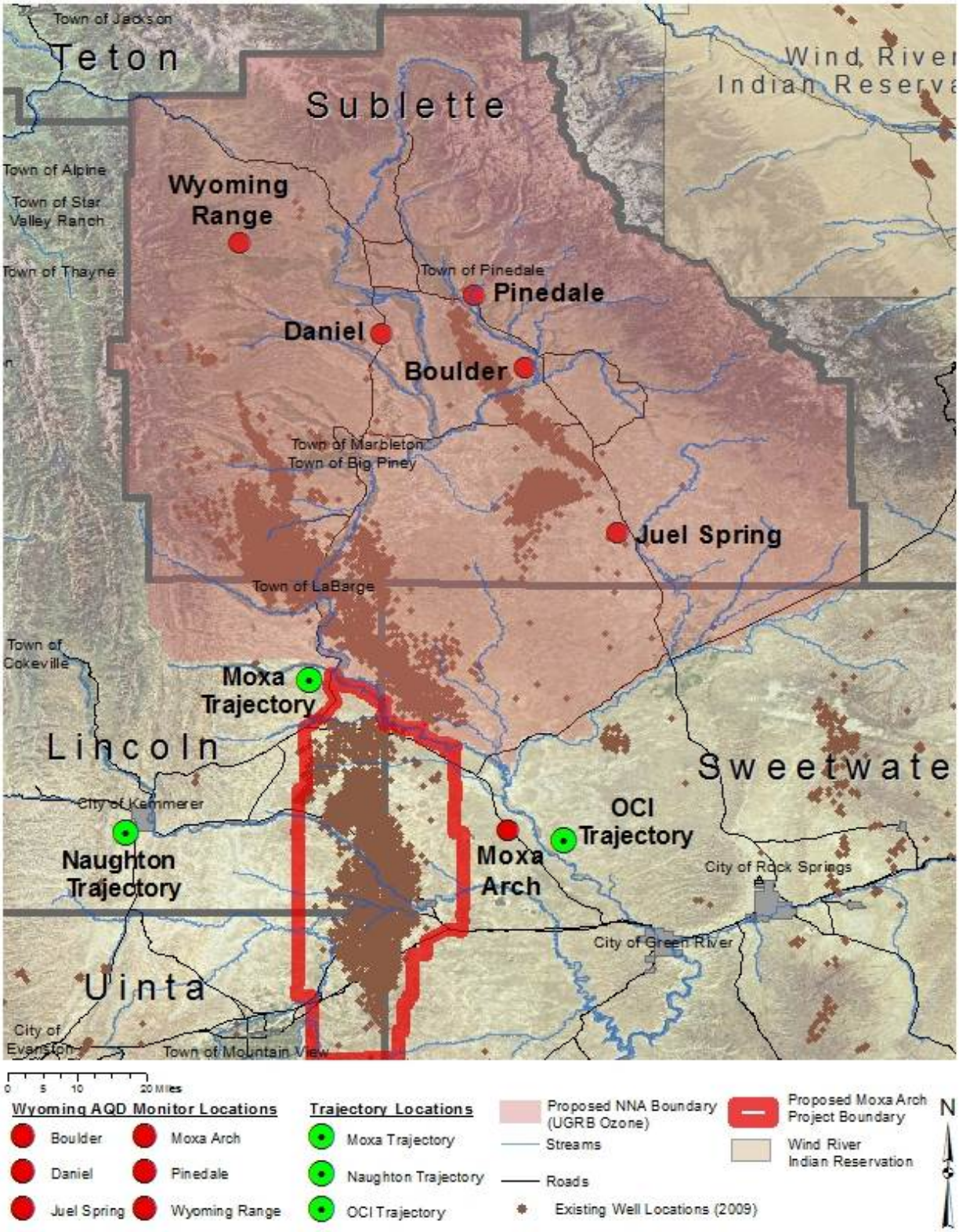


Moxa
3/15/2011 - 3/15/2011
Created: 2/21/2012



Scalar Wind Speed (meters/second)

Attachment 2



Attachment 3

Moxa Arch Trajectory point coordinates (WGS-84, decimal degrees)

	Latitude	Longitude
Moxa	42.066 N	110.203 W

2008 1st Quarter Moxa Arch Production Emissions (tons) *		
County	**NOx**	**VOCs**
Sweetwater	29	418
Lincoln	57	1,388
Uinta	18	579
Total	**104**	**2,385**

* The as reported annual values were divided by four (4) to get 1st Quarter emissions.