

Summary of 2015 & 2016 PM_{2.5} Exceptional Events in Montana

The following dates and locations are being submitted to the Environmental Protection Agency as PM_{2.5} exceptional events for 2015 and 2016. The associated wildfire smoke update for each date is provided as a hyperlink in the date column. For all dates where a wildfire smoke update is available a brief reason is provided for the exceptional event. Please contact the Montana Department of Environmental Quality at 406-444-3490 if you have any questions or concerns.

Date	Site	24-hr PM _{2.5} ($\mu\text{g}/\text{m}^3$)	Reason
6/29/2015	Malta Sidney	43.1 40.7	A dense plume of smoke moving off the Canadian fires impacted eastern Montana. Light smoke buildup under a strong and hot ridge of high pressure impacted western Montana.
6/30/2015 And PM Update	Malta Sidney	133.4 98.2	Concentrations started high in eastern Montana under a dense plume from the Canadian fires and decreased throughout the day. Hazy skies and light smoke continues to impact western Montana under a strong ridge of high pressure.
7/2/2015	Malta	49.5	Dense smoke from Canadian fires continues to impact Montana today, with the worst impacts east of the Continental Divide.
7/3/2015	Malta	42.1	Dense smoke continues to impact most of eastern Montana today from fires in Canada. Fires in Washington and Oregon are causing some light impacts in western Montana.
7/5/2015	Birney Lewistown Sidney	39.9 37.2 42.6	Strong winds brought smoke from fires in Canada into Montana during the afternoon. A fire near Lewistown Montana caused more localized impacts.
7/8/2015	Sidney	43.1	Northeastern Montana continues to be impacted by the dense smoke moving down from Saskatchewan while the rest of the state is seeing impacts from wildfires in the Pacific Northwest, including British Columbia.
8/2/2015	Libby	41.6	The Wolverine Fire in Washington State sent smoke into western Montana. A handful of fires in southeast Montana caused impacts in Birney and Broadus.
8/3/2015 And PM Update	Libby	63.7	Smoke moved into the state from numerous large fires in Washington, Oregon, and Northern California as a ridge of high pressure trapped smoke over Montana. The higher concentrations in Libby are due to the Wolverine Creek Fire in Washington State
8/15/2015 And PM Update	Butte Frenchtown Hamilton Helena	65.4 38.6 99.8 48.7	New fires ignited throughout central Idaho and western Montana due to strong winds and frequent lightning after a week of hot, dry weather. Nine new large fires were reported in the Northern Rockies and eight new large fires

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	Lewistown Missoula NCore	40.1 60.9 49.4	were reported in the Pacific Northwest. The largest new fire in Montana was the Eustice Fire north of Three Forks. Other large new fires in Montana include the Melton Fire near Dillion, the Scotchmans Gulch Fire near Philipsburg, the Trail Creek Fire near Swan Lake, and the Klatawa Fire near Libby at 156 acres. Fire activity also increased significantly on existing fires in Montana including the Sucker Creek Fire near Lincoln, the Marston Fire near Eureka, and the Weigel Fire near Libby. Fires in Idaho also contributed to the widespread smoke impacts.
8/16/2015 And PM Update	Hamilton	44.0	Extensive fire activity throughout central Idaho and western Montana caused smoke impacts throughout Montana. A large plume of smoke originated from the Clearwater Complex Fire in Idaho. In addition to this fire, 15 new large incidents were reported in Idaho and Montana due to the thunderstorm activity on Friday evening.
8/17/2015 And PM Update	Hamilton	46.2	Smoke impacts were caused by 12 large fires burning in Montana and 8 large fires in Idaho. In addition, 40 new small fires were reported across Idaho and Montana.
8/18/2015 And PM Update	Hamilton	69.2	Smoke impacts were limited to areas close to the Idaho/Montana border due to fire activity in Washington and Idaho. Elsewhere in the state, smoke impacts were kept to a minimum.
8/19/2015 And PM Update	Butte Flathead* Frenchtown Hamilton Libby	44.1 41.4 42.1 90.9 51.1	Satellite imagery confirms significant smoke spreading across Montana from Idaho and Washington. Fire activity in Montana has also increased, leading to widespread significant smoke impacts by late afternoon.
8/20/2015 And PM Update	Birney Broadus Butte Flathead* Frenchtown Hamilton Helena Lewistown Libby Missoula NCore	39.0 43.6 82.8 106.5 67.7 125.4 79.6 74.1 80.4 68.0 63.1	Satellite imagery showed a river of smoke from eastern Washington moving up into Canada and then down along western Montana in the morning, moving to the east throughout the day. Westerly winds and generally dry conditions caused smoke to impact the region throughout the day.

Date	Site	24-hr PM _{2.5} (µg/m ³)	Reason
8/21/2015 And PM Update	Birney Broadus Butte Flathead* Frenchtown Hamilton Helena Lewistown Libby Missoula NCore	52.2 47.5 58.4 73.7 53.3 147.4 66.0 78.6 49.0 67.8 62.9	Active fires in Washington, Idaho, and Montana continued to cause elevated smoke levels across Montana.
8/22/2015 And PM Update	Hamilton	49.1	After a brief reprieve in smoke impacts due to a cold front moving through the state, smoke moved back into western Montana in the evening. Smoke still lingered in eastern Montana as the cold front moved across the state.
8/23/2015	Butte Flathead* Frenchtown Hamilton Libby Missoula	41.8 95.4 44.2 58.6 40.2 41.9	Smoke continued to move into western Montana from fire activity in Washington, Idaho, and Montana. Conditions worsened throughout the day.
8/24/2015 And PM Update	Flathead* Frenchtown Hamilton Helena Libby Missoula NCore	111.2 82.8 58.9 51.7 165 74.9 52.3	Prolonged smoke impacts expected due to a large ridge of high pressure over the western U.S. and significant fire activity in Montana and neighboring states.
8/25/2015 And PM Update	Butte Flathead* Frenchtown Hamilton Helena Lewistown Libby Malta Missoula NCore	56.0 85.7 90.6 121.3 67.6 49.3 89.1 38.6 86.4 61.3	Satellite imagery shows a large amount of smoke over almost all of Montana. This smoke is being trapped under a ridge of high pressure that impacted the area until August 30, 2015. Westerly winds aloft continue to carry smoke into the region from the numerous fires burning in western Montana, Idaho, and eastern Washington.

Date	Site	24-hr PM _{2.5} ($\mu\text{g}/\text{m}^3$)	Reason
8/26/2015 And PM Update	Flathead* Frenchtown Hamilton Helena Lewistown Libby Malta Missoula NCore	91.1 64.7 101.6 50.6 47.8 78.7 56.6 66.8 48.4	
8/27/2015 And PM Update	Flathead* Frenchtown Hamilton Helena Lewistown Libby Missoula NCore	104.4 85.5 136.6 50.1 48.5 88.5 73.5 35.5	
8/28/2015 And PM Update	Birney Broadus Butte Flathead* Frenchtown Helena Lewistown Libby Malta Missoula NCore Sidney	62.0 82.7 85.3 97.7 133.7 82.1 51.6 63.6 75.0 126.4 67.7 62.5	
8/29/2015	Birney Broadus Butte Flathead* Frenchtown Hamilton Helena Lewistown Libby	46.0 46.5 89.3 77.6 124.7 196.8 94.2 58.5 59.6	

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	Malta	97.3	
	Missoula	132.4	
	NCore	85.4	
	Sidney	75.9	
8/30/2015	Broadus	35.6	
	Frenchtown	38.8	
	Hamilton	62.8	
	Helena	54.9	
	Missoula	35.7	
	NCore	39.8	
9/25/2015	Libby	38.3	The Goat Rock Complex Fire, located to the south of Libby sent smoke into the valley. This smoke was then trapped under an overnight inversion.
9/28/2015	Libby	48.9	Smoke from a fire located to the south of Libby, MT can be seen on satellite imagery. This smoke is causing localized but significant impacts.
9/29/2015	Libby	80.9	
10/1/2015	Libby	69.0	
10/2/2015	Libby	58.3	
10/5/2015	Libby	46.4	
10/6/2015	Libby	63.5	
8/1/2016	Hamilton	68.1	The Roaring Lion Fire, located near Hamilton, MT burned through over 3,000 acres in just a few hours on August 1, 2016. This fire caused smoke impacts in Hamilton throughout the first week of August.
8/2/2016	Hamilton	40.4	
8/5/2016	Hamilton	40.4	
8/6/2016	Hamilton	36.7	
8/22/2016 And PM Update	Hamilton	37.5	A handful of fires in the Selway-Bitterroot sent smoke in to Hamilton beginning at 6pm. The Moose fire, located 25 miles to the west of Hamilton looks to be the largest contributor of smoke.
8/28/2016	Hamilton	57.7	A handful of fires in the Selway-Bitterroot sent smoke in to Hamilton beginning at about 4pm. The smoke began to clear around 3am the following morning.

* The 'Flathead' monitor refers to the PM_{2.5} monitor located in Columbia Falls, MT. When referenced in wildfire smoke updates, and in this document, it is called Flathead to match the label on the Montana DEQ Today's Air Website.