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Attorneys for Citizens for Clean Air, a project of Alaska Community Action on Toxics, and Sierra Club

UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF WASHINGTON
AT SEATTLE

CITIZENS FOR CLEAN AIR, a project of ALASKA COMMUNITY ACTION ON TOXICS, and SIERRA CLUB, Plaintiffs, v. GINA MCCARTHY, in her official capacity as Administrator of the United States Environmental Protection Agency, and DENNIS MCLERRAN, in his official capacity as Regional Administrator of the United States Environmental Protection Agency Region 10, Defendants.	Case No. COMPLAINT FOR DECLARATORY AND INJUNCTIVE RELIEF

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INTRODUCTION

1. Fairbanks has the worst episodic fine-particulate matter ("PM-2.5") pollution in the nation—"worse than Los Angeles, Milwaukee and Detroit combined," a local newspaper put it. *See* Exhibit 1 (Amanda Bohman, *Air pollution in North Pole worse than Los Angeles, Milwaukee and Detroit combined*, Fairbanks News Miner (May 27, 2016)). Defendants have known about Fairbanks's PM-2.5 problem for half a decade at least, but they have repeatedly failed to take action mandated by the Clean Air Act. Most recently, they have failed to approve or disapprove a proposed state implementation plan within twelve months of deeming it complete as the statute requires. Due in part to Defendants' ongoing delay, the people of Fairbanks, including children and the elderly, continue to endanger their health with each breath.

2. The Federal government recognizes the dangers that PM-2.5 poses to the people of Fairbanks. Under the Clean Air Act, the U.S. Environmental Protection Agency regulates PM-2.5 pollution, imposing relevant 24-hour National Ambient Air Quality Standards. 62 Fed. Reg. 38,652 (July 18, 1997) (adopting 24-hour NAAQS for PM-2.5); 71 Fed. Reg. 61,144 (Oct. 17, 2006) (codified at 40 C.F.R. § 50.13) (strengthening standards).

3. EPA designated the Borough a nonattainment area for PM-2.5 in November 2009. 74 Fed. Reg. 58,688, 58,696, 58,702 (Nov. 13, 2009). It continues to document that the Borough has some of the worst episodic PM-2.5 pollution in the nation, with ambient air concentrations frequently in excess of the NAAQS for PM-2.5—currently by more than any other previously designated non-attainment area. *See* Exhibit 2 at 1 (EPA, *Areas Previously Designated Nonattainment for the 2006 PM-2.5 24-hour NAAQS*).

4. But EPA has been derelict in its duties to protect the families of Fairbanks from fine particulate matter pollution. EPA has failed to fulfill its statutorily required duty to fully or

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partially approve, or disapprove, the State of Alaska's state implementation plan submission (SIP submission) addressing the Fairbanks North Star Borough 24-hour fine particulate matter nonattainment area. The Clean Air Act gives EPA twelve months from its determination that the State's submission was administratively complete to issue its approval decision. 42 U.S.C. § 7410(k)(2). On December 31, 2014, the State of Alaska made its SIP submission addressing the Fairbanks PM-2.5 nonattainment to EPA and, on January 29, 2015, supplemented this submission by transmitting final regulations related to the proposed SIP. On February 18, 2015, EPA Office of Air, Waste and Toxics Director Kate Kelly determined that the State of Alaska's submission was complete, and thus, that the EPA would proceed to consider the SIP submission for approval. The agency's approval decision was due on February 18, 2016. Twelve months have come and gone without any response from EPA.

5. Accordingly, Plaintiffs CITIZENS FOR CLEAN AIR, a project of ALASKA COMMUNITY ACTION ON TOXICS and SIERRA CLUB bring this action to compel Defendant GINA MCCARTHY, in her official capacity as EPA Administrator, and Defendant DENNIS MCLERRAN, in his official capacity as Regional Administrator of EPA Region 10, to perform their mandatory duties to ensure that the Federal Government is acting timely to provide the residents of the Fairbanks North Star Borough the health protections promised to them by federal law.

JURISDICTION

6. The Court has jurisdiction over this action to compel the performance of EPA's non-discretionary duties under the Clean Air Act's citizen suit provision 42 U.S.C. § 7604(a) and 28 U.S.C. § 1331. The Court also has authority to order declaratory and injunctive relief pursuant to 28 U.S.C. §§ 2201 and 2202.

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NOTICE

7. On April 6, 2016, Plaintiffs provided EPA written notice of the claim stated in this action, as required by 42 U.S.C. § 7604(b)(2). *See* Exhibit 3 (Letter from Erik Grafe, counsel for Plaintiffs, to Gina McCarthy, Adm'r of EPA (April 6, 2016)). A period of sixty days has elapsed since EPA was notified of Plaintiffs' claim, therefore, notice was proper. *See* 42 U.S.C. § 7604(b)(2).

VENUE

8. Venue is proper in this Court pursuant to 28 U.S.C. § 1391(e). Defendant EPA resides in this judicial district. EPA Region 10, which has authority over Alaska and is charged with reviewing state implementation plans for Alaska, is headquartered in Seattle. This civil action is brought against officers of the United States acting in their official capacities and a substantial part of the events or omissions giving rise to the claims in this case occurred in the Western District of Washington. Further, because EPA Region 10 is located within King County, assignment to the Seattle Division is proper under Civil Local Rule 3(d)(1). Local Rule 3(d)(1).

PARTIES

9. Plaintiff CITIZENS FOR CLEAN AIR, a project of ALASKA COMMUNITY ACTION ON TOXICS, is a coalition of local community members and citizens groups in Fairbanks, Alaska who are committed to cleaning up the air while keeping everyone warm in the winter. Alaska Community Action on Toxics is a non-profit environmental health research and advocacy organization whose mission is to assure justice by advocating for environmental and community health.

10. Plaintiff SIERRA CLUB is a national nonprofit organization with 64 chapters and over 625,000 members dedicated to exploring, enjoying, and protecting the wild places of the

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Earth; to practicing and promoting the responsible use of the Earth's ecosystems and resources; to educating and enlisting humanity to protect and restore the quality of the natural and human environment; and to using all lawful means to carry out these objectives. The Alaska Chapter of the Sierra Club has approximately 1,475 members, including members in the Fairbanks North Star Borough.

11. Plaintiffs' members live, raise their families, work, recreate, and conduct educational, advocacy, and other activities in the Fairbanks North Star Borough. They are adversely affected by continuing exposure to levels of PM-2.5 pollution that exceed the national, health-based standards for 24-hour concentrations of PM-2.5 established under the Clean Air Act. The adverse effects of such pollution include actual or threatened harm to their health, their families' health, their professional, educational, and economic interests, and their aesthetic and recreational enjoyment of the environment in the Fairbanks North Star Borough.

12. EPA's failure timely to perform the mandatory duties described in this Complaint has injured and continues to injure the interests of Plaintiffs and their members. The relief requested in this lawsuit would redress these injuries by compelling EPA to take the action mandated by Congress in the Clean Air Act's requirements for addressing and improving air quality in areas violating national air quality standards, such as the Fairbanks North Star Borough.

13. Defendant GINA MCCARTHY is sued in her official capacity as the Administrator of the EPA. She is responsible for taking various actions to implement and enforce the Clean Air Act, including the mandatory duty at issue in this case.

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14. Defendant DENNIS MCLERRAN is sued in his official capacity as EPA Regional Administrator for Region 10. He is responsible for implementing and enforcing the Clean Air Act in EPA Region 10, which includes the Fairbanks North Star Borough, Alaska.

STATUTORY FRAMEWORK

15. Congress enacted the Clean Air Act to "speed up, expand, and intensify the war against air pollution in the United States with a view to assuring that the air we breathe throughout the Nation is wholesome once again." H.R. Rep. No. 91-1146, at 1 (1970), *reprinted in* U.S.C.C.A.N. 5356, 5356. Consistent with these goals, the Act requires EPA to set NAAQS for certain pollutants, "the attainment and maintenance of which . . . are requisite to protect the public health" with "an adequate margin of safety," 42 U.S.C. §§ 7409(a)-(b), and designate areas with air pollution levels that exceed the national standards as "nonattainment" areas, 42 U.S.C. § 7407(d)(1).

16. The Clean Air Act provides that each state with a nonattainment area must adopt a "state implementation plan" for improving air quality in that area in order to meet the NAAQS. 42 U.S.C. §§ 7407(a), 7410(a), 7502(b), and 7513a.

17. Under the Clean Air Act, states must submit such plans to EPA for review. 42 U.S.C. §§ 7410(a)(1), 7502(b). Once the EPA has determined that a submission is complete, the Clean Air Act requires EPA to reach a "completeness finding" determining whether the SIP submission is complete. 42 U.S.C. § 7410(k)(1)(B).

18. Where the EPA has determined that a submission is complete, the agency shall approve in whole or in part or disapprove the State's submission within twelve months of its completeness finding. 42 U.S.C. §§ 7410(k)(2), (3).

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19. If EPA fails to take a non-discretionary action, such as approving in whole or in part or disapproving a SIP submission within 12 months of a completeness finding, "any person may commence a civil action" to compel prompt action. 42 U.S.C. § 7604(a)(2).

STATEMENT OF FACTS

20. PM-2.5 refers to fine particles less than or equal to 2.5 micrometers in diameter, including hazardous forms of dirt, soot, smoke, and liquid droplets found in the air. 71 Fed. Reg. 61,144, 61,145 (Oct. 17, 2006). PM-2.5 is "produced chiefly by combustion processes and by atmospheric reactions of various gaseous pollutants," thus "[s]ources of fine particles include . . . motor vehicles, power generation, combustion sources at industrial facilities, and residential fuel burning." *Id.* at 61,146.

21. The detrimental effects of PM-2.5 on human health are significant. Exposure has been associated "with an array of health effects, notably premature mortality, increased respiratory symptoms and illnesses (e.g. bronchitis and cough in children), and reduced lung function." 62 Fed. Reg. 38,652, 38,668 (July 18, 1997). Numerous scientific studies have linked particle pollution exposure, especially exposure to fine particles, to a variety of problems, including premature death in people with heart or lung disease, non-fatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing, as well as possibly cancer, and reproductive and developmental harms. *See* Exhibit 4 (EPA, *Particulate Matter (PM)* (May 17, 2016)); Exhibit 5 at 8 (Am. Lung Ass'n, *State of the Air 2015* at 31 (citing EPA, Integrated Science Assessment for Particulate Matter, EPA 600/R-08/139F (2009))).

22. EPA first adopted 24-hour NAAQS for PM-2.5 in 1997. 62 Fed. Reg. 38,652 (July 18, 1997). In 2006, EPA strengthened these standards, revising the maximum allowed 24-

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hour average concentration of PM-2.5 from 65 micrograms per cubic meter ($\mu g/m^3$) to 35 $\mu g/m^3$. 71 Fed. Reg. 61,144 (Oct. 17, 2006) (codified at 40 C.F.R. § 50.13).

23. Fairbanks North Star Borough has some of the worst fine particulate matter pollution in the nation, with ambient air concentrations frequently in excess of the 24-hour NAAQS for PM-2.5. Of all previously designated nonattainment areas for 24-hour PM-2.5, measured by 2012-2014 design values, Fairbanks is the most polluted, with levels almost double the next most-polluted area, at 397 percent of the 24-hour PM-2.5 NAAQS. *See* Exhibit 2 at 1 (EPA, *Areas Previously Designated Nonattainment for the 2006 PM-2.5 24-hour NAAQS*). Within the United States, the highest measures of episodic PM-2.5 are reported from a pollution monitor on Hurst Road in the Borough's North Pole area. *See* Exhibit 1 (Amanda Bohman, *Air pollution in North Pole worse than Los Angeles, Milwaukee and Detroit combined*, Fairbanks News Miner (May 27, 2016)).

24. In designating attainment and nonattainment areas for the 2006 24-hour PM-2.5 NAAQS on November 13, 2009, EPA designated the Fairbanks North Star Borough as a nonattainment area. 74 Fed. Reg. 58,688, 58,696, 58,702 (Nov. 13, 2009). Because December 14, 2009 was the effective date for EPA's designations, a nonattainment state implementation plan submission for the Fairbanks North Star Borough was due no later than December 14, 2012. 42 U.S.C. §§ 7502(b), 7513(a)(2)(B).

25. The State of Alaska did not make a SIP submission by December 14, 2012, and failed to comply with its legal duty to submit for the 2006 24-hour PM-2.5 National Ambient Air Quality Standard no later than six months after the plan submission deadline—i.e., no later than June 14, 2013. *See* 42 U.S.C. § 7410(k)(1)(B).

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26. EPA made no finding that the State had failed to submit within six months of the submission deadline, despite a mandatory duty to do so. *See id.*

27. As a result, on April 24, 2014, Plaintiffs brought suit in this Court under the Clean Air Act's citizen suit provision, seeking redress for EPA's failure to perform its nondiscretionary duty to issue a finding that the State had failed to make a SIP submission. *See* Compl. at 8-9, *Citizens for Clean Air, et al. v. McCarthy et al.*, No. 2:14-cv-00610-MJP (W.D. Wash. Apr. 24, 2014), ECF No. 1.

28. On December 31, 2014, while Plaintiffs' suit was pending, the State made a SIP submission addressing the Fairbanks PM-2.5 nonattainment to EPA. *See* Exhibit 6 (Letter from Larry Hartig, Comm'r, Alaska Dep't of Envtl. Conservation, to Dennis McLerran, Reg'l Adm'r, EPA Region 10 (Dec. 31, 2014)).

29. On January 29, 2015, the State supplemented its SIP submission by transmitting final regulations related to the proposed SIP to the EPA. *See* Exhibit 7 (Letter from Larry Hartig, Comm'r, Alaska Dep't of Envtl. Conservation, to Dennis McLerran, Reg'l Adm'r, EPA Region 10 (Jan. 29, 2015)).

30. On February 18, 2015, Kate Kelly, Director of EPA's Office of Air, Waste and Toxics, determined that the State's submission was complete. Exhibit 8 (Letter from Kate Kelly, Director, Office of Air, Waste & Toxics, EPA, to Alice Edwards, Dir., Alaska Dep't of Envtl. Conservation, Div. of Air Quality at 1 (Feb. 18, 2015)). Thus, EPA would proceed to consider the SIP submission for approval. *Id.* As a result, Plaintiffs and EPA agreed that the pending suit before this Court was mooted, and the Court dismissed the case. *See* Notice of Case Closure, *Citizens for Clean Air et al. v. McCarthy et al.*, No. 2:14-cv-00610-MJP (W.D. Wash. Mar. 6, 2015).

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31. Having determined the State's SIP submission complete, EPA was required to approve in whole or in part, or disapprove the State's submission within 12 months of EPA's completeness finding. 42 U.S.C. §§ 7410(k)(2), (3), (4). Since EPA's completeness determination was rendered on February 18, 2015, EPA's approval decision was due on February 18, 2016.

32. To date, EPA has failed to approve in whole or in part, or disapprove the State's submission addressing the 24-hour PM-2.5 National Ambient Air Quality Standard in the Fairbanks North Star Borough.

CLAIM FOR RELIEF
(Failure to approve in whole or in part, or disapprove the State's submission)

33. Plaintiffs reallege each and every allegation set forth above, as if fully set forth herein.

34. The deadline for approval in whole or in part, or disapproval of the State's 2006 24-hour PM-2.5 National Ambient Air Quality Standard nonattainment state implementation plan submission was no later than February 18, 2016.

35. The EPA has not approved, in whole or in part, or disapproved the State's submission.

36. Pursuant to 42 U.S.C. §§ 7410(k)(2), (3), EPA had a mandatory duty to approve in whole or in part or disapprove the State's submission within twelve months of the completeness determination deadline and no later than February 18, 2016.

37. EPA has failed to perform this mandatory duty.

38. Accordingly, EPA has been in continuous violation of the Clean Air Act, 42 U.S.C. §§ 7410(k)(2), (3), since February 19, 2016, or earlier.

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39. This Clean Air Act violation constitutes a "failure of the Administrator to perform [an] act or duty under this chapter which is not discretionary with the Administrator," within the meaning of the Clean Air Act's citizen suit provision. 42 U.S.C. § 7604(a)(2). The violation is ongoing.

PRAYER FOR RELIEF

Wherefore, Plaintiffs respectfully request that the Court:

1. Declare that the Administrator is in violation of the Clean Air Act with regard to her mandatory, nondiscretionary duty under 42 U.S.C. § 7410(k)(2) to approve in whole or in part or disapprove within twelve months of the completeness determination deadline the State's submission of a proposed nonattainment state implementation plan addressing 24-hour concentrations of PM-2.5 in the Fairbanks North Star Borough;

2. Issue an injunction requiring the Administrator to make and publish in the *Federal Register* a decision to approve in whole or in part or disapprove the State's SIP submission;

3. Retain jurisdiction of this matter until such time as EPA has complied with its non-discretionary duties under the Clean Air Act;

4. Award to Plaintiffs their reasonable costs of litigation, including attorneys' fees and expert witness fees; and

5. Grant such further relief as the Court deems just and proper.

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Respectfully submitted this 9th day of June, 2016.

s/ Janette K. Brimmer

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TABLE OF EXHIBITS

Exhibit No.	Description
1	Bohman, Amanda, *Air pollution in North Pole worse than Los Angeles, Milwaukee and Detroit combined*, FAIRBANKS DAILY NEWS-MINER (May 27, 2016)
2	U.S. Environmental Protection Agency (EPA), *Areas Previously Designated Nonattainment for the 2006 PM-2.5 24-hour NAAQS* (excerpt), *available at* https://www3.epa.gov/airtrends/pdfs/PM25_DesignValues_20122014_FINAL_08_19_15.xlsx
3	Grafe, Erik, Earthjustice, Letter to the Hon. Gina McCarthy, Re. 60-Day Notice of Intent to File Clean Air Act Citizen Suit (Apr. 6, 2016)
4	EPA, *Particulate Matter (PM): Health*
5	American Lung Association, *State of the Air 2015* (excerpts)
6	Hartig, Larry, Commissioner, Alaska Department of Environmental Conservation (ADEC), Letter to Dennis McLerran, Regional Administrator, EPA Region 10 (Dec. 31, 2014)
7	Hartig, Larry, Commissioner, ADEC, Letter to Dennis McLerran, Regional Administrator, EPA Region 10 (Jan. 29, 2015)
8	Kelly, Kate, Director, EPA, to Alice Edwards, Director, ADEC (Feb. 18, 2015)

EXHIBIT 1

http://www.newsminer.com/news/local_news/air-pollution-in-north-pole-worse-than-los-angeles-milwaukee/article_a797d390-2315-11e6-a864-4714d8ec1790.html

Air pollution in North Pole worse than Los Angeles, Milwaukee and Detroit combined

Amanda Bohman, abohman@newsminer.com Updated May 27, 2016

Eric Engman/News-Miner

North Pole recorded it's worst air quality ever on Sunday as cars drive through the pollution inversion along Badger Road a Road intersection Monday afternoon, January 5, 2015.

FAIRBANKS — The highest counts of episodic PM 2.5 particulate pollution reported in the country are coming from a pollution monitor on Hurst Road in North Pole.

The counts are not just high. They are outrageously high — almost twice as high as the next highest community in the nation, according to data collected by the U.S. Environmental Protection Agency.

“This level of pollution is rarely experienced in the United States,” said Claudia Vaupel, EPA air planning team leader.

On winter days, when chimneys are churning out smoke and the air is stagnant, a thick haze settles on the area off Badger Road, burning people’s eyes, throats and noses. It’s a health hazard, which is why the EPA requires the pollution monitoring and is urging the state to take action.

New data certified by the Alaska Department of Environmental Conservation in early May shows little meaningful air quality improvement.

State air quality regulator Cindy Heil said the nonattainment area in the Fairbanks North Star Borough continues to lead the nation with the highest design value for short-term particulate pollution.

Three years of data are averaged to come up with a design value, which is a tool used by the EPA to measure progress. The new design value for the Fairbanks borough’s nonattainment area is 124 micrograms per cubic meter. It went down from 139 last year. The design value remains far — the farthest in the country — from the goal of getting below 35.5 micrograms per cubic meter.

“We are still extremely high,” said Ron Lovell, borough air quality manager.

The design value here was much lower in previous years when the monitor of record was in the city of Fairbanks. A few years ago, a monitor was added in North Pole, and that became the official monitoring site last year. Under federal guidelines, the monitor showing the highest pollution counts becomes the official monitor.

“It’s the way the rules are set up,” said Barbara Trost, air monitoring and quality assurance program manager for the DEC.

Last year’s dramatic jump in the design value put the Fairbanks smoke pollution nonattainment area way above some major metropolitan areas who also deal with particulate spikes.

The design value for episodic particulate pollution in Los Angeles last year was 38 micrograms per cubic meter. Salt Lake City's design value was 43.

The San Joaquin Valley in California, which is showing the second-highest particulate pollution spikes, had a design value of 71 last year.

The American Lung Association also collects PM2.5 pollution data, but analyzes it differently. The organization makes its own list of cities with periodic dirty air and ranked Fairbanks No. 5 in its 2016 State of the Air report. It's the worst showing that Fairbanks has had on a lung association list of most-polluted cities. Only four areas — all in California — ranked worse than Fairbanks, including Bakersfield, Fresno and Modesto.

Fairbanks has been listed among the lung association's top 10 most-polluted cities since 2013. The borough started climbing the list after 2010 when it ranked 44th for episodic particulate pollution.

Vaupel, the EPA regulator, said that temperature inversions — when a mass or warm air sits aloft colder air, trapping pollutants — in the subarctic cities of Fairbanks and North Pole are stronger than experienced in other U.S. cities.

"The air is so still. That doesn't happen in the other areas that have inversions," she said.

Krystal Francesco lived off of Badger Road between 2010-2013 about two miles from the Hurst Road monitor. Part of the reason she moved was to get away from the smoke pollution, she said.

"We could smell chemicals outside the house and also coming into the room where me and my infant daughter at the time slept," she said.

Francesco said she took multiple trips to the emergency room in the wintertime because of her daughter's breathing problems.

"Doctors called it croup the first few times," Francesco said. "After that, her pediatrician called it asthma."

After the family moved, the ER visits stopped and Francesco said her daughter's coughing fits decreased.

Contact staff writer Amanda Bohman at 459-7587. Follow her on Twitter: @FDNMborough.

EXHIBIT 2

Table 3b. PM2.5 Design Value History for Previously Designated Nonattainment Areas for the PM2.5 2006 24-hour NAAQS, 2003-2005 through 2012-2014[1,2,3,4]

AQS Data Query: 2015-08-18; Last updated: 2015-08-19

Designated Area	States	EPA Regions	2003-2005 Design Value ($\mu g/m^3$)	2004-2006 Design Value ($\mu g/m^3$)	2005-2007 Design Value ($\mu g/m^3$)	2006-2008 Design Value ($\mu g/m^3$)	2007-2009 Design Value ($\mu g/m^3$)	2008-2010 Design Value ($\mu g/m^3$)	2009-2011 Design Value ($\mu g/m^3$)	2010-2012 Design Value ($\mu g/m^3$)	2011-2013 Design Value ($\mu g/m^3$)	2012-2014 Design Value ($\mu g/m^3$)
Allentown	PA	3	36	37	37	36	34	32	33	32	32	29
Birmingham	AL	4	44	44	44	39	34	29	27	26	24	23
Canton-Massillon	OH	5	38	37	36				28	29	27	26
Charleston	WV	3	36	37	38	36	32	28	26	24	22	20
Chico	CA	9	47	56	55	69	59	51	35	34	34	28
Cleveland-Akron-Lorain	OH	5	47	43	42	38	36	33	30	30	29	27
Detroit-Ann Arbor	MI	5	45	44	43	37	35	32	32	28	26	25
Fairbanks	AK	10	40	43	39	41	44	63	63	47	45	139
Harrisburg-Lebanon-Carlisle	PA	3	41	38	38	36	34	33	32	31	32	34
Imperial Co[5]	CA	9	39	40	42	36	21	19	38	43	42	44
Johnstown	PA	3	39	39	39		32	30	30	30	30	28
Klamath Falls	OR	10	41	46	45	46	45	44	39	33	36	34
Knoxville-Sevierville-La Follette	TN	4	34	35	37							
Lancaster	PA	3	44	39	40	37	35	33	31	31	31	31
Liberty-Clairton	PA	3	68	65	60	53	50	48	44	43	37	35
Logan	UT-ID	8, 10	65	64	42	36	40	46	42	37	46	45
Los Angeles	CA	9	65	57	55	53	49	41	38	36	36	38
Milwaukee-Racine	WI	5	39	41	41	37	37	33	32	29	27	27
New York-N. New Jersey-Long Island	NY-NJ-CT	1, 2	45	43	41	38	35	30	30	29	30	27
Nogales	AZ	9	31	38	39	40	31	32	30	28	27	27
Oakridge	OR	10	53	48	47	40	41	38	39	38	40	40
Philadelphia-Wilmington	PA-NJ-DE	2, 3	39	40	42	42	38	36	34	31	30	29
Pittsburgh-Beaver Valley	PA	3	52	45	43	39	37	35	34	33	29	26
Provo	UT	8	43	44	45	44	50	41	42	35	46	44
Sacramento	CA	9	54	57	62	58	51	40	35	31	36	32
Salt Lake City	UT	8	49	49	55	46	48	44	45	38	41	43
San Francisco Bay Area	CA	9	41	42	43	44	39	34	33	32	32	30
San Joaquin Valley	CA	9	63	69	74	70	70	65	62	58	65	71
Seattle-Tacoma	WA	10	40	42	43	44	46	38	35	28	32	30
Steubenville-Weirton	OH-WV	3, 5	46	43	44	41	37	31	28	27	26	25
West Central Pinal County	AZ	9				48	40	31	26	28	33	36
Yuba City-Marysville	CA	9	36	40	39	47	42	36	27	26	29	25

Notes:

1. The level of the 2006 24-hour NAAQS for PM2.5 is 35 micrograms per cubic meter (ug/m3). The design value for the 24-hour PM2.5 NAAQS is the 3-year average 98th percentile concentration.

2. The design values shown here are computed for the latest design value period using Federal Reference Method or equivalent data reported by States, Tribes, and local agencies to EPA's Air Quality System (AQS) as of 07/22/2015. Concentrations flagged by States, Tribes, and local agencies as exceptional events (e.g., high winds, wildfires, volcanic eruptions, construction) and concurred by the associated EPA Regional Office are not included in the calculation of these design values. Data from special purpose monitors operating less than 24 month, data identified as 'non-regulatory' and other data judged by EPA as not meeting 40CFR58 monitoring requirements are not included in these design value calculations.

3 In this table, all design values are calculated based on the rules specified in Appendix N for the 2012 PM2.5 NAAQS.

4. For sites with approved seasonal sampling, the promulgated methodology may change the annual 98th percentile and 24-hour design value from the values posted on this website in previous years which were calculated under the 2006 NAAQS methodology. Data from 2012 and previous years processed using the 2006 rules can be found in the 2011 'PM2.5 Detailed Information' file posted here: http://www.epa.gov/airtrends/values.html. These changes in design values and corresponding changes in the trend are due to the new official calculation methodology and may not indicate a change in air quality observed for that area or location.

5. Design value based on all valid data, including data in 2012 that were submitted to, but are not currently in, AQS. EPA considers these data valid for use per 40 CFR Part 50 and 58 (see Memorandum 'Data Used for the Calculation of the Imperial County Design Value' found in Docket No. EPA-HQ-OAR-2012-0918).

EXHIBIT 3

EARTHJUSTICE

April 6, 2016

Via Certified and Electronic Mail
Return Receipt Requested

The Hon. Gina McCarthy
Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460
E: McCarthy.Gina@epa.gov

Re: 60-Day Notice of Intent to File Clean Air Act Citizen Suit

Dear Administrator McCarthy:

Pursuant to 42 U.S.C. § 7604(b)(2) and 40 C.F.R. Part 54, we hereby give notice of intent to commence a civil action against the Administrator of the United States Environmental Protection Agency ("Administrator," "EPA," or "you") for failing to perform a nondiscretionary duty under the Clean Air Act ("the Act"). As further specified below, you have failed to carry out your nondiscretionary duty under section 110(k)(2) of the Act[1] to issue a full or partial approval or a disapproval of the State of Alaska's state implementation plan ("SIP") submission addressing the Fairbanks North Star Borough 24-hour fine particulate matter nonattainment area "[w]ithin 12 months of a determination by the Administrator . . . that a State has submitted a plan . . . that meets the minimum criteria."[2] The Agency "determined that [Alaska's] SIP submission satisfie[d] the completeness criteria" on February 18, 2015,[3] but has still not issued a determination with respect to approval or disapproval of the SIP submission.

Inhalable airborne particles present serious air quality problems in many areas of the United States. Numerous scientific studies have linked particle pollution exposure, especially exposure to fine particles (particles, such as those found in smoke and haze, that are 2.5 micrometers in diameter or smaller, hereinafter "$PM_{2.5}$"), to a variety of problems, including premature death in people with heart or lung disease, non-fatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms, such as irritation of the airways,

[1] 42 U.S.C. § 7410(k)(2).

[2] *Id.*

[3] Letter from Kate Kelly, Director, Office of Air, Waste & Toxics, EPA, to Alice Edwards, Dir., Alaska Dep't of Envtl. Conservation, Div. of Air Quality at 1 (Feb. 18, 2015).

ALASKA 441 WEST 5TH AVENUE, SUITE 301 ANCHORAGE, AK 99501

T: 907.277.2500 F: 907.277.1390 AKOFFICE@EARTHJUSTICE.ORG WWW.EARTHJUSTICE.ORG

coughing, or difficulty breathing,[4] as well as possibly cancer, and reproductive and developmental harms.[5] Of all previously designated nonattainment areas for $PM_{2.5}$, measured by 2012-2014 design values, Fairbanks is the most polluted, with levels almost double the next most-polluted area, at 397% of the 24-hour $PM_{2.5}$ National Ambient Air Quality Standard (NAAQS).[6]

In 1997, EPA established a 24-hour NAAQS for $PM_{2.5}$ that was revised by the agency in 2006 to provide increased protection for public health and welfare.[7] EPA established its air quality designations for the 24-hour $PM_{2.5}$ NAAQS on November 13, 2009, identifying the Fairbanks North Star Borough as a "nonattainment area" for the revised standard.[8] At the time, EPA declared that, "[f]or those areas designated nonattainment, states must develop a [SIP]."[9] The State of Alaska missed the statutory deadline to submit a plan for addressing the $PM_{2.5}$ violations to EPA.[10] On April 24, 2014, Citizens for Clean Air and the Sierra Club initiated a citizen suit under the Act to compel EPA to take the statutorily required action of making a finding under the Act that the State of Alaska failed to submit a SIP.[11] On December 31, 2014, the State of Alaska submitted a SIP addressing the Fairbanks $PM_{2.5}$ nonattainment to EPA[12] and, on January 29, 2015, supplemented this SIP submission by transmitting final regulations related to the SIP.[13] In accordance with 42 U.S.C. § 7410(k)(1)(B), on February 18, 2015, EPA Office of Air, Waste

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[4] *See* EPA, *Particulate Matter (PM)* (Feb. 23, 2016), *available at* http://www.epa.gov/particles/health.html.

[5] *See* Am. Lung Ass'n, State of the Air 2015 at 31, *available at* http://www.stateoftheair.org/2015/assets/ALA_State_of_the_Air_2015.pdf (citing EPA, Integrated Science Assessment for Particulate Matter, EPA 600/R-08/139F (2009)).

[6] *See* EPA, *Areas Previously Designated Nonattainment for the 2006 PM2.5 24-hour NAAQS, available at* https://www3.epa.gov/airtrends/pdfs/PM25_DesignValues_20122014_FINAL_08_19_15.xlsx.

[7] *See* 71 Fed. Reg. 61,144, 61,144, 61,147 (Oct. 17, 2006).

[8] 74 Fed. Reg. 58,688, 58,702 (Nov. 13, 2009).

[9] *Id*. at 59,689.

[10] *See* 42 U.S.C. § 7502(b).

[11] Compl., *Citizens for Clean Air et al., v. McCarthy et al.*, Case No. 2:14-cv-00610, Doc. 1 at 1 (W.D. Wash. Apr. 24, 2014).

[12] *See* Letter from Larry Hartig, Comm'r, Alaska Dep't of Envtl. Conservation, to Dennis McLerran, Reg'l Adm'r, EPA Region 10 (Dec. 31, 2014), *available at* http://dec.alaska.gov/air/anpms/comm/docs/fbxSIPpm2-5/FNSB_PM25_EPA_transmittal_letter.pdf.

[13] *See* Letter from Larry Hartig, Comm'r, Alaska Dep't of Envtl. Conservation, to Dennis McLerran, Reg'l Adm'r, EPA Region 10 (Jan. 29, 2015), *available at* https://dec.alaska.gov/air/anpms/comm/docs/fbxSIPpm2-5/FNSB_PM25_EPA_transmittal_letter_01-29-15.pdf.

and Toxics Director Kate Kelly determined that the State of Alaska's submission was complete, and thus, that the EPA would proceed to consider the SIP for approval.[14]

Under section 110(k) of the Act, EPA shall approve in whole or in part or disapprove the State's submittal "[w]ithin 12 months of a determination by the Administrator . . . that a State has submitted a plan . . . that meets the minimum [completeness] criteria."[15] Since EPA's completeness determination was rendered on February 18, 2015, EPA's approval decision was due on February 18, 2016. This deadline has now passed, but EPA has issued no approval decision with respect to the SIP submission. Thus, EPA has been in violation of section 110(k) of the Act since February 19, 2016.

The parties listed below intend to commence a civil action to enforce your nondiscretionary duty to approve in whole or in part or disapprove the State of Alaska's submittal addressing the Fairbanks North Star Borough unless EPA has fully performed this duty within 60 days of the postmark date of this letter. As required by 40 C.F.R. § 54.3(a), this notice letter is submitted on behalf of the following organizations:

Citizens for Clean Air, a project of Alaska Community Action on Toxics
505 West Northern Lights Blvd., Suite 205
Anchorage, Alaska 99503
T: 907.222.7714

Sierra Club
85 Second St., 2nd Floor
San Francisco, CA 94105
T: 415.977.5500

Citizens for Clean Air (CCA) is a coalition of local community members and citizens groups in Fairbanks, Alaska who are committed to cleaning up the air while keeping everyone warm in the winter. CCA is a project of Alaska Community Action on Toxics (ACAT), a non-profit environmental health research and advocacy organization whose mission is to assure justice by advocating for environmental and community health. The Sierra Club is America's largest and most influential grassroots environmental organization, with more than 2.1 million members and supporters nationwide including in Fairbanks, Alaska.

I am legal counsel for the above-named organizations in this matter. Please feel free to contact me to discuss further the basis for this claim or to explore possible options for resolving this claim short of litigation. Any communications should be addressed to me using the contact information indicated below.

[14] Letter from Kate Kelly, Director, Office of Air, Waste & Toxics, EPA, to Alice Edwards, Dir., Alaska Dep't of Envtl. Conservation, Div. of Air Quality at 1 (Feb. 18, 2015).

[15] 42 U.S.C. § 7410(k)(2)–(3).

Sincerely,

Erik Grafe
EARTHJUSTICE
441 W. 5th Ave., Suite 301
Anchorage, AK 99501
T: 907.792.7102
E: egrafe@earthjustice.org

cc via e-mail:
Dennis McLerran, Regional Administrator, Region 10, mclerran.dennis@epa.gov
Lorie Schmidt, Air and Radiation Law Office, Office of General Counsel,
schmidt.lorie@epa.gov

EXHIBIT 4

EPA United States Environmental Protection Agency

Particulate Matter (PM)

Health

The size of particles is directly linked to their potential for causing health problems. Small particles less than 10 micrometers in diameter pose the greatest problems, because they can get deep into your lungs, and some may even get into your bloodstream.

Exposure to such particles can affect both your lungs and your heart. Small particles of concern include "inhalable coarse particles" (such as those found near roadways and dusty industries), which are larger than 2.5 micrometers and smaller than 10 micrometers in diameter; and "fine particles" (such as those found in smoke and haze), which are 2.5 micrometers in diameter and smaller.

The Clean Air Act requires EPA to set air quality standards to protect both public health and the public welfare (e.g. visibility, crops and vegetation). Particle pollution affects both.

Health Effects

Particle pollution - especially fine particles - contains microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems. Numerous scientific studies have linked particle pollution exposure to a variety of problems, including:

- premature death in people with heart or lung disease,
- nonfatal heart attacks,
- irregular heartbeat,
- aggravated asthma,
- decreased lung function, and
- increased respiratory symptoms, such as irritation of the airways, coughing or difficulty breathing.

People with heart or lung diseases, children and older adults are the most likely to be affected by particle pollution exposure. However, even if you are healthy, you may experience temporary symptoms from exposure to elevated levels of particle pollution. For more information about asthma, visit www.epa.gov/asthma.

Environmental Effects

Visibility impairment

Fine particles ($PM_{2.5}$) are the main cause of reduced visibility (haze) in parts of the United States, including many of our treasured national parks and wilderness areas. For more information about visibility, visit www.epa.gov/visibility.

Environmental damage

Particles can be carried over long distances by wind and then settle on ground or water. The effects of this settling include: making lakes and streams acidic; changing the nutrient balance in coastal waters and large river basins; depleting the nutrients in soil; damaging sensitive forests and farm crops; and affecting the diversity of ecosystems. More information about the effects of particle pollution and acid rain.

Aesthetic damage

Particle pollution can stain and damage stone and other materials, including culturally important objects such as statues and monuments. More information about the effects of particle pollution and acid rain.

You will need Adobe Acrobat Reader to view the Adobe PDF files on this page. See EPA's PDF page for more information about getting and using the free Acrobat Reader.

For more information on particle pollution, health and the environment, visit:

Particle Pollution and Your Health (PDF) (2pp, 320k): Learn who is at risk from exposure to particle pollution, what health effects you may experience as a result of particle exposure, and simple measures you can take to reduce your risk.

How Smoke From Fires Can Affect Your Health: It's important to limit your exposure to smoke -- especially if you may be susceptible. This publication provides steps you can take to protect your health.

Integrated Science Assessment for Particulate Matter (December 2009): This comprehensive assessment of scientific data about the health and environmental effects of particulate matter is an important part of EPA's review of its particle pollution standards.

Last updated on 5/12/2016

EXHIBIT 5

AMERICAN LUNG ASSOCIATION.

STATE OF THE AIR 2015

Contents

Two types of air pollution dominate in the U.S.: ozone and particle pollution.[1] These two pollutants threaten the health and the lives of millions of Americans. Thanks to the Clean Air Act, the U.S. has far less of both pollutants now than in the past. Still, more than 138.5 million people live in counties where monitors show unhealthy levels of one or both—meaning the air a family breathes could shorten life or cause lung cancer.

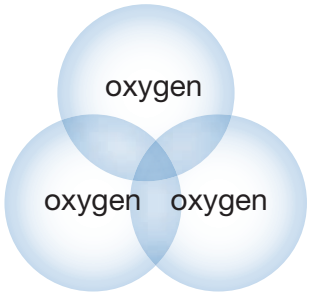
So what are ozone and particle pollution?

Ozone Pollution

It may be hard to imagine that pollution could be invisible, but ozone is. The most widespread pollutant in the U.S. is also one of the most dangerous.

Scientists have studied the effects of ozone on health for decades. Hundreds of research studies have confirmed that ozone harms people at levels currently found in the United States. In the last few years, we've learned that it can also be deadly.

What Is Ozone?



Ozone (O_3) is a gas molecule composed of three oxygen atoms. Often called "smog," ozone is harmful to breathe. Ozone aggressively attacks lung tissue by reacting chemically with it.

The ozone layer found high in the upper atmosphere (the stratosphere) shields us from much of the sun's ultraviolet radiation. However, ozone air pollution at ground level where we can breathe it (in the troposphere) causes serious health problems.

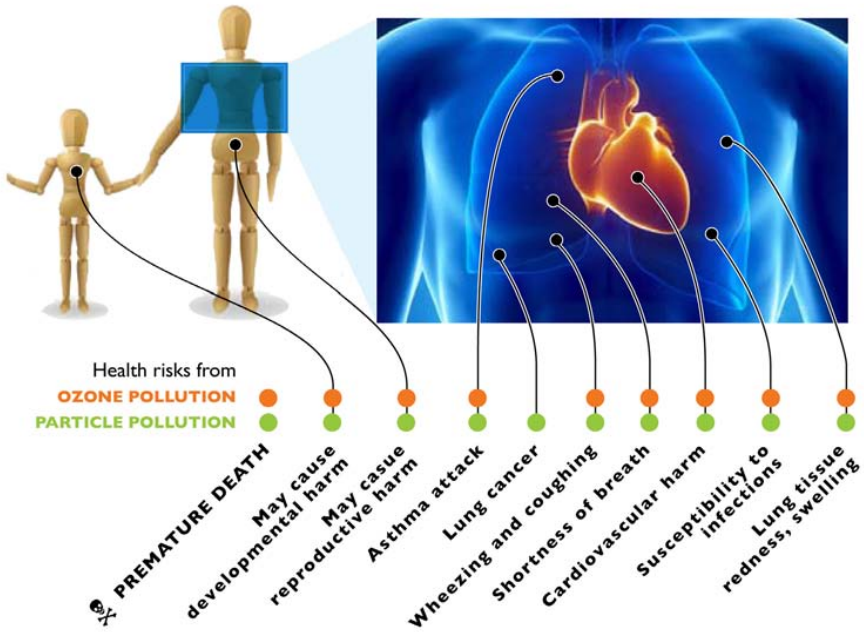
Where Does Ozone Come From?

Ozone develops in the atmosphere from gases that come out of tailpipes, smokestacks and many other sources. When these gases come in contact with sunlight, they react and form ozone smog.

The essential raw ingredients for ozone come from nitrogen oxides (NO_x), hydrocarbons, also called volatile organic compounds (VOCs) and carbon monoxide (CO). They are produced primarily when fossil fuels like gasoline, oil or coal are burned or when some chemicals, like solvents, evaporate. NO_x is emitted from power plants, motor vehicles and other sources of high-heat combustion. VOCs are emitted from motor vehicles, chemical plants, refineries, factories, gas stations, paint and other sources. CO is also primarily emitted from motor vehicles.[2]

If the ingredients are present under the right conditions, they

Air pollution remains a major danger to the health of children and adults.



react to form ozone. And because the reaction takes place in the atmosphere, the ozone often shows up downwind of the sources of the original gases. In addition, winds can carry ozone far from where it began.

You may have wondered why "ozone action day" warnings are sometimes followed by recommendations to avoid activities such as mowing your lawn or driving your car. Lawn mower exhaust and gasoline vapors are VOCs that could turn into ozone in the heat and sun.

Who is at risk from breathing ozone?

Anyone who spends time outdoors where ozone pollution levels are high may be at risk. Five groups of people are especially vulnerable to the effects of breathing ozone:

- children and teens[3];
- anyone 65 and older[4];
- people who work or exercise outdoors[5];
- people with existing lung diseases, such as asthma and chronic obstructive pulmonary disease (also known as COPD, which includes emphysema and chronic bronchitis)[6]; and
- people with cardiovascular disease.[7]

In addition, some evidence suggests that other groups—including women, people who suffer from obesity and people with low incomes—may also face higher risk from ozone.[8] More research is needed to confirm these findings.

The impact on your health can depend on many factors, however. For example, the risks would be greater if ozone levels are higher, if you are breathing faster because you're working outdoors or if you spend more time outdoors.

Lifeguards in Galveston, Texas, provided evidence of the impact of even short-term exposure to ozone on healthy, active adults in a study published in 2008. Testing the breathing capacity of these outdoor workers several times a day, researchers found that many lifeguards had greater obstruction in their airways when ozone levels were high. Because of this research, Galveston became the first city in the nation to install an air quality warning flag system on the beach.[9]

How Ozone Pollution Harms Your Health

Premature death. Breathing ozone can shorten your life. Strong evidence exists of the deadly impact of ozone in large studies conducted in cities across the U.S., in Europe and in Asia. Researchers repeatedly found that the risk of premature death increased with higher levels of ozone.[10] Newer research has confirmed that ozone increased the risk of premature death even when other pollutants also exist.[11]

Even low levels of ozone may be deadly. A large study of 48 U.S. cities looked at the association between ozone and all-cause mortality during the summer months. Ozone concentrations by city in the summer months ranged from 16 percent to 80 percent lower than the U.S. Environmental Protection Agency (EPA) currently considers safe. Researchers found that ozone at those lower levels was associated with deaths from cardiovascular disease, strokes, and respiratory causes.[12]

Immediate breathing problems. Many areas in the United States produce enough ozone during the summer months to cause health problems that can be felt right away. Immediate problems—in addition to increased risk of premature death—include:

- shortness of breath, wheezing and coughing;
- asthma attacks;
- increased risk of respiratory infections;
- increased susceptibility to pulmonary inflammation; and
- increased need for people with lung diseases, like asthma or chronic obstructive pulmonary disease (COPD), to receive medical treatment and to go to the hospital.[13]

Cardiovascular effects. Inhaling ozone may affect the heart as well as the lungs. A 2006 study linked exposures to high ozone levels for as little as one hour to a particular type of cardiac arrhythmia that itself increases the risk of premature death and stroke.[14] A French study found that exposure to elevated ozone levels for one to two days increased the risk of heart attacks for middle-aged

adults without heart disease.[15] Several studies around the world have found increased risk of hospital admissions or emergency department visits for cardiovascular disease.[16]

Long-term exposure risks. New studies warn of serious effects from breathing ozone over longer periods. With more long-term data, scientists are finding that long-term exposure—that is, for periods longer than eight hours, including days, months or years—may increase the risk of early death.

- Examining the records from a long-term national database, researchers found a higher risk of death from respiratory diseases associated with increases in ozone.[17]
- New York researchers looking at hospital records for children's asthma found that the risk of admission to hospitals for asthma increased with chronic exposure to ozone. Younger children and children from low income families were more likely than other children to need hospital admissions even during the same time periods.[18]
- California researchers analyzing data from their long-term Southern California Children's Health Study found that some children with certain genes were more likely to develop asthma as adolescents in response to the variations in ozone levels in their communities.[19]
- Studies link lower birth weight and decreased lung function in newborns to ozone levels in their community.[20] This research provides increasing evidence that ozone may harm newborns.

Breathing other pollutants in the air may make your lungs more responsive to ozone—and breathing ozone may increase your body's response to other pollutants. For example, research warns that breathing sulfur dioxide and nitrogen oxide—two pollutants common in the eastern U.S.—can make the lungs react more strongly than to just breathing ozone alone. Breathing ozone may also increase the response to allergens in people with allergies. A large study published in 2009 found that children were more likely to suffer from hay fever and respiratory allergies when ozone and $PM_{2.5}$ levels were high.[21]

EPA finds ozone causes harm. The EPA released their most recent review of the current research on ozone pollution in February 2013.[22] The EPA had engaged a panel of expert scientists, the Clean Air Scientific Advisory Committee, to help them assess the evidence; in particular, they examined research published between 2006 and 2012. The EPA concluded that ozone pollution posed multiple, serious threats to health. Their findings are highlighted in the box below.

EPA Concludes Ozone Pollution Poses Serious Health Threats

- Causes respiratory harm (e.g. worsened asthma, worsened COPD, inflammation)
- Likely to cause early death (both short-term and long-term exposure)
- Likely to cause cardiovascular harm (e.g. heart attacks, strokes, heart disease, congestive heart failure)
- May cause harm to the central nervous system
- May cause reproductive and developmental harm

—U.S. Environmental Protection Agency, *Integrated Science Assessment for Ozone and Related Photochemical Oxidants*, 2013. EPA/600/R-10/076F.

Particle Pollution

Ever look at dirty truck exhaust?

The dirty, smoky part of that stream of exhaust is made of particle pollution. Overwhelming evidence shows that particle pollution—like that coming from that exhaust smoke—can kill. Particle pollution can increase the risk of heart disease, lung cancer and asthma attacks and can interfere with the growth and work of the lungs.

What Is Particle Pollution?

Particle pollution refers to a mix of very tiny solid and liquid particles that are in the air we breathe. But nothing about particle pollution is simple. And it is so dangerous it can shorten your life.

Size matters. Particles themselves are different sizes. Some are one-tenth the diameter of a strand of hair. Many are even tinier; some are so small they can only be seen with an electron microscope. Because of their size, you can't see the individual particles. You can only see the haze that forms when millions of particles blur the spread of sunlight.

The differences in size make a big difference in how they affect us. Our natural defenses help us to cough or sneeze larger particles out of our bodies. But those defenses don't keep out smaller particles, those that are smaller than 10 microns (or micrometers) in diameter, or about one-seventh the diameter of a single human hair. These particles get trapped in the lungs, while the smallest are so minute that they can pass through the lungs into the bloodstream, just like the essential oxygen molecules we need to survive.

Researchers categorize particles according to size, grouping them as coarse, fine and ultrafine. Coarse particles fall between 2.5 microns and 10 microns in diameter and are called $PM_{10\text{-}2.5}$. Fine particles are 2.5 microns in diameter or smaller and are called $PM_{2.5}$. Ultrafine particles are smaller than 0.1 micron in diameter[23] and are small enough to pass through the lung tissue into the blood stream, circulating like the oxygen molecules themselves. No matter what the size, particles can harm your health.

"A mixture of mixtures." Because particles are formed in so many different ways, they can be composed of many different compounds. Although we often think of particles as solids, not all are. Some are completely liquid; some are solids suspended in liquids. As the EPA puts it, particles are really "a mixture of mixtures."[24]

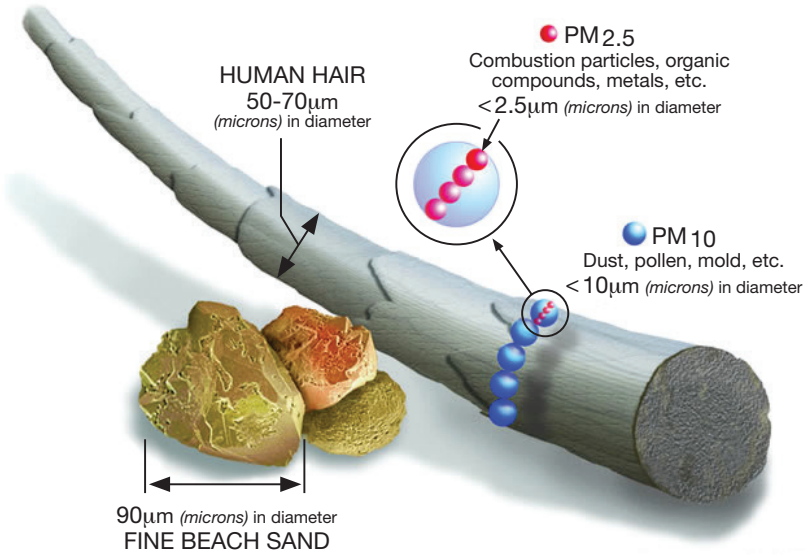


Image courtesy of the U.S. EPA

The mixtures differ between the eastern and western United States and in different times of the year. For example, the Midwest, Southeast and Northeast states have more sulfate particles than the West on average, largely due to the high levels of sulfur dioxide emitted by large, coal-fired power plants. By contrast, nitrate particles from motor vehicle exhaust form a larger proportion of the unhealthful mix in the winter in the Northeast, Southern California, the Northwest, and North Central U.S.[25]

Who Is at Risk?

Anyone who lives where particle pollution levels are high is at risk. Some people face higher risk, however. People at the greatest risk from particle pollution exposure include:

- Infants, children and teens[26];
- People over 65 years of age[27];
- People with lung disease such as asthma and chronic obstructive pulmonary disease (COPD), which includes chronic bronchitis and emphysema;
- People with heart disease[28] or diabetes[29];
- People with low incomes[30]; and
- People who work or are active outdoors.[31]

Diabetics face increased risk at least in part because of their higher risk for cardiovascular disease.[32] A 2010 study examined prevalence of diagnosed diabetes in relation to fine particle pollution in 2004-2005. The evidence suggested that air pollution is a risk factor for diabetes.[33]

What Can Particles Do to Your Health?

Particle pollution can be very dangerous to breathe. Breathing particle pollution may trigger illness, hospitalization and premature death, risks that are showing up in new studies that validate earlier research.

Thanks to steps taken to reduce particle pollution, good news is growing from researchers who study the drop in year-round levels of particle pollution.

- Looking at air quality in 545 counties in the U.S. between 2000 and 2007, researchers found that people had approximately four months added to their life expectancy on average due to cleaner air. Women and people who lived in urban and densely populated counties benefited the most.[34]
- Another long-term study of six U.S. cities tracked from 1974 to 2009 added more evidence of the benefits. Their findings suggest that cleaning up particle pollution had almost immediate health benefits. They estimated that the U.S. could prevent approximately 34,000 premature deaths a year if the nation could lower annual levels of particle pollution by 1 μg/m^3.[35]

These studies add to the growing research that cleaning up air pollution improves life and health.[36] Other researchers estimated that reductions in air pollution can be expected to produce rapid improvements in public health, with fewer deaths occurring within the first two years after reductions.[37]

Researchers are exploring possible differences in health effects of the three sizes of particles and particles from different sources, such as diesel particles from trucks and buses or sulfates from coal-fired power plants. So far, the evidence remains clear that particles of all sizes from all sources can be dangerous.[38]

Short-Term Exposure Can Be Deadly

First and foremost, short-term exposure to particle pollution can kill. Peaks or spikes in particle pollution can last for hours to days. Deaths can occur on the very day that particle levels are high, or within one to two months afterward. Particle pollution does not just make people die a few days earlier than they might otherwise—these are deaths that would not have occurred if the air were cleaner.[39]

Particle pollution also diminishes lung function, causes greater use of asthma medications and increased rates of school absenteeism, emergency room visits and hospital admissions. Other adverse effects can be coughing, wheezing, cardiac arrhythmias and heart attacks. According to the findings from some of the latest studies, short-term increases in particle pollution have been linked to:

- death from respiratory and cardiovascular causes, including strokes[40,41,42,43];
- increased mortality in infants and young children[44];
- increased numbers of heart attacks, especially among the elderly and in people with heart conditions[45];
- inflammation of lung tissue in young, healthy adults[46];
- increased hospitalization for cardiovascular disease, including strokes and congestive heart failure[47,48,49];
- increased emergency room visits for patients suffering from acute respiratory ailments[50];
- increased hospitalization for asthma among children[51,52,53]; and
- increased severity of asthma attacks in children.[54]

Again, the impact of even short-term exposure to particle pollution on healthy adults showed up in the Galveston lifeguard study. In addition to the harmful effects of ozone pollution, lifeguards had reduced lung volume at the end of the day when fine particle levels were high.[55]

Year-Round Exposure

Breathing high levels of particle pollution day in and day out also can be deadly, as landmark studies in the 1990s conclusively showed[56] and as other studies confirmed.[57] Chronic exposure to particle pollution can shorten life by one to three years.[58]

In late 2013, the International Agency for Research on Cancer, part of the World Health Organization, concluded that particle pollution could cause lung cancer. The IARC reviewed the most recent research and reported that the risk of lung cancer increases as the particle levels rise.[59]

Year-round exposure to particle pollution has also been linked to:

- increased hospitalization for asthma attacks for children living near roads with heavy truck or trailer traffic[60,61];
- slowed lung function growth in children and teenagers[62,63];
- significant damage to the small airways of the lungs[64];
- increased risk of death from cardiovascular disease[65]; and
- increased risk of lower birth weight and infant mortality.[66]

Research into the health risks of 65,000 women over age 50 found that those who lived in areas with higher levels of particle pollution faced a much greater risk of dying from heart disease than had been previously estimated. Even women who lived

within the same city faced differing risks depending on the annual levels of pollution in their neighborhood.[67]

The EPA completed their most recent review of the current research on particle pollution in December 2009.[68] The EPA had engaged a panel of expert scientists, the Clean Air Scientific Advisory Committee, to help them assess the evidence. The EPA concluded that particle pollution caused multiple, serious threats to health. Their findings are highlighted in the box below.

EPA Concludes Fine Particle Pollution Poses Serious Health Threats

- Causes early death (both short-term and long-term exposure)
- Causes cardiovascular harm (e.g. heart attacks, strokes, heart disease, congestive heart failure)
- Likely to cause respiratory harm (e.g. worsened asthma, worsened COPD, inflammation)
- May cause cancer
- May cause reproductive and developmental harm

—U.S. Environmental Protection Agency, Integrated Science Assessment for Particulate Matter, December 2009. EPA 600/R-08/139F.

Where Does Particle Pollution Come From?

Particle pollution is produced through two separate processes—mechanical and chemical.

Mechanical processes break down bigger bits into smaller bits with the material remaining essentially the same, only becoming smaller. Mechanical processes primarily create coarse particles.[69] Dust storms, construction and demolition, mining operations, and agriculture are among the activities that produce coarse particles. Tire, brake pad and road wear can also create coarse particles. Bacteria, pollen, mold, and plant and animal debris are also included as coarse particles.[70]

By contrast, chemical processes in the atmosphere create most of the tiniest fine and ultrafine particles. Combustion sources burn fuels and emit gases. These gases can vaporize and then condense to become a particle of the same chemical compound. Or, they can react with other gases or particles in the atmosphere to form a particle of a different chemical compound. Particles formed by this latter process come from the reaction of elemental carbon (soot), heavy metals, sulfur dioxide (SO_2), nitrogen oxides (NO_x) and volatile organic compounds with water and other compounds in the atmosphere.[71] Burning fossil fuels in factories, power plants, steel mills, smelters, diesel- and gasoline-powered motor vehicles (cars and trucks) and equipment generate a large part of the raw materials for fine particles. So does burning wood in residential fireplaces and wood stoves or burning agricultural fields or forests.

Focusing on Children's Health

Children face special risks from air pollution because their lungs are growing and because they are so active.

Just like the arms and legs, the largest portion of a child's lungs will grow long after he or she is born. Eighty percent of their tiny air sacs develop after birth. Those sacs, called the alveoli, are where the life-sustaining transfer of oxygen to the blood takes place. The lungs and their alveoli aren't fully grown until children become adults.[72] In addition, the body's defenses that help adults fight off infections are still developing in young bodies.[73] Children have more respiratory infections than adults, which also seems to increase their susceptibility to air pollution.[74]

Furthermore, children don't behave like adults, and their behavior also affects their vulnerability. They are outside for longer periods and are usually more active when outdoors. Consequently, they inhale more polluted outdoor air than adults typically do.[75]

Air Pollution Increases Risk of Underdeveloped Lungs

The Southern California Children's Health study looked at the long-term effects of particle pollution on teenagers. Tracking 1,759 children who were between ages 10 and 18 from 1993 to 2001, researchers found that those who grew up in more polluted areas face the increased risk of having underdeveloped lungs, which may never recover to their full capacity. The average drop in lung function was 20 percent below what was expected for the child's age, similar to the impact of growing up in a home with parents who smoked.[76]

Community health studies are pointing to less obvious, but serious effects from year-round exposure to ozone, especially for children. Scientists followed 500 Yale University students and

determined that living just four years in a region with high levels of ozone and related co-pollutants was associated with diminished lung function and frequent reports of respiratory symptoms.[77] A much larger study of 3,300 school children in Southern California found reduced lung function in girls with asthma and boys who spent more time outdoors in areas with high levels of ozone.[78]

Cleaning Up Pollution Can Reduce Risk to Children

There is also real-world evidence that reducing air pollution can help protect children.

A just-published follow-up to that Southern California Children's Health study showed that reducing pollution could improve children's health. This time they tracked a different group of 863 children living in the same area, but growing up between 2007 and 2011, when the air in Southern California was much cleaner. They compared these children to those who had been part of their earlier studies when the air was dirtier. Children growing up in the cleaner air had much greater lung function, a benefit that may help them throughout their lives. As the researchers noted, their study suggested that "all children have the potential to benefit from improvements in air quality." [79]

In Switzerland, particle pollution dropped during a period in the 1990s. Researchers there tracked 9,000 children over a nine-year period, following their respiratory symptoms. After taking other factors such as family characteristics and indoor air pollution into account, the researchers noted that during the years with less pollution, the children had fewer episodes of chronic cough, bronchitis, common cold, and conjunctivitis symptoms.[80]

Disparities in the Impact of Air Pollution

The burden of air pollution is not evenly shared. Poorer people and some racial and ethnic groups are among those who often face higher exposure to pollutants and who may experience greater responses to such pollution. Many studies have explored the differences in harm from air pollution to racial or ethnic groups and people who are in a low socioeconomic position, have less education, or live nearer to major sources,[81] including a workshop the American Lung Association held in 2001 that focused on urban air pollution and health inequities.[82]

Many studies have looked at differences in the impact on premature death. Results have varied widely, particularly for effects between racial groups. Some studies have found no differences among races,[83] while others found greater responsiveness for Whites and Hispanics, but not African Americans,[84] or for African Americans but not other races or ethnic groups.[85] Other researchers have found greater risk for African Americans from air toxics, including those pollutants that also come from traffic sources.[86]

Socioeconomic position has been more consistently associated with greater harm from air pollution. Recent studies show evidence of that link. Low socioeconomic status consistently increased the risk of premature death from fine particle pollution among 13.2 million Medicare recipients studied in the largest examination of particle pollution mortality nationwide.[87] In the 2008 study that found greater risk for premature death for African Americans, researchers also found greater risk for people living in areas with higher unemployment or higher use of public transportation.[88] A 2008 study of Washington, DC found that while poor air quality and worsened asthma went hand-in-hand in areas where Medicaid enrollment was high, the areas with the highest Medicaid enrollment did not always have the strongest association of high air pollution and asthma attacks.[89] However, two other recent studies in France have found no association with lower income and asthma attacks.[90]

Scientists have speculated that there are three broad reasons why disparities may exist. First, groups may face greater exposure to pollution because of factors ranging from racism to class bias to housing market dynamics and land costs. For example, pollution sources may be located near disadvantaged communities, increasing exposure to harmful pollutants. Second, low social position may make some groups more susceptible to health threats because of factors related to their disadvantage. Lack of access to health care, grocery stores and good jobs, poorer job opportunities, dirtier workplaces or higher traffic exposure are among the factors that could handicap groups and increase the risk of harm. Finally, existing health conditions, behaviors, or traits may predispose some groups to greater risk. For example, diabetics are

among the groups most at risk from air pollutants, and the elderly, African Americans, Mexican Americans and people living near a central city have higher incidence of diabetes.[91]

Communities of color also may be more likely to live in counties with higher levels of pollution. Non-Hispanic Blacks and Hispanics were more likely to live in counties that had worse problems with particle pollution, researchers found in a 2011 analysis. Non-Hispanic Blacks were also more likely to live in counties with worse ozone pollution. Income groups, by contrast, differed little in these exposures. However, since few rural counties have monitors, the primarily older, non-Hispanic white residents of those counties lack information about the air quality in their communities.[92]

Unemployed people, those with low income or low education and non-Hispanic Blacks were found to be more likely to live in areas with higher exposures to particle pollution in a 2012 study. However, the different racial/ethnic and income groups were breathing often very different kinds of particles; the different composition and structure of these particles may have different health impacts.[93]

Highways May Be Especially Dangerous for Breathing

Being in heavy traffic, or living near a road, may be even more dangerous than being in other places in a community. Growing evidence shows that the vehicle emissions coming directly from those highways may be higher than in the community as a whole, increasing the risk of harm to people who live or work near busy roads.

The number of people living "next to a busy road" may include 30 to 45 percent of the urban population in North America, according to the most recent review of the evidence. In January 2010, the Health Effects Institute published a major review of the evidence by a panel of expert scientists. The panel looked at over 700 studies from around the world, examining the health effects. They concluded that traffic pollution causes asthma attacks in children, and may cause a wide range of other effects including: the onset of childhood asthma, impaired lung function, premature death and death from cardiovascular diseases, and cardiovascular morbidity. The area most affected, they concluded, was roughly 0.2 mile to 0.3 mile (300 to 500 meters) from the highway.[94]

Children and teenagers are among the most vulnerable—though not the only ones at risk. A Danish study found that long-term exposure to traffic air pollution may increase the risk of developing chronic obstructive pulmonary disease (COPD). They found that those most at risk were people who already had asthma or diabetes.[95] Studies have found increased risk of premature death from living near a major highway or an urban road.[96] Another study found an increase in risk of heart attacks from being in traffic, whether driving or taking public transportation.[97] Urban women in a Boston study experienced decreased lung function associated with traffic-related pollution.[98]

How to Protect Yourself from Ozone and Particle Pollution

To minimize your exposure to ozone and particle pollution:

- Pay attention to forecasts for high air pollution days to know when to take precautions;
- Avoid exercising near high-traffic areas;
- Avoid exercising outdoors when pollution levels are high, or substitute an activity that requires less exertion;
- Do not let anyone smoke indoors and support measures to make all places smokefree; and
- Reduce the use of fireplaces and wood-burning stoves.

Bottom line: Help yourself and everyone else breathe easier. Support national, state and local efforts to clean up sources of pollution. Your life and the life of someone you love may depend on it.

1. Ozone and particle pollution are the most widespread, but they aren't the only serious air pollutants. Others include carbon monoxide, lead, nitrogen dioxide, and sulfur dioxide, as well as scores of toxins such as mercury, arsenic, benzene, formaldehyde, and acid gases. However, the monitoring networks are not as widespread nationwide for the other pollutants.
2. U.S. Environmental Protection Agency. *Integrated Science Assessment of Ozone and Related Photochemical Oxidants (Final Report)*. U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-10/076F, 2013.
3. Mar TF, Koenig JQ. Relationship between visits to emergency departments for asthma and ozone exposure in greater Seattle, Washington. *Ann Allergy Asthma Immunol*. 2009; 103: 474-479. Villeneuve PJ, Chen L, Rowe BH, Coates F. Outdoor air pollution and emergency department visits for asthma among children and adults: A case-crossover study in northern Alberta, Canada. *Environ Health Global Access Sci Source*. 2007; 6: 40.

4. Medina-Ramón M, Schwartz J. Who is more vulnerable to die from ozone air pollution? *Epidemiology*. 2008; 19: 672-679.

5. Thaller EI, Petronell SA, Hochman D, Howard S, Chhikara RS, Brooks EG. Moderate Increases in Ambient PM 2.5 and Ozone Are Associated With Lung Function Decreases in Beach Lifeguards. *J Occp Environ Med.* 2008; 50: 202-211; Sawyer K, Brown J, Hazucha M, Bennett WD. The effect of exercise on nasal uptake of ozone in healthy human adults. *J Appl Physiol*. 2007;102: 1380-1386; Hu SC, Ben-Jebria A, Ultman JS. Longitudinal distribution of ozone absorption in the lung: Effects of respiratory flow. *J Appl Physiol*. 1994; 77: 574-583.

6. Horstman DH, Ball BA, Brown J, Gerrity T, Folinsbee LJ. Comparison of pulmonary responses of asthmatic and nonasthmatic subjects performing light exercise while exposed to a low level of ozone. *Toxicol Ind Health*. 1995; 11: 369-385; Kreit JW, Gross KB, Moore TB, Lorenzen TJ, D'Arcy J, Eschenbacher WL. Ozone-induced changes in pulmonary function and bronchial responsiveness in asthmatics. *J Appl Physiol*. 1989; 66: 217-222; Medina-Ramón M, Zanobetti A, Schwartz J. The Effect of Ozone and PM10 on Hospital Admissions for Pneumonia and Chronic Obstructive Pulmonary Disease: a national multicity study. *Am J Epidemiol*. 2006; 163(6):579-588.

7. Peel JL, Metzger KB, Klein M, Flanders WD, Mulholland JA, Tolbert PE. Ambient air pollution and cardiovascular emergency department visits in potentially sensitive groups. *Am J Epidemiol*. 2007; 165: 625-633; Medina-Ramón and Schwartz, 2008; Medina-Ramón M, Zanobetti A, Schwartz J, 2006.

8. Medina-Ramón and Schwartz, 2008; Stafoggia M, Forastiere F, Faustini A, Biggeri A, Bisanti L, et al. Susceptibility factors to ozone-related mortality: A population-based case-crossover analysis. *Am J Respir Crit Care Med*. 2010; 182: 376-384; Jerrett M, Burnett RT, Pope CA III, Ito K, Thurston G, Krewski D, Shi Y, Calle E, Thun M. Long-term ozone exposure and mortality. *N Engl J Med*. 2009;360: 1085-1095; Alexeeff SE, Litonjua AA, Suh H, Sparrow D, Vokonas PS, Schwartz J. Ozone exposure and lung function: Effect modified by obesity and airways hyperresponsiveness in the VA Normative Aging Study. *Chest*. 2007; 132: 1890-1897; McDonnell WF, Stewart PW, Smith MV. Prediction of ozone-induced lung function responses in humans. *Inhal Toxicol*. 2010; 22: 160-168. Lin S, Liu X, Le LH, Hwang SA. Chronic exposure to ambient ozone and asthma hospital admissions among children. *Environ Health Perspect*. 2008; 116: 1725-1730; Burra TA, Moineddin R, Agha MM, Glazier RH. Social disadvantage, air pollution, and asthma physician visits in Toronto, Canada. *Environ Res*. 2009;109: 567-574.

9. Thaller, et al., 2008.

10. Bell ML, McDermott A, Zeger SL, Samet JM, Dominici F. Ozone and short-term mortality in 95 US urban communities, 1987-2000. *JAMA*. 2004; 292:2372-2378. Gryparis A, Forsberg B, Katsouyanni K, et al. Acute Effects of Ozone on Mortality from the "Air Pollution and Health: a European approach" project. *Am J Respir Crit Care Med*. 2004; 170: 1080-1087. Bell ML, Dominici F, and Samet JM. A Meta-Analysis of Time-Series Studies of Ozone and Mortality with Comparison to the National Morbidity, Mortality, and Air Pollution Study. *Epidemiology*. 2005; 16:436-445. Levy JI, Chermerynski SM, Sarnat JA. Ozone Exposure and Mortality: an empiric Bayes metaregression analysis. *Epidemiology*. 2005; 16:458-468. Ito K, De Leon SF, Lippmann M. Associations Between Ozone and Daily Mortality: analysis and meta-analysis. *Epidemiology*. 2005; 16:446-429.

11. Zanobetti A, Schwartz J. Mortality displacement in the association of ozone with mortality: an analysis of 48 cities in the United States. *Am J Respir Crit Care Med.* 2008; 177:184-189; Katsouyanni K, Samet JM, Anderson HR, Atkinson R, Le Tertre A, et al. *Air pollution and health: A European and North American approach (APHENA)*. Boston, MA: Health Effects Institute, 2009; Samoli E, Zanobetti A, Schwartz J, Atkinson R, Le Tertre A, et al. The temporal pattern of mortality responses to ambient ozone in the APHEA project. *J Epidemiol Community Health*. 2009; 63: 960-966; Stafoggia M, et al, 2010.

12. Zanobetti and Schwartz. 2008.

13. Gent JF, Triche EW, Holford TR, Belanger K, Bracken MB, Beckett WS, Leaderer BP. Association of Low-Level Ozone and Fine Particles with Respiratory Symptoms in Children with Asthma. *JAMA*. 2003; 290:1859-1867; Desqueyroux H, Pujet JC, Prosper M, Squinazi F, Momas I. Short-Term Effects of Low-Level Air Pollution on Respiratory Health of Adults Suffering from Moderate to Severe Asthma. *Environ Res*. 2002; 89:29-37; Burnett RT, Brook JR, Yung WT, Dales RE, Krewski D. Association between Ozone and Hospitalization for Respiratory Diseases in 16 Canadian Cities. *Environ Res*. 1997; 72:24-31; Medina-Ramón M, Zanobetti A, Schwartz J. The Effect of Ozone and PM10 on Hospital Admissions for Pneumonia and Chronic Obstructive Pulmonary Disease: a national multicity study. *Am J Epidemiol*. 2006; 163(6):579-588.

14. Rich DQ, Mittleman MA, Link MS, Schwartz J, Luttmann-Gibson H, Catalano PJ, Speizer FE, Gold DR, Dockery DW. Increased Risk of Paroxysmal Atrial Fibrillation Episodes Associated with Acute Increases in Ambient Air Pollution. *Environ Health Perspect*. 2006; 114:120-123.

15. Ruidavets J-B, Cournot M, Cassadou S, Giroux M, Meybeck M, Ferrières J. Ozone Air Pollution is Associated with Acute Myocardial Infarction. *Circulation*. 2005; 111:563-569.

16. Azevedo JM, Gonçalves FL, de Fátima Andrade M. Long-range ozone transport and its impact on respiratory and cardiovascular health in the north of Portugal. *Int J Biometeorol*. 2011; 55: 187-202; Linares C, Diaz J. Short-term effect of concentrations of fine particulate matter on hospital admissions due to cardiovascular and respiratory causes among the over-75 age group in Madrid, Spain. *Public Health*. 2010; 124: 28-36; Middleton N, Yiallouros P, Kleanthous S, Kolokotroni O, Schwartz J, et al. A 10-year time-series analysis of respiratory and cardiovascular morbidity in Nicosia, Cyprus: The effect of short-term changes in air pollution and dust storms. *Environ Health.* 2008; 7: 39; Lee JT, Kim H, Cho YS, Hong YC, Ha EH, Park H. Air pollution and hospital admissions for ischemic heart diseases among individuals 64+ years of age residing in Seoul, Korea. *Arch Environ Health*. 2003; 58: 617-623; Wong TW, Lau TS, Yu TS, Neller A, Wong SL, Tam W, Pang SW. Air pollution and hospital admissions for respiratory and cardiovascular diseases in Hong Kong. *Occup Environ Med.* 1999; 56: 679-683.

17. Jerrett, et al., 2009.

18. Lin S, Liu X, Le LH, and Hwang S-A. Chronic exposure to ambient ozone and asthma hospital admissions among children. *Environ Health Perspect*. 2008; 116:1725-1730.

19. Islam T, McConnell R, Gauderman WJ, Avol E, Peters JM, and Gilliland F, Ozone, oxidant defense genes, and risk of asthma during adolescence. *Am J Respir Crit Care Med.* 2009; 177(4):388-395.

20. Salam MT, Millstein J, Li YF, Lurmann FW, Margolis HG, Gilliland FD. Birth outcomes and prenatal exposure to ozone, carbon monoxide, and particulate matter: Results from the Children's Health Study. *Environ Health Perspect*. 2005; 113: 1638-1644; Morello-Frosch R, Jesdale BM, Sadd JL, Pastor M. Ambient air pollution exposure and full-term birth weight in California. *Environ Health*. 2010; 9: 44; Hansen CA, Barnett AG, Pritchard G. The effect of ambient air pollution during early pregnancy on fetal ultrasonic measurements during mid-pregnancy. *Environ Health Perspect*. 2008; 116: 362-369; Mannes T, Jalaludin B, Morgan G, Lincoln D, Sheppeard V, Corbett S. Impact of ambient air pollution on birth weight in Sydney, Australia. *Occup Environ Med.* 2005; 62: 524-530.

21. Parker JD, Akinbami LJ, Woodruff TJ. Air Pollution and Childhood Respiratory Allergies in the United States. *Environ Health Perspect*. 2009; 117:140-147.

22. U.S. EPA., 2013.
23. U.S. EPA. Integrated Science Assessment for Particulate Matter (Final Report). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-08/139F, 2009. Available at http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=216546
24. U.S. EPA. Air Quality Criteria for Particulate Matter, October 2004. Available at http://cfpub2.epa.gov/ncea/cfm/recordisplay.cfm?deid=87903.
25. U.S. EPA, 2009.
26. Mar TF, Larson TV, Stier RA, Claiborn C, Koenig JQ. An analysis of the association between respiratory symptoms in subjects with asthma and daily air pollution in Spokane, Washington. *Inhal Toxicol*. 2004; 16: 809-815; Peel JL; Tolbert PE; Klein M; Metzger KB, Flanders WD, Knox T; Mulholland JA, Ryan PB, Frumkin H. Ambient air pollution and respiratory emergency department visits. *Epidemiology*, 2005; 16: 164-174.
27. Barnett AG, Williams GM, Schwartz J, Best TL, Neller AH, Petroeschevsky AL, Simpson RW. The effects of air pollution on hospitalizations for cardiovascular disease in elderly people in Australian and New Zealand cities. *Environ Health Perspect*, 2006; 114: 1018-1023.
28. Peel JL, Metzger KB, Klein M, Flanders WD, Mulholland JA, Tolbert PE. Ambient air pollution and cardiovascular emergency department visits in potentially sensitive groups. *Am J Epidemiol*. 2007; 165: 625-633. Pope CA III, Dockery DW. Health Effects of Fine Particulate Air Pollution: Lines that Connect. *J Air Waste Mange Assoc*. 2006; 56:709-742.
29. Zanobetti A, Schwartz J. Are Diabetics More Susceptible to the Health Effects of Airborne Particles? *Am J Respir Crit Care Med*. 2001; 164: 831-833. National Research Council. Research Priorities for Airborne Particulate Matter: IV. Continuing Research Progress. Washington, DC: The National Academies Press, 2004.
30. Ostro B, Broadwin R, Green S, Feng WY, Lipsett M. Fine particulate air pollution and mortality in nine California counties: results from CALFINE. *Environ Health Perspect*. 2006: 114: 29-33; Ostro B, Feng WY, Broadwin R, Malig B, Green S, Lipsett M. The Impact of Components of Fine Particulate Matter on Cardiovascular Mortality in Susceptible Subpopulations. *Occup Environ Med*. 2008; 65(11):750-6.
31. U.S. EPA, 2009.
32. Miller, 2007; O'Neill MS, Veves A, Zanobetti A, Sarnat JA, Gold DR, Economides PA, Horton ES, Schwartz J. Diabetes Enhances Vulnerability to Particulate Air Pollution-Associated Impairment in Vascular Reactivity and Endothelial Function. *Circulation*. 2005; 111:2913-2920;
33. Pearson JF, Bachireddy C, Shyamprasad S, Goldfinre AB, Brownstein JS. Association Between Fine Particulate Matter and Diabetes Prevalence in the U.S. *Diabetes Care*. 2010; 10: 2196-2201.
34. Correia AW, Pope CA III, Dockery DW, Wang Y, Ezzati M, Domenici F. Effect of Air Pollution Control on Life Expectancy in the United States: An Analysis of 545 U.S. Counties for the Period from 2000 to 2007. *Epidemiology*. 2013; 24(1): 23-31.
35. Lepeule J, Laden F, Docker D, Schwartz J. Chronic Exposure to Fine Particles and Mortality: An Extended Follow-up of the Harvard Six Cities Study from 1974 to 2009. *Environ Health Perspect*. 2012; 120:965-970.
36. Pope and Dockery, 2006.
37. Schwartz J, Coull B, Laden F, Ryan L. The Effect of Dose and Timing of Dose on the Association between Airborne Particles and Survival. *Environ Health Perspect*. 2008; 116:64-69.
38. Pope and Dockery, 2006.
39. Zanobetti A, Schwartz J, Samoli E, Gryparis A, Tuoloumi G, Peacock J, Anderson RH, Le Tertre A, Bobros J, Celko M, Goren A, Forsberg B, Michelozzi P, Rabczenko D, Perez Hoyos S, Wichmann HE, Katsouyanni K. The Temporal Pattern of Respiratory and Heart Disease Mortality in Response to Air Pollution. *Environ Health Perspect*. 2003; 111:1188-1193; Dominici F, McDermott A, Zeger SL, Samet JM. Airborne Particulate Matter and Mortality: Timescale Effects in Four US Cities. *Am J Epidemiol*. 2003; 157:1055-1065.
40. Dominici F, McDermott A, Zeger SL, Samet JM. On the Use of Generalized Additive Models in Time-Series Studies of Air Pollution and Health. *Am J Epidemiol*. 2002; 156:193-203.
41. Hong Y-C, Lee J-T, Kim H, Ha E-H, Schwartz J, Christiani DC. Effects of Air Pollutants on Acute Stroke Mortality. *Environ Health Perspect*. 2002; 110:187-191.
42. Tsai SS, Goggins WB, Chiu HF, Yang CY. Evidence for an Association Between Air Pollution and Daily Stroke Admissions in Kaohsiung, Taiwan. *Stroke*. 2003; 34: 2612-6.
43. Wellenius GA, Schwartz J, Mittleman MA. Air Pollution and Hospital Admissions for Ischemic and Hemorrhagic Stroke Among Medicare Beneficiaries. *Stroke*. 2005; 36:2549-2553.
44. Pope and Dockery, 2006.
45. D'Ippoliti D, Forastiere F, Ancona C, Agabity N, Fusco D, Michelozzi P, Perucci CA. Air Pollution and Myocardial Infarction in Rome: a case-crossover analysis. *Epidemiology*. 2003;14:528-535. Zanobetti A, Schwartz J. The Effect of Particulate Air Pollution on Emergency Admissions for Myocardial Infarction: a multicity case-crossover analysis. *Environ Health Perspect*. 2005; 113:978-982.
46. Ghio AJ, Kim C, Devlin RB. Concentrated Ambient Air Particles Induce Mild Pulmonary Inflammation in Healthy Human Volunteers. *Am J Respir Crit Care Med*. 2000; 162(3 Pt 1):981-988.
47. Metzger KB, Tolbert PE, Klein M, Peel JL, Flanders WD, Todd K, Mulholland JA, Ryan PB, Frumkin H. Ambient Air Pollution and Cardiovascular Emergency Department Visits in Atlanta, Georgia, 1993-2000. *Epidemiology*. 2004; 15: 46-56.
48. Tsai, et al., 2003.
49. Wellenius GA, Schwartz J, Mittleman MA. Particulate Air Pollution and Hospital Admissions for Congestive Heart Failure in Seven United States Cities. *Am J Cardiol*. 2006; 97 (3):404-408; Wellenius GA, Bateson TF, Mittleman MA, Schwartz J. Particulate Air Pollution and the Rate of Hospitalization for Congestive Heart Failure among Medicare Beneficiaries in Pittsburgh, Pennsylvania. *Am J Epidem*. 2005; 161:1030-1036.
50. Van Den Eeden SK, Quesenberry CP Jr, Shan J, Lurmann F. *Particulate Air Pollution and Morbidity in the California Central Valley: a high particulate pollution region*. Final Report to the California Air Resources Board, 2002.
51. Lin M, Chen Y, Burnett RT, Villeneuve PJ, Kerwski D. The Influence of Ambient Coarse Particulate Matter on Asthma Hospitalization in Children: case-crossover and time-series analyses. *Environ Health Perspect*. 2002; 110:575-581.
52. Norris G, YoungPong SN, Koenig JQ, Larson TV, Sheppard L, Stout JW. An Association Between Fine Particles and Asthma Emergency Department Visits for Children in Seattle. *Environ Health Perspect*. 1999;107:489-493.
53. Tolbert PE, Mulholland JA, MacIntosh DD, Xu F, Daniels D, Devine OJ, Carlin BP, Klein M, Dorley J, Butler AJ, Nordenberg DF, Frumkin H, Ryan PB, White MC. Air Quality and Pediatric Emergency Room Visits for Asthma in Atlanta, Georgia. *Am J Epidemiol*. 2000; 151:798-810.

54. Slaughter JC, Lumley T, Sheppard L, Koenig JQ, Shapiro, GG. Effects of Ambient Air Pollution on Symptom Severity and Medication Use in Children with Asthma. *Ann Allergy Asthma Immunol*. 2003; 91:346-353.

55. Thaller, et al., 2008.

56. Dockery DW, Pope CA III, Xu X, Spengler JD, Ware JH, Fay ME, Ferris BG, Speizer FE. An Association Between Air Pollution and Mortality in Six U.S. Cities. *N Engl J Med*. 1993; 329:1753-1759. Pope CA, Thun MJ, Namboodiri MM, Dockery DW, Evans JS, Speizer FE, Heath CW. Particulate Air Pollution as a Predictor of Mortality in a Prospective Study of U.S. Adults. *Am J Respir Crit Care Med*. 1995; 151:669-674.

57. Zanobetti A, Schwartz J. The effect of fine and coarse particulate air pollution on mortality: A national analysis. *Environ Health Perspect*. 2009; 117:1-40 2009; Krewski D; Jerrett M; Burnett RT; Ma R; Hughes E; Shi Y; Turner MC; Pope AC III; Thurston G; Calle EE; Thun MJ. Extended follow-up and spatial analysis of the American Cancer Society study linking particulate air pollution and mortality. Report Nr. 140 (Cambridge, MA: Health Effects Institute, 2009); Franklin M, Zeka A, Schwartz J. Association between $PM_{2.5}$ and all-cause and specific cause mortality in 27 U.S. communities. *J Expo Sci Environ Epidemiol.* 2007; 18: 1005-1011. 2007 Lepeule et al, 2012; Pope CA III, Burnett RT, Thun MJ, Calle EE, Krewski D, Ito K, Thurston GD. Lung Cancer, Cardiopulmonary Mortality, and Long-Term Exposure to Fine Particulate Air Pollution. *JAMA*. 2002; 287(9):1132-1141.

58. Pope CA III. *Epidemiology* of Fine Particulate Air Pollution and Human Health: biological mechanisms and who's at risk? *Environ Health Perspect*. 2000;108: 713-723.

59. Hamra GB, Guha N, Cohen A, Laden F, Raaschou-Nielsen O, Samet JM, Vineis P, Forastiere F, Saldiva P, Yorifuji T, and Loomis D. Outdoor Particulate Mater Exposure and Lung Cancer: A Systematic Review and Meta-Analysis. *Environ Health Perspect*. 2014: 122: 906-911.

60. Lin S, Munsie JP, Hwang SA, Fitzgerald E, Cayo MR. Childhood Asthma Hospitalization and Residential Exposure to State Route Traffic. *Environ Res*. 2002; 88:73-81.

61. Gauderman WJ, Vora H, McConnell R, Berhane K, Gilliland GF, Thomas D, Lurmann F, Avol E, Küenzli N, Jarrett M, Peters J. Effect of Exposure to Traffic on Lung Development from 10 to 18 Years of Age: a cohort study. *Lancet*. 2007; 369:571-577.

62. Gauderman WJ, Gilliland GF, Vora H, Avol E, Stram D, McConnell R, Thomas D, Lurmann F, Margolis HG, Rappaport EB, Berhane K, Peters JM. Association between Air Pollution and Lung Function Growth in Southern California Children: results from a second cohort. *Am J Respir Crit Care Med*. 2002;166:76-84.

63. Gauderman WJ, Avol E, Gilliland F, Vora H, Thomas D, Berhane K, McConnell R, Kuenzli N, Lurmann F, Rappaport E, Margolis H, Bates D, Peters J. The effect of air pollution on lung development from 10 to 18 years of age. *N Engl J Med*. 2004; 351:1057-1067.

64. Churg, A Brauer, M, Avila-Casado, MdC, Fortoul TI, Wright JL. Chronic Exposure to High Levels of Particulate Air Pollution and Small Airway Remodeling. *Environ Health Perspect*. 2003; 111: 714-718.

65. Pope CA III, Burnett RT, Thurston GD, Thun MJ, Calle EE, Krewski D, Godleski JJ. Cardiovascular Mortality and Year-round Exposure to Particulate Air Pollution: epidemiological evidence of general pathophysiological pathways of disease. *Circulation*. 2004; 109:71-77.

66. Bell ML, Ebisu K, Belanger K. Ambient Air Pollution and low birth weight in Connecticut and Massachusetts. *Environ Health Perspect*. 2007; 115: 118-24; Ritz B, Wilhelm M, Zhao Y. Air pollution and infant death in southern California, 2989-2000. *Pediatrics*. 2006; 118: 493-502; Woodruff TJ, parker JD, Schoendorf KC. Fine particulate matter (PM 2.5) air pollution and selected causes of postneonatal infant mortality in California. *Environ Health Perspect*. 2006; 114: 785-790.

67. Miller KA, Siscovick DS, Shepard L, Shepherd K, Sullivan JH, Anderson GL, Kaufman JD. Long-Term Exposure to Air Pollution and Incidence of Cardiovascular Events in Women. *N Engl J Med*. 2007; 356: 447-458.

68. U.S. EPA, 2009.

69. U.S. EPA, 2009.

70. U.S. EPA, 2009.

71. U.S. EPA, 2009.

72. Dietert RR, Etzel RA, Chen D, et al. Workshop to Identify Critical Windows of Exposure for Children's Health: immune and respiratory systems workgroup summary. *Environ Health Perspect*. 2000; 108 (supp 3); 483-490.

73. World Health Organization: The Effects of Air Pollution on Children's Health and Development: a review of the evidence E86575. 2005. Available at http://www.euro.who.int/document/E86575.pdf .

74. WHO, 2005.

75. American Academy of Pediatrics Committee on Environmental Health, Ambient Air Pollution: health hazards to children. *Pediatrics*. 2004; 114: 1699-1707. Statement was reaffirmed in 2010.

76. Gauderman et al., 2004.

77. Galizia A, Kinney PL. Year-round Residence in Areas of High Ozone: association with respiratory health in a nationwide sample of nonsmoking young adults. *Environ Health Perspect*. 1999; 107:675-679.

78. Peters JM, Avol E, Gauderman WJ, Linn WS, Navidi W, London SJ, Margolis H, Rappaport E, Vora H, Gong H, Thomas DC. A Study of Twelve Southern California Communities with Differing Levels and Types of Air Pollution. II. Effects on Pulmonary Function. *Am J Respir Crit Care Med*. 1999; 159:768-775.

79. Gauderman WJ, Urman R, Avol E, Berhane K, McConnell R, Rapport E, Chang R, Lurmann F Gilliland F. Association of Improved Aur Quality with Kung Development in children. *N Eng J Med*. 2015; (372: 905-913.

80. Bayer-Oglesby L, Grize L, Gassner M, Takken-Sahli K, Sennhauser FH, Neu U, Schindler C, Braun-Fahrländer C. Decline of Ambient Air Pollution Levels and Improved Respiratory Health in Swiss Children. *Environ Health Perspect*. 2005; 113:1632-1637.

81. Institute of Medicine. *Toward Environmental Justice: Research, Education, and Health Policy Needs*. Washington, DC: National Academy Press, 1999; O'Neill MS, Jerrett M, Kawachi I, Levy JI, Cohen AJ, Gouveia N, Wilkinson P, Fletcher T, Cifuentes L, Schwartz J et al. Health, Wealth, and Air Pollution: Advancing Theory and Methods. *Environ Health Perspect*. 2003: 111: 1861-1870; Finkelstein MM; Jerrett M; DeLuca P; Finkelstein N; Verma DK, Chapman K, Sears MR. Relation Between Income, Air Pollution And Mortality: A Cohort Study. *CMAJ*. 2003; 169: 397-402; Ostro B, Broadwin R, Green S, Feng W, Lipsett M. Fine Particulate Air Pollution and Mortality in Nine California Counties: Results from CALFINE. *Environ Health Perspect*. 2005: 114: 29-33; Zeka A, Zanobetti A, Schwartz J. Short term effects of particulate matter on cause specific mortality: effects of lags and modification by city characteristics. *Occup Environ Med*. 2006: 62: 718-725.

82. American Lung Association. Urban Air Pollution and Health Inequities: A Workshop Report. *Environ Health Perspect*. 2001: 109(suppl 3): 357-374.

83. Zeka A, Zanobetti A, Schwartz J. Individual-Level Modifiers of the Effects of Particulate Matter on Daily Mortality. *Am J Epidemiol*. 2006: 163: 849-859.

84. Ostro, et al., 2006; Ostro, et al., 2008.

85. Bell ML, Dominici F. Effect Modification by Community Characteristics on the Short-term Effects of Ozone Exposure and Mortality in 98 US Communities. *Am J Epidemiol*. 2008; 167:986-997.

86. Apelberg BJ, Buckley TJ, White RH. Socioeconomic and Racial Disparities in Cancer Risk from Air Toxics in Maryland. *Environ Health Perspect*. 2005: 113:693-699.

87. Zeger SL, Dominici F, McDermott A, Samet J. Mortality in the Medicare Population and Chronic Exposure to Fine Particulate Air Pollution in Urban Centers (2000-2005). *Environ Health Perspect*. 2008: 116:1614-1619.

88. Bell and Dominici, 2008.

89. Babin S, Burkom H, Holtry R, Tabernero N, Davies-Cole J, Stokes L, Dehaan K, Lee D. Medicaid Patient Asthma-Related Acute Care Visits And Their Associations with Ozone and Particulates in Washington, DC, from 1994-2005. *Int J Environ Health Res.* 2008; 18(3)209-221.

90. Laurent O, Pedrono G, Segala C, Filleul L, Havard S, Deguen S, Schillinger C, Rivière E, Bard D. Air pollution, asthma attacks, and socioeconomic deprivation: a small-area case-crossover study. *Am J Epidemiol*. 2008; 168:58-65; Laurent O, Pedrono G, Filleul L, Segala C, Lefranc A, Schillinger C, Riviere E, Bard D. Influence of Socioeconomic Deprivation on the Relation Between Air Pollution and Beta-Agonist Sales for Asthma. *Chest*. 2009; 135(3):717-716.

91. O'Neill et al., 2003.

92. Miranda ML, Edwards SE, Keating MH, Paul CJ. Making the Environmental Justice Grade: The Relative Burden of Air Pollution Exposure in the United States. *Int J Environ Res Public Health*. 2011; 8: 1755-1771.

93. Bell ML, Ebisu K. Environmental Inequality in Exposures to Airborne Particulate Matter Component in the United States. *Environ Health Perspect*. 2012; 120:1699–1704.

94. Health Effects Institute Panel on the Health Effects of Traffic-Related Air Pollution. *Traffic-Related Air Pollution: A Critical Review of the Literature on Emissions, Exposure, and Health Effects*. Health Effects Institute: Boston, 2010. Available at www.healtheffects.org.

95. Andersen ZJ, Hvidberg M, Jensen SS, Ketzel M, Loft S, Sørensen M, Tjønneland A, Overvad K, and Raaschou-Nielsen O. Chronic Obstructive Pulmonary Disease and Long-Term Exposure to Traffic-related Air Pollution: A Cohort Study. *Am J Respir Crit Care Med*. 2011: 183:455-461.

96. Finklestein MM, Jerrett M., Sears M.R. Traffic Air Pollution and Mortality Rate Advancement Periods. *Am J Epidemiol*. 2004; 160:173-177; Hoek G, Brunkreef B, Goldbohn S, Fischer P, van den Brandt. Associations between mortality and indicators of traffic-related air pollution in the Netherlands: a cohort study. *Lancet*. 2002; 360:1203-1209.

97. Peters A, von Klot S, Heier M, Trentinaglia I, Cyrys J, Hormann A, Hauptmann M, Wichmann HE, Lowel H. Exposure to Traffic and the Onset of Myocardial Infarction. *N Engl J Med*. 2004; 351:1721-1730.

98. Suglia SF, Gryparis A, Schwartz J, Wright RJ. Association between Traffic-Related Black Carbon Exposure and Lung Function among Urban Women. *Environ Health Perspect*. 2008; 116(10)1333-1337.

EXHIBIT 6

THE STATE of ALASKA
GOVERNOR BILL WALKER

Department of Environmental Conservation
OFFICE OF THE COMMISSIONER
Post Office Box 111800
410 Willoughby Avenue, Suite 303
Juneau, Alaska 99811-1800
Main: 907.465.5066
Fax: 907.465.5070
dec.alaska.gov

December 31, 2014

Dennis McLerran
Regional Administrator
U.S. EPA Region 10
1200 Sixth Avenue
Seattle WA 98101

Subject: FNSB PM2.5 Moderate Nonattainment Area State Implementation Plan (SIP)

Dear Mr. McLerran:

The Alaska Department of Environmental Conservation (ADEC) has been working diligently to complete the moderate area State Implementation Plan (SIP) for the Fairbanks North Star Borough (FNSB) fine particulate matter (PM2.5) nonattainment area. This letter provides a status update and an initial submittal of the SIP to meet the required federal deadline of December 31, 2014. Enclosed are amendments to Alaska's State Air Quality Control Plan or SIP, adopted by reference into the Alaska Administrative Code (AAC) at 18 AAC 50.030, with an adoption date of December 24, 2014 and additional supporting regulations adopted on November 14 and December 24, 2014.

At the present time, these regulation revisions adopted by ADEC, are undergoing final review by the Alaska Department of Law. The state considers this regulatory and SIP package a top priority for completion and is moving expeditiously through the state's final administrative and legal processing requirements; ADEC anticipates that the revised regulations will be signed and filed by the Lieutenant Governor as soon as possible and plans to submit the final filed SIP revision package to EPA Region 10 no later than January 31, 2015.

The Alaska Department of Environmental Conservation (DEC) is submitting the enclosed adopted SIP revision:

- Alaska Administrative Code Title 18, Chapter 50 addressing air quality control,
- Revised *State Air Quality Control Plan* Vol. II Section III.D.5.1 – 5.14 and Vol. III, Appendices III.D.5.1 – 5.13, adopted by reference under 18 AAC 50.030.

We are providing one paper copy and one electronic version of the following documents to Lucy Edmondson of your staff (note that the electronic version is an exact duplicate of the paper copy). New regulations supporting the FNSB PM2.5 SIP were the subject of two public comment periods during 2013 and 2014. An initial set of regulations were adopted by DEC on November 14, 2014 and another set of regulations were adopted on December 24, 2014 along with the regulation adopting the SIP. The following supporting documents are provided for your use in evaluating and taking action on this SIP:

- Notices of Public Comment Period for Air Quality PM2.5 regulations, signed September 19, 2013, September 25, 2013, November 14, 2013, December 13, 2013, and January 10, 2014;

- Affidavits of Publication for the Public Notices for Air Quality PM2.5 regulations signed September 19, September 25, November 14, December 13, 2013 and January 10, 2014 (published in the Anchorage Daily News, Fairbanks Daily News Miner, and Juneau Empire).
- Notice of Public Comment Period for PM2.5 regulations and the State Implementation Plan, signed November 14, 2014;
- Affidavits of Publication for the Public Notice (published in the Anchorage Daily News and Fairbanks Daily News Miner on November 17 and 18, 2014), signed November 18, 2014;
- Affidavits of Agency Record of Public Comment, signed November 24, 2014 and December 23, 2014;
- Response to Comment documents dated November 14, 2014 and December 24, 2014;
- Affidavits of Oral Hearings held in Fairbanks on January 7, 2014 and in Juneau, Anchorage, and Fairbanks on January 21, 2014; signed November 24 and 25, 2014;
- Affidavits of Oral Hearings held in Juneau, Anchorage, and Fairbanks on December 3, 2014, and December 17, 2014; signed December 17 and 18, 2014;
- Affidavit of Notice of Proposed Adoption of Regulations and Furnishing of Additional Information, signed November 24, 2014;
- Affidavit of Notice of Proposed Adoption of Regulations and Furnishing of Additional Information, signed December 23, 2014;
- Public Review Draft of 18 AAC 50 regulations which shows the changes made to the regulations, with bold lettering as new language and bracketed language as old language, dated September 19, 2013;
- Public Review Draft of 18 AAC 50 regulations which shows the changes made to the regulations, with bold lettering as new language and bracketed language as old language, dated November 14, 2014; and
- A copy of the November 14 and December 24, 2014 adopted regulation amendments that are currently under review by the Department of Law prior to transmittal to the Lt. Governor for certification and filing.

Your staff may contact Alice Edwards at (907) 465-5109 or Cindy Heil at (907) 269-7579 for additional information as needed.

Sincerely,

Larry Hartig
Commissioner

Enclosures: SIP submittal: including 18 AAC 50 revisions adopted November 14, 2014; 18 AAC 50 revisions adopted December 24, 2014; and State Air Quality Control Plan amendments

cc via e-mail: Kate Kelly, Director, Office of Air Waste and Toxics, EPA, Region 10
Rob Elleman, Acting Manager, Air Planning Unit, EPA, Region 10
Donna Deneen, Air Planning Unit, EPA, Region 10
Lucy Edmonson, Air Planning Unit, EPA, Region 10
Alice Edwards, Director, Division of Air Quality, DEC
Cindy Heil, Air Non-Point Mobile Sources Manager, Division of Air Quality, DEC

EXHIBIT 7

THE STATE of ALASKA
GOVERNOR BILL WALKER

Department of Environmental Conservation
OFFICE OF THE COMMISSIONER
Post Office Box 111800
410 Willoughby Avenue, Suite 303
Juneau, Alaska 99811-1800
Main: 907.465.5066
Fax: 907.465.5070
dec.alaska.gov

January 29, 2015

Dennis McLerran
Regional Administrator
U.S. EPA Region 10
1200 Sixth Avenue
Seattle, WA 98101

Subject: FNSB PM2.5 Moderate Nonattainment Area State Implementation Plan (SIP)

Dear Mr. McLerran:

On December 31, 2014, the Alaska Department of Environmental Conservation (ADEC) transmitted to you the moderate area State Implementation Plan (SIP) for the Fairbanks North Star Borough (FNSB) fine particulate matter (PM2.5) nonattainment area. At that time, a number of the adopted regulations supporting the plan were still undergoing final legal review at the Alaska Department of Law. This letter serves to supplement the December 31st SIP submittal by transmitting the final, filed regulations related to this SIP action. ADEC requests EPA review and approval of the FNSB moderate area PM2.5 SIP, adopted by reference into the Alaska Administrative Code (AAC) at 18 AAC 50.030, with an effective date of February 5, 2015.

The Alaska Department of Environmental Conservation (DEC) is submitting the enclosed supporting documents to supplement and complete the December 31st SIP transmittal:

- New or revised Alaska Administrative Code: 18 AAC 50.007, 18 AAC 50.030, 18 AAC 50.065, 18 AAC 50.075, 18 AAC 50.076, 18 AAC 50.077, 18 AAC 50.245, 18 AAC 50.246, and 18 AAC 50.990;
- Lt. Governor's certified Filing Certificate for Permanent Regulations along with appropriate delegations, including Signed Adoption Order, for 18 AAC 50.030 with an effective date of regulation February 5, 2015;
- Lt. Governor's certified Filing Certificate for Permanent Regulations along with appropriate delegations, including Signed Adoption Order, for 18 AAC 50 with an effective date of regulation February 28, 2015; and
- Nine oral hearing affidavits, one affidavit of agency record of public comment, and one affidavit of notice of proposed adoption of regulations and furnishing of additional information, signed in Anchorage on January 27, 2015 (affidavits were previously submitted on December 31st, but were revised to reflect correct judicial district).

We are providing one paper copy and one electronic version of the above documents to Lucy Edmondson of your staff (note that the electronic version is an exact duplicate of the paper copy). The FNSB PM2.5 moderate area SIP and the following supporting documents were previously provided for your use in evaluating and taking action on this SIP:

- Notices of Public Comment Period for Air Quality PM2.5 regulations, signed September 19, 2013, September 25, 2013, November 14, 2013, December 13, 2013, and January 10, 2014;
- Affidavits of Publication for the Public Notices for Air Quality PM2.5 regulations signed September 19, September 25, November 14, December 13, 2013 and January 10, 2014 (published in the Anchorage Daily News, Fairbanks Daily News Miner, and Juneau Empire).
- Notice of Public Comment Period for PM2.5 regulations and the State Implementation Plan, signed November 14, 2014;
- Affidavits of Publication for the Public Notice (published in the Anchorage Daily News and Fairbanks Daily News Miner on November 17 and 18, 2014), signed November 18, 2014;
- Affidavits of Agency Record of Public Comment, signed November 24, 2014 and December 23, 2014;
- Response to Comment documents dated November 14, 2014 and December 24, 2014;
- Affidavits of Oral Hearings held in Fairbanks on January 7, 2014 and in Juneau, Anchorage, and Fairbanks on January 21, 2014; signed November 24 and 25, 2014;
- Affidavits of Oral Hearings held in Juneau, Anchorage, and Fairbanks on December 3, 2014, and December 17, 2014; signed December 17 and 18, 2014;
- Affidavit of Notice of Proposed Adoption of Regulations and Furnishing of Additional Information, signed November 24, 2014;
- Affidavit of Notice of Proposed Adoption of Regulations and Furnishing of Additional Information, signed December 23, 2014;
- Public Review Draft of 18 AAC 50 regulations which shows the changes made to the regulations, with bold lettering as new language and bracketed language as old language, dated September 19, 2013;
- Public Review Draft of 18 AAC 50 regulations which shows the changes made to the regulations, with bold lettering as new language and bracketed language as old language, dated November 14, 2014; and
- A copy of the November 14 and December 24, 2014 adopted regulation amendments that are currently under review by the Department of Law prior to transmittal to the Lt. Governor for certification and filing.

Your staff may contact Alice Edwards at (907) 465-5109 or Cindy Heil at (907) 269-7579 for additional information as needed.

Sincerely,

Larry Hartig
Commissioner

Enclosures: 18 AAC 50 revisions filed January 6, 2015; 18 AAC 50 revisions filed January 29, 2015; adoption orders and filing certificates, revised affidavits, and Department of Law regulation mark-ups

cc: Kate Kelly, Director, Office of Air Waste and Toxics, EPA, Region 10 (via e-mail)
Rob Elleman, Acting Manager, Air Planning Unit, EPA, Region 10 (via e-mail)
Lucy Edmondson, Air Planning Unit, EPA, Region 10 (via e-mail)
Alice Edwards, Director, Division of Air Quality, DEC (via e-mail)
Cindy Heil, Air Non-Point Mobile Sources Manager, Division of Air Quality, DEC (via e-mail)

EXHIBIT 8

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue, Suite 900
Seattle, WA 98101-3140

OFFICE OF
AIR, WASTE AND TOXICS

FEB 18 2015

Ms. Alice Edwards, Director
Division of Air Quality
Alaska Department of Environmental Conservation
P.O. Box 111800
Juneau, Alaska 99811-1800

Dear Ms. Edwards:

This is in response to your December 31, 2014 State Implementation Plan (SIP) and January 29, 2015 supplemental submittal addressing the requirements of the Clean Air Act for the 2006 $PM_{2.5}$ Particulate Matter National Ambient Air Quality Standard for the Fairbanks North Star Borough $PM_{2.5}$ Nonattainment Area (collectively your "SIP submission").

We have reviewed your SIP submission and compared it to the completeness criteria set forth at 40 CFR Part 51, Appendix V. We have determined that your SIP submission satisfies the completeness criteria; therefore, we have started processing your SIP submission. Please note that a finding of completeness indicates that the SIP submission meets the minimum criteria that a plan must satisfy for the U.S. Environmental Protection Agency to review the submittal under 40 CFR § 51.103. A completeness finding does not constitute a finding on the merits of the SIP submission or whether it meets the relevant criteria for SIP approval.

Thank you for your continued efforts to protect air quality. If you or members of your staff have any questions on this topic, please contact Lucy Edmondson at (360) 753-9082 or edmondson.lucy@epa.gov.

Sincerely,

Kate Kelly, Director
Office of Air, Waste and Toxics

cc: Ms. Cindy Heil, ADEC

JS 44 (Rev. 12/12)

CIVIL COVER SHEET

The JS 44 civil cover sheet and the information contained herein neither replace nor supplement the filing and service of pleadings or other papers as required by law, except as provided by local rules of court. This form, approved by the Judicial Conference of the United States in September 1974, is required for the use of the Clerk of Court for the purpose of initiating the civil docket sheet. *(SEE INSTRUCTIONS ON NEXT PAGE OF THIS FORM.)*

I. (a) PLAINTIFFS

See attachment.

(b) County of Residence of First Listed Plaintiff _____
(EXCEPT IN U.S. PLAINTIFF CASES)

(c) Attorneys *(Firm Name, Address, and Telephone Number)*

See attachment.

DEFENDANTS

See attachment.

County of Residence of First Listed Defendant _____
(IN U.S. PLAINTIFF CASES ONLY)

NOTE: IN LAND CONDEMNATION CASES, USE THE LOCATION OF THE TRACT OF LAND INVOLVED.

Attorneys *(If Known)*

II. BASIS OF JURISDICTION *(Place an "X" in One Box Only)*

- ❒ 1 U.S. Government Plaintiff
- ❒ 3 Federal Question *(U.S. Government Not a Party)*
- ☒ 2 U.S. Government Defendant
- ❒ 4 Diversity *(Indicate Citizenship of Parties in Item III)*

III. CITIZENSHIP OF PRINCIPAL PARTIES *(Place an "X" in One Box for Plaintiff and One Box for Defendant)*

(For Diversity Cases Only)

	PTF	DEF		PTF	DEF
Citizen of This State	❒ 1	❒ 1	Incorporated *or* Principal Place of Business In This State	❒ 4	❒ 4
Citizen of Another State	❒ 2	❒ 2	Incorporated *and* Principal Place of Business In Another State	❒ 5	❒ 5
Citizen or Subject of a Foreign Country	❒ 3	❒ 3	Foreign Nation	❒ 6	❒ 6

IV. NATURE OF SUIT *(Place an "X" in One Box Only)*

CONTRACT
- ❒ 110 Insurance
- ❒ 120 Marine
- ❒ 130 Miller Act
- ❒ 140 Negotiable Instrument
- ❒ 150 Recovery of Overpayment & Enforcement of Judgment
- ❒ 151 Medicare Act
- ❒ 152 Recovery of Defaulted Student Loans (Excludes Veterans)
- ❒ 153 Recovery of Overpayment of Veteran's Benefits
- ❒ 160 Stockholders' Suits
- ❒ 190 Other Contract
- ❒ 195 Contract Product Liability
- ❒ 196 Franchise

REAL PROPERTY
- ❒ 210 Land Condemnation
- ❒ 220 Foreclosure
- ❒ 230 Rent Lease & Ejectment
- ❒ 240 Torts to Land
- ❒ 245 Tort Product Liability
- ❒ 290 All Other Real Property

TORTS

PERSONAL INJURY
- ❒ 310 Airplane
- ❒ 315 Airplane Product Liability
- ❒ 320 Assault, Libel & Slander
- ❒ 330 Federal Employers' Liability
- ❒ 340 Marine
- ❒ 345 Marine Product Liability
- ❒ 350 Motor Vehicle
- ❒ 355 Motor Vehicle Product Liability
- ❒ 360 Other Personal Injury
- ❒ 362 Personal Injury - Medical Malpractice

PERSONAL INJURY
- ❒ 365 Personal Injury - Product Liability
- ❒ 367 Health Care/ Pharmaceutical Personal Injury Product Liability
- ❒ 368 Asbestos Personal Injury Product Liability

PERSONAL PROPERTY
- ❒ 370 Other Fraud
- ❒ 371 Truth in Lending
- ❒ 380 Other Personal Property Damage
- ❒ 385 Property Damage Product Liability

CIVIL RIGHTS
- ❒ 440 Other Civil Rights
- ❒ 441 Voting
- ❒ 442 Employment
- ❒ 443 Housing/ Accommodations
- ❒ 445 Amer. w/Disabilities - Employment
- ❒ 446 Amer. w/Disabilities - Other
- ❒ 448 Education

PRISONER PETITIONS

Habeas Corpus:
- ❒ 463 Alien Detainee
- ❒ 510 Motions to Vacate Sentence
- ❒ 530 General
- ❒ 535 Death Penalty

Other:
- ❒ 540 Mandamus & Other
- ❒ 550 Civil Rights
- ❒ 555 Prison Condition
- ❒ 560 Civil Detainee - Conditions of Confinement

FORFEITURE/PENALTY
- ❒ 625 Drug Related Seizure of Property 21 USC 881
- ❒ 690 Other

LABOR
- ❒ 710 Fair Labor Standards Act
- ❒ 720 Labor/Management Relations
- ❒ 740 Railway Labor Act
- ❒ 751 Family and Medical Leave Act
- ❒ 790 Other Labor Litigation
- ❒ 791 Employee Retirement Income Security Act

IMMIGRATION
- ❒ 462 Naturalization Application
- ❒ 465 Other Immigration Actions

BANKRUPTCY
- ❒ 422 Appeal 28 USC 158
- ❒ 423 Withdrawal 28 USC 157

PROPERTY RIGHTS
- ❒ 820 Copyrights
- ❒ 830 Patent
- ❒ 840 Trademark

SOCIAL SECURITY
- ❒ 861 HIA (1395ff)
- ❒ 862 Black Lung (923)
- ❒ 863 DIWC/DIWW (405(g))
- ❒ 864 SSID Title XVI
- ❒ 865 RSI (405(g))

FEDERAL TAX SUITS
- ❒ 870 Taxes (U.S. Plaintiff or Defendant)
- ❒ 871 IRS—Third Party 26 USC 7609

OTHER STATUTES
- ❒ 375 False Claims Act
- ❒ 400 State Reapportionment
- ❒ 410 Antitrust
- ❒ 430 Banks and Banking
- ❒ 450 Commerce
- ❒ 460 Deportation
- ❒ 470 Racketeer Influenced and Corrupt Organizations
- ❒ 480 Consumer Credit
- ❒ 490 Cable/Sat TV
- ❒ 850 Securities/Commodities/ Exchange
- ❒ 890 Other Statutory Actions
- ❒ 891 Agricultural Acts
- ☒ 893 Environmental Matters
- ❒ 895 Freedom of Information Act
- ❒ 896 Arbitration
- ❒ 899 Administrative Procedure Act/Review or Appeal of Agency Decision
- ❒ 950 Constitutionality of State Statutes

V. ORIGIN *(Place an "X" in One Box Only)*

☒ 1 Original Proceeding ❒ 2 Removed from State Court ❒ 3 Remanded from Appellate Court ❒ 4 Reinstated or Reopened ❒ 5 Transferred from Another District *(specify)* ❒ 6 Multidistrict Litigation

VI. CAUSE OF ACTION

Cite the U.S. Civil Statute under which you are filing ***(Do not cite jurisdictional statutes unless diversity)***:
See attachment.

Brief description of cause:
See attachment.

VII. REQUESTED IN COMPLAINT:

❒ CHECK IF THIS IS A **CLASS ACTION** UNDER RULE 23, F.R.Cv.P.

DEMAND $

CHECK YES only if demanded in complaint:

JURY DEMAND: ❒ Yes ☒ No

VIII. RELATED CASE(S) IF ANY

(See instructions): JUDGE _____ DOCKET NUMBER _____

DATE
06/09/2016

SIGNATURE OF ATTORNEY OF RECORD
s/ Janette K. Brimmer

FOR OFFICE USE ONLY

RECEIPT # _____ AMOUNT _____ APPLYING IFP _____ JUDGE _____ MAG. JUDGE _____

INSTRUCTIONS FOR ATTORNEYS COMPLETING CIVIL COVER SHEET FORM JS 44

Authority For Civil Cover Sheet

The JS 44 civil cover sheet and the information contained herein neither replaces nor supplements the filings and service of pleading or other papers as required by law, except as provided by local rules of court. This form, approved by the Judicial Conference of the United States in September 1974, is required for the use of the Clerk of Court for the purpose of initiating the civil docket sheet. Consequently, a civil cover sheet is submitted to the Clerk of Court for each civil complaint filed. The attorney filing a case should complete the form as follows:

I.(a) **Plaintiffs-Defendants.** Enter names (last, first, middle initial) of plaintiff and defendant. If the plaintiff or defendant is a government agency, use only the full name or standard abbreviations. If the plaintiff or defendant is an official within a government agency, identify first the agency and then the official, giving both name and title.

(b) **County of Residence.** For each civil case filed, except U.S. plaintiff cases, enter the name of the county where the first listed plaintiff resides at the time of filing. In U.S. plaintiff cases, enter the name of the county in which the first listed defendant resides at the time of filing. (NOTE: In land condemnation cases, the county of residence of the "defendant" is the location of the tract of land involved.)

(c) **Attorneys.** Enter the firm name, address, telephone number, and attorney of record. If there are several attorneys, list them on an attachment, noting in this section "(see attachment)".

II. **Jurisdiction.** The basis of jurisdiction is set forth under Rule 8(a), F.R.Cv.P., which requires that jurisdictions be shown in pleadings. Place an "X" in one of the boxes. If there is more than one basis of jurisdiction, precedence is given in the order shown below.
United States plaintiff. (1) Jurisdiction based on 28 U.S.C. 1345 and 1348. Suits by agencies and officers of the United States are included here.
United States defendant. (2) When the plaintiff is suing the United States, its officers or agencies, place an "X" in this box.
Federal question. (3) This refers to suits under 28 U.S.C. 1331, where jurisdiction arises under the Constitution of the United States, an amendment to the Constitution, an act of Congress or a treaty of the United States. In cases where the U.S. is a party, the U.S. plaintiff or defendant code takes precedence, and box 1 or 2 should be marked.
Diversity of citizenship. (4) This refers to suits under 28 U.S.C. 1332, where parties are citizens of different states. When Box 4 is checked, the citizenship of the different parties must be checked. (See Section III below**; NOTE: federal question actions take precedence over diversity cases.**)

III. **Residence (citizenship) of Principal Parties.** This section of the JS 44 is to be completed if diversity of citizenship was indicated above. Mark this section for each principal party.

IV. **Nature of Suit.** Place an "X" in the appropriate box. If the nature of suit cannot be determined, be sure the cause of action, in Section VI below, is sufficient to enable the deputy clerk or the statistical clerk(s) in the Administrative Office to determine the nature of suit. If the cause fits more than one nature of suit, select the most definitive.

V. **Origin.** Place an "X" in one of the six boxes.
Original Proceedings. (1) Cases which originate in the United States district courts.
Removed from State Court. (2) Proceedings initiated in state courts may be removed to the district courts under Title 28 U.S.C., Section 1441. When the petition for removal is granted, check this box.
Remanded from Appellate Court. (3) Check this box for cases remanded to the district court for further action. Use the date of remand as the filing date.
Reinstated or Reopened. (4) Check this box for cases reinstated or reopened in the district court. Use the reopening date as the filing date.
Transferred from Another District. (5) For cases transferred under Title 28 U.S.C. Section 1404(a). Do not use this for within district transfers or multidistrict litigation transfers.
Multidistrict Litigation. (6) Check this box when a multidistrict case is transferred into the district under authority of Title 28 U.S.C. Section 1407. When this box is checked, do not check (5) above.

VI. **Cause of Action.** Report the civil statute directly related to the cause of action and give a brief description of the cause. **Do not cite jurisdictional statutes unless diversity.** Example: U.S. Civil Statute: 47 USC 553 Brief Description: Unauthorized reception of cable service

VII. **Requested in Complaint.** Class Action. Place an "X" in this box if you are filing a class action under Rule 23, F.R.Cv.P.
Demand. In this space enter the actual dollar amount being demanded or indicate other demand, such as a preliminary injunction.
Jury Demand. Check the appropriate box to indicate whether or not a jury is being demanded.

VIII. **Related Cases.** This section of the JS 44 is used to reference related pending cases, if any. If there are related pending cases, insert the docket numbers and the corresponding judge names for such cases.

Date and Attorney Signature. Date and sign the civil cover sheet.

ATTACHMENT TO CIVIL COVER SHEET

I. (a)

PLAINTIFFS

CITIZENS FOR CLEAN AIR, a project of ALASKA COMMUNITY ACTION ON TOXICS

SIERRA CLUB

DEFENDANTS

GINA MCCARTHY, in her official capacity as Administrator of the United States Environmental Protection Agency

DENNIS MCLERRAN, in his official capacity as Regional Administrator of the United States Environmental Protection Agency Region 10

I. (b)

County of Residence of First Listed Plaintiff

Fairbanks North Star Borough, Alaska

I. (c) ATTORNEYS FOR PLAINTIFFS

Janette K. Brimmer
EARTHJUSTICE
705 Second Avenue, Suite 203
Seattle, WA 98104
206.343.7340

Erik Grafe
EARTHJUSTICE
441 W 5th Avenue, Suite 301
Anchorage, AK 99501
907.792.7102

Kenta Tsuda
EARTHJUSTICE
325 Fourth Street
Juneau, AK 99801
907.500.7129

VI. CAUSE OF ACTION

Cite the U.S. Civil Statute under which you are filing (Do not cite jurisdictional statutes unless diversity):

Clean Air Act citizen suit provision, 42 U.S.C. § 7604

Brief description of cause:

Challenge to the U.S. Environmental Protection Agency's failure to fulfill its statutory duty to issue a full or partial approval or a disapproval of the State of Alaska's state implementation plan to address violations of the 24-hour National Ambient Air Quality Standard for fine particulate matter in the Fairbanks North Star Borough, Alaska.

Earthjustice
705 Second Ave., Suite 203
Seattle, WA 98104
206.343.7340

United States District Court

for the

Western District of Washington

CITIZENS FOR CLEAN AIR, a project of ALASKA COMMUNITY ACTION ON TOXICS, and SIERRA CLUB,

Plaintiff

v.

GINA MCCARTHY, in her official capacity as Administrator of the United States Environmental Protection Agency, and DENNIS MCLERRAN, in his official capacity as Regional Administrator of the United States Environmental Protection Agency Region 10,

Defendant

Civil Action No. _____

SUMMONS IN A CIVIL ACTION

To: *(Defendant's name and address)*

Gina McCarthy, Administrator
United States Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Mail Code: 1101A
Washington, DC 20460

A lawsuit has been filed against you.

Within ___ days after service of this summons on you (not counting the day you received it) - or 60 days if you are the United States or a United States agency, or an officer or employee of the United States described in Fed. R. Civ. P. 12 (a)(2) or (3) - you must serve on the plaintiff an answer to the attached complaint or a motion under Rule 12 of the Federal Rules of Civil Procedure. The answer or motion must be served on the plaintiff or plaintiff's attorney, whose name and address is:

Janette K. Brimmer	Erik Grafe	Kenta Tsuda
EARTHJUSTICE	EARTHJUSTICE	EARTHJUSTICE
705 Second Avenue, Suite 203	441 W. 5th Avenue, Suite 301	325 Fourth Street
Seattle, WA 98104	Anchorage, AK 99501	Juneau, AK 99801

If you fail to respond, judgment by default will be entered against you for the relief demanded in the complaint. You also must file your answer or motion with the court.

CLERK OF COURT

Date: _____

_____
Signature of Clerk or Deputy Clerk

PROOF OF SERVICE

This section should not be filed with the court unless required by Fed.. ***R. Civ. P. 4(1)***

This summons for (*name of individual and title, if any)* _____

was received by me on *(date)* _____ .

☐ I personally served the summons and complaint on the individual at *(place)*

_____ on *(date)* _____ ; or

☐ I left the summons and complaint at the individual's residence or usual place of abode with *(name)*

_____ , a person of suitable age and discretion who resides there,

on *(date)* _____ , and mailed a copy to the individual's last known address; or

☐ I served the summons and complaint on *(name of individual)* _____

who is designated by law to accept service of process on behalf of *(name of organization)*

_____ on *(date)* _____ ; or

☐ I returned the summons unexecuted because _____ ; or

☐ Other *(specify)*

My fees are $_____ for travel and $ _____ for services, for a total of $ _____ .

I declare under penalty of perjury that this information is true.

Date: _____

_____
Server's signature

_____
Printed name and title

_____
Server's address

Additional information regarding attempted service, etc.

United States District Court

for the

Western District of Washington

CITIZENS FOR CLEAN AIR, a project of ALASKA COMMUNITY ACTION ON TOXICS, and SIERRA CLUB,

Plaintiff

v.

GINA MCCARTHY, in her official capacity as Administrator of the United States Environmental Protection Agency, and DENNIS MCLERRAN, in his official capacity as Regional Administrator of the United States Environmental Protection Agency Region 10,

Defendant

Civil Action No. _____

SUMMONS IN A CIVIL ACTION

To: *(Defendant's name and address)*

Dennis McLerran, Regional Administrator
United States Environmental Protection Agency, Region 10
1200 Sixth Avenue
Mail Code: RA-140
Seattle, WA 98101

A lawsuit has been filed against you.

Within ___ days after service of this summons on you (not counting the day you received it) - or 60 days if you are the United States or a United States agency, or an officer or employee of the United States described in Fed. R. Civ. P. 12 (a)(2) or (3) - you must serve on the plaintiff an answer to the attached complaint or a motion under Rule 12 of the Federal Rules of Civil Procedure. The answer or motion must be served on the plaintiff or plaintiff's attorney, whose name and address is:

Janette K. Brimmer EARTHJUSTICE 705 Second Avenue, Suite 203 Seattle, WA 98104	Erik Grafe EARTHJUSTICE 441 W. 5th Avenue, Suite 301 Anchorage, AK 99501	Kenta Tsuda EARTHJUSTICE 325 Fourth Street Juneau, AK 99801

If you fail to respond, judgment by default will be entered against you for the relief demanded in the complaint. You also must file your answer or motion with the court.

CLERK OF COURT

Date: _____

_____
Signature of Clerk or Deputy Clerk

PROOF OF SERVICE

This section should not be filed with the court unless required by Fed.. ***R. Civ. P. 4(1)***

This summons for (*name of individual and title, if any)* _____

was received by me on *(date)* _____ .

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_____ on *(date)* _____ ; or

☐ I left the summons and complaint at the individual's residence or usual place of abode with *(name)*

_____ , a person of suitable age and discretion who resides there,

on *(date)* _____ , and mailed a copy to the individual's last known address; or

☐ I served the summons and complaint on *(name of individual)* _____

who is designated by law to accept service of process on behalf of *(name of organization)*

_____ on *(date)* _____ ; or

☐ I returned the summons unexecuted because _____ ; or

☐ Other *(specify)*

My fees are $_____ for travel and $ _____ for services, for a total of $ _____ .

I declare under penalty of perjury that this information is true.

Date: _____

_____
Server's signature

_____
Printed name and title

_____
Server's address

Additional information regarding attempted service, etc.

United States District Court

for the

Western District of Washington

CITIZENS FOR CLEAN AIR, a project of ALASKA COMMUNITY ACTION ON TOXICS, and SIERRA CLUB,

Plaintiff

v.

GINA MCCARTHY, in her official capacity as Administrator of the United States Environmental Protection Agency, and DENNIS MCLERRAN, in his official capacity as Regional Administrator of the United States Environmental Protection Agency Region 10,

Defendant

Civil Action No. _____

SUMMONS IN A CIVIL ACTION

To: *(Defendant's name and address)*

Loretta E. Lynch, Attorney General
U.S. Department of Justice
950 Pennsylvania Avenue, NW
Washington, DC 20530

A lawsuit has been filed against you.

Within ___ days after service of this summons on you (not counting the day you received it) - or 60 days if you are the United States or a United States agency, or an officer or employee of the United States described in Fed. R. Civ. P. 12 (a)(2) or (3) - you must serve on the plaintiff an answer to the attached complaint or a motion under Rule 12 of the Federal Rules of Civil Procedure. The answer or motion must be served on the plaintiff or plaintiff's attorney, whose name and address is:

Janette K. Brimmer	Erik Grafe	Kenta Tsuda
EARTHJUSTICE	EARTHJUSTICE	EARTHJUSTICE
705 Second Avenue, Suite 203	441 W. 5th Avenue, Suite 301	325 Fourth Street
Seattle, WA 98104	Anchorage, AK 99501	Juneau, AK 99801

If you fail to respond, judgment by default will be entered against you for the relief demanded in the complaint. You also must file your answer or motion with the court.

CLERK OF COURT

Date: _____

_____
Signature of Clerk or Deputy Clerk

PROOF OF SERVICE

This section should not be filed with the court unless required by Fed.. ***R. Civ. P. 4(1)***

This summons for (*name of individual and title, if any)* _____

was received by me on *(date)* _____ .

☐ I personally served the summons and complaint on the individual at *(place)*

_____ on *(date)* _____ ; or

☐ I left the summons and complaint at the individual's residence or usual place of abode with *(name)*

_____ , a person of suitable age and discretion who resides there,

on *(date)* _____ , and mailed a copy to the individual's last known address; or

☐ I served the summons and complaint on *(name of individual)* _____

who is designated by law to accept service of process on behalf of *(name of organization)*

_____ on *(date)* _____ ; or

☐ I returned the summons unexecuted because _____ ; or

☐ Other *(specify)*

My fees are $_____ for travel and $ _____ for services, for a total of $ _____ .

I declare under penalty of perjury that this information is true.

Date: _____

_____
Server's signature

_____
Printed name and title

_____
Server's address

Additional information regarding attempted service, etc.

United States District Court

for the

Western District of Washington

CITIZENS FOR CLEAN AIR, a project of ALASKA COMMUNITY ACTION ON TOXICS, and SIERRA CLUB,

Plaintiff

v.

GINA MCCARTHY, in her official capacity as Administrator of the United States Environmental Protection Agency, and DENNIS MCLERRAN, in his official capacity as Regional Administrator of the United States Environmental Protection Agency Region 10,

Defendant

Civil Action No. _____

SUMMONS IN A CIVIL ACTION

To: *(Defendant's name and address)*

Annette E. Hayes, Interim U.S. Attorney
Western District of Washington
700 Stewart Street, Suite 5220
Seattle, WA 98101

A lawsuit has been filed against you.

Within ___ days after service of this summons on you (not counting the day you received it) - or 60 days if you are the United States or a United States agency, or an officer or employee of the United States described in Fed. R. Civ. P. 12 (a)(2) or (3) - you must serve on the plaintiff an answer to the attached complaint or a motion under Rule 12 of the Federal Rules of Civil Procedure. The answer or motion must be served on the plaintiff or plaintiff's attorney, whose name and address is:

Janette K. Brimmer EARTHJUSTICE 705 Second Avenue, Suite 203 Seattle, WA 98104	Erik Grafe EARTHJUSTICE 441 W. 5th Avenue, Suite 301 Anchorage, AK 99501	Kenta Tsuda EARTHJUSTICE 325 Fourth Street Juneau, AK 99801

If you fail to respond, judgment by default will be entered against you for the relief demanded in the complaint. You also must file your answer or motion with the court.

CLERK OF COURT

Date: _____

_____
Signature of Clerk or Deputy Clerk

PROOF OF SERVICE

This section should not be filed with the court unless required by Fed.. ***R. Civ. P. 4(1)***

This summons for (*name of individual and title, if any)* _____

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☐ I personally served the summons and complaint on the individual at *(place)*

_____ on *(date)* _____ ; or

☐ I left the summons and complaint at the individual's residence or usual place of abode with *(name)*

_____ , a person of suitable age and discretion who resides there,

on *(date)* _____ , and mailed a copy to the individual's last known address; or

☐ I served the summons and complaint on *(name of individual)* _____

who is designated by law to accept service of process on behalf of *(name of organization)*

_____ on *(date)* _____ ; or

☐ I returned the summons unexecuted because _____ ; or

☐ Other *(specify)*

My fees are $_____ for travel and $ _____ for services, for a total of $ _____ .

I declare under penalty of perjury that this information is true.

Date: _____

_____
Server's signature

_____
Printed name and title

_____
Server's address

Additional information regarding attempted service, etc.