



April 14, 2014

**BY CERTIFIED MAIL
RETURN RECEIPT REQUESTED**

Joe Pizarchik
Director
U.S. Office of Surface Mining Reclamation and Enforcement
1951 Constitution Ave., NW
Washington, D.C. 20240

**Re: Petition for Rulemaking Under the Surface Mining Control and Reclamation Act,
30 U.S.C. § 1211(g)**

Dear Director Pizarchik:

Enclosed, please find a petition to the Office of Surface Mining Reclamation and Enforcement (“OSM”) for the issuance of a rule pursuant to the Surface Mining Reclamation and Enforcement Act (“SMCRA”), 30 U.S.C. § 1211(g).

The petition specifically calls on OSM to promulgate a rule prohibiting the production of visible nitrogen oxide emissions during blasting at surface coal mining operations in order to protect public and mine worker health, welfare, and safety, and prevent injury to persons, as required by SMCRA. Blasting done in conjunction with surface coal mining operations often produces visible nitrogen oxide emissions, which are observed as orange to red clouds. Whenever these visible clouds are formed, nitrogen dioxide concentrations exceed federal health standards, including national ambient air quality standards promulgated by the U.S. Environmental Protection Agency. The rule would ensure these toxic clouds are not produced, thereby preventing the formation of dangerous and harmful air pollution at surface coal mining operations.

In accordance with 30 C.F.R. § 700.12(b), the petition provides a concise statement of the facts, technical justification, and law which require the issuance of the petitioned rule. The petition also includes draft rule language, which we request OSM consider adopting in full or modify as appropriate. In accordance with 30 C.F.R. § 700.12(b), we do not request a public hearing. However if OSM believes that a public hearing would serve the agency and would be in the interest of the public, we would support holding a hearing.

We believe this petition has a reasonable basis. Blasting at surface coal mining operations has clearly been producing visible clouds of nitrogen oxide emissions, oftentimes

leading to public exposure, concern, and complaints. It is not denied by OSM or other agencies that these clouds are dangerous to public and worker health, welfare, and safety. Furthermore, there are a number of control measures that could be undertaken by mining operators to prevent the formation of these visible emissions. In spite of this, there are no limits on the production of such harmful emissions, either under SMCRA or under the Clean Air Act.

The proposed rule would be a simple qualitative standard, which would represent a straightforward, effective, and efficient means of preventing injury to persons. The proposed rule would provide mine operators the flexibility to determine the most appropriate methods for assuring compliance.

SMCRA not only authorizes OSM to promulgate rules for the protection of public and mine worker health, welfare, and safety, but requires the Agency to ensure that blasting is conducted so as to prevent injury to persons. Here, with no limits on nitrogen oxide emissions, there are no standards in place to prevent injury to persons from this dangerous air pollution.

In addition to filing the petition with your office, we have also copied the U.S. Environmental Protection Agency's Acting Assistant Administrator for Air and Radiation and the Assistant Secretary of Interior for Lands and Minerals Management. It is crucial that the Environmental Protection Agency be informed of this issue given OSM's obligation to ensure that it consults with the Agency whenever it proposes to adopt air quality standards under SMCRA.

In accordance with 30 U.S.C. § 1211(g), we look forward to OSM granting our petition within 90 days. If you have any questions or concerns, please contact me at the information below. Thank you.

Sincerely,

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cc: Department of Interior, Office of the Secretary, Assistant Secretary of Interior for Land and Minerals Management;
Acting Assistant Administrator for Air and Radiation, U.S. Environmental Protection Agency

**BEFORE THE DIRECTOR
UNITED STATES DEPARTMENT OF INTERIOR
OFFICE OF SURFACE MINING RECLAMATION AND ENFORCEMENT**

In the Matter of:)	
Issuance of Rules Adopting Permanent Program)	
Environmental Protection Performance)	
Standards to Limit Nitrogen Oxide Air)	
Pollution from Blasting Operations at Surface)	
Coal Mining Operations Under 30 C.F.R. §§)	
816 and 817)	
)	Petition for rulemaking under the Surface Mining Control and Reclamation Act, 30 U.S.C. § 1211(g), and Administrative Procedure Act, 5 U.S.C. § 553(e)

**PETITION FOR THE ISSUANCE OF RULES TO THE OFFICE OF SURFACE
MINING RECLAMATION AND ENFORCEMENT**

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2. Agency for Toxic Substances and Disease Registry, “Nitrogen oxides (nitric oxide, nitrogen dioxide, etc.)” Division of Toxicology ToxFAQs (April 2002).
3. EPA, “Nitrogen Dioxide, Health,” website available at <http://www.epa.gov/oaqps001/nitrogenoxides/health.html> (last accessed April 14, 2014).
4. EPA, “Air Quality Guide for Nitrogen Oxide” (Feb. 2011).
5. OSM, “Annual Evaluation Summary Report for the Regulatory Program Administered by the Land Quality Division for the Wyoming Department of Environmental Quality for Evaluation Year 2000” (Dec. 7, 2000).
6. BLM, “Final Environmental Impact Statement for the Wright Area Coal Lease Applications” (July 2010).
7. Queensland Government Department of Employment, Economic Development and Innovation, “Coal Mine Workers Fact Sheet: Avoiding exposure to oxides of nitrogen (NOx) fumes from surface blasts.”
8. Hancock, L., “Nitric oxide cloud hangs over air in south Gillette,” *Gillette News Record* (Jan. 23, 2012).
9. Sukhomlinova Cockar, A., “Cast blast creates a cloud,” *Gillette News Record* (Jan. 4, 2013).
10. EPA, “Emissions – Unit Level Data Report, Wyodak,” Query Produced March 22, 2014.
11. DEQ, “Permit Application Analysis, AP-10986, Black Thunder Mine.”
12. OSM, “Special Study Topic Oversight Report on Blasting in Wyoming (EY 2013)” (2013).
13. “Photos: Hazardous Gas Clouds from Coal Mine Blasting in Southeastern Montana,” east of billings (Feb. 4, 2014), available at <http://www.eastofbillings.com/photos-hazardous-gas-clouds-from-coal-mine-blasting-in-southeastern-montana/> (last accessed April 14, 2014).
14. Letter from Doug Emme, Wyoming Department of Environmental Quality to Mrs. Karla Oksanen (Jan. 19, 2011).
15. Rio Tinto, “Mount Thorley Warkworth Blast Management Plan” (Oct. 30, 2012).

16. Letter from Bob Perciasepe, Acting EPA Administrator, to Ted Zukoski, Staff Attorney with Earthjustice (April 30, 2013).
17. DEQ, “PRB Coal Mine Permitting Guidance” (Feb. 27, 2006).
18. DEQ, “Air Quality Permit MD-6375, Thunder Basin Coal, LLC, North Antelope Rochelle Mine” (Nov. 10, 2008).
19. Montana DEQ, “Montana Air Quality Permit #1418-06, Westmoreland Resources, Inc., Absaloka Mine” (March 25, 2010).

INTRODUCTION

WildEarth Guardians hereby petitions the Director of the Department of Interior, Office of Surface Mining Reclamation and Enforcement (“OSM”) for the issuance of a rule pursuant to Section 201(g) of the Surface Mining Control and Reclamation Act (“SMCRA”), 30 U.S.C. § 1211(g), and the Administrative Procedure Act (“APA”), 5 U.S.C. § 553(e). Specifically, we petition the Director to issue a rule to prohibit the production of visible nitrogen oxide emissions, and in particular nitrogen dioxide emissions, from blasting operations associated with surface coal mining operations.¹ This simple approach to controlling nitrogen oxide emissions will ensure protection of public and mine worker health, welfare, and safety, and prevent injury to persons, as required by SMCRA.

Too often, blasting at coal mines leads to the production of dangerous levels of nitrogen dioxide emissions, which are seen as orange to red clouds. *See Image Below.* These clouds of toxic gas represent significant threats to public health and welfare and must be curtailed to prevent injuries to persons as required by SMCRA. OSM has itself recognized the serious threats posed to persons from nitrogen oxide emissions produced as a result of blasting.



Toxic Orange Cloud Produced from Blasting at Rosebud Coal Mine, Rosebud County, MT. Picture Taken February 2014.

We petition the Director to promulgate the proposed rule pursuant to 30 U.S.C. § 1251(b), which requires OSM to promulgate regulations “covering a permanent regulatory procedure for surface coal mining and reclamation operations performance standards based on

¹ We petition OSM to “issue” rules. However, to the extent that “issuance” of the petitioned rules will require an amendment to existing regulations, WildEarth Guardians also hereby petitions OSM to amend rules as appropriate or necessary.

and conforming to the provisions of this subchapter [V][.]” 30 U.S.C. § 1251(b).² Among other things, subchapter V requires state and federally issued permits to conduct surface mining operations (including the surface impacts of underground mining) ensure the “type of explosives and detonating equipment, the size, the timing and frequency of blasts” be limited so as to prevent “injury to persons.” See 30 U.S.C. §§ 1265(b)(15)(C)(i) and 1266(b)(11).

OSM has promulgated rules under 30 C.F.R. Chapter VII, Subchapter K (30 C.F.R. § 810, *et seq.*) setting forth “minimum performance standards and design requirements to be adopted and implemented under a regulatory program[.]” 30 C.F.R. § 810.1. These rules, among many other things, regulate the use of explosives related to surface coal mining operations. See 30 C.F.R. §§ 816.61-816.68. These rules generally echo SMCRA’s requirement that blasting be limited so as to prevent injury to persons, but also set forth a number of specific standards to ensure blasting is undertaken in a safe, responsible, and transparent manner. In particular, 30 C.F.R. §§ 816.67 and 817.67 set forth standards to control the “adverse effects” of blasting. These rules, however, do not expressly require that blasting be limited to ensure resulting air emissions do not injure persons or otherwise unreasonably put public and mine worker health, welfare, and safety at risk.

This Petition calls on OSM to remedy this regulatory gap and promulgate explicit and enforceable standards to ensure that when explosives are used at coal mining operations, emissions of nitrogen oxides are controlled to prevent injury to persons and to protect the general health, welfare, and safety of the public and mine workers. Attached to this Petition as Exhibit 1 is proposed rule language, which we request OSM promulgate under 30 C.F.R. §§ 816.67 and 817.67, or otherwise incorporate as appropriate into OSM’s performance standard regulations under Subchapter K after a public rulemaking process. Our proposed rule language sets forth a straightforward and clear prohibition on visible emissions. Herein, we provide the factual, technical, and legal justification for promulgating the proposed rule.

The need for OSM to promulgate the requested rule is clear and urgent. Nitrogen oxides are harmful pollutants. To this end, the U.S. Environmental Protection Agency (“EPA”) has adopted national ambient air quality standards (“NAAQS”) limiting nitrogen dioxide, a key indicator of nitrogen oxide emissions. These standards limit nitrogen dioxide concentrations in the air on an hourly basis in order to safeguard public health and welfare. In spite of these limits, blasting at coal mines is often clearly producing nitrogen dioxide emissions that exceed the NAAQS, putting public and mine worker health, welfare, and safety at great risk. Despite this great risk of injury, OSM has not taken steps to ensure that enforceable standards are in place to limit these emissions. Guardians simply calls on OSM to ensure that air quality does not exceed the NAAQS and other relevant thresholds, thereby preventing injury to persons.

² We also petition OSM pursuant to 30 U.S.C. § 1262(a), which requires the Agency to promulgate rules regarding coal exploration operations, and 30 U.S.C. § 1211(c)(2), which provides the Agency with authority to “publish and promulgate such rules and regulations as may be necessary to carry out the purposes and provisions of this chapter.”

PETITIONER

WildEarth Guardians is a nonprofit conservation advocacy organization dedicated to protecting and restoring the wildlife, wild rivers, and wild places of the American West. To this end, Guardians seeks to safeguard the climate by promoting cleaner energy, efficiency and conservation, and alternatives to fossil fuels. Headquartered in Santa Fe, New Mexico, Guardians also has offices in Denver, Utah, Montana, and elsewhere in the western United States. WildEarth Guardians has more than 43,000 members and supporters throughout the United States. WildEarth Guardians has also engaged extensively in coal mining issues for many years, advocating for greater limits on environmental impacts.

LEGAL BASIS FOR PETITIONING

WildEarth Guardians petitions OSM pursuant to SMCRA and the APA. The APA generally provides that, “[e]ach agency shall give an interested person the right to petition for the issuance, amendment, or repeal of a rule.” 5 U.S.C. § 553(e).³ SMCRA specifically provides that “any person may petition the [OSM] Director to initiate a proceeding for the issuance, amendment, or repeal of a rule under this chapter.” 30 U.S.C. § 1211(g); *see also* 30 C.F.R. § 700.12(a).

A rulemaking petition must present a “concise statement of facts, technical justification, and law which require issuance, amendment, or repeal of a regulation” under SMCRA. 30 C.F.R. § 700.12(b). Upon receipt, OSM must determine whether the facts, technical justification, and law set forth in the petition “may provide a reasonable basis for issuance, amendment, or repeal of a regulation.” 30 C.F.R. § 700.12(c). If a petition has a “reasonable basis,” a notice shall be published in the Federal Register seeking public comment on the proposed changes. *Id.* OSM may also hold a public hearing or undertake an investigation to determine whether a petition has a “reasonable basis.” *Id.*

Within 90 days of receipt, OSM must either grant or deny a petition. *See* 30 U.S.C. § 1211(g)(4); *see also* 30 C.F.R. § 700.12(d). If a petition is granted, a rulemaking proceeding must be initiated. *See* 30 C.F.R. § 700.12(d)(1). If a petition is denied, the Director must notify the petitioner in writing and set forth the reasons for denial. *See* 30 C.F.R. § 700.12(d)(2).

LEGAL BACKGROUND

This petition requests that OSM issue a rule to ensure compliance with SMCRA. SMCRA requires that coal mining operations meet minimum environmental protection

³ A rule is defined as “the whole or a part of an agency statement of general or particular applicability and future effect designed to implement, interpret, or prescribe law or policy[.]” 5 U.S.C. § 551(4).

performance standards. OSM is required to promulgate regulations that assure such performance standards are met. Below, we detail these key legal underpinnings.

1. The Surface Mine Control and Reclamation Act

SMCRA was passed in 1977 to “establish a nationwide program to protect society and the environment from the adverse effects of surface coal mining operations.” 30 U.S.C. § 1202(a). The law implements a “cooperative federalism” approach to regulating coal mining. While minimum standards for surface coal mining are established through federal law and regulation, states are largely delegated authority to implement the law. Where states fail to meet minimum standards, or otherwise choose not to seek delegated authority, the federal government, by and through OSM, retains authority to implement its provisions. Congress intended this “cooperative effort” as “necessary to prevent or mitigate adverse environmental effects of present and future surface coal mining operations.” 30 U.S.C. § 1201(k).

The law primarily regulates the impacts of surface coal mining, including the surface impacts of underground mining, through permitting established through a state or federal permitting program. SMCRA expressly prohibits any person from engaging in or carrying out surface coal mining “unless [that] person has first obtained a permit[.]” 30 U.S.C. § 1256(a). To this end, SMCRA requires that permitting programs be developed. *See id.* While the law contemplates that states will primarily develop permitting programs and serve as delegated permitting authorities, where states lack approved programs, OSM will develop a federal program and serve as the permitting authority. *See* 30 U.S.C. §§ 1253 and 1254. Both state and federal permitting programs must, among other things, “[meet] the requirements of [] subchapter [V of SMCRA] for the [regulation] of surface coal mining and reclamation operations for coal on lands within the State.” 30 U.S.C. § 1253(a)(4).

2. Performance Standards Under SMCRA

SMCRA explicitly requires that surface coal mining operations, including the surface impacts of underground mining, be conducted so as “to protect the environment.” 30 U.S.C. § 1202(d).⁴ To this end, SMCRA requires that permits for surface mining and for underground mining, whether issued by states or OSM, meet minimum environmental protection performance standards. *See* 30 U.S.C. §§ 1265(a) and 1266(b).

A number of environmental protection performance standards are set forth under SMCRA. *See e.g.* 30 U.S.C. § 1265(b)(1)-(25). However, the law also charges OSM with promulgating regulations “covering a permanent regulatory procedure for surface coal mining and reclamation operations performance standards based on and conforming to the provisions of

⁴ The definition of surface coal mining operations under SMCRA includes the surface impacts of underground mining. *See* 30 U.S.C. § 1291(28) and 30 C.F.R. § 700.5

subchapter [V of SMCRA].” 30 U.S.C. § 1251(b).⁵ To this end, OSM has promulgated regulations setting forth explicit permanent environmental protection performance standards under 30 C.F.R. Chapter VII, Subchapter K. OSM explains:

Subchapter K sets forth the environmental and other performance standards which apply to coal exploration and to surface coal mining and reclamation operations during the permanent regulatory program. The regulations establish the minimum requirements for operations under State and Federal programs.

30 C.F.R. § 700.1(i). According to OSM, the standards under Subchapter K are meant to, among other things, “provide for [] [p]rotection of the health, safety, and general welfare of mine workers and the public.” Under Subchapter K, OSM has promulgated environmental protection performance standards for surface mining (30 C.F.R. § 816) and underground mining (30 C.F.R. § 817).

3. Performance Standards for the Use of Explosives

Among the environmental protection performance standards established by SMCRA are those related to the control of explosive use at coal mines. The law specifically requires surface coal mining operations to “limit the type of explosives and detonating equipment, the site, the timing and frequency of blasts based on the physical conditions of the site so as to prevent [] injury to persons[.]” 30 U.S.C. §§ 1265(b)(15)(C)(i). To this effect, the law is clear that injury must be “prevented,” rather than being allowed to occur.

To meet the requirements of SMCRA, OSM has promulgated rules to address the adverse impacts of blasting at both surface and underground coal mines. *See* 30 C.F.R. §§ 816.67 and 817.67. In addition to echoing SMCRA’s general requirement that “injury to persons” be prevented, these rules also impose specific limits on airblasts, flyrock production, and ground vibrations. *See e.g.* 30 C.F.R. § 816.67(b)-(d). To ensure performance standards relating to the use of explosives are met, regulations under 30 C.F.R. § 780.13 further require that mining permits issued under regulatory programs contain an operating plan that includes a “blasting plan” and “monitoring system” to meet standards under 30 C.F.R. §§ 816.61-816.68.

4. Regulation of Air Quality Under SMCRA

The regulation of air quality under SMCRA is expressly contemplated. The law actually requires OSM, in adopting rules for a permanent regulatory program, to follow procedures under 30 U.S.C. § 1261(a)(B), which require the Agency to “[obtain] the written concurrence of the Administrator of the Environmental Protection Agency” before adopting any rules that relate to air quality standards promulgated under the authority of the Clean Air Act, 42 U.S.C. § 7401, *et seq.* 30 U.S.C. § 1261(b). Although OSM is expressly prohibited from adopting rules

⁵ OSM also has authority under SMCRA to “publish and promulgate such rules and regulations as may be necessary to carry out the purposes and provisions of this chapter.” 30 U.S.C. § 1211(c)(2).

“superseding, amending, modifying, or repealing” the Clean Air Act, it does allow the Agency to fill air quality regulatory gaps in order to meet the substantive requirements of SMCRA. 30 U.S.C. § 1291(a)(4).

SMCRA further obligates OSM to explicitly regulate air quality in certain situations, requiring the Agency to “effectively control erosion and attendant air and water pollution” as surface areas are stabilized and protected during surface mining operations. 30 U.S.C. § 1265(b)(4). Accordingly, OSM has adopted some performance standards to address air quality impacts, including erosion-related air pollution impacts related to exposed surface areas. *See* 30 C.F.R. §§ 816.95 and 817.95. Furthermore, to ensure compliance with these standards, OSM requires permits to contain an operating plan to monitor and limit fugitive dust. *See* 30 C.F.R. § 780.15.

FACTUAL AND TECHNICAL BACKGROUND

1. Nitrogen Oxides

“Nitrogen oxides are a mixture of gases that are composed of nitrogen and oxygen [and are] released to the air from the exhaust of motor vehicles, the burning of coal, oil, or natural gas, and during processes such as arc welding, electroplating, engraving, and dynamite blasting.” Exhibit 2, Agency for Toxic Substances and Disease Registry, “Nitrogen oxides (nitric oxide, nitrogen dioxide, etc.),” Division of Toxicology ToxFAQs (April 2002) at 1 (hereafter “ATSDR Fact Sheet”). At low levels, the health effects of nitrogen oxides include irritation of eyes, nose, throat, and lungs, as well as other adverse health effects, while at high levels the gases can cause rapid burning, spasms, and swelling of throat and upper respiratory tract tissues, as well as death. *See id.* at 2. Nitrogen oxides also contribute to the formation of ground-level ozone and particulate matter, which are also harmful to public health. *See* Exhibit 3, EPA, “Nitrogen Dioxide, Health,” website available at <http://www.epa.gov/oaqps001/nitrogenoxides/health.html> (last accessed April 14, 2014).

In recognition of the health risks of nitrogen oxides, the EPA has adopted NAAQS under the Clean Air Act to limit concentrations of this dangerous group of gases.⁶ Specifically, the EPA has adopted NAAQS limiting nitrogen dioxide as an indicator of overall nitrogen oxide concentrations. *See* 40 C.F.R. § 50.11.⁷ In doing so, the EPA has adopted both long and short-term NAAQS, limiting concentrations of nitrogen dioxide to no more than 53 parts per billion (“ppb”) on an annual basis and 100 ppb on an hourly basis. *See* 40 C.F.R. §§ 50.11(a) and (b).

The short-term, 1-hour NAAQS is especially significant as it was adopted only in 2010. *See* 75 Fed. Reg. 6474 (Feb. 9, 2010). The standard represented the first time that EPA adopted

⁶ Under the Clean Air Act, the EPA establishes NAAQS based solely on what is “requisite to protect the public health.” 42 U.S.C. § 7409(b)(1).

⁷ Nitrogen oxides are often referred to as “NO_x” and nitrogen dioxide is referred to as “NO₂.”

a short-term NAAQS for nitrogen dioxide and also acknowledged the important health concerns associated with short-term exposure to nitrogen dioxide. As was stated in the final rule:

[T]he [EPA] Administrator determines that the appropriate judgment, based on the entire body of evidence and information available in this review, and the related uncertainties, is a standard level of 100 ppb [parts per billion] (for a standard that reflects the maximum allowable NO₂ concentration anywhere in an area) [and] concludes that such a standard, with the averaging time and form discussed above, will provide a significant increase in public health protection compared to that provided by the current annual standard alone and would be expected to protect against the respiratory effects that have been linked with NO₂ exposures in both controlled human exposure and epidemiologic studies.

75 Fed. Reg. 6501. The EPA affirmed, “a standard reflecting the maximum allowable NO₂ concentration anywhere in an area set at 100 ppb is sufficient to protect public health with an adequate margin of safety, including the health of at-risk populations, from adverse respiratory effects that have been linked to short-term exposures to NO₂ and for which the evidence supports a likely causal relationship with NO₂ exposures.” *Id.* at 6502. The adoption of the short-term NAAQS recognized that anytime nitrogen dioxide concentrations exceed 100 ppb on an hourly basis anywhere in an area, there was cause for public health concern.

To this end, the EPA also adopted a system for communicating the health risks of NO₂ to the general public. Using a system called on the Air Quality Index, the EPA’s system conveys the state of air quality using a numerical and color-coded scheme based on current conditions. For instance, if current 1-hour concentrations are higher than 100 ppb or higher than the level of the NAAQS, the EPA would say that the Air Quality Index is between 101 and 150 and that air quality is “unhealthy for sensitive groups.” As 1-hour concentrations get higher, EPA communicates a higher Air Quality Index and, accordingly, more dire health warnings. 1-hour nitrogen dioxide concentrations above 1245 ppb are considered “hazardous” and carry the most dire public health warnings. *See* Table below; *see also* Exhibit 4, EPA, “Air Quality Guide for Nitrogen Oxide” (Feb. 2011).

EPA Air Quality Index Information (information available on EPA’s AirNow.gov website, http://airnow.gov/index.cfm?action=resources.aqi_conc_calc).

1-Hour NO ₂ Concentration (ppb)	Air Quality Index	Description of Air Quality	Health Effects Statement
0-53	0-50	Good	No health impacts expected.
54-100	51-100	Moderate	Unusually sensitive people should consider limiting prolonged or heavy outdoor exertion.
101-360	101-150	Unhealthy for Sensitive Groups	Active children, the elderly, and people with lung disease, such as asthma, should reduce prolonged or heavy outdoor exertion.
361-649	151-200	Unhealthy	Active children, the elderly, and people with lung disease, such as asthma, should avoid prolonged or heavy outdoor exertion; everyone else, especially children, should reduce prolonged or heavy outdoor exertion.
650-1244	201-300	Very Unhealthy	Active children, the elderly, and people with lung disease, such as asthma, should avoid all outdoor exertion; everyone else, especially children, should reduce prolonged or heavy outdoor exertion.
>1245	>300	Hazardous	Children, the elderly, and people with lung disease, such as asthma, should remain indoors; everyone else, especially children, should avoid outdoor exertion.

Other agencies and organizations besides the EPA have also identified limits on nitrogen dioxide that are necessary to protect people in the workplace. For instance, the Department of Labor’s Occupational Safety and Health Administration (“OSHA”) limits concentrations in the workplace to no more than 5 parts per million (“ppm”), or 5,000 ppb, over 15 minutes, although these standards were adopted in 1993. *See* 29 C.F.R. § 1910.1000, Table Z-1. Below is a table showing other relevant workplace limits on nitrogen dioxide established by OSHA and other entities. These standards further indicate that short-term nitrogen dioxide exposure is dangerous to public health, welfare, and safety, particularly worker health, welfare, and safety.

Workplace Exposure Limits for Nitrogen Dioxide. Information Taken from OSHA Website at https://www.osha.gov/dts/chemicalsampling/data/CH_257400.html (last accessed April 14, 2014).

Exposure Limit Source	Limit Values
Occupational Safety and Health Administration Permissible Exposure Limit (General Industry and Construction)	5 ppm (5,000 ppb) ⁸
National Institute for Occupational Safety and Health	1 ppm (1,000 ppb)
American Conference of Governmental Industrial Hygienists	0.2 ppm (200 ppb)
State of California	1 ppm (1,000 ppb)

2. Blasting and Nitrogen Oxide Emissions at Surface Coal Mining Operations

Blasting is a common and necessary practice for many coal mining operations. However, the practice can produce nitrogen oxide gases. It is well known that these gaseous emissions, which are largely comprised of nitrogen dioxide (and to a lesser degree, nitric oxide), can become visible, producing toxic reddish to orange clouds. OSM has explained, “On occasion, blasting generates NOx gas which forms an orange cloud. NOx gas is a result of incomplete combustion of ANFO (ammonium nitrate and fuel oil).” Exhibit 5, OSM, “Annual Evaluation Summary Report for the Regulatory Program Administered by the Land Quality Division for the Wyoming Department of Environmental Quality for Evaluation Year 2000” (Dec. 7, 2000) at 5 (hereafter “OSM 2000 Wyoming Evaluation”). In analyses of the impacts of coal mining, the U.S. Bureau of Land Management (“BLM”), OSM’s sister agency within the Department of Interior, has explained that these visible clouds of nitrogen dioxide are “highly reactive,” reddish brown,” “heavier than air, and have “a pungent odor.” Exhibit 6, Excerpts from BLM, “Final Environmental Impact Statement for the Wright Area Coal Lease Applications” (July 2010) at 3-78 (hereafter “Wright Area FEIS”). These clouds become redder and more orange with higher concentrations of nitrogen dioxide. See Exhibit 7, Queensland Government Department of Employment, Economic Development and Innovation, “Coal Mine Workers Fact Sheet: Avoiding exposure to oxides of nitrogen (NOx) fumes from surface blasts” (hereafter “Coal Mine Workers Fact Sheet”). Although these clouds dissipate, a recent orange cloud was reported to have lingered over the city of Gillette, Wyoming for more than an hour. See Exhibit 8, Hancock, L., “Nitric oxide cloud hangs over air in south Gillette,” *Gillette News Record* (Jan. 23, 2012).

As pointed out by OSM, the cause of these orange clouds is tied to incomplete combustion. The cause of incomplete combustion can result from several factors. The BLM has explained, “Incomplete combustion during blasting may be caused by wet conditions in the overburden, incompetent or fractured geologic formations, deformation of boreholes, and blasting agent factors.” Exhibit 6, Wright Area FEIS at 3-79. The BLM has stated further that the rate of nitrogen dioxide emissions from blasting is believed to be dependent on a wide number of factors that likely include, but are not necessarily limited to: downhole confinement;

⁸ 1 ppm equals 1,000 ppb. Thus, 5 ppm would equal 5,000 ppb.

downhole moisture; type/blend of ammonium nitrate, fuel oil (ANFO) and emulsion; and detonation velocity.” *Id.* In general, orange clouds are “more prevalent at operations that use the blasting technique referred to as cast blasting[,] a type of blasting in which the blast is designed to directly cast the overburden from on top of the coal into the previously mined area.” *Id.*

Blasting that produces visible clouds, such as cast blasting, is often associated with surface coal mining operations. In the Powder River Basin of northeastern Wyoming and southeastern Montana, the largest coal producing region in the United States, orange clouds are a frequent occurrence at the region’s surface mines.⁹ See Images below. Recent news articles have explained that 95% of cast blasting in the Powder River Basin produced orange clouds. See Exhibit 9, Sukhomlinova Cockar, A., “Cast blast creates a cloud,” *Gillette News Record* (Jan. 4, 2013). However, it has been noted that conventional blasting (i.e., not cast blasting) can also produce orange clouds in the Powder River Basin.



Orange Cloud at Rawhide Coal Mine in Powder River Basin, Campbell County, Wyoming. Picture Taken January 7, 2011.

⁹ It should be understood, however, that blasting at coal mines in any state has the potential to produce visible nitrogen oxide emissions.



Orange Cloud at Black Thunder Coal Mine in Powder River Basin, Campbell County, Wyoming. Picture Taken April 11, 2010.

When orange clouds are produced, they reflect significant levels of nitrogen dioxide. OSM has noted that concentrations of nitrogen dioxide in orange clouds can be as high as 30 ppm, or 30,000 ppb. *See Exhibit 5, OSM 2000 Wyoming Evaluation at 5.* The threshold at which nitrogen dioxide concentrations become visible is considered to be 2.5 ppm, or 2,500 ppb, are visible. *See Exhibit 7, Coal Mine Workers Fact Sheet.* This represents concentrations twenty-five times higher than the current 1-hour NAAQS for nitrogen dioxide. In other words, visible orange clouds represent nitrogen dioxide levels that far exceed the NAAQS, clearly threatening public health.

Blasting can not only produce high concentrations of nitrogen dioxide, but also release significant amounts of the gas. For example, at the Black Thunder mine in the Powder River Basin in Campbell County, Wyoming, blasting is the largest source of nitrogen oxide emissions. *See Table below.* By 2015, emissions are estimated to be as high as 3,254 tons annually. This is more nitrogen oxide pollution than is released every year by the 362 megawatt Wyodak coal-fired power plant, which operates 50 miles north of the Black Thunder mine near Gillette, Wyoming. In 2013, it was reported to the EPA that the Wyodak plant released 3,005.9 tons of nitrogen oxides. *See Exhibit 10, EPA, "Emissions – Unit Level Data Report, Wyodak," Query Produced March 22, 2014.*

Sources and Amounts of Nitrogen Oxide Emissions at Black Thunder Mine. See Exhibit 11, DEQ, “Permit Application Analysis, AP-10986, Black Thunder Mine” (Dec. 15, 2010).

Emission Source	2014 Emissions (tons/year)	2015 Emissions (tons/year)
Haul Trucks	2,612	2,663
Graders	62	62
Dozers	261	264
Scrapers	64	64
Water Trucks	132	133
Locomotives	273	273
Blasting	3,155	3,254
TOTALS	6,558	6,713

Orange clouds produced by blasting at coal mines have also produced numerous public complaints and concerns over the years. In its 2000 oversight report of Wyoming’s regulatory program, OSM disclosed complaints over orange clouds in 1995, 1998, and 1999. See Exhibit 5, OSM 2000 Wyoming Evaluation at 6. More recently in Wyoming, complaints not only prompted OSM to make blasting a “special study topic” of oversight in 2013, but also to hold an “outreach/educational stakeholder meeting” in November of 2012 regarding the issue. See Exhibit 12, OSM, “Special Study Topic Oversight Report on Blasting in Wyoming (EY 2013)” (2013). OSM noted that public concerns were raised at the November 2012 meeting, including comments from the local citizens’ group, Powder River Basin Resource Council, over “growing public concern regarding NOx gas and clouds.” *Id.* at 6. A recent posting on the blog site, “east of billings,” also attest to public concern over orange clouds associated with coal mining in Montana. See Exhibit 13, “Photos: Hazardous Gas Clouds from Coal Mine Blasting in Southeastern Montana,” east of billings (Feb. 4, 2014), available at <http://www.eastofbillings.com/photos-hazardous-gas-clouds-from-coal-mine-blasting-in-southeastern-montana/> (last accessed April 14, 2014).

That orange clouds endanger public health and threaten injury to persons is not disputed. In the Powder River Basin of Wyoming, for example, mine operators have posted signs along roadways informing people to “avoid contact” with orange clouds. See Image Below. The Wyoming Department of Environmental Quality (“DEQ”) has informed members of the public to avoid contact with orange clouds whenever they are observed. In communications to the public, the DEQ has informed those living near coal mines, that “it is prudent to stay inside anytime you see any NOx fumes from blasting at the neighboring mines, even if the fumes will travel well away from your house, as the wind usually carries any fumes quickly away from any point in the area.” Exhibit 14, Letter from Doug Emme, Wyoming Department of Environmental Quality to Mrs. Karla Oksanen (Jan. 19, 2011) at 3 (hereafter “2011 DEQ Letter”). Exposure to nitrogen dioxide emissions associated with blasting at coal mines in the Powder River Basin has been reported. See Exhibit 6, Wright Area FEIS at 3-88. The BLM has further explained, “Public exposure to NOx emissions caused by surface mining operations is most likely to occur along publicly accessible roads and highways that pass near and through the areas of mining operations” and that “Occupants of dwellings in the [coal mining] area could also be affected.” *Id.* at 3-84.



Sign on Wyoming Highway 450, Near Black Thunder Coal Mine, Warning the Public to Avoid Contact with Orange Clouds. Picture Taken April 11, 2010.

It is possible to prevent the production of orange clouds when blasting at coal mines. According to the BLM, the most “successful control measure” is to “reduc[e] the size of the cast blasting shots.” Exhibit 6, Wright Area FEIS at 3-89. Other means of eliminating nitrogen oxide emissions include “working with blasting agent manufacturers to reduce NOx emissions by the use of different blasting agents, different blends of blasting agents, different additives, different initiation systems and sequencing, [and] borehole liners[.]” *Id.* At the North Antelope Rochelle mine in the Powder River Basin, the BLM reports the operator has eliminated “NOx in over 75 percent of their cast blasting through the use of borehole liners and changing their blasting agent blends.” *Id.*

In Australia, the mining company Rio Tinto has developed Blast Management Plans that provide for a number of control measures to prevent the formation of visible nitrogen dioxide emissions when blasting at coal mines. *See* Exhibit 15, Rio Tinto, “Mount Thorley Warkworth Blast Management Plan” (Oct. 30, 2012) (hereafter “Rio Tinto Blasting Plan”). Among other things, the Rio Tinto Blasting Plan sets forth control measures for addressing the role of geological conditions, climate, blast design, explosive product selection, explosive quality, contamination of explosives, and on-bench practices. *See* Exhibit 15, Rio Tinto Blasting Plan at Appendix E, pp. 9-16. The Rio Tinto Blasting Plan also contains visual monitoring protocol to determine nitrogen dioxide concentrations based on the color and thickness of fumes. *See id.* at Appendix E, Appendix 2.

3. Current Regulation of Nitrogen Oxide Emissions from Surface Coal Mining Operations

Despite the fact that visible nitrogen oxide emissions produced during blasting at surface coal mining operations clearly threaten injury and endanger public and mine worker health, welfare, and safety, there are no limits on such emissions. Current Performance Standards promulgated by OSM do not explicitly address nitrogen oxide emissions or otherwise set forth standards to ensure that such emissions are minimized or prevented. A review of state programs also indicates that such standards are nonexistent. *See* Table Below. The Wyoming DEQ, for example has straightforwardly commented that it “has no standards for exposure limits to NOx and neither does OSM.” Exhibit 14, 2011 DEQ Letter at 3. The BLM has acknowledged this, explaining “The [Wyoming] DEQ has not required the mines to implement any specific measures to control or limit public exposure to NO₂ from blasting[.]” Exhibit 6, Wright Area FEIS at 3-80. Instead, only “voluntary measures” have been instituted *Id.* at 3-87.

A Review of Approved State SMCRA Regulatory Programs and Whether They Address Nitrogen Oxide Emissions from Blasting.¹⁰

State	Coal Mining Rules Addressing Blasting	Do Rules Address Nitrogen Oxide or Other Air Emissions
Alabama	Ala. Admin. Code r. 880-x-10C-.30, <i>et seq.</i>	No
Alaska	Alaska Admin. Code tit. 11, § 90.371, <i>et seq.</i>	No
Arkansas	Code Ark. R. § 816.65	No
Colorado	2 Code Colo. Regs. § 407-2-4.08	No
Illinois	Ill. Admin. Code tit. 62, pt. 300.200	No
Indiana	Ind. Admin. Code tit. 312, r. 25-6-29, <i>et seq.</i>	No
Kansas	Kan. Admin. Regs. § 47-2, <i>et seq.</i>	No
Kentucky	405 Ky. Admin. Regs. 1:090, <i>et seq.</i>	No
Louisiana	La. Admin. Code tit. 43 § 5361	No
Maryland	Code Md. Regs. 26.20.22.06	No
Mississippi	Code Miss. R. 11.8.2.5 § 5355	No
Missouri	Mo. Code Regs. tit. 10, § 40-3.050, <i>et seq.</i>	No
Montana	Admin. R. Mont. 17.24.624	No
New Mexico	N.M. Admin. Code § 19.8.20.2028, <i>et seq.</i>	No
North Dakota	N.D Admin. Code 69.05-2.17	No
Ohio	Ohio Admin. Code 1501:13-9-06	No
Oklahoma	Okla. Admin. Code § 460:20-43-22	No
Pennsylvania	1 Pa. Code § 87.127	No

¹⁰ This table only assesses states that produced coal as of 2012. *See* U.S. Energy Information Administration, “Coal Production and Number of Mines by State and Mine Type, 2012 and 2011,” available at <http://www.eia.gov/coal/annual/pdf/table1.pdf> (last accessed April 14, 2014). This table also does not include states that produced coal under a federal program, including in Arizona, where coal is mined under a tribal program, and Tennessee. Mining under a federal program is governed by the requirements of 30 C.F.R. §§ 816 and 817, which are the subject of this Petition.

Texas	Tex. Admin. Code tit. 16, § 12.360	No
Utah	Utah Admin. Code r. 645-301-524	No
Virginia	4 Va. Admin. Code 25-125-816.67	No
West Virginia	W. Va. Code R. § 199-1, <i>et seq.</i>	No
Wyoming	Land Quality Division Rules, Chapter 6	No

Although at times, mine operators have been cited for failing to prevent injury to persons in accordance with 30 C.F.R. § 816.67(a) because of orange clouds, states and OSM do not appear to take the position that the production of orange clouds constitutes a failure to prevent injury, even where there is a clear risk to public health, welfare, and safety. In 2011, for example, the Wyoming DEQ found an orange cloud produced at the Rawhide mine near the city of Gillette that prompted a citizen complaint did not constitute a violation of the state’s surface coal rules and regulations. *See* Exhibit 14, 2011 DEQ Letter at 3. Thus, SMCRA’s requirement that blasting be conducted so as to prevent “injury to persons” is not limiting the creation of toxic orange clouds at surface coal mining operations that could injure persons.

Furthermore, while nitrogen oxide emissions associated with blasting could be regulated under the Clean Air Act, they are not currently. On a federal level, the EPA declined in 2013 to review whether to regulate air pollution from coal mines under Section 111 of the Clean Air Act, the federal New Source Performance Standards program. *See* Exhibit 16, Letter from Bob Perciasepe, Acting EPA Administrator, to Ted Zukoski, Staff Attorney with Earthjustice (April 30, 2013). Additionally, under the Clean Air Act, such emissions are considered “fugitive” and not regulated under permitting programs. *See* 40 C.F.R. § 51.166(b)(20) (setting forth definition of fugitive emissions are those emissions that cannot “reasonably pass through a stack, chimney, vent or other functionally equivalent opening”).

On a state level, no limits on nitrogen oxide emissions from coal mining have been adopted, either by rule or through permits, by states with surface coal mining operations. In Wyoming, for example, the state only requires analysis of impacts to the annual nitrogen dioxide NAAQS, not the 1-hour NAAQS. *See* Exhibit 17, DEQ, “PRB Coal Mine Permitting Guidance” (Feb. 27, 2006). Permits issued to mines in Wyoming also do not limit short-term nitrogen oxide emissions or otherwise limit blasting emissions. *See e.g.*, Exhibit 18, DEQ, “Air Quality Permit MD-6375, Thunder Basin Coal, LLC, North Antelope Rochelle Mine” (Nov. 10, 2008) (hereafter “North Antelope Rochelle Air Permit”). Permits issued to mines in Montana suffer from the same shortcomings. *See e.g.*, Exhibit 19, Montana DEQ, “Montana Air Quality Permit #1418-06, Westmoreland Resources, Inc., Absaloka Mine” (March 25, 2010) (hereafter “Absaloka Mine Air Permit”).¹¹

The lack of regulation under the Clean Air Act both on a state and federal level is a clear sign that there exists a regulatory gap.

¹¹ Montana air permits do not even acknowledge that nitrogen oxide emissions are produced during blasting. For example, for the Absaloka mine permit, Montana identifies no nitrogen oxide emissions attributed to “overburden blasting.” *See* Exhibit 19, Absaloka Mine Air Permit at 8.

THE PETITIONED RULE

In light of the aforementioned legal, factual, and technical background, WildEarth Guardians hereby petitions OSM to issue a rule providing explicit and enforceable limits on nitrogen oxide emissions associated with blasting at surface coal mining operations. We request this rule be promulgated by OSM as environmental protection performance standards under Subchapter K. This rulemaking request is based on the following:

- A. Nitrogen oxides are byproducts of combustion and are toxic gases for which the EPA and other agencies have established health-based limits to ensure the public and workers are sufficiently protected. At all times and at all places in the U.S., the EPA has determined that nitrogen dioxide, a key indicator of nitrogen oxides, must be limited to no more than 100 ppb over a 1-hour period in order to adequately protect public health;
- B. Blasting at coal mines produces nitrogen oxides, sometimes in such significant quantities and concentrations that orange to red clouds are formed. These visible clouds represent toxic concentrations of nitrogen dioxide that exceed the NAAQS and other health-based standards and have prompted public complaints and concern. The health risks of “orange clouds” are not disputed by OSM or other agencies.
- C. The use of explosives is a necessary practice for surface coal mining operations, but SMCRA requires in all cases that blasting be conducted so as to prevent injury to persons. This means that injury must be prevented, not allowed to occur.
- D. Despite the risks posed by nitrogen oxide emissions associated with blasting at coal mines, there are currently no explicit or enforceable limits, either under OSM’s permanent program performance standards or under state approved regulatory programs. Furthermore, such emissions are not limited by standards promulgated by the EPA or states under the Clean Air Act. There are simply no standards in place to prevent orange clouds from injuring persons.
- E. Over the years, there have been numerous complaints and concerns conveyed to OSM over orange clouds produced during blasting at surface coal mining operations, as well as actual public exposure and possible public exposure to these emissions.
- F. The lack of actual limits on nitrogen oxide emissions produced during blasting at surface coal mining operations means that OSM’s current rules do not prevent injury to persons or protect public and mine worker health, welfare, and safety, as required by SMCRA.
- G. The causes of visible nitrogen oxide emissions associated with blasting at times may vary, but careful blasting management, including the implementation of control

measures that, among other things, limit the size of blasting and ensure effective monitoring, can eliminate such emissions.

- H. OSM is therefore duty-bound to establish a clear, enforceable, consistent, and reasonable level of protection from nitrogen oxide emissions produced as a result of blasting at surface coal mining operations nationwide.

To this end, we petition OSM to incorporate the language detailed below into 30 C.F.R. §§ 816 and 817, which set forth performance standards for surface mining and the surface impacts of underground mining. Our proposed language is straightforward and simple, requiring only that visible emissions of nitrogen oxides be prohibited. We believe the proposed rule language would best be promulgated as additions to performance standards set forth at 30 C.F.R. §§ 816.67 and 817.67. However, we urge OSM to determine the best placement for the proposed rule language through a public rulemaking process. The specific language and additional background and justification is as follows:

1. Revision to 30 C.F.R. § 816.67

We propose that OSM issue a rule that adds a paragraph (f) to 30 C.F.R. § 816.67 as follows:

30 C.F.R. § 816.67

....

(f) *Nitrogen oxide emissions.*

(1) Blasting shall be conducted so as to prevent visible emissions of nitrogen oxides, including nitrogen dioxide.

(2) The operator shall visually monitor all blasting activities (through the use of remote surveillance or other acceptable methods for detecting visible emissions) and within 24-hours report in writing any instances of visible emissions of nitrogen oxides to the regulatory authority.

We proposed this language as a simple and straightforward means to prevent the production of harmful levels of nitrogen oxide emissions during blasting. A qualitative approach to limiting emissions, such as what is proposed, is appropriate and reasonable. Because visible emissions at all times correlate to levels of nitrogen dioxide that are much higher than the NAAQS (2.5 ppm, at least 25 times higher than the NAAQS of 100 ppb) and other health thresholds (e.g., National Institute for Occupational Safety and Health threshold of 1 ppm or 1,000 ppb), preventing visible emissions will fully prevent concentrations of nitrogen oxides from forming that could injure persons. Furthermore, preventing visible emissions is less complicated, more affordable, and less time intensive than limiting emissions to quantitative concentrations that may be difficult to monitor.

By setting an explicit, qualitative standard, this proposed language would allow mine operators the flexibility to undertake the most appropriate measures to prevent the formation of visible emissions. Additionally, because there is often not any single cause or causes of visible nitrogen oxide emissions, the proposed language would not require mine operators to undertake control measures that may not be warranted or otherwise effective.

The proposed language also requires basic monitoring of blasting operations to determine whether or not visible emissions of nitrogen oxides are produced. The monitoring would be simple, based only on whether visible emissions are formed, and the mine operator would have the flexibility to determine and implement the most appropriate means of conducting monitoring. In most cases, mine operators are already monitoring blasting activities, meaning no additional burden would be imposed other than to require operators to observe for visible nitrogen oxide emissions. The reporting requirement would ensure that the appropriate regulatory authority (either state or OSM) is timely informed of any visible nitrogen oxide emissions so that appropriate oversight can be exercised to ensure future compliance. Reporting in writing to the regulatory authority also ensures that information regarding visible emissions is available to the public and that a full record of any and all instances of visible emissions, which currently may not be detected during inspections and may not prompt citizen complaints, is before the regulatory authority.

2. Revision to 30 C.F.R. § 817.67

We propose that OSM issue a rule that adds a paragraph (f) to 30 C.F.R. § 817.67 as follows:

30 C.F.R. § 817.67

....

(f) *Nitrogen oxide emissions.*

(1) Blasting shall be conducted so as to prevent visible emissions of nitrogen oxides, including nitrogen dioxide.

(2) The operator shall visually monitor all blasting activities (through the use of remote surveillance or other acceptable methods for detecting visible emissions) and within 24-hours report in writing any instances of visible emissions of nitrogen oxides to the regulatory authority.

This proposed language echoes the proposed language for 30 C.F.R. § 816.67, but would ensure that visible emissions are also limited whenever blasting occurs in conjunction with surface mining operations incidental to underground mining. This proposal is all the more reasonable given that current rules under 30 C.F.R. § 817.67 essentially mirror the rules at 30 C.F.R. § 816.67. This proposed language therefore ensures that injury to persons is consistently prevented whenever blasting occurs in conjunction with surface mining operations, as required by SMCRA.

CONCLUSION

For the foregoing reasons, WildEarth Guardians requests that OSM issue a rule pursuant to 30 U.S.C. § 1211(g) to prohibit visible emissions of nitrogen oxides produced during blasting at surface coal mining operations in order to prevent injury to persons and protect public and mine worker health, welfare, and safety. We request this rule be incorporated into OSM's environmental protection performance standards and promulgated under 30 C.F.R. §§ 816 and 817, as appropriate.

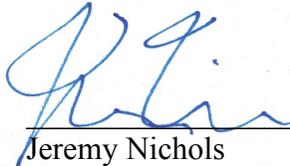
The petitioned rule is reasonable and achievable. By preventing visible emissions, the proposed rule ensures that concentrations of nitrogen oxides do not exceed levels that are considered dangerous to health and welfare, thereby preventing injury to persons. Mining operators already utilize a variety of practices to prevent the formation of visible nitrogen oxide emissions. The proposed rule would ensure these practices are utilized consistently, effectively, and with appropriate oversight in order to ensure protection of public and mine worker health, welfare, and safety.

Pursuant to 30 U.S.C. § 1211(g), we look forward to OSM granting this Petition within 90 days and initiating a public rulemaking immediately thereafter. Should OSM not respond to this Petition within 90 days, Guardians will consider OSM to have failed to perform a nondiscretionary duty.

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Respectfully submitted this 14th day of April 2014,



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