

**IN THE UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF CALIFORNIA**

SIERRA CLUB; CENTER FOR	)	
BIOLOGICAL DIVERSITY; EARTHWORKS;	)	
ENVIRONMENTAL DEFENSE FUND;	)	
NATURAL RESOURCES DEFENSE	)	
COUNCIL; THE WILDERNESS SOCIETY;	)	Case No. 3:17-cv-7187
NATIONAL WILDLIFE FEDERATION;	)	
CITIZENS FOR A HEALTHY COMMUNITY;	)	
DINÉ CITIZENS AGAINST RUINING OUR	)	
ENVIRONMENT; ENVIRONMENTAL LAW	)	
AND POLICY CENTER; FORT BERTHOLD	)	
PROTECTORS OF WATER AND EARTH	)	
RIGHTS; MONTANA ENVIRONMENTAL	)	
INFORMATION CENTER; SAN JUAN	)	
CITIZENS ALLIANCE; WESTERN	)	
ORGANIZATION OF RESOURCE	)	
COUNCILS; WILDERNESS WORKSHOP;	)	
WILDEARTH GUARDIANS; and WYOMING	)	
OUTDOOR COUNCIL,	)	
	)	
Plaintiffs,	)	
	)	
v.	)	
	)	
RYAN ZINKE, in his official capacity as	)	
Secretary of the Interior; BUREAU OF LAND	)	
MANAGEMENT; and UNITED STATES	)	
DEPARTMENT OF THE INTERIOR,	)	
	)	
Defendants.	)	
	)	

**APPENDIX TO MOTION FOR PRELIMINARY INJUNCTION**

**Volume 3 – Attachments 41 to 58 – Pages A652 to A814**

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# **Attachment 41**

**Declaration of Christopher Leo Sherman, Sierra Club**

## **DECLARATION OF CHRISTOPHER LEO SHERMAN**

I, Christopher Leo Sherman, declare as follows:

1. My name is Christopher Leo Sherman. I am over the age of 18 and competent to give this declaration. The information in this declaration is based on my personal experience and my review of publicly available information.
2. I live in Maricopa, California, which is in Kern County. I live approximately 2.5 miles east of the Maricopa city limits off of highway 166.
3. I have been living in my current residence for 7 years. I live with my wife.
4. I joined the Sierra Club a year ago because I care about the environment.
5. I am a disabled veteran.
6. I enjoy outdoor activities and am outside all the time. We have sheep and goats and horses. I like to ride a bike and ride horses.
7. Some days the air is bad in the southern valley where we live. The air turns grey and I can that there is air pollution. I am aware that this part of Kern County is in an ozone non-attainment area. I am also aware that methane and other gasses emitted by oil and gas development contribute to this ozone problem.
8. I am aware that the Bureau of Land Management (BLM) has suspended compliance dates for its Methane and Waste Prevention Rule. Because the



rule is suspended operators are not required to comply and retrofit these wells as required under the rule to reduce the release of methane through leak detection and repair.

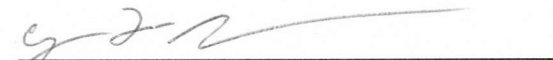
9. We live on a BLM lease and they lease one well and sometimes two on the property. The well that is operated consistently is 300 feet from my house. Exhibit A (attached to this declaration) is a map that I generated on Google Maps representing the wells on my property. Exhibit B (also attached to this declaration) is a picture that I took on my property on December 13<sup>th</sup>, 2017.
10. I am aware that leaks from oil and gas wells contribute to increased levels of ozone, which is the primary component of smog, through emissions of both VOCs (which is an ozone precursor) and methane (which accelerates ozone formation in the atmosphere). I am also aware that ground-level ozone is harmful to human respiratory health and can lead to shortness of breath, hospital visits, cardiovascular disease, stroke, and premature death. I am aware that leaks from oil and gas wells also emit hazardous air pollutants, including benzene, a known carcinogen.
11. I have a mass in my lung that doctors are currently doing tests on and trying to figure out more about. I am a nonsmoker. My illness affects my ability to complete daily activities and function day to day. My illness also impacts my ability to get outdoors. Specifically, the mass in my lung combined with

the pollution in my area has restricted my ability to bike ride or ride horses near my house.

12. I am also aware of the climate issues posed by methane, and I am concerned about climate change. We are definitely being affected by temperature changes and drought.
13. I am aware that Sierra Club is filing a lawsuit seeking to challenge BLM's one-year suspension of compliance dates for the Methane and Waste Prevention Rule. I believe that BLM suspending the rule (and postponing the time until compliance dates take effect) will negatively impact my health and my wife's health, and our enjoyment of the area around the well. I support Sierra Club filing its challenge. If Sierra Club is successful, I will benefit from knowing that methane and various other pollutants are captured rather than released into the air.

I declare under penalty of perjury that, to the best of my knowledge, the foregoing is true and correct.

Executed this 13 day of December, 2017.

  
\_\_\_\_\_  
Christopher Leo Sherman

# EXHIBIT A



# EXHIBIT B



# **Attachment 42**

**Declaration of Nada Culver, The Wilderness Society**

**DECLARATION OF NADA CULVER**

1  
2 1. My name is Nada Culver. I have personal knowledge of each of the facts set forth below. I  
3 am Senior Counsel and Director, BLM Action Center, at The Wilderness Society (TWS).

4 2. Founded in 1935, TWS' mission is to protect wilderness and inspire Americans to care for  
5 our wild places. TWS has a long-standing interest in the management of Bureau of Land  
6 Management (BLM) and Forest Service lands across the West,. We engage frequently in the  
7 decision-making processes for land use planning and project proposals that could potentially affect  
8 wilderness-quality lands, wildlife habitat, and other natural resources managed by the BLM and  
9 Forest Service, as well as the health, safety, and quality of life of surrounding communities.

10 3. TWS also has a long-standing interest in the use of our public and tribal lands for energy  
11 development, including supporting a transition to renewable energy, and ensuring that oil and gas  
12 and other energy development are focused in suitable locations and completed in a manner that does  
13 not harm other values. TWS actively engages in all aspects of oil and gas management and  
14 development, including land use planning, lease sales, rulemakings, and other policy initiatives.

15 4. TWS members and staff enjoy a myriad of recreation opportunities on public lands, including  
16 hiking, biking, nature-viewing, photography, hunting, birdwatching, and quiet contemplation in the  
17 solitude offered by wild places. TWS has more than 1,000,000 members and supporters nationwide.  
18 This includes more than 91,000 members in California.

19 5. TWS has offices throughout the country, including two offices in California. Our California  
20 Regional Office Headquarters are located in San Francisco, at 250 Montgomery Street, Suite 210.  
21 We also have a Los Angeles Office, located in Pasadena, California, and a California Desert  
22 representative. We have a total of 11 staff who live and work in California at these offices.

23 6. Although we work to protect wilderness and promote a balanced approach to oil and gas  
24 development nationwide, we specifically work on many campaigns in California. We have been  
25 actively involved in planning, policy and conservation efforts in California, including the Northwest  
26 California Integrated Resource Management Plan for BLM lands in Humboldt, Mendocino, Del  
27 Norte, Trinity, Shasta, Siskiyou, Butte and Tehama counties. Additional areas of focus in California  
28 include the expansion of the Cascade-Siskiyou National Monument, and management of BLM and

1 Forest Service lands in the San Gabriel Mountains, the Sierra Nevada, the California Desert, and the  
2 Central Coast.

3 7. TWS members and staff specifically use and enjoy public and tribal lands where oil and gas  
4 development is occurring or has been proposed, including areas on and around public lands affected  
5 by air pollution and other impacts from such development. TWS staff and members also benefit  
6 from the distribution of royalties from development of federal minerals to states and counties. TWS  
7 has a continuing interest in ensuring the protection of wild lands and the responsible use of public  
8 and tribal lands and minerals for energy development.

9 8. TWS was been actively engaged in BLM's rulemaking process for developing its Waste  
10 Prevention Rule.

11 a. TWS advocated for issuance of a BLM rule governing methane emissions, including  
12 venting, flaring, and leaks of natural gas, since the BLM announced its intention to issue new  
13 regulations in January 2015.

14 b. In March 2015, TWS released a report prepared by Stratus Consulting that  
15 demonstrated the need for the federal government to address the contributions to climate  
16 change coming from fossil fuel production from public lands and minerals; including,  
17 especially, the importance of regulating methane emissions. *See* Greenhouse Gas Emissions  
18 from Fossil Energy Extracted from Federal Lands and Waters: An Update,  
19 <http://wilderness.org/sites/default/files/Stratus-Report.pdf>.

20 c. TWS submitted extensive comments on the proposed Waste Prevention Rule in April  
21 2016.

22 d. TWS members and supporters, responding to wild alerts, submitted thousands of  
23 comments on the proposed rule and urged the BLM to adopt a comprehensive rule.

24 e. Throughout the rulemaking process, TWS submitted additional recommendations,  
25 met with federal and state representatives, and worked with members of the conservation  
26 community and other stakeholders to advocate for completion of a strong rule to manage  
27 venting, flaring, and other leakage of natural gas.

28

1 9. TWS has also been actively engaged in defending BLM's Waste Prevention Rule from  
2 various attempts to roll it back:

3 a. TWS intervened as a Respondent in litigation brought by several states and industry  
4 groups challenging the Waste Prevention Rule in the District of Wyoming, successfully  
5 convincing the court to deny a preliminary injunction that would have placed the rule on  
6 hold.

7 b. TWS staff and members successfully lobbied Congress to vote against a  
8 Congressional Review Act resolution that would have repealed the Rule.

9 c. In July 2017, TWS sued BLM when it unlawfully attempted to stay the Waste  
10 Prevention Rule under 5 U.S.C. § 705.

11 d. In November 2017, TWS and its members submitted comments on BLM's proposal  
12 to suspend the Waste Prevention Rule (the Suspension Rule), asking that the agency instead  
13 keep the Waste Prevention Rule in effect.

14 10. BLM's Waste Prevention Rule significantly reduces emissions of natural gas, including  
15 methane, by imposing restrictions on venting and flaring and requiring monitoring and prevention of  
16 leaks. These measures ensure that taxpayers are provided with a fair return on natural gas that is  
17 produced, through payment of royalties. In addition, the rule protects users of public and tribal lands  
18 and residents in areas affected by oil and gas development by reducing impacts to air quality caused  
19 by the release of natural gas and the pollutants released with natural gas is burned (or flared).  
20 Further, the rule reduces the contribution from fossil fuel operations on federal and tribal lands and  
21 minerals to climate change, especially from methane emissions, which are an especially potent  
22 contributor to climate change.

23 11. BLM suspending the Waste Prevention Rule deprives American taxpayers of a fair return on  
24 leasing and development of federal lands and minerals, because companies producing oil will not  
25 pay royalties on the natural gas that is vented, flared, or leaked. Because royalties are shared with  
26 states in which development occurs, and then further allocated to counties, TWS members and staff  
27 benefit (through funding of public schools, infrastructure, and other local and regional projects) from  
28



1 these revenues and will be harmed by losing the opportunities to benefit from increased revenue  
2 collected from oil development under the BLM's Waste Prevention Rule.

3 12. Further, the health of TWS members and staff will be harmed by the release of toxic  
4 pollutants and degradation of air quality. The use and enjoyment of public lands by TWS members  
5 will also be at risk. Further, with the Waste Prevention Rule suspended, the contribution to climate  
6 change from oil development on federal and tribal lands and minerals, especially the release of  
7 methane into the atmosphere, will not be reduced.

8  
9  
10 Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that the foregoing is true and correct  
11 to the best of my knowledge.

12  
13 Executed in Denver, Colorado on December 12, 2017

14  
15 

16  
17 \_\_\_\_\_  
18 Nada Culver

# **Attachment 43**

**Declaration of Sara Kendall, Western Organization of Resource  
Councils**

DECLARATION OF SARA KENDALL

I, Sara Kendall, declare as follows:

1. I am the Washington, DC Office Director and Campaign Director for the Western Organization of Resource Councils (WORC), a nonprofit organization that works to advance the vision of a democratic, sustainable, and just society through community action. WORC is committed to building sustainable environmental and economic communities that balance economic growth with the health of people and stewardship of their land, water, and air resources.

2. While the Bureau of Land Management's (BLM) new Waste Prevention Rule has serious limitations, it represents a significant improvement over the agency's previous rules, and has advantages over rules in many states. The new rules are a much-needed update because BLM had not revised its rules in 36 years despite significant changes in oil and gas industry development practices and technologies.

3. The updated rules will better protect the interests of WORC and its 12,200 members, many of whom live in States where significant federal and Indian oil and gas development occurs. For example, WORC has 1495 members in Colorado, 5455 in Montana, 884 in North Dakota and 726 in Wyoming.

4. Numerous WORC members live on split estate lands, where the federal government owns the minerals underlying their property, while others live in close

proximity to federal or tribal lands and/or federal or Indian minerals where oil and gas development occurs or has been proposed.

5. BLM's new rules benefit WORC members in a variety of ways. The rules will significantly reduce natural gas venting by 35% and flaring by 49%, and result in the capture and use of 41 billion cubic feet of natural gas each year. Minimizing this waste significantly reduces emissions of climate-destabilizing methane, smog-forming volatile organic compounds and air toxics, limiting local residents' exposure to these pollutants and the harmful health effects associated with them.

6. WORC members also have an economic interest in the new rules as taxpayers of states that receive a share of oil and gas royalties, which are expected to increase by \$2 billion under the new rules. Also, some of our Native American members are mineral owners who stand to receive increased royalty payments as a direct result of the new rules. This is an area where BLM must set policy and cannot rely on states because states have no authority to impose royalties on federal minerals, or those held in trust by the federal government for tribal governments or individual Native American allottees.

7. Because some of our members' homes are in close proximity to federal oil and gas development, flaring and other emissions can directly impact their property values as well. The new rules should reduce those impacts.

8. The BLM rules provide a minimum standard that establishes a basic level of protection against waste of federal oil and gas. In order to prevent waste, federal and Indian minerals should be subject to national standards that are not subject to state politics, enforcement budgets and varying levels of expertise. BLM's rules set that standard while providing certainty and consistency for operators.

9. Now that BLM has stayed some of the Waste Prevention Rule's compliance deadlines, all of these benefits to WORC members have been delayed.

10. WORC and its members have worked for several years to persuade the BLM to update its rules. WORC also researched and published a report, Flaring Boom, in 2014, which documented the need for national rules setting uniform limits on flaring. For this report, WORC surveyed state regulations and documented considerable variation among six states with substantial oil and gas development - Alaska, Colorado, Montana, North Dakota, Texas and Wyoming. In 2016, we released an updated and expanded report, Falling Short, with the Western Environmental Law Center, which reviewed state rules in Colorado, Montana, New Mexico, North Dakota, Utah and Wyoming. According to our research for these reports, while some states have rules that require some of the measures mandated by the BLM rules, other states do not and no state has regulations that meet or exceed the protections of the BLM rules across the board.

11. Additionally, dozens of WORC members and attended and spoke in support of stronger new rules at the BLM's May, 2014 stakeholder meeting in Dickinson, North Dakota and the hearings on the proposed rule in Dickinson, North Dakota and Lakewood, Colorado in March, 2016. I myself attended the May, 2014 hearing in Dickinson. WORC also submitted written scoping comments in May 2014, as well as comments on the proposed rules in April 2016.

12. On behalf of WORC, I met numerous times with agency officials while they reviewed comments and worked on finalizing the Rule, often accompanied by WORC members who flew to Washington, D.C. to continue to urge a strong rule, as well as representatives of allied organizations. After the Rule was finalized, WORC intervened to defend the Rule against industry and state challenges in the District of Wyoming. And when opponents of the Rule sought to repeal it through the Congressional Review Act, WORC members and staff, including myself, lobbied their members of Congress to keep the Rule in place in Washington, DC and in their home districts.

I declare under the penalty of perjury that the foregoing is true and correct to the best of my knowledge.

A handwritten signature in black ink that reads "Sara Kendall". The signature is written in a cursive, slightly slanted style.

Executed on December 12, 2017.

Sara Kendall

# **Attachment 44**

**Declaration of Jeremy Nichols, WildEarth Guardians**

## DECLARATION OF JEREMY NICHOLS

I, Jeremy Nichols, declare as follows:

1. The facts set forth in this declaration are based on my personal knowledge. If called as a witness in this proceeding, I could and would testify competently to these facts.

2. I currently reside in Golden, Colorado.

3. I am an employee and member of WildEarth Guardians. I am the Climate and Energy Program Director for the organization. WildEarth Guardians is a nonprofit environmental advocacy organization founded 27 years ago in Santa Fe, New Mexico. WildEarth Guardians' mission is to protect and restore the wildlife, wild places, wild rivers, and health of the American West. The organization currently has more than 120,000 members and supporters.

4. Over the years, Guardians' advocacy work has expanded to address conservation and environmental protection concerns throughout the western United States. Nine years ago, Guardians began a Climate and Energy Program. Through its Climate and Energy Program, Guardians works to confront the negative environmental and public health impacts of fossil fuel development and consumption, and to advance cleaner energy and fuels in order to make the west and the world a healthier, happier place to live. Key concerns of the Climate and Energy Program are the impacts of oil, gas, and coal development in the western United States to our global climate. The production, processing, distribution, and consumption of fossil fuels releases large amounts of greenhouse gas emissions that are contributing to global climate change. Guardians' Climate and Energy Program works to curtail these emissions and help foster a transition away from being reliant on fossil fuels.



5. A major campaign of WildEarth Guardians' Climate and Energy Program is to spur the U.S. Department of the Interior's Bureau of Land Management to be more transparent in disclosing the greenhouse gas emissions associated with its oil and gas leasing approvals, and to compel action from the agency to limit these emissions. The agency manages vast amounts of publicly owned oil and gas reserves, most of which are located in the western United States. Recent reports have found that the agency's management of these oil and gas resources, and in particular the leasing of oil and gas, poses tremendous impacts to the climate in the form of added greenhouse gas emissions.

6. I am aware of the Bureau of Land Management's ("BLM's") methane waste prevention rule, 81 Fed. Reg. 83,008 (Nov. 18, 2016) ("Waste Prevention Rule"). I understand that BLM has finalized a rule suspending key provisions of the Waste Prevention Rule, including a provision that requires operators to meet monthly capture targets for methane waste from oil and gas wells on BLM-administered leases (Section 3179.7), a provision that requires operators to measure or estimate flared or vented gas (Section 3179.9), provisions that address gas losses from pneumatic controllers and venting from storage vessels, which "vent" and "bleed" methane gas into the atmosphere (Sections 3179.201 and 3129.203), and provisions that address methane leak detection and repair (Sections 3179.301-305).

7. While the Waste Prevention Rule is not perfect, it represents a significant step forward in addressing the rampant waste of methane from oil and gas operations on public and Tribal lands. The rule is a much-needed update to waste guidance that was adopted 36 years ago. WildEarth Guardians joined in commenting on the proposed Waste Prevention Rule.

8. WildEarth Guardians strongly supports regulations that better control methane emissions associated with oil and gas operations on public and Tribal lands. Methane is a potent

greenhouse gas that contributes to global climate change. Controlling methane emissions helps to reduce greenhouse gases and contributes to addressing the impacts of global climate change. Methane is also often released from oil and gas operations together with other harmful gases, including volatile organic compounds (“VOCs”) that are often toxic and contribute to ground-level ozone pollution and fine particulate pollution. Both ozone and fine particulates are known to be harmful to public health. Limiting methane emissions has the effect of limiting VOC emissions and reducing other harmful air pollutants.

9. If BLM had not suspended the provisions of its Waste Prevention Rule, the standards would protect the interests of WildEarth Guardians and its members. Guardians members live in the states where oil and gas is currently being developed, or may be developed in the future, on public and Tribal lands, including in Colorado, Montana, New Mexico, Utah, and Wyoming.

10. Guardians also has members who regularly recreate on public lands near where oil and gas development is occurring or has been proposed. Other members reside on “split estate” lands where the federal government owns the minerals underlying the property, or they live in close proximity to federal lands where oil and gas development has been proposed.

11. For example, Guardians has members who regularly recreate on the Pawnee National Grassland in northeastern Colorado, where a surge in public lands oil and gas development has occurred in recent years. Guardians also has members who live in Farmington, New Mexico, where extensive public lands oil and gas development has occurred, even within neighborhoods of the town. Guardians has members who live within the Navajo Nation near the towns of Lybrook and Counselor, New Mexico, an area of Tribal lands that has also experienced extensive oil and gas development recently. Guardians also has members who

regularly recreate in the Uinta Basin of northeastern Utah, an area that has experienced intensive public lands oil and gas development over the years. Guardians also has members who regularly recreate on the Thunder Basin National Grassland in northeastern Wyoming and in the Red Desert of southern Wyoming, both areas that have recently experienced extensive public lands oil and gas development. Guardians also has members who regularly recreate on public lands in eastern Montana, particularly along the Missouri and Yellowstone Rivers, where extensive public lands oil and gas development has occurred.

12. Oil and gas development on public and Tribal lands throughout the states of Colorado, Montana, New Mexico, Utah, and Wyoming harms WildEarth Guardians' members. It contributes to air pollution that reduces quality of life and the ability of members to recreate outdoors, it causes health concerns among members and their families, and it interferes with recreational enjoyment of public lands. The practices of venting, flaring, and leaking pose particularly visible and distressful harms to WildEarth Guardians' members use and enjoyment of public lands. Seeing and/or hearing such emissions and activities detracts from Guardians' members' enjoyment of natural scenery and wildlife and raises significant concerns over the public health impacts of such activities. If the provisions of the Waste Prevention Rule remain suspended, venting, flaring, and leaking will continue to injure Guardians' members in these ways.

13. As a member of WildEarth Guardians, I have frequently been harmed by the impacts of venting, flaring, and leaking from oil and gas operations on public lands. If the provisions of the Waste Prevention Rule remain suspended, these harms will continue. For example, in my regular visits to the Pawnee National Grassland, I have increasingly observed and experienced the sights of flaring in the area. This flaring detracts from the natural scenery

of the area and interferes with my ability to view wildlife and enjoy the public lands of this area. In my recent recreational outing to public lands in the Uinta Basin of northeast Utah, I have also increasingly observed and experienced the sights of oil and gas operations flaring, venting, and leaking in this area, particularly when I am recreating on public lands managed by the BLM in the area and on the Ouray National Wildlife Refuge. I also regularly recreate on public lands in other parts of Colorado, Montana, New Mexico, Utah, and Wyoming, and have regularly observed and been harmed by oil and gas operations and the practice of venting, flaring, and leaking. Below are images of flaring that I have observed in my recreational outings.



**Oil and Gas Well Site on Pawnee National Grassland of Colorado and Flaring Activity.  
Photo Taken October 2015.**



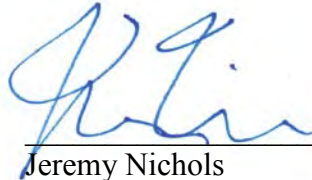
**Oil and Gas Wells in Uinta Basin of Utah near Ouray National Wildlife Refuge. Photo Taken January 2015.**

14. If this Court invalidates the rule suspending the Waste Prevention Rule's key provisions, the Rule will require or incentivize oil and gas operators to take measures to reduce natural gas waste from BLM-administered mineral leases. In doing so, the Rule will reduce incidences of venting, leaking, and flaring, in turn limiting methane emissions and associated VOC emissions. The Rule will invariably limit emissions that interfere with Guardians' members' quality of life, their use and enjoyment of public and Tribal lands, and their health and happiness.

15. If the Rule's provisions remain suspended, the aforementioned benefits will be lost. Guardians' members would face increased health risks posed by toxic VOCs, ozone, and particulate matter. Damage from these pollutants to the landscape and the environment also would diminish those members' enjoyment on recreating on federal public lands.

Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Executed on December 12, 2017.



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Jeremy Nichols  
Climate and Energy Program Director  
WildEarth Guardians

# **Attachment 45**

**Declaration of Peter Hart, Wilderness Workshop**

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## DECLARATION OF PETER HART

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I, Peter Hart, declare as follows:

1. I live in Grand Junction, Colorado and work in Carbondale, Colorado. I have lived in Western Colorado for most of my life, with a few years spent out-of-state for college and a few years on Colorado's Front Range for law school.
2. I am a member of The Wilderness Society (TWS) and Natural Resources Defense Council (NRDC). I am also a member and employee of Wilderness Workshop (WW). I have been employed as WW's staff attorney since 2007. For much of the last ten years I have been engaged in work related to leasing and development of oil and gas on public lands.
3. Wilderness Workshop has worked closely with partners at TWS, NRDC, and the Western Environmental Law Center to support strong regulation of methane emissions from oil and gas for years. As the Staff Attorney tasked with leading most of our oil and gas work, I have been in charge of most of this work for WW.
4. BLM's Waste Prevention Rule directly addresses many WW members' biggest concerns related to oil and gas development on local public lands. For example, WW members are increasingly concerned about the climate impacts of oil and gas development. Many of our members who live in and around the Piceance Basin worry about the health-related impacts of oil and gas emissions. And nearly all of our members support our work because we work to ensure against the waste and destruction of public resources.
5. Throughout BLM's rulemaking process for the Waste Prevention Rule, WW and its members consistently commented on the BLM Methane Rule—pushing the agency to implement the strongest rule possible. WW staff and our members even visited Washington D.C. to discuss the Rule with legislators and agency officials. When Congress was contemplating utilizing the Congressional Review Act to eliminate BLM's Methane Waste Rule, WW and its members sent hundreds of letters to our representatives in Congress asking them to support this common sense rule.
6. Throughout this period of advocacy, I also worked closely with staff from TWS and NRDC. As a member of both groups, I am aware that they also submitted comments on the Rule, lobbied legislators and agency officials in support of the Rule, and solicited their members to contact their legislators to support the Rule.
7. I regularly enjoy exploring the undeveloped mid-elevation forestlands of western Colorado, particularly the White River, Grand Mesa, Uncompahgre and Gunnison



National Forests. While much of Garfield, Mesa, Gunnison and Delta Counties has been cut up, developed, or otherwise altered by intensive human use, parts of the national forests remain quiet, full of wildlife and numerous clean mountain streams, and abound with opportunities for unconfined recreation. I return at every opportunity to hike, ride my bike, take photographs, watch wildlife, and camp. I have developed fond memories in these areas and a deep appreciation for the natural values that still exist. These places have helped me introduce my children to nature, provided a place for me to quench my thirst for outdoor adventure, and given me opportunities to connect with my aging parents in wild country that they also have grown to love.

8. There is already extensive oil and gas development, and more has been proposed, on many areas of the national forests and surrounding BLM lands where I regularly hike, backcountry ski, camp and mountain bike. These include areas west and southwest of Carbondale, Colorado such as the Thompson Creek watershed, the Lake Ridge and East Willow areas, Haystack Mountain, the area around McClure Pass, as well as Battlement Mesa southwest of Rifle, Colorado. The Roan Plateau is another place I enjoy visiting, where oil and gas leasing and development has occurred and continues to occur.
9. Last summer, I travelled into the Thompson Divide on several occasions and witnessed historic oil and gas development and oil and gas storage on public lands there. I have also travelled extensively through portions of northwest Colorado between Dinosaur National Monument and Douglas Pass, where public lands have been extensively developed for oil and gas. And I spent several days out in the field looking at new parcels that BLM was proposing to lease for oil and gas development in the Grand Junction and Colorado River Valley Field Offices. During those trips I saw substantial oil and gas development. I also experienced odors emanating from existing infrastructure on federal lands west of the town of De Beque that made me concerned for my health and made me wonder about potential climate impacts of fugitive gas and about how much gas had been wasted.
10. Existing oil and gas development has decreased my aesthetic enjoyment of the areas that I have visited, including this past summer. Industrial development diminishes my quiet enjoyment of undeveloped areas. And I am concerned that air pollution from unregulated venting, flaring, and leaking has negatively impacted my health, even when I recreate in remote regions. As an active person who enjoys activities like mountain biking, I am concerned that smoggy air and air toxics will decrease my lung capacity and diminish my ability to perform to the best of my ability.
11. Next summer, I intend to take my boys camping in the Thompson Divide and atop the Roan Plateau. On both of those planned trips, I expect to see oil and gas development on public lands we will travel through. On these camping trips we will spend time hiking on public lands that are either under development or threatened by oil and gas development. Honestly, I would rather avoid areas that have been developed for oil and gas leasing, but so much of our local public lands have been leased and developed that it is a virtual certainty you will see existing development when you explore public lands in and around the Colorado River Valley.

12. I also regularly drive through the heart of the Piceance Basin on Interstate 70 as I commute between my home in Grand Junction and my office in Carbondale. There are thousands of existing oil and gas wells scattered along this commute—many are federal wells that have been permitted by the Bureau of Land Management. Many thousands more federal wells are anticipated in the area in coming years. Over the last decade I have witnessed the development of many of these wells and the associated impacts. The aesthetic value of my commute is lessened as a result of air pollution from oil and gas development, and I am disturbed by the obvious impacts of oil and gas development and the waste of natural gas through flaring. I can regularly smell odors and see haze in the sky on my commute, even while sitting in my car and traveling at highway speeds. The odors generally occur when I'm passing drilling sites or gas processing facilities that are close to the highway. The odors are bad enough that I wonder why anyone would continue to live in towns like Rifle and Parachute, where oil and gas development dominates the landscape. The haze is something that has become more noticeable as oil and gas development and production from the area has increased.
13. I have experienced air quality degradation, including reduction in visibility clouding western Colorado's dramatic vistas and noxious clouds in areas where existing and ongoing oil and gas development is occurring. I have also witnessed countless examples of flaring in the Piceance Basin—often at night, as I drive home from work, lighting up the sky and wasting natural gas that belongs to the public before anyone can use it.
14. I am aware that WW, TWS, NRDC, and a number of other environmental and tribal citizen groups have filed litigation challenging BLM's recent rule suspending the most significant requirements of the Waste Prevention Rule, including those limiting flaring (the "Suspension Rule"). I support this litigation because the BLM's Waste Prevention Rule represents good policy aimed at protecting the public from unnecessary waste and potential health impacts from vented, leaked, and flared natural gas.
15. I have experienced and witnessed flaring on numerous occasions. One particularly memorable experience occurred as I was driving from Grand Junction to Carbondale in October of 2016. I had my 2-year old son in the car. It was about 9pm, and it should have been completely dark. After driving out of De Beque Canyon, however, the sky was eerily light. The sky continued to get brighter as we approached the Town of Parachute. My first suspicion was that a wildfire was burning north of the highway. I pulled off the highway at Parachute and started driving north to see what was going on. A few miles north of town I could see the stacks from a gas processing plant on fire, sending flames several stories into the sky. I pulled over to take some photos. The noise was like a jet engine, even from at least a mile away. Several police cars zoomed by without paying notice to me. Then a company truck pulled up. The driver gruffly asked what "the hell" I was doing. I told him I was taking pictures: "this isn't something I see every day." He said: "well, it isn't a good thing. You better get outta here." I took his advice. I was nervous for my own safety and the safety of my kid.

16. I realize that incident may not have been a normal flaring operation, but it solidified my concerns about burning off natural gas from oil and gas facilities in the Piceance. There were noticeable odors, loud and unnatural noise was evident from a long way off, and, of course, there were obvious safety issues.
17. I regularly witness normal flaring at wells on my drive through the Piceance Basin. That flaring is often less dramatic than the event I witnessed in October of 2016. I am aware that although Colorado has state regulations that address leaks from oil and gas development and some restrictions on emissions from certain equipment, like storage tanks, Colorado has very lax regulations to restrict flaring. Accordingly, I am very concerned about flaring of publicly-owned natural gas on federal lands. Invariably, when I see flaring, I am frustrated to think that gas is not getting to market, and that taxpaying citizens aren't getting the benefit of royalties from that wasted gas. This particularly concerns me as a resident of Mesa County, which receives a share of Colorado's federal mineral royalties revenues. I am frustrated that less funding is available for my local schools and other infrastructure and services that I rely upon.
18. Further, I am concerned that the flared gas is adding potent greenhouse gases to the atmosphere that exacerbate human induced climate change and expedite global warming. I also worry that this wasteful practice is contributing pollution to the hazy air in the Piceance Basin that impacts my health and the health of my kids, as well as other area residents. I worry that, without strong federal regulation and effective enforcement, this practice will continue to result in real and significant impacts to my interests.
19. I understand that, through the Suspension Rule, BLM has suspended Section 3179.7 of the Rule, which requires operators to meet monthly capture targets for methane waste from oil and gas wells on BLM-administered leases. This provision allows BLM to require operators to reduce routine flaring of associated gas from oil wells on BLM-administered leases, by capturing more methane from these wells over time. In the absence of this provision, more flaring will occur than if the rule was in effect. BLM has also suspended Section 3179.9, which requires operators to measure or estimate flared and vented gas. This provision allows BLM to ensure compliance and make accurate determinations about when royalties are due. It contributes to the control of both venting and flaring, and to the payment of royalties. The agency suspended Sections 3179.201 and 3129.203 addressing gas losses from pneumatic controllers and venting from storage vessels, which "vent" and "bleed" methane gas into the atmosphere. BLM also suspended Sections 3179.301-305 addressing leak detection and repair. Leaks represent waste. These provisions of the Rule were intended to curb such waste which harms all citizens who aren't getting a full and fair return through royalty payments on publicly owned minerals, and area residents who are dealing with the direct climate and health impacts of emissions.
20. These waste reduction measures are important to me and to many other people in Western Colorado who enjoy and, in many cases, rely upon a robust snow-dependent economy. Indeed, in the Roaring Fork Valley where I work, the ski industry is the single

biggest economic driver. BLM's decision to suspend provisions of the Waste Prevention Rule that reduce potent greenhouse gas emissions from oil and gas operations directly impacts these interests. Winters in our area are already several weeks shorter now than they were a few decades ago because of the impacts of human induced climate change.

21. I strongly support agency efforts to curb venting, flaring, and leakage from oil and gas development on public lands, and development of federal minerals under private lands. I'm concerned about health harms from emissions of cancer-causing pollutants and volatile organic compound (VOC) emissions that lead to ozone formation. Because ozone suppresses vegetation growth, I am also concerned about harms to vegetation including forage needed to sustain local wildlife and other vegetation that contributes to my recreational enjoyment of public lands here in the Piceance Basin. Finally, I am concerned about the aesthetic impacts from flaring, including noise and light pollution.
22. If BLM had not suspended the most significant provisions of its Waste Prevention Rule, the standards would do much to mitigate the adverse impacts of oil and gas development on federal lands that I enjoy. Implementation and enforcement of all of the provisions of the Waste Prevention Rule will help minimize impacts related to health, climate, and safety from fossil fuel development. Similarly, implementation will reduce impacts to my recreational, aesthetic, and economic interests. And implementation will secure the public health and taxpayer protections that Wilderness Workshop, NRDC, and TWS has worked towards for several years.

I declare under penalty of perjury that the foregoing is true and correct. Executed in Carbondale, Colorado on December 12, 2017.



Peter Hart

# **Attachment 46**

**Declaration of Richard Brame, Wyoming Outdoor Council**

## DECLARATION OF RICHARD BRAME

I, Richard Brame, declare as follows:

1. I am a member of the Wyoming Outdoor Council and served on its volunteer board of directors for six years. Founded in 1967, the Wyoming Outdoor Council is the state's oldest independent conservation organization whose mission is to protect Wyoming's environment and quality of life for future generations.

2. I live in Lander, Wyoming, located in Fremont County, where I have resided for 33 years. There is oil and gas development on Bureau of Land Management (BLM) lands and split estate lands in Fremont County in proximity to where my family and I live and recreate, as well as on the public lands throughout the state of Wyoming that I frequently visit.

3. I frequently notice the smell of fumes and emissions coming from the Lander/Hudson oil/gas fields along the Middle Fork right outside of Lander and along Highway 287 north of Ft. Washakie. These unwelcome odorous emissions (and other un-smelled leaks and vents) negatively impact me, making me concerned about my health and the health of my family. I am also concerned that they contribute to atmospheric pollution and do nothing to compensate our state for the impact or lost revenue.

4. I moved to Wyoming over three decades ago because of public lands. Access to Fremont, Sublette, Sweetwater, Hot Springs, Teton and Park Counties' mountains, rivers, deserts and open space is a key reason I live here and are required for my successful employment in the outdoor education and recreation industry. Simply put: Wyoming's clean air, pure water and healthy wildlife populations are precious and unique attributes that should be protected at all costs.

5. Because of the benefits I would personally experience from the implementation of the BLM's methane waste prevention rule, I am concerned that the suspension of this rule will harm me and others in my community. I believe BLM's rule is important to curb waste and derive greater

revenue from the development of our country's mineral resources. The rule also has the co-benefits of reducing harmful air pollutants, improving visibility and limiting potent greenhouse gas emissions.

6. I value the fiscally responsible aspects of the BLM's waste prevention rule and do not want the rule suspended. Revenue from mineral development—in the form of severance taxes and royalties—contributes significantly to Wyoming's state budget. It pays for education, health care, infrastructure and other state and local government services. Section 3179.9 of the rule requires operators to measure or estimate flared or vented gas, which allows the BLM to make accurate assessments about when royalty payments are due. If the BLM suspends this aspect of the rule, funding for services that I appreciate in Wyoming will not be as robust as it could be.

7. The BLM's rule has several co-benefits in addition to addressing waste. Although not the purpose of the rule, it does ensure that air pollution resulting from the often-unnecessary practices of venting and flaring will be reduced, and it requires operators to find and fix leaks in oil and gas related equipment and infrastructure. Emissions from flaring, venting and leaking include several ozone precursors such as nitrogen oxides and volatile organic compounds. In adjacent Sublette County, home to several large oil and gas fields on BLM-administered lands, these emissions interact with sunlight and deep snowpack to form dangerous levels of ground level ozone. As a result, several years ago the EPA found the county to be in non-attainment with the National Ambient Air Quality Standard for ozone. Although high level ozone days are now fewer (as a result of the state implementation of guidance in this part of the state similar to what the BLM rule requires), there were days again this past winter where levels were higher than is considered safe. Suspension of the rule would roll back these positive co-benefits.

8. I have recreated on the National Forest and BLM-administered lands in Sublette county for 33 years and continue to do so. I have winter hiked on National Forest land (Beaver Creek). My family and I consistently explore and camp on BLM lands in the Atlantic City, Miners Delight and Sweetwater River area in all seasons. I've camped all over the Wind Rivers and stayed in

campgrounds in the foothills along Boulder Lake, Green River Lakes and New Fork Lakes. I know that air quality monitors in the area have too often revealed high levels of ozone— ongoing levels that exceed standards and norms akin to the worst days in Los Angeles or Houston. These ozone levels concern me greatly since they impact my health, my kids' health and rural communities in my state.

9. The sections of the rule that address flaring, venting and leaking that could be suspended include sections 3179.7, 3179.201, 3179.203, 3179.301-305. This means that higher levels of the ozone-forming emissions that result from these practices will not be abated anytime soon. Thus, my health, and that of my family and friends who also recreate on public lands in Wyoming where oil and gas development is occurring nearby is at risk as long as the rule is stayed.

10. Another co-benefit of the BLM rule is better visibility through the reduction of haze that is caused by these emissions. If the rule is suspended these emissions will not be reduced. Wyoming is renowned for its 100-miles views and clear skies. As a climber, skier, hiker, and angler on Wyoming's public lands, the ability to enjoy and appreciate clear skies and sweeping vistas is something I greatly value. It is also something I have witnessed changing, and that saddens me.

11. Finally, the rule regulates and limits the release of methane, which is a potent greenhouse gas. Greenhouse gas emissions that are released in the processes of venting, flaring, and leaking contribute to global climate change. If the rule is suspended, more methane will be released into the atmosphere than would be if the rule was being implemented. Scientists and federal land managers are already documenting adverse impacts of a warming climate on our public lands and resources. I understand that a warmer, drier climate increases the likelihood of more frequent and intense wildfire seasons, threatens cold-water fisheries' habitats, and the viability of certain sensitive plant and animal species. I value the intact habitat found on public lands, sweeping and clear views, thriving wildlife and fish populations, and unimpaired recreational waters.



12. For the reasons stated above, I believe BLM's rule is important to better regulate oil and gas development by curbing waste and increasing revenue generated from the development of our finite natural resources. It also has the co-benefits of reducing harmful air emissions, protecting visibility and reducing greenhouse gas emissions. If the rule is suspended, I will be harmed from its lack of implementation.

Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Executed on December 15, 2017.

A handwritten signature in black ink, appearing to read 'Richard Brame', written over a horizontal line.

Richard Brame

153 Washakie Street

Lander, WY 82520

# **Attachment 47**

**Declaration of Lisa D. McGee, Wyoming Outdoor Council**

## **DECLARATION OF LISA DARDY McGEE**

I, Lisa D. McGee, declare as follows:

1. I am the interim director of the Wyoming Outdoor Council. Founded in 1967, the Wyoming Outdoor Council is the state's oldest independent conservation organization. Our mission is to protect Wyoming's environment and quality of life for future generations. We are dedicated to developing productive and lasting solutions to conflicts that threaten Wyoming's citizens and environmental health. And we understand that a healthy environment is crucial to public health and quality of life.

2. The Bureau of Land Management's (BLM) methane waste prevention rule represents a significant step forward in addressing the rampant waste of methane—a non-renewable resource and potent greenhouse gas—from oil and gas operations on public lands. The rule is a much-needed update to the current waste guidance the BLM adopted 36 years ago.

3. This declaration is in support of a challenge to the BLM's new rule suspending certain requirements of the methane waste prevention rule ("Suspension Rule"), and in support of the motion to preliminarily enjoin BLM's Suspension Rule.

4. The BLM's Suspension Rule suspends the waste prevention rule's most significant requirements—those regarding waste minimization plans, gas capture, the measurement and reporting of venting and flared gas, royalty-free flaring, well drilling and completion, pneumatic controllers, pneumatic diaphragm pumps, storage vessels, downhole well maintenance and liquids unloading, and leak detection and repair. In short, the Suspension Rule guts the Methane Waste Prevention Rule, rendering it ineffective at reducing waste, and causing harmful impacts to public health and the environment. The Suspension Rule not only suspends the protections

associated with the Waste Prevention Rule; it also fails to reinstate even the inadequate policies that were in place to mitigate waste prior to the Waste Prevention Rule.

5. The suspension rule threatens the interests of the Wyoming Outdoor Council and its nearly 2,000 members. Most of our members live Wyoming, where oil and gas is currently being developed, or may be developed in the future on federal public lands.

6. Many of our members recreate on public lands near where oil and gas development is occurring or has been proposed. The public lands in Wyoming provide sanctuaries for our members to hike, camp, hunt, fish, bike, ride and generally explore and enjoy. They provide inspiration and opportunities for solitude, wonder and adventure. Other members reside on “split estate” lands where the federal government owns the minerals underlying the property, or they live in close proximity to federal lands where oil and gas development has been proposed.

7. Public lands provide recreational, spiritual, aesthetic and other cherished experiences for our members. These experiences are negatively impacted in situations of poorly regulated oil and gas development on our public lands. Whether it is an otherwise beautiful view marred by an actively flaring oil well in the distance, or the smog produced from a large gas field that degrades visibility, or the impacts to sensitive wildlife habitat that is occurring in part as a result of a warming climate, our members benefit from and support the BLM’s Waste Prevention Rule—and oppose the BLM’s proposed suspension of the rule.

8. The Wyoming Outdoor Council has a long history of in-depth engagement with the BLM and its management of public lands and federal minerals. We advocate responsible oil and gas leasing, and often remind the BLM of its mandate to ensure our public lands are managed for an array of multiple uses—including wildlife, wilderness, recreation, cultural resources and aesthetics—not only for energy development. We support many of the common sense and

environmentally sound standards the BLM currently requires of lessees who operate on public land. We also advocate updated standards, like those set out in the Methane Waste Prevention Rule, that we believe can and should be required of 21st century operators to reduce waste and to protect air quality, scenic views, and landscapes vulnerable to the effects of climate change.

9. The success of our advocacy on behalf of our members who value public lands, intact wildlife habitats, clear skies and public health depends on the BLM modernizing and improving its rules for managing public lands and minerals.

10. Suspending the rule will mean that air pollution resulting from the often-unnecessary practices of venting, flaring and leaking will continue and not be lessened. This will harm visibility by failing to reduce the haze that is caused by these emissions, degrading recreational opportunities, and decreasing my, and our members', enjoyment of the clear skies and sweeping mountain vistas we value in Wyoming.

11. Emissions from flaring and venting include several ozone precursors such as nitrogen oxides and volatile organic compounds. Ozone pollution has been a threat to public health in several small communities in Sublette County, Wyoming near large oil and gas fields where a number of our members reside. The Rule's reduction of these emissions will help protect the health of our members, particularly the young, the elderly and those members with compromised respiratory systems who live in areas adjacent to public land that host significant oil and gas development. The suspension of the rule will have an opposite and negative effect.

12. Methane is a potent greenhouse gas. Greenhouse gas emissions that are released in the processes of venting, flaring and leaking contribute to global climate change. Scientists and federal land managers are already documenting adverse impacts of a warming climate on our public lands and resources. For example, a warmer, drier climate impacts wildfire frequency and

intensity, cold water fisheries habitats, and the viability of certain sensitive plant and animal species. The members of the Wyoming Outdoor Council appreciate intact public lands, sweeping and clear viewsheds, thriving wildlife habitats, and unimpaired recreational waters. For these reasons, they have a strong desire to see BLM's waste prevention rule implemented. Our interests will be harmed if the rule is suspended.

13. The BLM's new methane waste rule will require or incentivize oil and gas operators to take measures to reduce natural gas waste from BLM-administered mineral leases. The Rule's goals of reducing venting, leaking, and flaring would, if implemented, decrease waste of a valuable and finite natural resource. Suspension of the rule would have the opposite and negative effect.

14. The Wyoming Outdoor Council has a long history of in-depth engagement with the oil and gas industry and state regulators to reduce waste and incentivize gas capture in Wyoming, including extensive efforts to improve leak detection and repair at oil and gas extraction operations in Wyoming. Currently, there are no statewide regulations in Wyoming that require routine leak detection and repair at oil and gas production facilities. The only requirements for leak detection and repair apply to one geographic area in the western part of Wyoming that was found to be in non-attainment with the National Ambient Air Quality Standards for ozone. We are currently advocating Wyoming's Department of Environmental Quality require quarterly leak detection and repair across the entire state.

15. In 2015 the Wyoming Outdoor Council advocated updates to Wyoming's flaring rules as promulgated by the Wyoming Oil and Gas Conservation Commission. We supported some of the changes the Commission implemented. The final rule, however, did not contain nearly the number of improvements we sought. For example, we advocated the Commission: a)

impose a complete prohibition on venting; b) require operators to perform quarterly leak detection and repair; c) require a permit for any amount of flaring, not only at levels above 60 mcf/day; and d) prohibit indefinite flaring. The Commission declined to adopt these recommendations. We were pleased that the BLM's Rule addressed some of these recommendations, particularly a requirement that operators conduct routine leak detection and repair services on their facilities. Suspension of the rule would result in the continued wasteful practices of venting, leaking and flaring.

16. The BLM's waste prevention rule has financial benefits. More of the non-renewable natural gas being captured and brought to market, which, in a time of budget cuts in the Wyoming State Government, benefits our state wildlife and environmental quality agencies. Ensuring these agencies have adequate financial resources to manage wildlife and to ensure clean air and water is of great interest to our members. Suspension of the rule means needed revenue is not collected and our state government's budget is not benefitted.

17. If the Suspension Rule is not preliminarily enjoined, I and Wyoming Outdoor Council's members will experience immediate and irreparable harm. These harms include aesthetic harm to our enjoyment of Wyoming's mountain views and flora and fauna, which are damaged by ozone and other air pollutants associated with the venting and flaring of natural gas; recreational harm to our interest in outdoor lifestyles enjoyed in Wyoming's naturally functioning ecosystems; and harm to our health as a result of increased air pollution and ozone.

Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Executed on December 8, 2017.

A handwritten signature in black ink that reads "Lisa Dardy McGee". The signature is written in a cursive, slightly slanted style.

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Lisa Dardy McGee

Interim Director, Wyoming Outdoor Council



# **Attachment 48**

**Declaration of Melynda Schmitz, Environmental Law & Policy Center**

**UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF CALIFORNIA**

Sierra Club, et al.	)	
	)	
Plaintiffs,	)	
	)	
v.	)	Case No. _____
	)	
Ryan Zinke, et al.	)	
	)	
Defendants.	)	

**DECLARATION OF MELYNDA SCHMITZ**

I, Melynda Schmitz, declare as follows:

1. I live in Jamestown, North Dakota, and am employed by the Environmental Law & Policy Center (“ELPC”) as a Government Relations Specialist. I have held this position since 2007. I am also a member of ELPC.

2. I am personally affected by the Bureau of Land Management’s (“BLM”) final rule published in the Federal Register on December 8, 2017, that delays and suspends certain requirements of the Waste Prevention, Production Subject to Royalties, and Resource Conservation Rule (“Waste Rule”).

3. I am on the Board of the Friends of the Theodore Roosevelt National Park, an organization dedicated to preserving the tranquility and beauty of the National Park. The National Park is located in western North Dakota, in the immediate vicinity of oil leases to which the BLM Waste Rule applies.

4. The National Park is negatively impacted by both the air pollution and light pollution resulting from gas venting and flaring at those oil leases. The impacts of oil leases on the National Park would be meaningfully reduced if the Waste Rule were to go into and remain in

effect as previously scheduled. With the delay and suspension of provisions of the Waste Rule, the National Park will continue to be seriously negatively impacted by the nearby oil drilling.

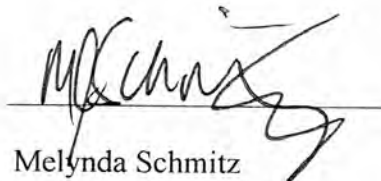
5. I visit the National Park about three times per year to hike and camp with my family and to enjoy the natural surroundings. In the coming year, I plan to visit the National Park in May and September of 2018.

6. My enjoyment of the National Park is diminished due to the venting and flaring of natural gas at the nearby oil wells. The flares are an eyesore and negatively impact the scenic vistas at the National Park.

7. The Waste Rule requirements that have been delayed and suspended would reduce the venting and flaring of natural gas near the National Park, and would allow me to better enjoy my visits there. I would visit the National Park more frequently if all of the Waste Rule requirements were in effect.

I declare under penalty of perjury that the foregoing is true and correct. Executed on

12/15/2017

  
Melynda Schmitz

# **Attachment 49**

**Declaration of Kendra Pinto, Diné CARE**

## DECLARATION OF KENDRA PINTO

I, Kendra Pinto, declare as follows:

1. I grew up in Twin Pines, New Mexico. I have lived here for a majority of my life. It is a small community located in the valley near Chaco Canyon National Historical Park, a site well known for its history and architecture. People from all over the world travel to these ruins to witness their beauty and wonder.

2. I am a member of Dine' Citizens Against Ruining our Environment (Dine' CARE). Dine' CARE, formed in 1988, is a community-based environmental justice organization operating within the Navajo Nation. Dine' CARE's mission is to support local community activists who seek to defend their communities from the adverse effects of unchecked energy exploration and development. For 25 years, Dine' CARE has been the foremost defender of local community people on a wide variety of issues affecting their land, health, and advocating a course of development that is in harmony with the traditional Navajo philosophy of "*Hozhoji*" path to live in harmony.

3. I am concerned that the beauty of my surroundings is being damaged and will continue to be damaged by oil and gas development on public and tribal lands in my area. Damage to our clean air, pure water, and healthy wildlife populations, as well as to our human health, is facilitated by lax regulation of methane waste. The BLM's recently-promulgated waste prevention and resource conservation rule, 81 Fed. Reg. 83,008 (Nov. 18, 2016), would reduce these harmful impacts.

4. While the Bureau of Land Management's (BLM) Methane Waste Prevention Rule is not perfect, it represents a significant step forward in addressing the rampant waste of methane

from oil and gas operations on public and tribal lands. The rule is a much-needed update to waste guidance that was adopted 36 years ago. The BLM's Methane Waste Prevention Rule minimizes waste of natural resources on tribal lands, secures royalty revenue for the Navajo Nation, and protects the environment and public health by minimizing pollution from oil and gas development that harms air quality and contributes to climate change.

5. The Secretary of the Interior has a trust responsibility for managing Indian minerals and has delegated this responsibility to the BLM, among other agencies. Congress has directed the Secretary to "aggressively carry out his trust responsibility in the administration of Indian oil and gas." 30 U.S.C. 1701(a)(4). BLM has a duty to ensure oil and gas reserves on tribal and allotted lands are developed responsibly and ensure that energy is not wasted.

6. I understand that the BLM has finalized a rule suspending the most significant requirements of the Methane Waste Prevention Rule ("the Suspension Rule"), including a provision that requires operators to meet monthly capture targets for methane waste from oil and gas wells on BLM-administered leases (Section 3179.7), a provision that requires operators to measure or estimate flared or vented gas (Section 3179.9), provisions that address gas losses from pneumatic controllers and venting from storage vessels, which "vent" and "bleed" methane gas into the atmosphere (Sections 3179.201 and 3129.203), and provisions that address methane leak detection and repair (Sections 3179.301-305). I understand that the Suspension Rule leaves BLM with no national regulations or guidance limiting waste from federal or tribal leases.

7. Because of the benefits I would personally experience from the implementation of the BLM's Methane Waste Prevention Rule, I am concerned that the recent suspension of the key portions of this Rule will harm me and others in my community. The suspension of the Methane Waste Prevention Rule is contrary to BLM's trust responsibility, by allowing tribal resources to be

unreasonably wasted, particularly when best practices, including the use of gas-capture technology, can be cost-effectively utilized by the oil and gas industry.

8. I have seen the physical changes in the landscape near Twin Pines as a result of oil and gas development on public and tribal lands. These changes became more evident in 2013. Traffic on Highway 550 began to increase with semi-trucks while cedar and pine trees were torn down to make way for equipment used in hydraulic fracturing. With the increase in truck traffic on the highway there have been many safety violations committed by oil industry truck drivers. The incidents of safety issues are felt throughout the community by locals who live in the area and must share the road to commute to work and back home. Such unsafe driving conditions are a daily stress for community members, including myself. Watching this development occur makes me concerned about the effects of natural gas leaking and venting on my health, the health of my family and community, and the health of my surroundings, and it affects my aesthetic enjoyment of my surroundings.

9. I have quite a few relatives who are directly impacted by the oil and gas activity because of its proximity to their homes. These impacts to my family members are concerning to me. Many of my relatives reside on “split estate” lands where the federal government owns the minerals underlying the property, or they live in close proximity to federal lands where oil and gas development has been proposed. The unique layout of our area is known as the checkerboard. It is a mix of several different types of land ownership. With the uniqueness of the land, many of my family members’ homes are located near public BLM lands that are being leased for oil and gas. As a result, well sites can be established in very close proximity to their homes. I am concerned that if the BLM’s Methane Waste Rule’s key provisions are suspended, I and my family members will experience more health impacts from emissions from flaring, venting, and leaking.

10. BLM's Methane Waste Prevention Rule will require or incentivize oil and gas operators to take measures to reduce natural gas waste from BLM-administered mineral leases. The Rule's reductions in venting, leaking, and flaring will reduce air pollution that occurs during oil and gas development. I understand that these pollutants include a host of harmful air pollutants, such as volatile organic compounds (VOCs) and benzene. VOCs form ground-level ozone, or smog, that has been linked to increased rates of asthma attacks, and exacerbation of other heart and lung conditions. I understand that asthma rates among Navajos are two to three times higher than the general public. I also understand that the oil and gas sector emits pollutants which include toxics, such as benzene, that is known to cause cancer in humans. There is a high rate of lung cancer among Navajos that is attributable in part to uranium mining on the Navajo Nation. This lung cancer is exacerbated by air pollution from oil and gas development. If the Methane Waste Rule's key provisions are suspended, the health improvements that we would see under the Rule will be lost.

11. I have a natural concern for the safety of the children who attend Lybrook Elementary School as it is located near several well sites. These sites can be seen in clear view from the school. In the summer of 2015 I witnessed four flares going simultaneously within a mile of the school. I am concerned that the safety of children in my community is at risk when natural gas is flared in their vicinity. If the Methane Waste Rule's key provisions are suspended, this dangerous and disturbing flaring will not be restricted as much as it would be under the rule.

12. In addition to reducing the risk to the health of our members, if the Rule remains in effect, it will also protect and enhance plant life. Ozone inhibits vegetation growth. Reduced ozone levels as a result of the Rule's limits and incentives will benefit local natives, including myself, who plant and garden, as well as protect local ecosystems that I and others in my



community enjoy for hiking, camping, and other recreation. If the Rule's key provisions are suspended, my enjoyment of my natural surroundings will be negatively impacted.

13. The Rule will also decrease emissions of hazardous air pollutants, including carcinogens like benzene, and particulate matter and nitrogen oxides, providing additional health benefits to community members and local ecosystems. I am concerned that the suspension of key provisions in the Rule will eliminate these benefits.

14. Reduced venting and flaring as a result of the Rule will also improve visibility by reducing ozone, nitrogen oxides, and particulate matter emissions, improving recreational opportunities for visitors to Chaco Canyon park, including myself and other Dine' CARE members, as well as visitors from out of town who contribute to our community's economy. Likewise, flaring reductions will benefit those live in the Lybrook/Counselor area, including Dine' CARE members, who experience noisy and unsightly flares throughout the day and night near their homes or in the areas where they enjoy recreating.

15. The Rule will also provide royalties, some of which are allocated to the Navajo Nation to spend in areas economically impacted by mineral development. I and other Dine' CARE members live in areas that are impacted by oil and gas development, and we will benefit from these expenditures in our communities. These royalties are used to fund schools, health care facilities, infrastructure projects such as roads and bridges, social programs, and other local improvement projects.

16. If the Rule's key provisions are suspended, the aforementioned benefits will be lost. I, my family members, and other members of Dine' CARE would face increased health risks posed by ozone, hazardous air pollutants, and particulate matter. Damage from these pollutants to the landscape and the environment also would diminish our enjoyment from recreating on federal

public lands. BLM-managed oil and gas operations would continue to waste tribal energy resources, and much-needed royalties for our communities would be reduced.

Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Executed on December 13, 2017.

A handwritten signature in black ink that reads "Kendra Pinto". The signature is written in a cursive, flowing style.

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Kendra Pinto

Member, Dine' CARE

# **Attachment 50**

**Declaration of Michael Eisenfeld, San Juan Citizens Alliance**

## DECLARATION OF MICHAEL EISENFELD

I, Michael Eisenfeld, declare as follows:

1. My name is Michael Eisenfeld. I am more than 18 years of age and a citizen of the United States. I have lived in Farmington, New Mexico since 1996. I work for San Juan Citizens Alliance (SJCA) as the Energy and Climate Program Manager. I am also a member of SJCA. SJCA is a grassroots organization dedicated to social, economic, and environmental justice in the San Juan Basin. SJCA advocates for clean air, pure water, and healthy lands—the foundations of resilient communities, ecosystems, and economies in the San Juan Basin. SJCA has 1,000 members.

2. In my position as Energy and Climate Program Manager at SJCA, I work on issues related to energy, water quality, air quality, public lands, and public health. I have participated in projects overseen by the U.S. Department of the Interior, Bureau of Land Management (BLM) since 2007. These projects include participation in oil and gas lease sales and specific oil and gas projects, including commenting on Environmental Assessments prepared by BLM in the Farmington Field Office in New Mexico and in the Tres Rios Field Office in Colorado. It has been reported that 94% of the public (federal) lands in the BLM Farmington Field Office are open for oil and gas leasing.<sup>1</sup> The BLM has already leased 85-90% of public lands in the Farmington Field Office for oil and gas.

3. I am aware of the BLM's methane waste prevention rule, 81 Fed. Reg. 83,008 (Nov. 18, 2016). I understand that BLM recently finalized a rule suspending the provisions of the waste prevention rule that would reduce methane emissions, 82 Fed.

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<sup>1</sup> [http://wilderness.org/sites/default/files/TWS%20DataMapInsert\\_0.pdf](http://wilderness.org/sites/default/files/TWS%20DataMapInsert_0.pdf)

Reg. 58050 (Dec. 8, 2017) (“Suspension Rule”), including a provision that requires operators to meet monthly capture targets for methane waste from oil and gas wells on BLM-administered leases (Section 3179.7), a provision that requires operators to measure or estimate flared or vented gas (Section 3179.9), provisions that address gas losses from pneumatic controllers and venting from storage vessels, which “vent” and “bleed” methane gas into the atmosphere (Sections 3179.201 and 3129.203), and a provision that addresses methane leak detection and repair (Sections 3179.301-305).

4. The BLM’s methane waste prevention rule, 81 Fed. Reg. 83,008 (Nov. 18, 2016), is not perfect, but it represents a significant step forward in addressing the rampant waste of methane from oil and gas operations on public and tribal lands. The rule is a much-needed update to waste guidance that was adopted 36 years ago.

5. If not suspended, the Waste Prevention Rule would do much to mitigate the adverse impacts of oil and gas development on my health, the health of my family, and the health of SJCA members.

6. According to studies by the National Aeronautics and Space Administration (NASA), the largest concentration of methane hovers over the Four Corners Region where I live. This large concentration has been referred to as a “methane hotspot” where the largest methane emitters are natural gas facilities. There are over 40,000 oil and gas wells in the Four Corners Region. There also gas processing plants and storage facilities throughout the Four Corners Region. Many of these wells are on federal land and are permitted and managed by the BLM. I am concerned that methane emissions in the Four Corners Region are adversely impacting my health, the health of my family, and the health of SJCA members.

7. If not suspended, BLM's methane waste rule would require or incentivize oil and gas operators to take measures to reduce natural gas waste from BLM-administered mineral leases. The Rule's restrictions on venting, leaking, and flaring would decrease volatile organic compound emissions that contribute to the formation of ozone. Ozone contributes to asthma, emergency room visits, and premature mortality, and its reduction would improve the health of SJCA's members.

8. In addition to reducing the risk to the health of our members, the Rule would also protect and enhance plant life. Ozone also inhibits vegetation growth. Reduced ozone levels as a result of the Rule's limits and incentives would benefit SJCA's members who farm and ranch, as well as protect local ecosystems that our members enjoy for hiking, camping, and other recreation.

9. If not suspended, the Rule would also decrease emissions of hazardous air pollutants, including carcinogens like benzene, and particulate matter and nitrogen oxides, providing additional health benefits to SJCA's members and local ecosystems.

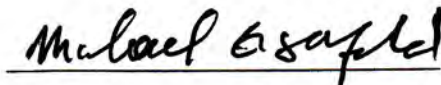
10. Reduced venting and flaring as a result of the Rule would also improve visibility by reducing ozone, nitrogen oxides, and particulate matter emissions, improving recreational opportunities for SJCA's members. Likewise, flaring reductions would benefit SJCA's members who experience noisy and unsightly flares throughout the day and night near their homes or in the areas where they enjoy recreating.

11. The Rule would also provide royalties, some of which are allocated to states to spend in areas economically impacted by mineral development. SJCA's members live in areas that are impacted by oil and gas development and would benefit from these expenditures in their communities.

12. If key portions of the Waste Prevention Rule are suspended, the aforementioned benefits would be lost. SJCA's members would face increased health risks posed by ozone, hazardous air pollutants, and particulate matter. Damage from these pollutants to the landscape and the environment also would diminish those members' enjoyment from recreating on federal public lands. SJCA's members would also lose the increased royalties paid under the Rule that would benefit their communities.

Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Executed on December 17, 2017.



Michael Eisenfeld

Energy and Climate Program Manager, SJCA

# **Attachment 51**

**Declaration of Herman Farley, Red Mesa Chapter of the Navajo Nation, and Wesley Jones, Aneth Chapter of the Navajo Nation**



IN THE UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF CALIFORNIA

**DECLARATION OF HERMAN FARLEY AND WESLEY JONES**

We, Herman Farley and Wesley Jones, declare as follows:

1. I, Herman Farley, am President of the Red Mesa Chapter of the Navajo Nation.
2. I, Wesley Jones, am President of the Aneth Chapter of the Navajo Nation.
3. We respectfully submit this declaration on behalf of the Red Mesa and Aneth Chapters (“the Chapters”) of the Navajo Nation.
4. The Red Mesa and Aneth Chapters are recognized local government entities and delegated certain authorities and responsibilities under Navajo Nation Laws. The Chapters have the authority to review all matters affecting the Red Mesa and Aneth communities and make appropriate recommendations to the Navajo Nation, as well as to county, state government, and federal agencies.
5. Red Mesa Chapter encompasses approximately 267,000 acres, and Aneth Chapter encompasses approximately 184,000 acres. Red Mesa and Aneth Chapters are two of 110 chapters of the Navajo Nation. The Navajo Nation is the largest American Indian tribe within the geographic boundaries of the United States, spanning over 27,000 square miles. The Navajo Nation has more than 300,000 enrolled members, with over 180,000 of those members living on the Navajo Nation.
6. The Navajo Nation possesses significant and valuable oil and natural gas resources, and has sovereign authority over these resources. Pursuant to the Fundamental Laws of the Diné, the Navajo Nation government upholds a sacred obligation and duty to respect,

preserve, and protect our resources. Red Mesa and Aneth Chapters both currently have producing wells within their boundaries.

7. The Chapters are aware that the U.S. Bureau of Land Management (BLM) took action in 2016 to reduce the waste of natural gas owned by the American public, tribes, and individual Indian Mineral Owners, which occurs during the oil and gas production process on public and tribal lands administered by BLM. We support BLM's waste prevention standards for oil and gas production on federal and tribal lands ("Waste Prevention Rule"), 81 Fed. Reg. 83,008 (Nov. 18, 2016).

8. This action minimizes waste of natural resources on tribal lands, secures additional royalty revenue for the tribes and individual Indian Mineral Owners, and protects the environment and public health by minimizing pollution from oil and gas development that harms air quality and contributes to climate change.

9. We are also aware that BLM has suspended for one year almost all of the requirements of the Waste Prevention Rule that would generate benefits from gas savings and reduce methane emissions, 82 Fed. Reg. 58,050 (Dec. 8, 2017). We oppose the suspension of these standards.

10. Methane waste is a serious problem for tribes, robbing tribal governments of millions of dollars and polluting the air we breathe.

11. The Secretary of the Interior has a trust responsibility for managing Indian minerals and has delegated this responsibility to the BLM, among other agencies. Congress has directed the Secretary to "aggressively carry out his trust responsibility in the administration of Indian oil and gas." 30 U.S.C. § 1701(a)(4). BLM has a duty to ensure oil and gas reserves on tribal and allotted lands are developed responsibly and ensure that energy is not wasted.

12. BLM manages and regulates oil and gas drilling on the Navajo Nation and on allotted lands pursuant to its trust responsibilities to the Navajo Nation and to allottees. *See Cotton Petroleum Corp. v. U.S. Dep't of the Interior*, 870 F.2d 1515, 1524 (10th Cir. 1989). As a trustee, the agency must manage these operations for the benefit of the Navajo Nation and the Individual Indian Mineral Owner allottees.

13. Energy development is important to the economy of the Navajo Nation, which suffers from unemployment and poverty rates that are significantly higher than national averages. Oil and gas royalties are a meaningful source of revenue for the Navajo Nation. These royalties are used to fund schools, health care facilities, infrastructure projects such as roads and bridges, social programs, and other local improvement projects.

14. Navajo allottees likewise benefit from royalties they receive from oil and gas production on their allotted land.

15. Half of the royalties from mineral development and leasing on BLM-managed federal land in Utah go back to the state. The oil and gas royalties that Utah receives support local infrastructure and improvement projects in areas most affected by oil and gas development, including San Juan County.

16. According to ICF International, oil and gas companies wasted \$100 million worth of natural gas through venting, flaring, and equipment leaks on tribal lands alone in a single year. These practices waste tribal energy resources, and deprive tribes of millions of dollars in revenue each year, reducing funding for vital public services.

17. The Waste Prevention Rule is an important exercise of BLM's trust responsibilities, increasing royalty payments from minerals held in trust for tribes and individual Indian mineral owners.

18. In contrast, the suspension of the Waste Prevention Rule is contrary to BLM's trust responsibility, by allowing tribal resources to be unreasonably wasted, particularly when best practices, including the use of gas-capture technology, can be cost-effectively utilized by the oil and gas industry.

19. In addition to gas capture from oil and gas operations providing additional revenue to the Navajo Nation and Navajo allottees, such measures will also reduce air pollution that occurs during oil and gas development.

20. We understand that this pollution includes a host of harmful air pollutants, such as volatile organic compounds (VOCs) and benzene. VOCs form ground-level ozone, or smog, that has been linked to increased rates of asthma attacks, and exacerbation of other heart and lung conditions. According to the American Lung Association, San Juan County, Utah, which intersects with Navajo lands, received a "C" grade for ozone pollution in 2012-2014, due in part to oil and gas development. We understand that more than 1,800 asthma attacks in children occur annually for the four counties that intersect with Navajo lands where oil and gas development is most heavily concentrated (San Juan County, Utah; Apache County, Arizona; San Juan County, New Mexico; and McKinley County, New Mexico). We understand that asthma rates among the Navajo Nation are two to three times higher than the general public.

21. We also understand that the oil and gas sector emits pollutants which include toxics, such as benzene, that is known to cause cancer in humans.

22. Public health is a critical issue for the Navajo Nation. The suspension of the Waste Prevention Rule will harm tribal members living near energy development by increasing exposure to toxic air pollutants such as benzene and smog-forming VOCs.

23. We are also concerned that BLM's rapid pace for suspending the Waste Prevention Rule has not allowed adequate time for tribal consultation. BLM's trust responsibility includes the duty to consult with federally recognized tribes and individual Indian mineral owners prior to making decisions that impact their resources. Executive Order 13,175, 64 Fed. Reg. 67,249 (Nov. 6, 2000). According to BLM's Handbook on Improving and Sustaining BLM-Tribal Relations, "BLM cannot simply rely on the proscribed public participation and notification requirements of...other...laws to comply with ... BLM's general trust obligations to consult." BLM, H 1780-1 at IV-23 (Dec. 15, 2016).

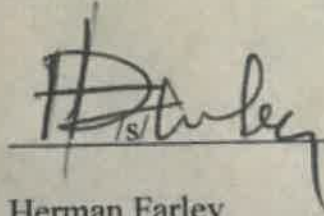
24. Consistent with this responsibility, BLM engaged in an extensive tribal consultation process prior to promulgating the Waste Prevention Rule. In 2014, BLM held four tribal outreach sessions, in Denver, Colorado; Albuquerque, New Mexico; Dickinson, North Dakota; and Washington, D.C. 81 Fed. Reg. at 83,071. Two of the sessions were live-streamed to allow for greater participation. *Id.* After the proposed rule was published in 2016, BLM held four more tribal outreach meetings in Farmington, New Mexico; Oklahoma City, Oklahoma; Denver, Colorado; and Dickinson, North Dakota. *Id.* In advance of both the 2014 and 2016 tribal outreach sessions, BLM sent letters to over 200 tribal leaders that had previously expressed interest in oil and gas-related matters. *Id.* at 83,021.

25. By contrast, BLM has provided little opportunity for tribes, tribal subdivisions, and individual Indian mineral owners to consult about the suspension of the Waste Prevention Rule. BLM states that it has "conducted an appropriate degree of tribal outreach in the course of developing this final delay rule," 82 Fed. Reg. at 58,065, but has not conducted any tribal outreach sessions—or, indeed, any public hearings at all—instead merely sending rule notification letters to tribal organizations. This falls well short of the tribal consultation that

BLM engaged in prior to promulgating the Waste Prevention Rule, and well short of the consultation required by BLM's trust responsibility to individual Indian mineral owners.

26. For all the above reasons, we oppose the suspension of the Waste Prevention Rule, which will result in BLM-managed oil and gas operations continuing to waste tribal energy resources, reducing much-needed royalties, and continuing to emit harmful pollution, threatening the health of our communities.

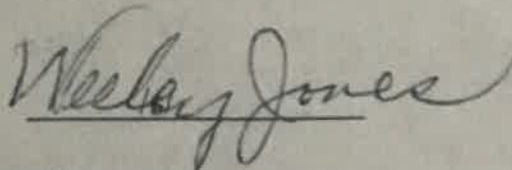
I declare that the foregoing is true and correct to the best of my knowledge, information, and belief.

A handwritten signature in black ink, appearing to read "Herman Farley", written over a horizontal line.

Herman Farley

Dated: December 15, 2017

I declare that the foregoing is true and correct to the best of my knowledge, information, and belief.

A handwritten signature in black ink, appearing to read "Wesley Jones", written over a horizontal line.

Wesley Jones

Dated: December 15, 2017

# **Attachment 52**

**Declaration of Theodora Bird Bear, Ft. Berthold POWER**

### **DECLARATION OF THEODORA BIRD BEAR**

- 1). I live out in rural Mandaree on the Fort Berthold Indian Reservation in western North Dakota. As a recent Medicare-eligible retiree, I have lived in rural Mandaree most of my life including during my childhood. I have been a permanent resident of rural Mandaree continuously for approximately 33 years. Mandaree is a small, remote tribal community which has become a targeted area of intensive drilling, fracking, flaring, and oil and gas extraction on the Fort Berthold Indian Reservation, since late 2007. I am an enrolled member of the Mandan, Hidatsa, and Arikara Nation (also known as the Three Affiliated Tribes (TAT) of the Fort Berthold Reservation). I am also a member of Fort Berthold Protectors of Water and Earth Rights (Ft. Berthold POWER).
- 2). Before the intensive oil & gas extraction started in rural Mandaree in 2007-08, our tribal community had a natural and quiet landscape with the Missouri River as the east border and the Little Missouri as the southern border. For about 24 years altogether, I was employed full time and commuted about 80-miles round trip everyday to New Town.
- 3). Since 2007 - or for the past 10 years - my community of rural Mandaree has been the targeted area for drilling, fracking, and flaring on the Fort Berthold Indian Reservation. There are now hundreds of flaring and venting wells in Mandaree - and hundreds more on the way. Lately, I've seen wells with up to five (5) active flares going day and night in the West Segment or Mandaree area of Fort Berthold.
- 4). Mandaree and the Fort Berthold Indian Reservation - including the Missouri River and the Little Missouri - are very special to me because this landscape is the last of our historic pre-treaty lands. Although we lost millions of acres in treaties and executive orders in the 1800's and all seven (7) of our tribal communities were forcibly and permanently flooded out by the Garrison Dam in the 1950's, we have consistently remained anchored here in our pre-treaty homelands. We stayed true to our land and ourselves - and this is our strength.
- 5). I am the sole owner of trust property where my home is located and where I live. In the 1990's - years before the intensive oil & gas extraction and flaring started - I went through a Dunn County cost-share program and had a small wildlife pond built from a natural spring on my land and near my home. I also have a tree shelter belt around my home which is also a protective wildlife habitat. The former quietude of this habitat helped support wildlife but has also been under assault from the air pollution of multiple flaring, venting, leaking oil and gas well sites near my home.
- 6). Prior to the oil and gas development that occurs around my home, I routinely heard, or saw meadow larks, woodpeckers, hawks, eagles, owls, ducks, swallows, geese, pelicans, red-winged blackbirds, robins, mourning doves, yellow finches, catbirds, and hummingbirds that either summered here on my land or migrated through. Wild deer, fox, rabbits, coyotes, porcupines, raccoons, and even the buffalo (from tribal buffalo ranch) have grazed or found shelter on the landscape around my home. Wild juneberries, wild plums, buffalo berries, chokecherries, and wild turnips, are some of the natural foods from this land that I consumed as a child and can find a few today. These natural foods which our tribe relied on, prior to the 1950's are important to me as a tribal member in our original homelands. Sadly, there are very few butterflies visible, especially the monarch butterfly, in the past nine (9) years of the intensive mineral extraction all around my home.
- 7). The intensive oil & gas extraction started in Mandaree and around my home around 2007-08. I am worried about the cumulative and adverse impacts to air and water in Mandaree and Fort Berthold - including to my wildlife dam and wildlife habitat at my home.



- 8). I own both surface and minerals where my home is located. During this 10-year period, at different times, I have been pressured by various oil companies or through their local (tribal) "landmen" for either crude/gas pipelines and/or mineral leasing on my trust land where my home is located. Their approach inevitably includes a vaguely-worded or implied threat of forcible eminent domain seizure of my surface land and minerals where my home is located.
- 9). My home is in Dunn County which is one of the five (5) top oil and gas-extracting counties in the state of North Dakota.
- 10). My community, Mandaree, is located in two of the intensive oil-extractive counties of Dunn and McKenzie. Prior to 2006 or thereabout, I was an elected Mandaree school board member and I know that McKenzie County - where the Mandaree school is located - was providing a portion of oil & gas revenue to the school each year during my term. The State of North Dakota actively supported the mineral extractive industry and, based on their low oil & gas taxes, distributed the revenue to schools through the county.
- 11). The Tribal Council of the Three Affiliated Tribes receives and relies on oil & gas revenues from federal trust land minerals and the surfaces which they administer. In the past couple of years, the council has distributed \$1,000 to each enrolled tribal member from the oil & gas revenue. As a tribal member, I have received this payment also.
- 12). The BLM Waste Prevention Rule directly protects the health of children and families, especially in the oil & gas-targeted rural Mandaree area. The Rule requires the oil & gas industry to reduce their leaky polluting wells and reduce flaring and venting of natural gas into the air we breathe every day. There are now hundreds of flaring, venting, and leaky well sites in Mandaree on the Fort Berthold Indian Reservation - and hundreds more are on the way.
- 13). My home is situated in a low-lying geographic area and I know that oil well gases and fumes collect in low-lying areas. As I grow older, it will be even more dangerous to my health if BLM allows the leaking, venting, and flaring on natural gas to continue. However, this is not a plea for oil & gas crude pipelines; I have serious concerns about the safety of oil and gas pipelines in the coming phase of this oil & gas extraction.
- 14). I know methane is a greenhouse gas contained in natural gas and it contributes to both the current warming of the earth and the extreme weather which we are already experiencing.
- 15). For these reasons, I want the BLM Waste Prevention Rule enforced; there must be no delay in protecting public health, especially of small children.
- 16). In March 2016, I testified during the public hearing of the BLM Waste Prevention Rule in Dickinson North Dakota. I identified myself as a tribal mineral owner and emphasized both protection of air quality in the oil & gas-targeted Mandaree area and the critical need for enforcement of the BLM Waste Prevention Rule in both Mandaree and on the Fort Berthold Indian Reservation.
- 17). A few months ago, as a member of Fort Berthold POWER, I participated in a formal meeting with the reluctant members of the tribal council of the Three Affiliated Tribes to help argue for their formal and official support the BLM Methane Rule - through a tribal resolution which we had drafted. After about an hour of discussion, the council unanimously passed a motion in support of the BLM Waste Prevention Rule and provided us with a formal letter of support to North Dakota Senator Heitkamp.

- 18). As members of Fort Berthold POWER, we presented the tribe's letter to the equally-reluctant Senator on the following day, during her public meeting in Bismarck, North Dakota. As a result of our strategic and combined efforts as adversely-impacted tribal members, Senator Heitkamp did vote to uphold the BLM Methane rule when it came down to the Senate vote.
- 19). About a week prior to our meetings with the TAT tribal council and Senator Heitkamp, some of the statewide North Dakota newspapers had also published my letter-to-editor asking if Senator Heitkamp was on our side on this issue. And a couple weeks prior to our meeting with the tribal council, I also paid for a full-page display ad in the local New Town NEWS asking the public to contact the North Dakota senators, Heitkamp and Hoeven, and ask them to support the BLM Methane Rule.
- 20). I am a mineral owner on trust land and have started receiving oil & gas mineral revenue. Oil & gas statements indicate that I have received a small portion of revenue from natural gas. I asked the BLM rep about the volume of the unpaid natural gas that is flared, vented, or leaked from the producing well where I receive revenue. I was verbally told BLM is not required to keep track of this so, as a tribal mineral owner, I don't know how much natural gas revenue is not paid to me. I have legal standing in this lawsuit against this attempted delay of the BLM Methane Rule because I am adversely affected in several ways. First, the invisible toxic gases and visible particulate matter emitted from the multiple leaky, flaring, and venting well sites one (1) mile in each direction of my home add to the overall cumulative deterioration of air quality which I am breathing every day. As stated earlier, I am a retiree. Based on scientific and peer-reviewed research conducted in other industry-ravaged communities, the cumulative impacts of dirty and chemicalized air from heavy oil and gas extraction is expected to undermine and deteriorate both my respiratory and circulatory health. Further, as a tribal member receiving oil and gas revenue, the natural gas extracted from my minerals is being deliberately wasted by the oil company through flaring and venting and has resulted in a loss of oil and gas royalties to me.
- 21). I have heard and seen many, many natural gas flares every day in Mandaree and on Fort Berthold Indian Reservation since 2007-08. I continue to see them today. Lately, I have seen well sites with five (5) flares going continuously.
- 22). The first flare was over the hill about one-mile away from my home; it was so loud, like a large jet taking off continuously... for 24-hours; it wouldn't stop. I didn't know flares made that loud a noise. The volume of the unwanted industrial noise dominates the entire landscape and is non-stop. The flare lit up the hills all night long. I couldn't hear the birds singing around my home when the flares start. The public has no idea of how much flares can dominate an area. It ruins the natural landscape and we might as well be in the middle of a major city like New York or Hong Kong.
- 23). Every day, I can see that there's dirty air visible in the horizon since the oil & gas extraction and flaring started in 2007-08. If I can see it all the time, I know that I am breathing it every day.
- 24). I use to routinely walk about 1-2 miles every few days at home. I quit that since the oil & gas started due to safety reasons. I feel it's unsafe to recreate outside too much now due to deteriorating air quality from oil & gas flaring and diesel fumes from the oil trucks which travel back and forth by my home 24-hours-a-day. There's no systematic testing of air quality or public health or respiratory health impacts here. I will directly benefit from the active enforcement of the BLM methane rule because I live in Mandaree on the Fort Berthold Indian Reservation where hundreds of flaring, venting, and leaky wells are located. There are also hundreds more oil and gas well sites pending in the future on Fort Berthold. I don't want to feel like a prisoner in my home because of the chemicalized air outside my door from hundreds of oil and gas wells in Mandaree will harm my health. With strong enforcement to protect our air quality through the BLM Methane Rule, I can be more confident that its safer to breathe outdoor air and I can resume my former outdoor activities again.

25). We've had almost ten (10) years of oil & gas extraction in Mandaree and on Fort Berthold Indian Reservation. For various reasons, our tribal council has been unable to even enforce their own 'flaring' resolution, which they passed around the year 2010 for the industry operating on Fort Berthold. After 10 years of oil & gas revenue received by the tribal council, it's also unlikely they will have political will to stand up for the health of tribal members on Fort Berthold when it comes to oil & gas pollution. This is another reason why the BLM Methane Rule is so important to the health of individual tribal members, like myself, on the Fort Berthold Indian Reservation in western North Dakota.

26). Late last month, just before Thanksgiving Day, I learned that WPX oil company had lost control of their well site flare outside of my fence line. As a result, their flare spewed a "mist" of crude on my land in 2013, or at least four years ago. ( Outside of my property, WPX admits the mist from the well site's flare also contaminated a large section of the leased surface property where the well site is located outside of my fence line).

27). Attached as Exhibit A are maps and one self-report by WPX on this contamination of my trust land. There are six (6) pages attached in one file. According to the BIA system, this allotted trust property is identified as 301-895A. This property is in Section 26, Township 149, Range 93. There's a 5-digit number, 33429, assigned to Section 26, apparently by the ND Industrial Commission. The 2-page "customized view of section printout" showing the fracking lines around my home, is from the NDIC website. At my request, the colored Google map was provided by the BIA Realty Specialist, along with other reports by WPX, or its sources, about this spill.

28). The area of WPX contamination on my property is uphill from my home where I have lived continuously for 35 years. Both a hill and my existing tree windbreak prevented me from seeing both the WPX well site and this crude spill or mist contamination identified only by WPX. My trust property, where this occurred, is a 78-acre allotment which includes both my permanent home and my wildlife dam - and both are downhill from the WPX-contaminated area on my property.

29). Because I have had concerns about both the lack of strong regulatory protections by federal agencies, especially including the BLM, and the adverse impacts of oil & gas extraction, I have never signed any mineral oil and gas extraction lease of this small property where I live - although I felt threatened by oil industry representative's statements implying eminent domain seizure of this property and minerals when I repeatedly refused to do sign mineral leases (or pipeline ROWs) during the last ten (10) years.

30). By refusing to sign a mineral lease on this property where I live, I had hoped to protect my health, safety, and property. BLM'S failure to enforce strong regulatory protections, including at the out-of-control WPX wellsite next door, has already endangered by my health and safety. There has been no adequate BLM monitoring or enforcement on Fort Berthold Indian Reservation. And despite my own individual efforts, my health, safety, and property has been compromised. I have been directly and irreparably harmed by BLM's failure to enforce regulatory protections and enforcement of oil and gas well site flaring on tribal land next to my home

31). The tribal council repeatedly tells tribal members that they, as our tribal government, have no role nor responsibility in directly helping individual tribal members with oil and gas issues and refers us to the federal agencies—which includes the absent BLM agency. Sadly, the three (3) different tribal government administrations in the ten years of oil and gas extraction on Fort Berthold, remains "pro-development" at the cost of individual tribal members health and safety, including myself. To compound the barriers to a clean and safe environment, oil companies are allowed to self-report on

environmental damages to tribal lands. There's no independent verification of the true extent of damages to the land and health of individual tribal members - including my land and wildlife dam.

32). Few in the general public, or even among the legal profession, understand that individual tribal members must rely solely on federal regulations for health and safety protections, especially in an intensive and targeted area like rural Mandaree. Therefore, enforcement of the existing BLM Methane Rule which requires reduced or limited flaring and fixing leaky well sites - including at the WPX well site - is critical to my health and safety and to all tribal members on Fort Berthold Indian Reservation. I initiated a telephone call to the BIA Superintendent about this crude mist contamination. I was referred to a BIA Realty Specialist and traveled to see him. The BIA Realty Specialist told me that oil companies don't have to identify the locations where they take samples of their self-reported toxic spills or crude "mists" for analysis. So, there's no documented proof that they even took samples from my land for testing. During my initiated visit to the BIA Realty Specialist, he even laughed and told me that hydrocarbons from crude spilling on land was helpful to new growth of the grasses. I believe this attitude is reflective of the mixed messages that the BIA, our trustee, gives to individual tribal members on oil and gas issues.

33). When oil companies lose control of their well sites on Fort Berthold Indian Reservation, individual tribal landowners next door - like myself - are not notified, in a timely manner, of any kind of contamination or toxic crude "mists" which cross onto our lands and water. I didn't hear about this contamination until four (4) years after it happened - just before Thanksgiving Day last month, November 2017.

34). Decades before the oil & gas extraction started - in the 1990's - I had the wildlife dam developed on this property for migrating birds and local wildlife. There has always been a natural spring on the property and this natural spring has continuously provided fresh water for the wildlife dam on my property, including in 2013 and through today. As noted above, my wildlife dam is downhill from the contaminated spill area on my land caused by the WPX oil company.

35). WPX's report denies contamination of any water from their crude "mist" or spill. Because my freshwater wildlife dam is immediately downhill from the contaminated area they generally identified on my property, I believe WPX had also contaminated my wildlife dam.

36). Late last week, I also initiated an office visit to the BIA Environmental Specialist up in New Town. During our conversation, he happened to mention to me that WPX lost control of this same well site again and had yet another "spill" - reportedly in the opposite direction from my land. Since there's no independent verification or timely notice, any nearby individual tribal landowners, like myself, cannot be sure to what extent damages are occurring.

37). This contamination of my land and water occurred because of lack of adequate regulation, monitoring, and enforcement of flaring by BLM. Further, because I was not informed in a timely manner, I lost the opportunity to verify through independent testing processes the full and actual extent of contamination of both my trust land where I permanently live and my wildlife dam. These are valid reasons why the pro-active BLM Methane Waste Prevention Rule must be enforced on Fort Berthold Indian Reservation as soon as possible, including on the faulty WPX well site flare which contaminated my land, my wildlife dam, and created a hazardous environment where I live.

38). I have witnessed out-of-control prairie fires caused by flaring well sites in Mandaree, especially during drought conditions. Fort Berthold Indian Reservation and western North Dakota is a semi-arid environment. Droughts and oil & gas flaring compounds safety concerns out here. Due to the remoteness of this area, voluntary fire departments must travel miles to get to a prairie fire out here. I witnessed one

prairie fire, due to an oil company worker using a shovel to throw gasoline at the well site fire to start it. He quickly caused a prairie fire which threatened three (3) different occupied tribal homes nearby. The fire traveled up to the lawn of one nearby, occupied home which was about two miles from my own home. The long-time tribal homeowner was trying to gather her belongings to flee as a cloud of black smoke billowed over her home. I took photos and a video to document the results of a loss of control of flares in Mandaree on the Fort Berthold Indian Reservation. One of the pictures I took is attached as Exhibit B. The very same well site lost control of their flare a second time and caused a large area near this homeowner's land to be burned again. . Further, there have also been much larger out-of-control prairie fires originating from wellsites/flares in the highly remote areas of Mandaree. This would not have happened if BLM enforced strong regulations in regard to the flaring on federal lands, including in rural Mandaree. This is a public safety issue and another reason why BLM must immediately enforce the BLM Methane Rule on Fort Berthold Indian Reservation and on all federal lands.

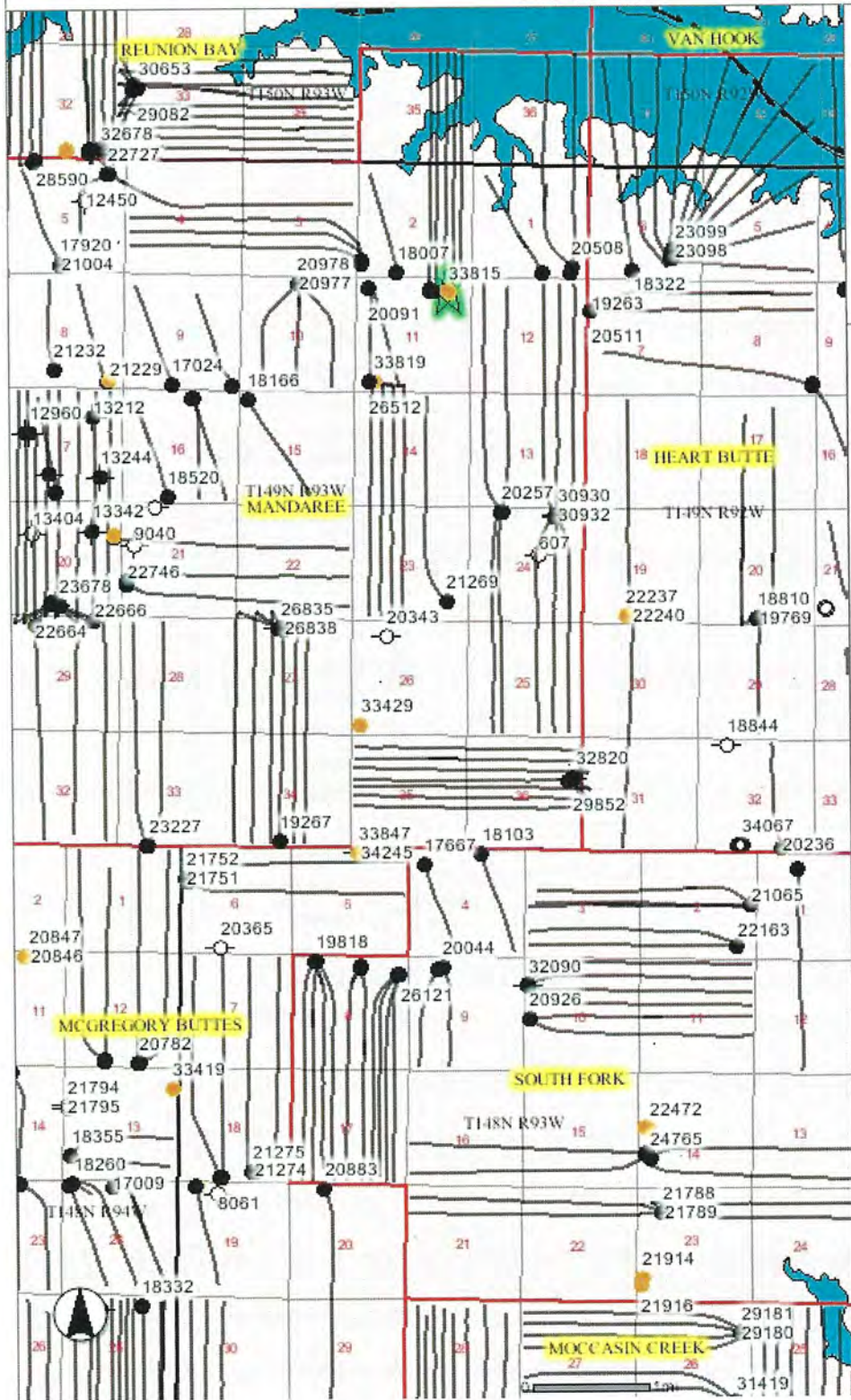
I declare under penalty of perjury that the foregoing is true and correct. Executed on December 17, 2017.

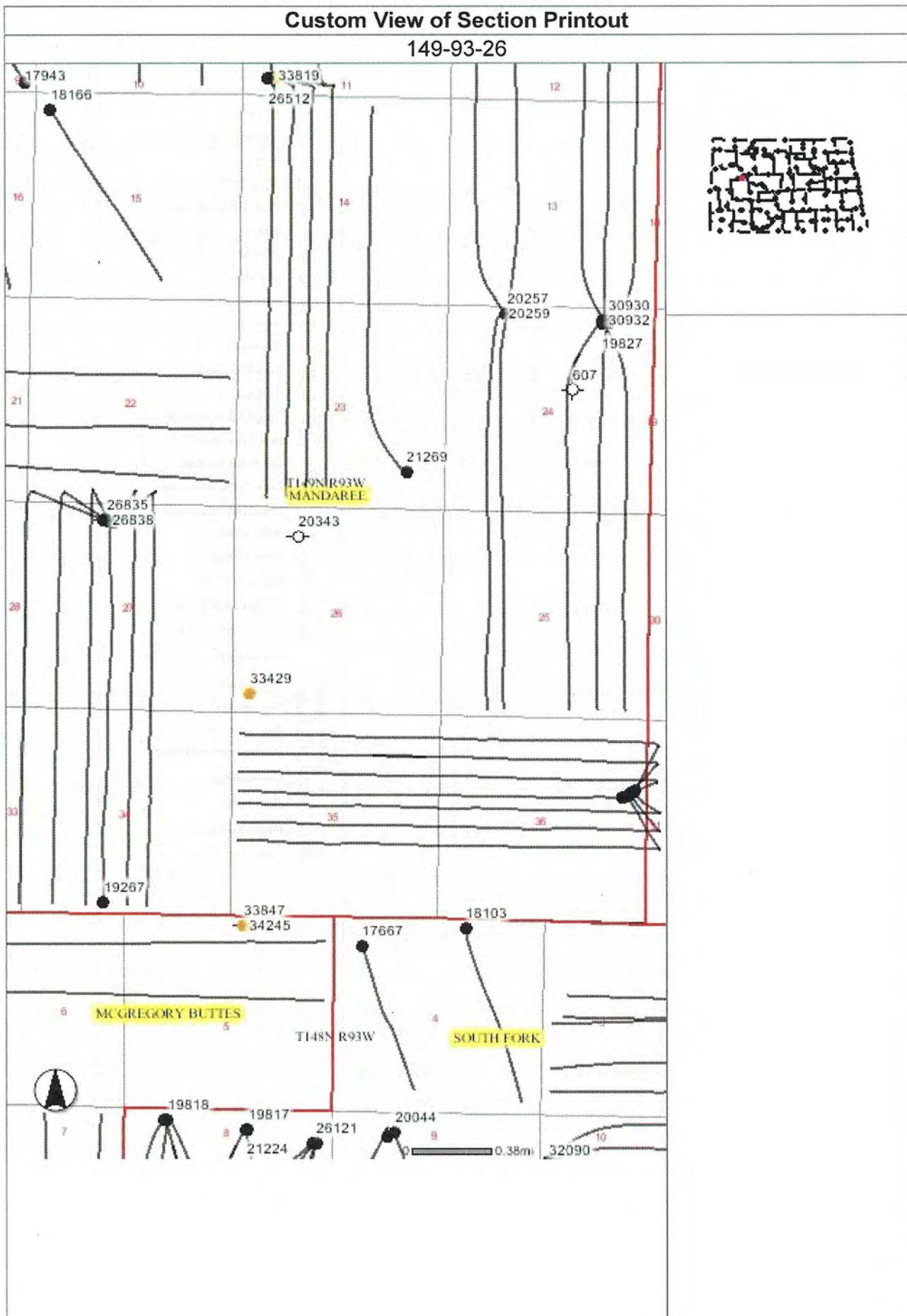
A handwritten signature in black ink, appearing to read "Theresa Pauline". The signature is written in a cursive, somewhat stylized font.

# **EXHIBIT A**

### Custom View of Section Printout

149-93-26





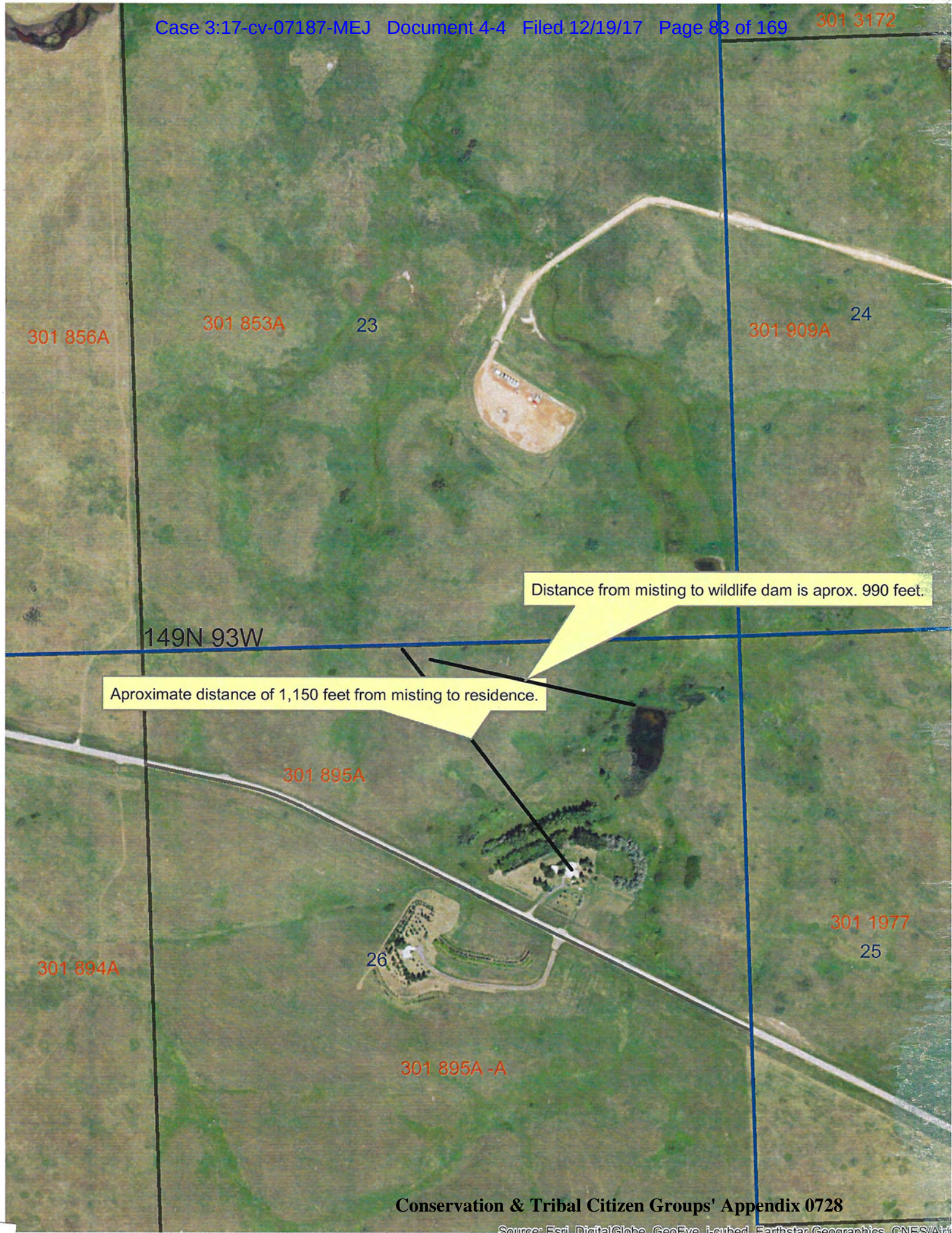


API Number <b>33 - 025 - 01431</b>		Well File or Facility No. <b>21269</b>					
Operator <b>WPX Energy Williston LLC</b>						Telephone Number <b>701-389-1095</b>	
Address <b>1801 Burdick Expressway</b>			City <b>Minot</b>	State <b>ND</b>	Zip Code <b>58701</b>		
Well Name and Number or Facility Name <b>Skunk Creek 23-14HC</b>			Field <b>Mandaree</b>				
Location of Well or Facility	Footages F L F L	Qtr-Qtr <b>SE-SE</b>	Section <b>23</b>	Township <b>149 N</b>	Range <b>93 W</b>	County <b>Dunn</b>	
Description of Spill Location if not on Well or Facility Site and/or Distance and Direction from Well or Facility <b>See Page Two.</b>							
Directions to Site <b>See Page Two.</b>							
Release Discovered By <b>WPX Personnel</b>		Date Release Discovered <b>December 3, 2013</b>	Time Release Discovered <b>9 : 00</b>		Date Release Controlled :		
Company Personnel Notified <b>James Raley</b>		How Notified <b>Telephone</b>		Date Notified <b>December 3, 2013</b>		Time Notified <b>9 : 00</b>	
Type of Incident <b>Stuffing Box Leak</b>		Root Cause of Release <b>Human Error</b>			Date Clean up Activities Concluded <b>December 12, 2013</b>		
Distance to Nearest Residence or Occupied Building <b>2,050 Feet</b>			Distance to Nearest Fresh Water Well <b>0.50 Miles</b>				
Piping Specifics (If Applicable)	Size (Decimal Format) "	Type			Location of Piping		
Volume of Release	Oil <b>20.00 Barrels</b>	Saltwater <b>0.00 Barrels</b>		Other <b>0.00 Barrels</b>			
Volume of Release Recovered	Oil <b>0.00 Barrels</b>	Saltwater <b>0.00 Barrels</b>		Other <b>0.00 Barrels</b>			
Was Release Contained Within Dike <b>No</b>		If No, Was Release Contained on Well Site <b>No</b>		If No, Was Release Contained on Facility Site or Pipeline ROW <b>No</b>			
Areal Extent of Release if not Within Dike <b>10.75 Acres</b>			Affected Medium <b>Topsoil</b>		General Land Use <b>Pasture</b>		
Describe Cause of Release or Fire and Other Type of Incidents, Root Causes of Release, Land Uses, and Released Substances <b>See Page Two.</b>							
Action Taken to Control Release and Clean Up Action Undertaken <b>See Page Two.</b>							
Potential Environmental Impacts <b>See Page Two.</b>							
Planned Future Action and/or Action Taken to Prevent Reoccurrence <b>See Page Two.</b>							
Where Were Recovered Liquids Disposed <b>No liquids recovered</b>			Where Were Recovered Solids Disposed <b>Prairie Disposal - Tioga, ND</b>				
Weather Conditions	Wind Speed <b>32 MPH</b>	Wind Direction <b>Southwest</b>	Temperature <b>8 ° F</b>	Skies <b>Overcast</b>		Estimated Cleanup Cost <b>\$</b>	
Damage Value <b>\$</b>							
Regulatory Agencies/Others Notified <b>NDIC/NDDH</b>		Person Notified <b>Allen Christensen</b>		Date Notified <b>December 3, 2013</b>		Time Notified <b>5 : 28 PM</b>	
Notified By <b>James Raley</b>							
Fee Surface Owner <b>BIA</b>		Person Notified <b>Chris McLaughlin</b>		Date Notified <b>December 3, 2013</b>		Time Notified <b>5 : 29 PM</b>	
Notified By <b>James Raley</b>							
Federal Agency <b>BLM</b>		Person Notified <b>Dan Velder/Mark Glass</b>		Date Notified <b>December 3, 2013</b>		Time Notified <b>5 : 30 PM</b>	
Notified By <b>James Raley</b>							
Report Originator <b>James Raley</b>		Title <b>Environmental Specialist I</b>			Date <b>December 19, 2013</b>		
Reviewed By		Title <b>Conservation &amp; Tribal Citizen Groups' Appendix 0726</b>			Date		

(Only to be used if additional space is needed)

Well File No.  
 21269

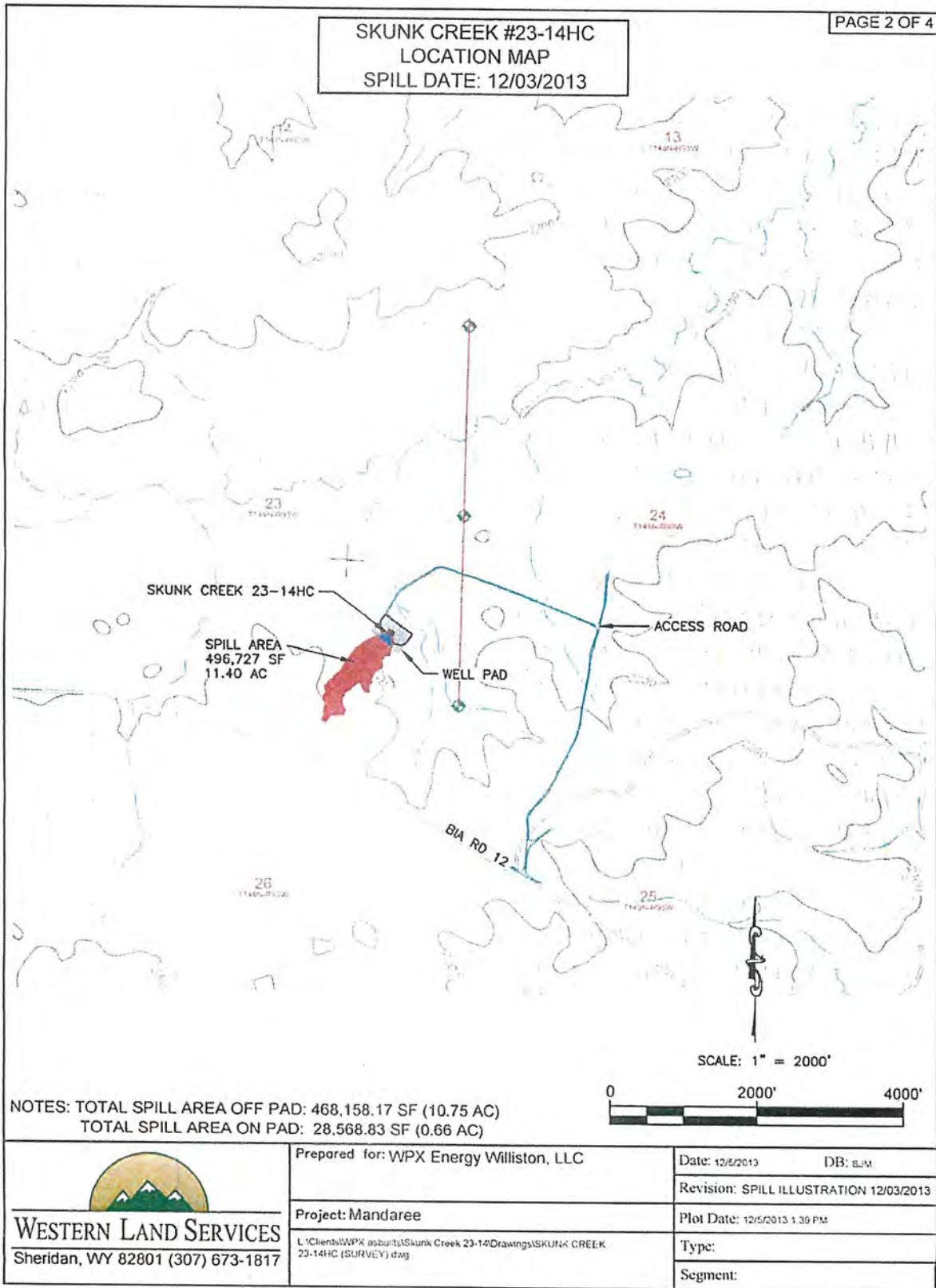
Well Name and Number or Facility Name <b>Skunk Creek 23-14HC</b>		Field <b>Mandaree</b>				
Location of Well or Facility	Qtr-Qtr <b>SE-SE</b>	Section <b>23</b>	Township <b>149 N</b>	Range <b>93 W</b>	County <b>Dunn</b>	
Release Discovered By <b>WPX Personnel</b>	Date Release Discovered <b>December 3, 2013</b>	Time Release Discovered <b>9 : 00 0</b>	Date Release Controlled <b>January 0, 1900</b>	Time Release Controlled <b>0 : 0 0</b>		
Description of Spill Location if not on Well or Facility Site and/or Distance and Direction from Well						
Released crude oil was windblown onto snow approximately 1,500 southwest of the well pad. The impacted area consists of gently sloping, snow covered rangeland with two small clumps of brush. The area under the snow is primarily grasses and forbs. The two brush clumps are primarily willow.						
Directions to Site						
The Skunk Creek 23-14HS well pad is located approximately 8 miles east of Mandaree, ND along BIA 12. The associated access road runs 0.70 miles north and then 0.60 miles west to the well pad.						
Describe Cause of Release or Fire and Other Type of Incidents, Root Causes of Release, Land Uses, and Released Substances						
At approximately 9:00 A.M. on December 3, 2013 the rubber seals on the stuffing box failed due to improper adjustment. The rubbers were not adjusted for rapid changes in temperature due to weather conditions. Small leaks began to develop which allowed oil to escape around the seal.						
Action Taken to Control Release and Clean Up Action Undertaken						
Stuffing box rubbers were replaced. Environmental contractors (Trustland, LLC) were dispatched to the site to remove the impacted snow and dispose of at Prairie Disposal near Tioga, ND. InterTech Environmental & Engineering collected soil samples from beneath the impacted snow. These samples were submitted to ALS Laboratory in Holland, MI for analytical analysis of TPH, pH, SAR and EC.						
Potential Environmental Impacts						
InterTech Environmental & Engineering was dispatched to the site to evaluate the potential environmental risks of the release. Analytical laboratory results show that the impacts were limited to the snow and did not impact the underlying soils. No groundwater was impacted or at risk from this incident.						
Planned Future Action and/or Action Taken to Prevent Reoccurrence						
WPX personnel and their contractors have been instructed on how to properly adjust the stuffing box rubbers for changing weater conditions.						
Where Were Recovered Liquids Disposed			Where Were Recovered Solids Disposed			
Impacted snow was in solid form thus no liquids were recovered.			Prairie Disposal near Tioga, ND			



Distance from misting to wildlife dam is aprox. 990 feet.

Aproximate distance of 1,150 feet from misting to residence.

149N 93W



# **EXHIBIT B**



# **Attachment 53**

**Declaration of Dr. Elena Craft, Environmental Defense Fund**

IN THE UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF CALIFORNIA

**DECLARATION OF DR. ELENA CRAFT**

I, Dr. Elena Craft, declare:

1. I am a Senior Scientist at Environmental Defense Fund (“EDF”), a non-profit organization focused on protecting human health and the environment from airborne contaminants by using sound science. I received a Ph.D. in toxicology from Duke University’s Nicholas School of the Environment – Earth and Ocean Sciences Division. I also have a Master of Science degree in Toxicology from North Carolina State University.

2. As a Senior Scientist for EDF based in Texas, I work to assess health impacts associated with living in close proximity to oil and gas development, and I also help to formulate and implement science-based strategies to reduce air pollution from oil and gas drilling activities. I have provided expert testimony at two U.S. House Congressional hearings related to issues of air quality, and related to ozone specifically. I have served on various advisory committees to the Environmental Protection Agency (“EPA”), including the Mobile Source Technical Review Subcommittee (“MSTRS”) under the Clean Air Act Advisory Committee (“CAAAC”); the Air, Climate, and Energy Subcommittee of the Board of Scientific Counselors; an Environmental Justice Technical Review Subcommittee; and a ports work group.



### The 2016 Waste Prevention Rule

3. The oil and natural gas sector is the nation's largest industrial source of methane. Based on EPA's most recent data,<sup>1</sup> these sources account for almost 10 million metric tons of methane, or approximately 33 percent of the nation's total annual methane emissions. These sources also account for substantial emissions of smog-forming volatile organic compounds ("VOCs") and toxic air pollutants like benzene. The Bureau of Land Management ("BLM") further estimates that domestic oil and natural gas production from over 96,000 federal onshore oil and gas wells accounts for about 11% of the nation's total natural gas supply and 5% of its oil. 81 Fed. Reg. 83,009 (Nov. 18, 2016).

4. I am aware that BLM's 2016 rule, Waste Prevention, Production Subject to Royalties, and Resource Conservation ("Waste Prevention Rule" or "Rule"), 81 Fed. Reg. 83,008 (Nov. 18, 2016), is projected to reduce methane emissions by 175,000-180,000 tons per year (tpy), 81 Fed. Reg. 83,014, and likewise reduce substantial emissions of ozone-forming VOCs. BLM also projected that the Rule will reduce toxic contaminants like benzene—a known human carcinogen—and other hazardous air pollutants, and reduce "production of

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<sup>1</sup> EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2014* (2016) ("2014 GHGI"), at ES-13, Figure ES-8, available at <https://www3.epa.gov/climatechange/Downloads/ghgemissions/US-GHG-Inventory-2016-Main-Text.pdf> ("Natural gas systems were the largest anthropogenic source category of CH<sub>4</sub> emissions in the United States in 2014 with 176.1 MMT CO<sub>2</sub> Eq. of CH<sub>4</sub>").

nitrogen oxides (NO<sub>x</sub>) and particulate matter, which can cause respiratory and heart problems.” *Id.* at 83,014.

5. I am aware that BLM has now finalized a suspension of all of the key waste prevention compliance deadlines in the Waste Prevention Rule. Waste Prevention, Production Subject to Royalties, and Resource Conservation; Delay and Suspension of Certain Requirements, 82 Fed. Reg. 58,050 (December 8, 2017) (“Suspension Rule”). As a result of the Suspension Rule, BLM estimates that these wells will emit an additional 175,000 tons of methane, 250,000 tons of VOCs, and 1,860 tons of HAPs in year one of the delay. *Id.* at 58,056-58,057; BLM, Environmental Assessment, Waste Prevention, Production Subject to Royalties, and Resource Conservation Delay, BLM-WO-WO30000-2018-0001-EA at 25.

### **VOCs Form Ground-Level Ozone, or Smog, that Harms Human Health**

6. Ozone forms when VOCs and oxides of nitrogen (NO<sub>x</sub>) react in the presence of heat and sunlight. This process becomes more pronounced in the summertime.

7. A longstanding body of scientific research, including numerous EPA assessments, demonstrates that exposure to ground-level ozone harms human health. In its most recent Integrated Scientific Assessment for Ozone, EPA concluded that “a very large amount of evidence spanning several decades supports a relationship between exposure to [ozone] and a broad range of respiratory

effects.” *2013 Final Report: Integrated Science Assessment of Ozone and Related Photochemical Oxidants* (“ISA”) (EPA/600/R-10/076F) at 1-6. These effects range from decreases in lung function and increases in respiratory-related hospital admissions and emergency room visits, to premature death. *Id.* at 6-131 to 6-158, 6-162 to -163.

8. EPA concluded that there is a causal relationship or likely causal relationship between both short- and long-term ozone exposure and a broad range of harmful respiratory and cardiovascular effects in humans. *ISA* at 1-5–1-8, Table 1-1. Short-term exposure is defined as hours, days, or weeks, and long-term exposure is measured in months to years. *Id.* at 1-4.

9. Short-term exposure to ozone can have critical health implications. For instance, there is strong evidence of an association between out-of-hospital cardiac arrests and short-term exposure to ozone, as reported in Ensor, et al., 2013. Katherine B. Ensor, *et al.*, *A Case-Crossover Analysis of Out-of-Hospital Cardiac Arrest and Air Pollution*, 127 *CIRCULATION* 1192 (2013), <https://www.ncbi.nlm.nih.gov/pubmed/23406673>. Time scales of exposure up to three hours in duration and also at the daily level on the day of the event were significant. This evidence augments the long-standing body of literature demonstrating the serious impacts from short-term exposure to ozone pollution, including the increased risk of premature death. *ISA* at 1-14 (concluding that there

is “likely to be a causal relationship between short-term exposures to [ozone] and total mortality.”). EPA recognized that positive associations have been reported between “short-term [ozone] exposures and respiratory mortality, particularly during the summer months.” EPA, *National Ambient Air Quality Standards for Ozone*, 80 Fed. Reg. 65,292, 65,307 (Oct. 26, 2015); *See ISA* 6-220 to 6-221.

10. In addition, there is likely to be a causal relationship between short-term ozone exposure and non-accidental and cardiopulmonary-related mortality. *ISA* at 6-222.

11. EPA has also found that the scientific evidence for respiratory effects from long-term ozone exposure had strengthened since the agency’s last review in 2008. 80 Fed. Reg. 65,307. EPA now concludes that there is “likely to be a causal relationship between long-term exposure to [ozone] and respiratory effects.” *ISA* at 1-8. Similarly, EPA notes that “recent evidence is suggestive of a causal relationship between long-term [ozone] exposures and total mortality.” *Id.* Some longitudinal studies have further demonstrated that “long-term [ozone] exposure influences the risk of asthma development in children.” *ISA* at 7-2.

12. Ozone pollution is particularly harmful for vulnerable populations, such as children, people with respiratory diseases or asthma, older adults, and people who are active outdoors, especially outdoor workers. *ISA* at 1-8. Children with asthma also face heightened risks from ozone exposure. Many studies have

demonstrated that children with asthma experience decrements in lung function and increases in respiratory symptoms when exposed to ozone pollution. K.

Mortimer et al., *The Effect of Air Pollution on Inner-City Children with Asthma*, 19 EUR. RESPIRATORY J. 699 (2002), *ISA*, 6-120–21, 6-160.

13. A recent study of almost 61 million Medicare patients conducted nationwide indicates a significant association between ozone exposure and all-cause mortality, with effects strongest in minorities and those of low socioeconomic status. These effects were seen at ozone concentrations well below the current standard of 70 ppb. Di et al., *Air Pollution and Mortality in the Medicare Population*, NEW ENGLAND J. OF MEDICINE (June 29, 2017).

14. In 2015, EPA strengthened the national health-based standard for ground-level ozone, lowering the standard from 75 parts per billion (“ppb”) to 70 ppb.<sup>2</sup> The record for that rulemaking, however, along with subsequent scientific studies, demonstrates that health effects can occur at much lower levels, especially in sensitive populations. For that reason, EPA’s independent scientific advisors recommended that the agency establish the standard in the range of 60-70 ppb. Many health and medical associations suggested that lower standards may be appropriate.<sup>3</sup> EPA has issued attainment designations for some counties under the

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<sup>2</sup> EPA, *National Ambient Air Quality Standards for Ozone*, 80 Fed. Reg. 65,292 (Oct. 26, 2015).

<sup>3</sup> *Id.* at 65,321-23; 65,355.

2015 ozone standards, but as of yet has not designated any areas as in nonattainment with the 2015 standards. EPA, *Air Quality Designations for the 2015 Ozone National Ambient Air Quality Standards*, 82 Fed. Reg. 54,232 (Nov. 16, 2017).

15. In addition to these designations, which are to be based on the 3-year average of the fourth-highest daily ozone air quality monitoring readings, particular areas of the country experience unhealthy levels of air quality on a daily basis. These unhealthy levels of ozone air quality can result in acute respiratory illness and other damaging health outcomes. To help alert the public about these unhealthy conditions, EPA maintains the Air Now database, a searchable, publicly-accessible database that characterizes daily air quality in particular areas of the country based on the threats posed by air pollution. For ozone, the agency has identified the following threat levels: green (good), yellow (moderate), orange (unhealthy for sensitive groups), red (unhealthy), purple (very unhealthy), and maroon (hazardous).

### **The Oil and Natural Gas Sector Is a Substantial Source of Smog-Forming Emissions**

16. The oil and natural gas sector is a substantial source of smog-forming emissions. According to EPA's most recent National Emissions Inventory (NEI),

“Petroleum & Related Industries” is the second largest source of VOCs nationally.<sup>4</sup>

Regional analyses likewise underscore the significant ozone-forming emissions from these sources, including work in the Uinta Basin in Utah,<sup>5</sup> the Barnett Shale in Texas,<sup>6</sup> and in Colorado.<sup>7</sup>

17. Studies and analyses have linked ozone formation to emissions from oil and gas development. For example, a recent study by NOAA scientists at the Cooperative Institute for Research in Environmental Sciences (“CIRES”) found that, on Colorado’s Northern Front Range, oil and gas operations contribute roughly 50% to regional VOC reactivity and that these activities are responsible

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<sup>4</sup> EPA, National Emissions Inventory (NEI) Air Pollutant Emissions Trends Data, <https://www.epa.gov/air-emissions-inventories/air-pollutant-emissions-trends-data>.

<sup>5</sup> Warneke, C. et al., “Volatile organic compound emissions from the oil and natural gas industry in the Uintah Basin, Utah: oil and gas well pad emissions compared to ambient air composition,” 14 *Atmos. Chem. Phys.*, 10977–10988 (2014), available at [www.atmos-chem-phys.net/14/10977/2014/](http://www.atmos-chem-phys.net/14/10977/2014/); ENVIRON, “Final Report: 2013 Uinta Basin Winter Ozone Study,” (March 2014), available at [https://deq.utah.gov/locations/U/uintahbasin/ozone/docs/2014/06Jun/UBOS2013FinalReport/Title\\_Contents\\_UBOS\\_2013.pdf](https://deq.utah.gov/locations/U/uintahbasin/ozone/docs/2014/06Jun/UBOS2013FinalReport/Title_Contents_UBOS_2013.pdf).

<sup>6</sup> David T. Allen, “Atmospheric Emissions and Air Quality Impacts from Natural Gas Production and Use,” *Annu. Rev. Chem. Biomol. Eng.* 5:55–75 (2014), available at <http://www.annualreviews.org/doi/abs/10.1146/annurev-chembioeng-060713-035938>.

<sup>7</sup> Brantley, et al., “Assessment of volatile organic compound and hazardous air pollutant emissions from oil and natural gas well pads using mobile remote and onsite direct measurements,” *Journal of the Air & Waste Management Association* 1096-2247 (Print) 2162-2906 (Online) (2015); Pétron, G., et al., “A new look at methane and non-methane hydrocarbon emissions from oil and natural gas operations in the Colorado Denver-Julesburg Basin,” 119 *J. Geophys. Res. Atmos.*, 6836–6852 (2014), available at <http://onlinelibrary.wiley.com/doi/10.1002/2013JD021272/full>.

for approximately 20% of all regional ozone production.<sup>8</sup> Another study analyzing ozone impacts associated with unconventional natural gas development in Pennsylvania concluded that “natural gas emissions may affect compliance with federal ozone standards,”<sup>9</sup> and an analysis in the Haynesville Shale in Texas found that emissions from the oil and gas sector could be responsible for as much as a 5 ppb increase in 8-hour ozone design levels for projected future productions.<sup>10</sup> There are also well-documented connections between oil and gas development and ozone formation in Wyoming’s Upper Green River Basin and Utah’s Uinta Basin, among others.

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<sup>8</sup> McDuffie, E. E., et al. (2016), Influence of oil and gas emissions on summertime ozone in the Colorado Northern Front Range, *J. Geophys. Res. Atmos.*, 121, 8712–8729, doi:10.1002/2016JD025265. <http://onlinelibrary.wiley.com/doi/10.1002/2016JD025265/abstract>. See also Gilman, J. B., B. M. Lerner, W. C. Kuster, and J. A. de Gouw (2013), *Source signature of volatile organic compounds from oil and natural gas operations in northeastern Colorado*, *Environ. Sci. Technol.*, 47(3), 1297–1305, available at <http://pubs.acs.org/doi/abs/10.1021/es304119a> (finding 55% of VOC reactivity in the metro-Denver area is due to nearby O&NG operations and calling these emissions a “significant source of ozone precursors.”)

<sup>9</sup> Swarthout, R. F., R. S. Russo, Y. Zhou, B. M. Miller, B. Mitchell, E. Horsman, E. Lipsky, D. C. McCabe, E. Baum, and B. C. Sive (2015), *Impact of Marcellus Shale natural gas development in southwest Pennsylvania on volatile organic compound emissions and regional air quality*, *Environ. Sci. Technol.*, 49(5), 3175–3184, doi:10.1021/es504315f available at <https://www.ncbi.nlm.nih.gov/pubmed/25594231>

<sup>10</sup> Kembell-Cook, S., A. Bar-Ilan, J. Grant, L. Parker, J. Jung, W. Santamaria, J. Mathews, and G. Yarwood (2010), *Ozone impacts of natural gas development in the Haynesville Shale*, *Environ. Sci. Technol.*, 44(24), 9357–9363, doi:10.1021/es1021137 available at <https://www.ncbi.nlm.nih.gov/pubmed/21086985>



**BLM's Suspension Rule Will Allow Additional,  
Harmful Ozone-Forming Emissions**

18. Analysis completed by Dr. Renee McVay and attached in a separate declaration found that over 6,000 wells on federal or tribal lands, which would have been required to perform leak detection and repair but for BLM's Suspension Rule, are located in areas that are not in attainment with the 2008 ozone standard. The analysis finds that up to an additional 2,000 tons of VOCs are likely to be emitted from these sources during the suspension. When accounting for all standards that are now suspended, Dr. McVay found that additional emissions due to BLM's Suspension Rule could result in as much as 20,000 additional tons of VOCs in non-attainment areas.

19. While EPA has not yet finalized nonattainment designations for the new, more protective 2015 standard, that standard will require reductions in pollutants from a broader set of counties, likely including additional counties with oil and gas wells that would be subject to BLM's Waste Prevention Rule if not for the Suspension Rule.

20. In addition to these formal nonattainment designations, counties with significant numbers of wells subject to the Waste Prevention Rule including Fresno, CA; Los Angeles, CA; Ventura, CA; Contra Costa, CA; Orange, CA; San Luis Obispo, CA; Sacramento, CA; Kern, CA; Kings, CA; Weld, CO; Armstrong, PA; Westmoreland, PA; Sublette, WY; Lincoln, WY; Sweetwater,

WY; Iberville LA; Cuyahoga, OH; Knox, OH; Portage, OH; Summit, OH; Brazoria, TX; Montgomery, TX; Tarrant, TX; Wise, TX; Denton, TX; Parker, TX; and Chambers, TX have experienced numerous unhealthy ozone air quality days, according to data obtained from the Air Now database. During the 2017 ozone season, these counties experienced 1,880 moderate days (yellow flag warning), 205 days unhealthy for sensitive groups (orange flag warning), and 24 unhealthy days (red flag warning). During the 2016 ozone season, these same counties experienced 2,772 moderate days (yellow flag warning), 448 days deemed unhealthy for sensitive groups (orange flag warning), 78 unhealthy days (red flag warning), and 4 very unhealthy and hazardous days (purple flag warning).

21. Many Americans live in counties which experience unhealthy levels of ozone pollution. These counties have wells that will now continue emitting harmful pollution because of BLM's Suspension Rule. For example, an analysis included in an EDF membership declaration submitted by John Stith finds that EDF has over 34,000 members who live in counties that have wells subject to the Waste Prevention Rule and are designated nonattainment for the 2008 national ambient air quality standards for ozone. Nationwide, it is estimated that almost 18 million people live within 1 mile of at least one active oil and/or gas site. Eliza D. Czolowsk et al., *Toward Consistent Methodology to Quantify Populations in*

*Proximity to Oil and Gas Development: A National Spatial Analysis and Review*, 125 *Envtl Health Perspectives* 6, available at <https://doi.org/10.1289/EHP1535>.

22. BLM's Suspension Rule will allow additional emissions of smog-forming pollutants in these areas already burdened with unhealthy levels of ozone pollution. This added pollution enhances the risk of near-term harm to children, older adults, those suffering from respiratory diseases such as asthma, low income populations, outdoor workers, and others recreating outdoors.

**Oil and Natural Gas Operations Emit Hazardous Air Pollutants like Benzene, a Known Human Carcinogen**

23. Oil and natural gas operations also emit several different hazardous air pollutants ("HAPs") from equipment leaks, processing, compressing, transmission and distribution, and storage tanks. HAPs emitted from oil and gas operations include benzene, a known carcinogen. BLM recognized that HAPs emitted from oil and gas extraction have negative health and welfare consequences and that the Waste Prevention Rule provides health benefits by reducing HAPS, in addition to the health and welfare benefits of curbing the emission of methane and VOCs. BLM RIA at 155.

24. There is no safe level of human exposure to many of the toxic pollutants released as a result of oil and gas extraction. Exposure to HAPs can cause cancer and seriously impair the human neurological system. For example, EPA has found that benzene, found naturally in oil and gas, is a "known human

carcinogen (causing leukemia) by all routes of exposure, and . . . that exposure is associated with additional health effects, including genetic changes in both humans and animals.”<sup>11</sup>

25. Further, a “number of adverse noncancer health effects including blood disorders, such as preleukemia and aplastic anemia, have also been associated with long-term exposure to benzene.”<sup>12</sup> Along with benzene, EPA also catalogued the harmful effects of other specific air toxics emitted from oil and gas operations, including toluene, carbonyl sulfide, ethylbenzene, mixed xylenes, n-hexane, and other air toxics.<sup>13</sup> Each of these hazardous pollutants is harmful to human health. For example, the serious health effects associated with exposure to toluene range from the dysfunction of the central nervous system to narcosis, with effects “frequently observed in humans acutely exposed to low or moderate levels of toluene by inhalation.”<sup>14</sup>

26. BLM’s own analysis suggests that over the year that the Suspension Rule is in place, almost 1,900 tons of these damaging pollutants will now be emitted by sources subject to the Suspension Rule. Many Americans live in very

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<sup>11</sup> EPA, *Regulatory Impact Analysis of the Final Emission Standards for New and Modified Sources in the Oil and Natural Gas Sector Sources* (“EPA RIA”), EPA-452/R-16-002, (May, 2016) available at <https://www.regulations.gov/document?D=EPA-HQ-OAR-2010-0505-7630>.

<sup>12</sup> *Id.* at 3-34.

<sup>13</sup> *See id.* 4-33- 4-37.

<sup>14</sup> *Id.*

close proximity to these wells, including many EDF members living on or near the public minerals subject to BLM's Suspension Rule. For example, an analysis included in an Environmental Defense Fund membership declaration submitted by John Stith finds that EDF has 39 members who live within a quarter mile of wells subject to the Suspension Rule. The analysis identifies over 398 members who live within a mile of these sources and over 14,227 members who live within 10 miles of these sources, all in states that lack any state-level leak detection and repair requirements. These members and many other Americans will be exposed to additional hazardous air pollutants, increasing their risk of experiencing adverse health outcomes.

**Recent Studies Suggest Proximity to Oil and Gas Development is Associated with Adverse Health Outcomes.**

27. In addition to the threats to public health posed by exposure to HAPs and ozone, new studies document associations between proximity to nonconventional oil and gas development and human health effects. While these studies do not evaluate concentrations of specific air pollutants, they document health effects that are consistent with exposure to smog and hazardous air pollutants.

28. Air pollutants associated with oil and gas operations are known to cause serious health impacts in sensitive populations such as pregnant women, babies, and children. Studies have documented that living near natural gas wells is

associated with lower birth weight babies<sup>15</sup> and preterm birth.<sup>16</sup> Another study found an association between oil and gas proximity and congenital heart defects in infants.<sup>17</sup> Babies whose mothers had large numbers of natural gas wells within a 10-mile radius of their home had an increased risk of birth defects of the heart, compared to babies whose mothers had no wells within 10 miles of their home.<sup>18</sup>

29. Other studies also document correlations between proximity to oil and gas drilling and human health effects in otherwise healthy populations. This emerging body of scientific literature includes several new studies documenting negative human health impacts based on proximity to oil and gas wells. For example, a study from 2016 demonstrated that oil and gas well proximity was correlated with an increase in the likelihood of asthma exacerbations, including mild, moderate, and severe asthma attacks.<sup>19</sup> A 2015 study documented increased

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<sup>15</sup> See Stacy, et al., *Perinatal Outcomes and Unconventional Natural Gas Operations in Southwest Pennsylvania*, PLoS ONE (June 3, 2015) available at <https://doi.org/10.1371/journal.pone.0126425>.

<sup>16</sup> Casey et al., *Unconventional Natural Gas Development and Birth Outcomes in Pennsylvania, USA*, *Epidemiology* (March, 2016) available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4738074/>.

<sup>17</sup> McKenzie et. al., *Birth Outcomes and Maternal Residential Proximity to Natural Gas Development in Rural Colorado*, *Envtl. Health Perspectives* (Jan. 28, 2014) available at <https://ehp.niehs.nih.gov/1306722/>.

<sup>18</sup> *Id.*

<sup>19</sup> Rasmussen et al., *Association between Unconventional Natural Gas Development in the Marcellus Shale and Asthma Exacerbations*, 176 *J. Am. Med. Assn. Internal Med.* 1334-43. (Sept., 2016) available at <https://www.ncbi.nlm.nih.gov/pubmed/27428612>.

hospitalization rates in counties with a high density of oil and gas wells.<sup>20</sup>

Similarly, other studies, including a 2017 study, have demonstrated an increase in the reporting of nasal, sinus, and migraine headaches, and fatigue symptoms in areas with high volumes of oil and gas drilling.<sup>21</sup>

30. While this literature is developing, it substantiates that people living in close proximity to oil and gas development are exposed to air pollution from these sources and experience acute, adverse, and often near-term health impacts.

### Conclusion

31. BLM's Suspension Rule will result in additional VOC and HAP emissions. Individuals exposed to these emissions face a higher risk of adverse health effects, including acute and immediate respiratory ailments like asthma and enhanced risk of longer term, deleterious health effects associated with toxic pollution exposures.

I declare that the foregoing is true and correct.



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Elena Craft, PhD

Dated: December 17, 2017

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<sup>20</sup> Jemielita et al., *Unconventional Gas and Oil Drilling Is Associated with Increased Hospital Utilization Rates*, PLoS ONE (July 15, 2015) available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4503720/>.

<sup>21</sup> See Tustin et al., *Associations between Unconventional Natural Gas Development and Nasal and Sinus, Migraine Headache, and Fatigue Symptoms in Pennsylvania*, 125 ENV. HEALTH PERSPECTIVES 189 (Feb., 2017) available at [available at https://ehp.niehs.nih.gov/EHP281/](https://ehp.niehs.nih.gov/EHP281/).

# **Attachment 54**

**Declaration of Gwen Lachelt**, County Commissioner, La Plata County, Colorado, **and Katee McClure**, City Commissioner, Aztec, New Mexico



IN THE UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF CALIFORNIA

**DECLARATION OF GWEN LACHELT AND KATEE McCLURE  
Submitted In Support of Plaintiffs' Motion for Preliminary Injunction**

We, Gwen Lachelt and Katee McClure, collectively declare as follows:

1. I, Gwen Lachelt, am a County Commissioner in La Plata County, Colorado. La Plata is a largely rural county in southwestern Colorado, bordering New Mexico, with a population of approximately 56,000 residents. La Plata County is in the San Juan Basin, which covers the Four Corners region of Colorado and New Mexico. Since my election to the La Plata County Commission in 2012, I have deeply engaged in issues related to oil and gas development, including the county's efforts to conserve resources and minimize the environmental impacts of that development. For instance, as a Commissioner, I served as co-chair of Governor Hickenlooper's Oil and Gas Task Force, which focused on how to address land use issues in a way that protects communities while allowing reasonable access to private mineral rights. The Task Force was comprised of a wide range of stakeholders including local governments, industry representatives, and conservation groups. The group issued a final report in February of 2015 setting forth a number of recommendations to govern oil and gas development in the state. Prior to my time on the County Commission, I spent over 25 years working

on issues related to the impacts of oil and gas development in various capacities, including as the founder and director of Earthworks Oil & Gas Accountability Project.

- a. La Plata County and the surrounding areas in the San Juan Basin have significant oil and gas development, including extensive development on federal and tribal lands that lie within the county. La Plata County has over 3,000 oil and gas wells, with roughly 90% of wells and production in La Plata located on federal and tribal lands.<sup>1</sup> Royalties from oil and gas production on federal lands are an important source of revenue for La Plata County. In fiscal year 2016, La Plata County received \$994,392.20 and the La Plata School District received \$65,423.80 from Federal Mineral Lease distributions.<sup>2</sup> These royalties fund critical programs in the county, including education, public infrastructure investment for roads and bridges, and mitigation efforts to offset the impacts of energy development in our community.
2. I, Katee McClure, am a City Commissioner in Aztec, New Mexico. Aztec is located in northwestern New Mexico in the San Juan Basin. Aztec has a population of approximately 6,800 and is the county seat of San Juan

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<sup>1</sup> Calculated from Drillinginfo and ICF International datasets.

<sup>2</sup> Colorado Department of Local Affairs, Federal Mineral Lease Distributions County Pool (FY 2016), <https://dola.colorado.gov/sdd/ddFMLTier1.jsf>.

County, New Mexico. Since I became a City Commissioner in 2014, I have worked on oil and gas issues that affect our community.

- a. San Juan County is the leading producer of natural gas on federal lands in New Mexico and a major producer of oil on federal lands. San Juan County has over 11,000 oil and gas wells on federal and tribal lands or utilizing federal mineral rights.<sup>3</sup> In 2016, 267,732,910 mcf of gas and 2,931,321 barrels of oil were produced in San Juan County from BLM-managed wells.<sup>4</sup> Royalties from federal oil and gas development are a significant source of revenue for New Mexico, with the state receiving \$455,154,380 in federal disbursements from natural resources extraction in 2017.<sup>5</sup> These royalty revenues provide essential funding for education needs in the state.
3. Figure 1 below shows active oil and gas wells managed by the Bureau of Land Management in the San Juan Basin, focusing on La Plata and San Juan counties.<sup>6</sup>

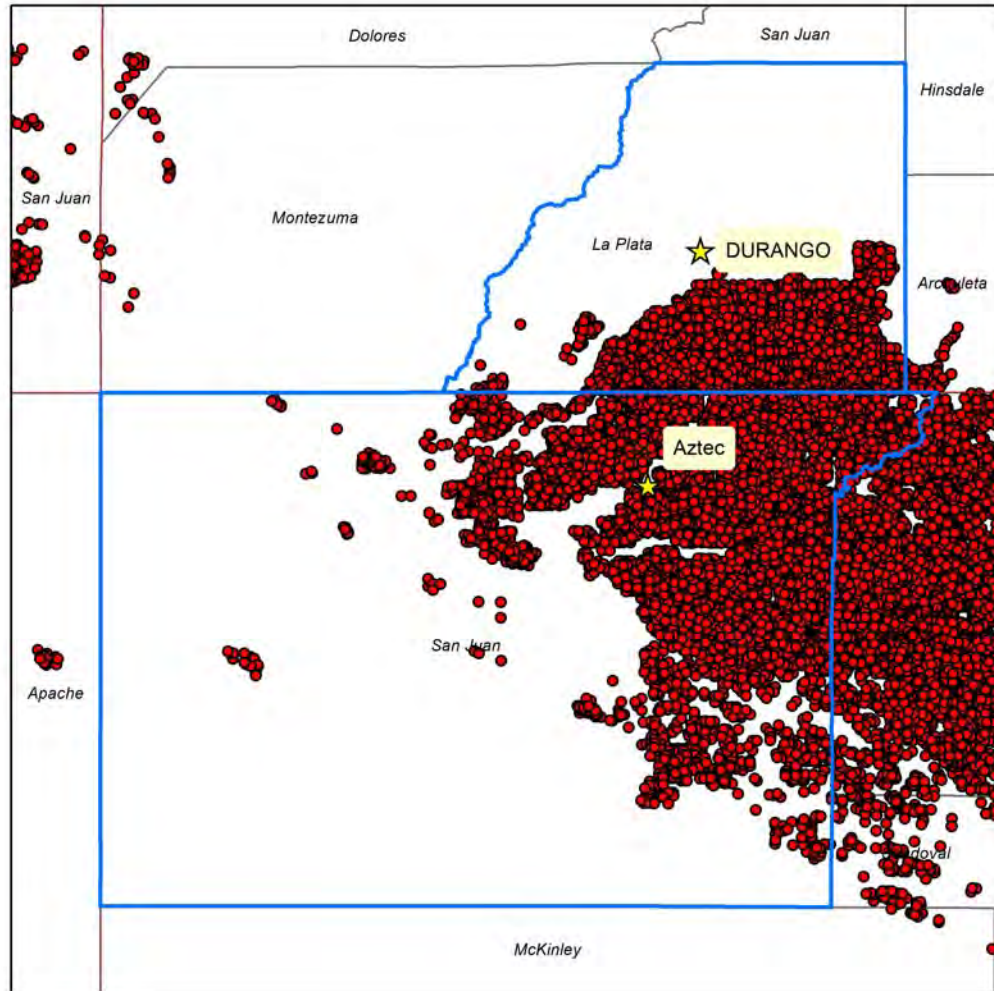
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<sup>3</sup> Calculated from Drillinginfo, U.S. Geological Survey, and U.S. Forest Service data.

<sup>4</sup> U.S. Department of Interior, Natural Resources Revenue Data (2016), <https://revenuedata.doi.gov/explore/NM/#production>.

<sup>5</sup> U.S. Department of Interior, Natural Resources Revenue Data (2017), <https://revenuedata.doi.gov/explore/NM/#disbursements>.

<sup>6</sup> Wells identified using Drillinginfo, U.S. Geological Survey, and U.S. Forest Service data.



**Figure 1: BLM-Managed Oil and Gas Wells in the San Juan Basin**

4. Oil and gas production can also lead to a waste of natural resources. Lost gas from venting, flaring, and leakage from sources in Colorado and New Mexico has profound negative consequences for both our communities' royalty revenue and our communities' public health. For example, a recent

report found that New Mexico residents lose out on an estimated \$12.7 million in revenue each year due to waste of natural gas on federal lands.<sup>7</sup>

5. The San Juan Basin, in which La Plata County, Colorado and Aztec, New Mexico are situated, has one of the highest rates of wasted gas and methane loss in the country, accounting for nearly 17% of U.S. methane losses.<sup>8</sup> In 2014, NASA discovered a methane cloud the size of Delaware over the San Juan Basin.<sup>9</sup> In a follow-up study released in 2016, NASA found that a significant portion of these methane losses were attributable to oil and gas sources in the Basin.<sup>10</sup> In particular, the study identified 250 sites with very high loss rates, sometimes known as super-emitters.<sup>11</sup> Approximately half of these super-emitter sites were in La Plata County on the Southern Ute Reservation, which is tribal land subject to the BLM Rule. The site with the greatest losses identified in the study was a gas processing plant on tribal land in La Plata County.
6. In addition to wasted methane, oil and gas sites in La Plata County, San Juan County, and across the San Juan Basin release dangerous pollutants such as

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<sup>7</sup> Environmental Defense Fund, *Oil and Gas Methane Emissions in New Mexico* 12 (2017), <https://www.edf.org/sites/default/files/new-mexico-methane-analysis.pdf>.

<sup>8</sup> Conservation Economics Institute, *A Review of the Economic Factors Surrounding the Capture of Methane from Oil and Natural Gas Development on Federal Public Land* (April 22, 2016).

<sup>9</sup> NASA news release, Oct. 9, 2014 available at <http://www.nasa.gov/press/2014/october/satellitedata-shows-us-methane-hot-spot-bigger-thanexpected/#.VLbQ0PnF9sE>.

<sup>10</sup> Christian Frankenberg, et al., *Airborne methane remote measurements reveal heavy-tail flux distribution in Four Corners region*, Proceedings of the National Academy of the Sciences of the United States of America (June 17, 2016), available at <http://www.pnas.org/content/113/35/9734.full>.

<sup>11</sup> *Id.*

benzene and ozone-forming pollutants that can lead to asthma attacks and worsen emphysema. This air pollution continues to be a regional public health hazard, and has contributed to La Plata County receiving a “D” grade for poor ozone air quality from the American Lung Association, based on the number of days where air quality was found to be unsafe for sensitive groups using EPA Air Quality System data.<sup>12</sup> San Juan County has similarly poor ozone air quality, receiving a “C” grade from the American Lung Association.<sup>13</sup>

7. The Bureau of Land Management’s Waste Prevention Rule establishes uniform requirements across oil and gas sources on federal and tribal lands, increasing the volume of natural gas that companies are able to bring to market and boosting the royalties and severance taxes that fund public services provided by our governments for our communities. In addition to the waste prevention standards, the final rule’s royalty provisions clarify when producers must pay royalties on gas and so will have near-term benefits for incentivizing additional capture and associated revenues for our governments.

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<sup>12</sup> American Lung Association, *State of the Air Report Card: Colorado* (2017), <http://www.lung.org/our-initiatives/healthy-air/sota/city-rankings/states/colorado/>.

<sup>13</sup> American Lung Association, *State of the Air Report Card: New Mexico* (2017), <http://www.lung.org/our-initiatives/healthy-air/sota/city-rankings/states/new-mexico/>.

8. The Waste Prevention Rule has the added benefit of reducing harmful air pollution and improving air quality for the people of La Plata County and the San Juan Basin. This is particularly so because La Plata County and San Juan County are situated on the border of Colorado and New Mexico and so emissions from sources in both states impact the air we breathe. Although Colorado has state requirements that address many sources of waste and reduce air pollution from the oil and gas sector, New Mexico largely lacks such measures. BLM's rule helps to provide important uniformity across state lines.
9. The Waste Minimization Rule is an important step forward to ensure operators on federal and tribal lands are deploying commonsense measures to capture additional gas. The Rule benefits our communities by providing additional royalties that we can use to fund key priorities—including infrastructure, roads, and education—while also helping to clean up the air in our parts of Colorado and New Mexico, which has health benefits for our citizens. If BLM's suspension of key provisions of the Waste Prevention Rule takes effect, our communities will be harmed by the loss of royalties and degradation of air quality caused by the suspension.

I declare under penalty of perjury that the foregoing is true and correct.

/s/ Gwen Lachelt

Gwen Lachelt

Dated December 18, 2017

I declare under penalty of perjury that the foregoing is true and correct.

/s/ Katee McClure

Katee McClure

Dated December 18, 2017



# **Attachment 55**

**Declaration of George Werito, Jr., Ojo Encino Chapter of the Navajo Nation**

IN THE UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF CALIFORNIA

**DECLARATION OF GEORGE WERITO, JR.**

I, George Werito, Jr., declare as follows:

1. I respectfully submit this declaration on behalf of the Ojo Encino Chapter of the Navajo Nation. I am the elected President of Ojo Encino Chapter.

2. Pursuant to 11 N.N.C. §10 and 26 N.N.C. §102, the Ojo Encino Chapter is a recognized local government entity and delegated certain authorities and responsibilities under Navajo Nation Laws. The Ojo Encino Chapter has the authority to review all matters affecting the Ojo Encino community and make appropriate recommendations to the Navajo Nation, as well as to county, state government, and federal agencies.

3. Ojo Encino Chapter encompasses approximately 97 square miles within its land use planning area, which includes Navajo tribal trust lands, Navajo allottee lands and minerals, New Mexico state lands and minerals, and federal lands and minerals. Ojo Encino Chapter is one of 110 chapters of the Navajo Nation. The Navajo Nation is the largest American Indian tribe within the geographic boundaries of the United States, spanning over 27,000 square miles. The Navajo Nation has more than 300,000 enrolled members, with over 180,000 of those members living on the Navajo Nation.

4. The Navajo Nation possesses significant and valuable oil and natural gas resources, and has sovereign authority over these resources. Pursuant to the Fundamental Laws of the Diné, the Navajo Nation government upholds a sacred obligation and duty to respect, preserve, and protect our resources. According to data from the New Mexico Oil Conservation Division well database, Ojo Encino Chapter currently has approximately 7 active wells within its

boundaries that overlay Federal or Indian minerals, and within the 5 mile zone around Ojo Encino Chapter, there are approximately an additional 47 active wells that overlay Federal or Indian minerals.

5. The Ojo Encino Chapter is aware that the U.S. Bureau of Land Management (BLM) took action in 2016 to reduce the waste of natural gas owned by the American public, tribes, and individual Indian Mineral Owners, which occurs during the oil and gas production process on public and tribal lands administered by BLM. We support BLM's waste prevention standards for oil and gas production on federal and tribal lands ("Waste Prevention Rule"), 81 Fed. Reg. 83,008 (Nov. 18, 2016). Ojo Encino Chapter also had a representative present at the March 18<sup>th</sup> and 19<sup>th</sup> sessions that BLM held in Golden, CO.

6. This action minimizes waste of natural resources on tribal lands, secures additional royalty revenue for the tribes and individual Indian Mineral Owners, and protects the environment and public health by minimizing pollution from oil and gas development that harms air quality and contributes to climate change.

7. We are also aware that BLM has suspended for one year almost all of the requirements of the Waste Prevention Rule that would generate benefits from gas savings and reduce methane emissions, 82 Fed. Reg. 58,050 (Dec. 8, 2017). We oppose the suspension of these standards.

8. Methane waste is a serious problem for tribes, robbing tribal governments of millions of dollars and polluting the air we breathe.

9. The Secretary of the Interior has a trust responsibility for managing Indian minerals and has delegated this responsibility to the BLM, among other agencies. Congress has directed the Secretary to "aggressively carry out his trust responsibility in the administration of

Indian oil and gas.” 30 U.S.C. § 1701(a)(4). BLM has a duty to ensure oil and gas reserves on tribal and allotted lands are developed responsibly and ensure that energy is not wasted.

10. BLM manages and regulates oil and gas drilling on the Navajo Nation and on allotted lands pursuant to its trust responsibilities to the Navajo Nation and to allottees. *See Cotton Petroleum Corp. v. U.S. Dep’t of the Interior*, 870 F.2d 1515, 1524 (10th Cir. 1989). As a trustee, the agency must manage these operations for the benefit of the Navajo Nation and the Individual Indian Mineral Owner allottees.

11. Navajo allottees benefit from royalties they receive from oil and gas production on their allotted land. New Mexico also splits royalties with the federal government from production on federal land. The 49% of oil and gas royalties that the state receives is earmarked for public education in New Mexico. However, public education funding is suffering due to lost royalty revenue from wasted natural gas.

12. According to ICF International, oil and gas companies wasted \$100 million worth of natural gas through venting, flaring, and equipment leaks on tribal lands alone in a single year. These practices waste tribal energy resources, and deprive tribes of millions of dollars in revenue each year, reducing funding for vital public services.

13. The Waste Prevention Rule is a valid and important exercise of BLM’s trust responsibilities, increasing royalty payments from minerals held in trust for tribes and individual Indian mineral owners.

14. In contrast, the suspension of the Waste Prevention Rule is contrary to BLM’s trust responsibility, by allowing tribal resources to be unreasonably wasted, particularly when best practices, including the use of gas-capture technology, can be cost-effectively utilized by the oil and gas industry.

15. In addition to gas capture from oil and gas operations providing additional revenue to the Navajo Allottees, such measures will also reduce air pollution that occurs during oil and gas development.

16. We understand that this pollution includes a host of harmful air pollutants, such as volatile organic compounds (VOCs) and benzene. VOCs form ground-level ozone, or smog, that has been linked to increased rates of asthma attacks, and exacerbation of other heart and lung conditions. According to the American Lung Association, San Juan County, New Mexico, which intersects with Navajo lands, received a "C" grade for ozone pollution due in-part to oil and gas development (McKinley County does not collect ozone data). We understand that more than 1,800 asthma attacks in children occur annually for the four counties that intersect with Navajo lands where oil and gas development is most heavily concentrated (San Juan County, Utah; Apache County, Arizona; San Juan County, New Mexico; and McKinley County, New Mexico). We understand that asthma rates among the Navajo Nation are two to three times higher than the general public. We also understand that the oil and gas sector emits pollutants which include toxics, such as benzene, that is known to cause cancer in humans.

17. Public health is a critical issue for the Navajo Nation. The suspension of the Waste Prevention Rule will harm tribal members living near energy development by increasing exposure to toxic air pollutants such as benzene and smog-forming VOCs.

18. We are also concerned that BLM's rapid pace for suspending the Waste Prevention Rule has not allowed adequate time for tribal consultation. BLM's trust responsibility includes the duty to consult with federally recognized tribes and individual Indian mineral owners prior to making decisions that impact their resources. Executive Order 13,175, 64 Fed. Reg. 67,249 (Nov. 6, 2000). According to BLM's Handbook on Improving and Sustaining BLM-Tribal Relations,

“BLM cannot simply rely on the proscribed public participation and notification requirements of...other...laws to comply with ... BLM’s general trust obligations to consult.” BLM, H 1780-1 at IV-23 (Dec. 15, 2016).

19. Consistent with this responsibility, BLM engaged in an extensive tribal consultation process prior to promulgating the Waste Prevention Rule. In 2014, BLM held four tribal outreach sessions, in Denver, Colorado; Albuquerque, New Mexico; Dickinson, North Dakota; and Washington, D.C. 81 Fed. Reg. at 83,071. Two of the sessions were live-streamed to allow for greater participation. *Id.* After the proposed rule was published in 2016, BLM held four more tribal outreach meetings in Farmington, New Mexico; Oklahoma City, Oklahoma; Denver, Colorado; and Dickinson, North Dakota. *Id.* In advance of both the 2014 and 2016 tribal outreach sessions, BLM sent letters to over 200 tribal leaders that had previously expressed interest in oil and gas-related matters. *Id.* at 83,021.

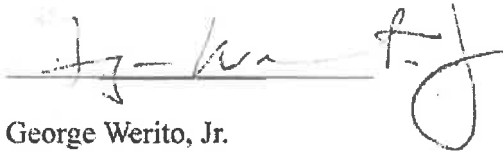
20. By contrast, BLM has provided little opportunity for tribes, tribal subdivisions, and individual Indian mineral owners to consult about the suspension of the Waste Prevention Rule. BLM states that it has “conducted an appropriate degree of tribal outreach in the course of developing this final delay rule,” 82 Fed. Reg. at 58,065, but has not conducted any tribal outreach sessions—or, indeed, any public hearings at all—instead merely sending rule notification letters to tribal organizations. This falls well short of the tribal consultation that BLM engaged in prior to promulgating the Waste Prevention Rule, and well short of the consultation required by BLM's trust responsibility to individual Indian mineral owners.

21. For all the above reasons, we oppose the suspension of the Waste Prevention Rule, which will result in BLM-managed oil and gas operations continuing to waste tribal energy

resources, reducing much-needed royalties, and continuing to emit harmful pollution, threatening the health of our communities.

I declare that the foregoing is true and correct to the best of my knowledge, information, and belief.

Dated: December 15, 2017

A handwritten signature in black ink, appearing to read "George Werito, Jr.", is written over a horizontal line. To the right of the signature is a large, stylized flourish or initial.

George Werito, Jr.

# **Attachment 56**

**Declaration of Harry Domingo, Sr.,** Counselor Chapter of the Navajo Nation



IN THE UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF CALIFORNIA

**DECLARATION OF HARRY DOMINGO, SR.**

I, Harry Domingo, Sr., declare as follows:

1. I respectfully submit this declaration on behalf of the Counselor Chapter of the Navajo Nation. I am the elected President of Counselor Chapter.

2. Pursuant to 11 N.N.C. §10, the Counselor Chapter is a recognized local government entity and delegated certain authorities and responsibilities under Navajo Nation Laws. The Counselor Chapter has the authority to review all matters affecting the Counselor community and make appropriate recommendations to the Navajo Nation, as well as to county, state government, and federal agencies.

3. Counselor Chapter encompasses approximately 166 square miles within its land use planning area, which includes Navajo tribal trust lands, Navajo allottee lands and minerals, New Mexico state lands and minerals, and federal lands and minerals. Counselor Chapter is one of 110 chapters of the Navajo Nation. The Navajo Nation is the largest American Indian tribe within the geographic boundaries of the United States, spanning over 27,000 square miles. The Navajo Nation has more than 300,000 enrolled members, with over 180,000 of those members living on the Navajo Nation.

4. The Navajo Nation possesses significant and valuable oil and natural gas resources, and has sovereign authority over these resources. Pursuant to the Fundamental Laws of the Diné, the Navajo Nation government upholds a sacred obligation and duty to respect, preserve, and protect our resources. According to data from the New Mexico Oil Conservation Division well database, Counselor Chapter currently has approximately 191 active wells within

its boundaries that overlay Federal or Indian minerals, and within the 5 mile zone around Counselor Chapter are approximately an additional 306 active wells that overlay Federal or Indian minerals.

5. The Counselor Chapter is aware that the U.S. Bureau of Land Management (BLM) took action in 2016 to reduce the waste of natural gas owned by the American public, tribes, and individual Indian Mineral Owners, which occurs during the oil and gas production process on public and tribal lands administered by BLM. We support BLM's waste prevention standards for oil and gas production on federal and tribal lands ("Waste Prevention Rule"), 81 Fed. Reg. 83,008 (Nov. 18, 2016).

6. This action minimizes waste of natural resources on tribal lands, secures additional royalty revenue for the tribes and individual Indian Mineral Owners, and protects the environment and public health by minimizing pollution from oil and gas development that harms air quality and contributes to climate change.

7. We are also aware that BLM has suspended for one year almost all of the requirements of the Waste Prevention Rule that would generate benefits from gas savings and reduce methane emissions, 82 Fed. Reg. 58,050 (Dec. 8, 2017). We oppose the suspension of these standards.

8. Methane waste is a serious problem for tribes, robbing tribal governments of millions of dollars and polluting the air we breathe.

9. The Secretary of the Interior has a trust responsibility for managing Indian minerals and has delegated this responsibility to the BLM, among other agencies. Congress has directed the Secretary to "aggressively carry out his trust responsibility in the administration of

Indian oil and gas.” 30 U.S.C. § 1701(a)(4). BLM has a duty to ensure oil and gas reserves on tribal and allotted lands are developed responsibly and ensure that energy is not wasted.

10. BLM manages and regulates oil and gas drilling on the Navajo Nation and on allotted lands pursuant to its trust responsibilities to the Navajo Nation and to allottees. *See Cotton Petroleum Corp. v. U.S. Dep't of the Interior*, 870 F.2d 1515, 1524 (10th Cir. 1989). As a trustee, the agency must manage these operations for the benefit of the Navajo Nation and the Individual Indian Mineral Owner allottees.

11. Navajo allottees benefit from royalties they receive from oil and gas production on their allotted land. New Mexico also splits royalties with the federal government from production on federal land. The 49% of oil and gas royalties that the state receives is earmarked for public education in New Mexico. However, public education funding is suffering due to lost royalty revenue from wasted natural gas.

12. According to ICF International, oil and gas companies wasted \$100 million worth of natural gas through venting, flaring, and equipment leaks on tribal lands alone in a single year. These practices waste tribal energy resources, and deprive tribes of millions of dollars in revenue each year, reducing funding for vital public services.

13. The Waste Prevention Rule is a valid and important exercise of BLM's trust responsibilities, increasing royalty payments from minerals held in trust for tribes and individual Indian mineral owners.

14. In contrast, the suspension of the Waste Prevention Rule is contrary to BLM's trust responsibility, by allowing tribal resources to be unreasonably wasted, particularly when best practices, including the use of gas-capture technology, can be cost-effectively utilized by the oil and gas industry.

15. In addition to gas capture from oil and gas operations providing additional revenue to the Navajo Allottees, such measures will also reduce air pollution that occurs during oil and gas development.

16. We understand that this pollution includes a host of harmful air pollutants, such as volatile organic compounds (VOCs) and benzene. VOCs form ground-level ozone, or smog, that has been linked to increased rates of asthma attacks, and exacerbation of other heart and lung conditions. According to the American Lung Association, San Juan County, New Mexico, which intersects with Navajo lands, received a "C" grade for ozone pollution due in-part to oil and gas development (McKinley County does not collect ozone data). We understand that more than 1,800 asthma attacks in children occur annually for the four counties that intersect with Navajo lands where oil and gas development is most heavily concentrated (San Juan County, Utah; Apache County, Arizona; San Juan County, New Mexico; and McKinley County, New Mexico). We understand that asthma rates among the Navajo Nation are two to three times higher than the general public. We also understand that the oil and gas sector emits pollutants which include toxics, such as benzene, that is known to cause cancer in humans.

17. Public health is a critical issue for the Navajo Nation. The suspension of the Waste Prevention Rule will harm tribal members living near energy development by increasing exposure to toxic air pollutants such as benzene and smog-forming VOCs.

18. We are also concerned that BLM's rapid pace for suspending the Waste Prevention Rule has not allowed adequate time for tribal consultation. BLM's trust responsibility includes the duty to consult with federally recognized tribes and individual Indian mineral owners prior to making decisions that impact their resources. Executive Order 13,175, 64 Fed. Reg. 67,249 (Nov. 6, 2000). According to BLM's Handbook on Improving and Sustaining BLM-Tribal Relations,

“BLM cannot simply rely on the proscribed public participation and notification requirements of...other...laws to comply with ... BLM’s general trust obligations to consult.” BLM, H 1780-1 at IV-23 (Dec. 15, 2016).

19. Consistent with this responsibility, BLM engaged in an extensive tribal consultation process prior to promulgating the Waste Prevention Rule. In 2014, BLM held four tribal outreach sessions, in Denver, Colorado; Albuquerque, New Mexico; Dickinson, North Dakota; and Washington, D.C. 81 Fed. Reg. at 83,071. Two of the sessions were live-streamed to allow for greater participation. *Id.* After the proposed rule was published in 2016, BLM held four more tribal outreach meetings in Farmington, New Mexico; Oklahoma City, Oklahoma; Denver, Colorado; and Dickinson, North Dakota. *Id.* In advance of both the 2014 and 2016 tribal outreach sessions, BLM sent letters to over 200 tribal leaders that had previously expressed interest in oil and gas-related matters. *Id.* at 83,021.

20. By contrast, BLM has provided little opportunity for tribes, tribal subdivisions, and individual Indian mineral owners to consult about the suspension of the Waste Prevention Rule. BLM states that it has “conducted an appropriate degree of tribal outreach in the course of developing this final delay rule,” 82 Fed. Reg. at 58,065, but has not conducted any tribal outreach sessions—or, indeed, any public hearings at all—instead merely sending rule notification letters to tribal organizations. This falls well short of the tribal consultation that BLM engaged in prior to promulgating the Waste Prevention Rule, and well short of the consultation required by BLM’s trust responsibility to individual Indian mineral owners.

21. For all the above reasons, we oppose the suspension of the Waste Prevention Rule, which will result in BLM-managed oil and gas operations continuing to waste tribal energy

resources, reducing much-needed royalties, and continuing to emit harmful pollution, threatening the health of our communities.

I declare that the foregoing is true and correct to the best of my knowledge, information, and belief.

Dated: December 15, 2017

A handwritten signature in cursive script that reads "Harry Domingo, Sr." The signature is written in black ink and is positioned above a horizontal line.

Harry Domingo, Sr.

# **Attachment 57**

**Declaration of Dr. Renee McVay and Hillary Hull, Environmental Defense Fund**

IN THE UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF CALIFORNIA

**DECLARATION OF DR. RENEE McVAY AND HILLARY HULL**

We, Dr. Renee McVay and Hillary Hull, declare as follows:

1. I, Dr. Renee McVay, am a Research Analyst in the Oil and Gas program at the Environmental Defense Fund (“EDF”). I earned my PhD in Chemical Engineering from the California Institute of Technology, where my research focused on atmospheric chemistry and the formation of atmospheric aerosols. I also have an MS in Chemical Engineering from the California Institute of Technology and a BS in Chemical Engineering from Texas A&M University. After my PhD, I completed a postdoctoral fellowship at the National Oceanic and Atmospheric Administration working with the regional air quality model WRF-Chem to improve performance and predictions of the model. At EDF, my work focuses on using emission inventories to develop state and region-specific emission profiles from the oil and gas sector. My curriculum vitae is attached as Attachment 1.
2. I, Hillary Hull, am a Research and Analytics Manager for the Climate & Energy program at EDF in San Francisco. I have an MS from Stanford University in environmental engineering (Atmosphere & Energy Program) and a BS from the University of Texas at Austin in civil engineering. In my



role at EDF, I develop analytics in support of EDF's state, federal, and international natural gas work. My work includes emissions inventory compilation, data and economic analytics, technical support for rulemaking and regulation, and policy analysis and development. My curriculum vitae is attached as Attachment 2.

**BLM's Rule Will Delay Implementation of the Compliance Requirements for Certain Provisions of the Waste Prevention Rule.**

3. The Bureau of Land Management ("BLM") has finalized a rule ("delay rule") to suspend or delay until January 17, 2019 certain requirements in BLM's final rule: Waste Prevention, Production Subject to Royalties, and Resource Conservation, 81 Fed. Reg. 83,008 ("Waste Prevention Rule"). The 2017 final delay rule postpones implementation of the compliance requirements for certain provisions of the Waste Prevention Rule for one year. For certain requirements in the Waste Prevention Rule with compliance dates that have yet to pass, the final delay rule will postpone the compliance dates until January 17, 2019, or for one year. For other requirements in the Waste Prevention Rule with compliance dates that have already passed, the final delay rule will extend those dates until January 17, 2019.

4. We performed an analysis to characterize affected wells and emissions from these wells in order to document harm the public would face on account of BLM's action. Section I describes our methodology for identifying all affected sources and presents a map of those sources. Section II characterizes total emissions that will result from the delay rule, relying on BLM's methodologies in the agency's *Regulatory Impact Analysis for the Final Rule to Suspend or Delay Certain Requirements of the 2016 Waste Prevention Rule* ("2017 RIA") and *Regulatory Impact Analysis for: Revisions to 43 CFR 3100 (Onshore Oil and Gas Leasing) and 43 CFR 3600 (Onshore Oil and Gas Operations), Additions of 43 CFR 3178 (Royalty-Free Use of Lease Production) and 43 CFR 3179 (Waste Prevention and Resource Conservation)* ("2016 RIA"). Section III focuses on the delay of the leak detection and repair ("LDAR") requirements, accounting for all existing state and EPA LDAR regulations. This analysis demonstrates that the delay of the LDAR requirements alone will cause significant additional emissions, even without accounting for the additional emissions and waste that will occur due to the delay of other standards in the Waste Prevention Rule. We focus our analysis in this section on the LDAR requirement to show with specificity where those additional emissions will occur, and to demonstrate that state and EPA standards are insufficient to reduce waste.

**SECTION I: BLM's Delay Rule Will Allow Hundreds of Thousands of Oil and Natural Gas Facilities to Forego Emissions Reductions.**

5. To identify wells that would be subject to the BLM Waste Prevention Rule, we followed a similar methodology to that used by BLM in their 2016 RIA. We obtained well data from DrillingInfo, a proprietary database that compiles a wide range of drilling- and production-related information from state oil and gas commissions. We obtained latitude and longitude data for all wells in the U.S., filtering to include only wells with active production during 2016 in order to exclude abandoned and shuttered wells. We obtained federal and tribal surface land ownership data from the United States Geological Survey.<sup>1</sup> Because the BLM Rule also applies to split-estate wells, in which the mineral rights belong to the federal government but the surface rights are owned by another party, we obtained mineral rights data from the USDA Forest Service.<sup>2</sup> Using these two data layers, we identified all active wells on federal or tribal lands or with federal mineral rights. This dataset of wells represents wells that would be covered by the BLM Rule (denoted as BLM-covered wells). In total, there are 107,231 producing wells covered by the Waste Prevention Rule, and therefore affected by BLM's delay of the

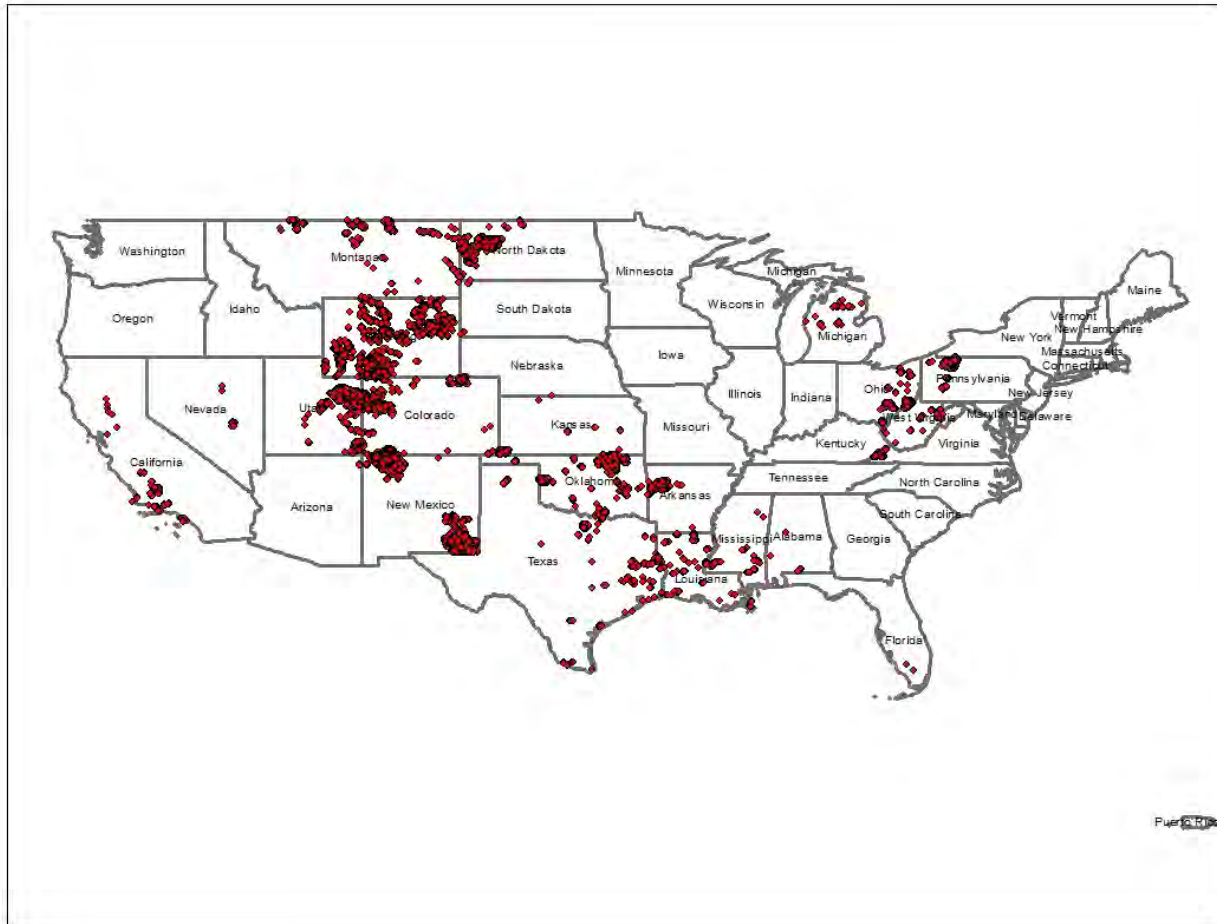
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<sup>1</sup> Available at <https://coastalmap.marine.usgs.gov/GISdata/basemaps/boundaries/fedlands/fedlanp020.htm>

<sup>2</sup> Available at <https://data.fs.usda.gov/geodata/edw/datasets.php>

Waste Prevention Rule requirements. Figure 1 displays a map of BLM-covered wells.

**Figure 1: Map of Total Affected Well Sources**



**SECTION II: BLM’s Delay of the Waste Prevention Rule Will Result in Additional Emissions of Harmful Methane, Volatile Organic Compounds, and Hazardous Air Pollutants from Affected Facilities.**

6. A delay of the Waste Prevention Rule’s provisions will result in additional emissions of methane, volatile organic compound (“VOC”), and hazardous air pollutant (“HAP”) emissions that would otherwise be remediated by

these requirements. Methane is a powerful short-term climate forcer with over 80 times the global warming potential of carbon dioxide on a mass basis over the first 20 years after it is emitted. VOCs react with nitrogen oxides to form ground-level ozone, or smog, which can cause respiratory disease and premature death. Other hazardous air pollutants emitted by oil and gas sources include benzene, a known human carcinogen.

7. To estimate emissions that will now continue unabated because of BLM's delay, we relied on BLM's estimated emissions reductions in 2018 from the 2016 RIA. BLM's estimates rely on data from EPA's New Source Performance Standards and Control Technique Guidelines analyses, scaled according to the share of oil and gas production coming from Federal and Indian lands (in 2014). BLM's estimates for pneumatic controllers, pneumatic pumps, storage tanks, and for leak detection and repair do not include emissions reductions from sources in Colorado and Wyoming (in the Upper Green River Basin) already subject to state rules. BLM's estimates likewise exclude reductions due to EPA's standards for new and modified sources. After accounting for these state and federal programs, BLM estimated that Waste Prevention Rule would result in 176,000 tons of methane emissions reductions, 252,000 tons of VOC emissions reductions, and 1,880 tons of HAP emissions reductions. 2016 RIA at Tables 8-2b, 8-2c;

BLM, *Environmental Assessment, Waste Prevention, Production Subject to Royalties, and Resource Conservation* (“2016 EA”) at Table 22. These reductions will not occur under the delay rule, so the rule will result in additional emissions of methane, VOCs, and HAPs.

8. Table 1 below summarizes these additional emissions that will occur under the delay rule, using BLM’s estimates from the 2016 RIA and the 2016 EA.<sup>3</sup>

**Table 1: Additional 2018 Emissions Due to Delay Rule Based on BLM’s 2016 RIA and 2016 EA\***

	2018 Additional Emissions [tons]			Uncontrolled Sources [2018]
	Methane	VOC	HAP	
<b>Capture Target</b>	no effect	no effect	no effect	-
<b>Flare Measurement</b>	no effect	no effect	no effect	-
<b>Pneumatic Controllers</b>	18,000	64,900	188	5,040 controllers
<b>Pneumatic Pumps</b>	26,800	7,000	13	7,954 pumps
<b>Liquids Unloading</b>	34,300	123,000	1,242	1,600 wells
<b>Storage Tanks (&gt;6TPY VOC)</b>	7,100	32,500	328	292 tanks

<sup>3</sup> These estimates are drawn from BLM’s estimate of 2018 impacts in the 2016 RIA and 2016 EA. In the 2017 RIA and BLM’s *Environment Assessment, Waste Prevention, Production Subject to Royalties, and Resource Conservation Delay Final Rule* (“2017 EA”), BLM incorrectly attributed what it had previously recognized as 2017 emissions reductions in the 2016 RIA and 2016 EA as “Year 1” emissions increases due to the stay. The estimates are identical between the 2017 and 2018 emissions, with the exception of increased emissions reductions projected in 2018 due to more wells being subject to the liquids unloading provisions.

	2018 Additional Emissions [tons]			Uncontrolled Sources [2018]
	Methane	VOC	HAP	
<b>LDAR (semi-annual)</b>	89,500	24,800	108	36,700 well sites
<b>Administrative</b>	no effect	no effect	no effect	-
<b>2018 TOTAL ADDITIONAL EMISSIONS</b>	<b>175,700</b>	<b>252,200</b>	<b>1,879</b>	-

\* BLM 2016 RIA Table 8-2b (Methane), Table 8-2c (VOC), and BLM 2016 EA Table 22 (HAP)

**SECTION III: BLM's Delay of the Leak Detection and Repair Provisions Will Result in Additional Emissions of Harmful Methane, Volatile Organic Compounds, and Hazardous Air Pollutants from Well Sites**

9. Along with the total emissions that will result from BLM's delay rule, we separately analyzed emissions that will occur because of BLM's suspension of leak detection and repair requirements. As described above, the LDAR requirements are just one of several provisions that BLM has suspended that reduce emissions. As a result, the analysis in this section is not intended to capture the total, harmful emissions impact of the suspension. We performed this LDAR-specific analysis for two reasons. First, we are able to identify with a high degree of confidence precisely where these emissions will occur. Because of that, we can assess emissions impacts in areas that already suffer from harmful levels of ambient air pollution, like ozone. Second, this analysis allows us to quantitatively refute BLM's claim that

existing state and EPA standards will be sufficient to address BLM's obligation to minimize waste. We address both of these issues more fully below.

10. We assessed state-level LDAR approaches in California, Colorado, Wyoming, Texas, Pennsylvania, Ohio, and Utah. These states take widely divergent approaches that vary significantly in stringency, with many far less protective when compared to the Waste Prevention Rule. Appendix 1 provides a detailed comparison of state standards to the Waste Prevention Rule.
11. Additionally, EPA's New Source Performance Standards for oil and gas facilities, Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources, 81 Fed. Reg. 35,824 (June 3, 2016) ("NSPS"), require LDAR at wells constructed or modified after September 18, 2015, although a stay of these requirements is currently proposed.
12. Because these state and federal regulations will continue to require LDAR at some wells, we have isolated, excluded, and separately characterized producing wells covered by these state regulations and the NSPS. A detailed methodology of how this analysis was done is included in Appendix 2. The dataset includes 19,323 wells covered by other LDAR requirements. Separating these sources results in a conservative estimate of foregone



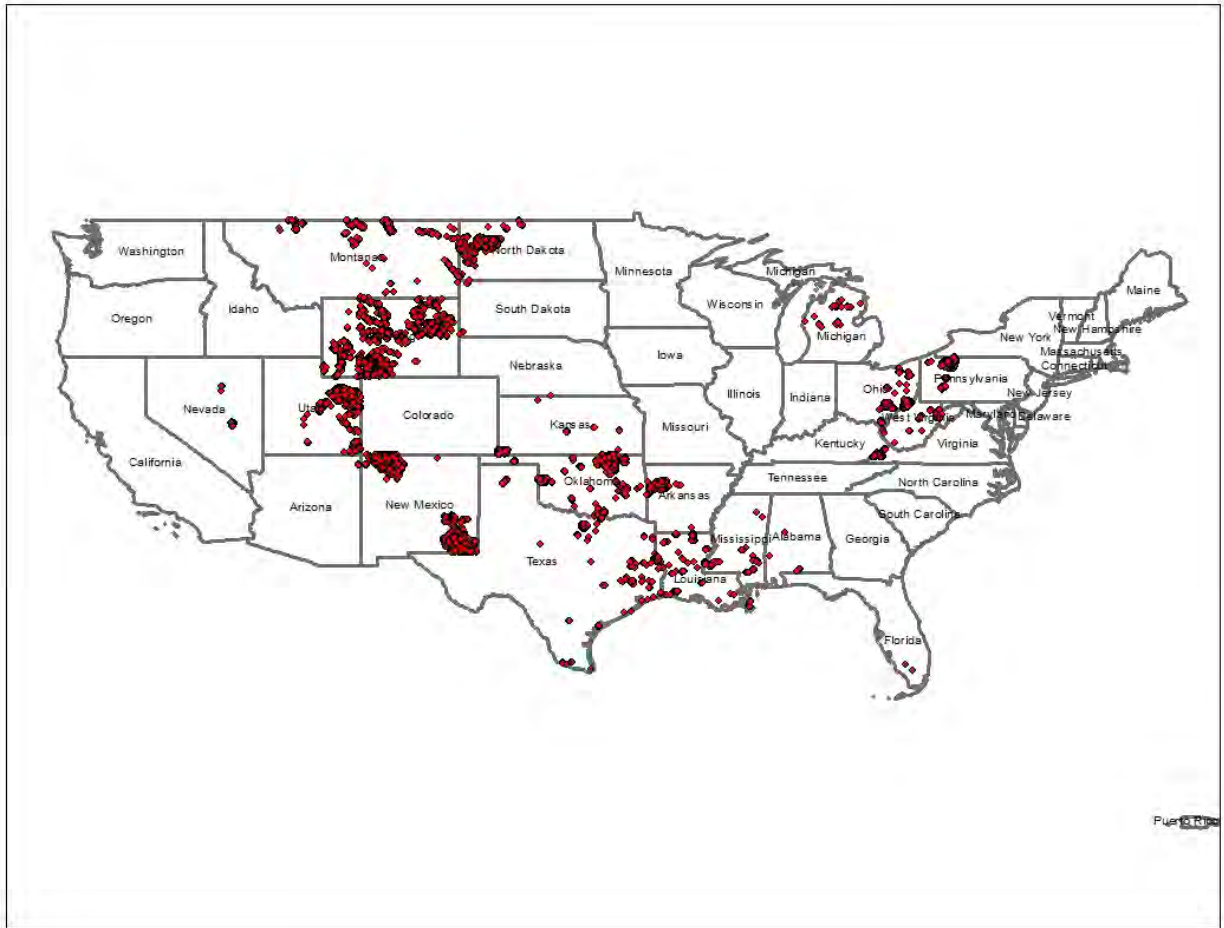
emission reductions, because BLM's LDAR requirements are more protective than many state standards and so would likely deliver incremental benefits for many of these sources if not for the delay.

13. We identified 87,908 producing wells not covered by other forms of LDAR requirements (state or EPA) that will not be required to inspect and repair their leaks if BLM's delay goes into effect. As discussed above, however, many of the additional wells that have been excluded to arrive at this number would nonetheless likely experience emission benefits due to BLM's LDAR requirements.
14. Table 2 summarizes our analysis of wells affected by BLM's delay of the Waste Prevention Rule LDAR requirements. Figure 2 displays a map of affected wells that are not covered by state or EPA LDAR requirements.

**Table 2: Summary of Affected Well Sites on Federal and Tribal Lands**

	<b># of Affected Wells (Federal and Tribal Lands)</b>
<b>Nationwide</b>	107,231
<b>Wells with no state or NSPS LDAR Requirements</b>	87,908

**Figure 2: Map of Affected Wells on Federal and Tribal Lands that are Not Covered by State or NSPS LDAR Requirements**



15. In order to calculate foregone emission reductions associated with these well sites, we have relied upon BLM estimates in the 2016 RIA. BLM estimates that 36,690 existing well sites, or 73,380 wells based on BLM's two-wells-per-site assumption, affected by the BLM Rule are not covered by preexisting state LDAR requirements. This is slightly fewer wells than we calculate in our analysis; this discrepancy could be due to our use of more up-to-date well data or more granular well data. BLM estimated that semiannual LDAR at these wells will result in emission reductions of 89,500

tons methane, 24,800 tons VOCs, and 108 tons HAP. 2016 RIA at Table 8-2b (Methane), Table 8-2c (VOCs); 2016 EA at Table 22 (HAP). We divided these emission reductions by the number of affected wells estimated by BLM (73,380) in order to calculate an average emission reduction factor per well for each category of emissions. We then applied these emissions factors to our updated calculation of wells affected by the BLM Rule that are not already covered by existing LDAR regulations.

16. Table 3 below summarizes the affected well sites without separate state or NSPS LDAR requirements.

**Table 3: Summary of Affected Well Sources and Associated Additional Emissions Due to Delay Rule.**

	# of Affected Wells	% of Affected Wells	Additional Annual Emissions [tons]		
			Methane	VOC	HAPs
<b>Wells Without Other LDAR Requirements</b>	87,908	82%	107,219	29,710	129

17. We calculate that of the total wells that are subject to the Waste Prevention Rule and because of the delay rule do not now have to comply with the LDAR requirements until January 17, 2019, nearly 82%, or 87,908 producing wells, are not covered by other LDAR requirements. These sources will remain unregulated during the delay of BLM's LDAR

provisions, and we estimate that these sources will add 107,219 tons of methane emissions, 29,710 tons of VOC emissions, and 129 tons of hazardous air pollutant emissions into the air on an annual basis. As noted above, however, the LDAR requirements in BLM's rule would also likely yield additional emission reductions even from affected wells that are already subject to state-level LDAR requirements. This quantitative assessment of just one affected source category refutes BLM's claim that state and EPA standards will adequately address BLM's obligation to minimize waste.

18. Our geographic assessment of LDAR standards also allows us to identify where the delay rule will allow additional ozone-forming emissions in areas with unhealthy ozone air quality.<sup>4</sup> As described above, there will be additional emissions in these areas attributable to storage tanks, pneumatic controllers, liquids unloading and other now-suspended requirements, but our assessment of LDAR is meant to illustrate this harmful effect for one significant source category. In ozone non-attainment areas, the incremental emissions during the delay from sources that would otherwise be covered by

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<sup>4</sup> The following counties in non-attainment with the 2008 national ambient air quality standards for ozone contain wells covered by BLM's standards: Fresno, CA; Los Angeles, CA; Ventura, CA; Contra Costa, CA; Orange, CA; San Luis Obispo, CA; Sacramento, CA; Kern, CA; Kings, CA; Weld, CO; Armstrong, PA; Westmoreland, PA; Sublette, WY; Lincoln, WY; Sweetwater, WY; Iberville, LA; Cuyahoga, OH; Knox, OH; Portage, OH; Summit, OH; Brazoria, TX; Montgomery, TX; Tarrant, TX; Wise, TX; Denton, TX; Parker, TX; Chambers, TX.

BLM's LDAR requirements may have a particularly deleterious effect on local and regional ozone levels.

19. We have identified 6,182 wells subject to the BLM requirements (and not subject to other state and NSPS LDAR requirements, per the methodology described in Appendix 2) in areas that are currently not in attainment with the 2008 national ambient air quality standards (NAAQS) for ozone.<sup>5</sup> These sources will add an estimated 2,089 tons of VOCs to the atmosphere during the delay of the LDAR requirements. VOCs contribute to ozone formation and exacerbate smog-related health issues.
20. This estimate does not fully capture the effects of the delay rule. First, it excludes additional emissions from delayed provisions other than the LDAR requirements. Assuming the other standards BLM has also delayed would deliver reductions in the non-attainment areas that are proportionate to their nation-wide reductions, BLM's decision to suspend the Waste Prevention Rule could result in as much as 20,000 additional tons of VOCs in non-attainment areas. Second, the analysis also does not account for the many wells located just outside of ozone non-attainment areas, which can still contribute to the formation of ozone that can be transported into the non-

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<sup>5</sup> The following counties in non-attainment with the 2008 national ambient air quality standards for ozone contain wells covered by BLM's standards that are not subject to any state or EPA LDAR requirements: Armstrong, PA; Westmoreland, PA; Sublette, WY; Sweetwater, WY; Iberville, LA; Cuyahoga, OH; Knox, OH; Portage, OH; Summit, OH; Brazoria, TX; Montgomery, TX; Tarrant, TX; Wise, TX; Denton, TX; Parker, TX; Chambers, TX.

attainment areas. For instance, in counties directly adjacent to the non-attainment areas, there are 7,979 additional wells that would be covered by the Waste Prevention Rule. Additionally, the 2008 NAAQS for ozone are less protective than the 2015 NAAQS. EPA has not yet issued its final designations of areas not in attainment with the 2015 NAAQS, but when it does, it is likely that there will be additional wells (and now uncontrolled emissions) in these non-attainment areas.

### **Conclusion**

21. BLM's delay will allow numerous sources to continue operating without controls to reduce methane, VOC, and HAP emissions, allowing significant emissions to persist from these sources in 2018. Because our analysis conservatively estimates the impacts of this delay, the true impacts could be much more extensive and harmful.

I declare that the foregoing is true and correct.

  
\_\_\_\_\_  
Renee McVay

December 18, 2017

I declare that the foregoing is true and correct.

/s/ Hillary Hull  
Hillary Hull

December 18, 2017

## Appendix 1

### Comparison of BLM and State Requirements

#### GAS CAPTURE TARGET REQUIREMENTS

<b>BLM: CAPTURE TARGETS PHASE IN FROM 2018-2026 FROM 85% TO 98% OF ASSOCIATED GAS PRODUCED FROM DEVELOPMENT OIL WELLS (I.E., TARGETS DON'T APPLY TO EXPLORATORY WELLS, WELL TESTING).</b>	
<b>CA<sup>2</sup></b>	NONE
<b>CO<sup>3</sup></b>	ASSOCIATED GAS: 95% CONTROL OF VENTING GAS FROM NEW WELLS; NO RESTRICTION ON FLARING.
<b>ND<sup>4</sup></b>	NORTH DAKOTA INDUSTRIAL COMMISSION GAS CAPTURE GOALS: 74% OCTOBER 1, 2014 THROUGH DECEMBER 31, 2014 77% JANUARY 1, 2015 THROUGH MARCH 31, 2016 80% APRIL 1, 2016 THROUGH OCTOBER 31, 2016 85% NOVEMBER 1, 2016 THROUGH OCTOBER 31, 2018 88% NOVEMBER 1, 2018 THROUGH OCTOBER 31, 2020 91% BEGINNING NOVEMBER 1, 2020
<b>OH<sup>5</sup></b>	NONE
<b>PA<sup>6</sup></b>	NONE
<b>TX<sup>7</sup></b>	NONE
<b>UT<sup>8</sup></b>	NONE
<b>WY<sup>9</sup></b>	NONE



**PNEUMATIC CONTROLLERS**

<b>BLM: REQUIRES OPERATORS TO REPLACE HIGH-BLEED CONTINUOUS CONTROLLERS WITH LOW-BLEED CONTROLLERS, WITH SOME EXCEPTIONS.</b>	
<b>CA<sup>2</sup></b>	<p>BY 1/1/2019 VENTING PROHIBITED FROM CONTINUOUS BLEEDING PNEUMATIC DEVICES AND MUST COMPLY WITH LDAR. EXEMPTION FOR DEVICES INSTALLED BEFORE 1/1/16 PROVIDED ARE LOW-BLEED, TAGGED, AND TESTED ANNUALLY USING A DIRECT MEASUREMENT METHOD. ANY DEVICE WITH A MEASURED EMISSIONS FLOW RATE &gt;6 SCFH MUST BE REPAIRED WITHIN 14 CALENDAR DAYS FROM DATE OF INITIAL EMISSION FLOW RATE MEASUREMENT.</p> <p>BEGINNING 1/1/18, INTERMITTENT BLEED PNEUMATIC DEVICES SHALL COMPLY WITH LDAR REQUIREMENTS IN SECTION 95669 WHEN DEVICE IS IDLE AND SHALL NOT VENT WHEN IDLE.</p>
<b>CO<sup>3</sup></b>	<p>LOW-BLEED CONTINUOUS DEVICES REQUIRED. NO-BLEED DEVICES REQUIRED IF SITE HAS ACCESS TO GRID ELECTRICITY.</p> <p>NOT APPLICABLE TO INTERMITTENT DEVICES</p>
<b>OH<sup>5</sup></b>	COMPRESSOR STATIONS: INTERMITTENT CONTROLLERS SUBJECT TO LDAR; LOW-BLEED CONTINUOUS DEVICES
<b>PA<sup>6</sup></b>	NONE
<b>UT<sup>8</sup></b>	<p>EXISTING: REQUIRES RETROFITS OF HIGH BLEED CONTINUOUS WITH LOW-BLEEDS AT PRODUCTION AND GATHERING &amp; BOOSTING SITES AND NO-BLEEDS AT GAS PROCESSING PLANTS.</p> <p>NEW: ROUTE EMISSIONS TO A PROCESS UNIT, VOC CONTROL DEVICE WITH A 98% DRE OR LIMIT EMISSIONS TO LOW-BLEED LEVELS.</p> <p>CONTINUOUS &amp; INTERMITTENT BLEED PNEUMATIC CONTROLLERS:</p>
<b>WY<sup>9</sup></b>	<ul style="list-style-type: none"> <li>NEW: LOW OR NO-BLEED CONTROLLERS OR THE CONTROLLER DISCHARGE STREAMS ROUTED INTO A CLOSED LOOP SYSTEM.</li> </ul>

•EXISTING: OPERATORS MUST EITHER USE LOW-BLEED, ZERO BLEED, OR ROUTE THE CONTROLLER DISCHARGE TO A SALES LINE, COLLECTION LINE, SUPPLY LINE OR OTHER CLOSED LOOP SYSTEM

**PNEUMATIC PUMPS**

<b>BLM: OPERATORS MUST REPLACE PNEUMATIC DIAPHRAGM PUMPS WITH SOLAR PUMPS, IF ADEQUATE FOR THE FUNCTION, OR ROUTE THE PUMPS TO A FLARE (IF ONE IS AVAILABLE ON-SITE) WITHIN ONE YEAR.</b>	
<b>CA<sup>2</sup></b>	PNEUMATIC PUMPS SHALL NOT VENT AND COMPLY WITH LDAR.
<b>CO<sup>3</sup></b>	NOT COVERED
<b>OH<sup>5</sup></b>	NONE
<b>PA<sup>6</sup></b>	CURRENT: NONE PROPOSED: 98% CONTROL OF EMISSIONS IF ABOVE 2.7 TPY OF VOC, 200 TPY OF CH4, OR SPECIFIED HAP THRESHOLDS
<b>UT<sup>8</sup></b>	NEW: ROUTE EMISSIONS TO A PROCESS UNIT OR A VOC CONTROL DEVICE WITH A 98% DRE.
<b>WY<sup>9</sup></b>	<ul style="list-style-type: none"> <li>•NEW FACILITIES: 98% CONTROL OR PUMP DISCHARGE STREAMS ROUTED INTO A CLOSED LOOP SYSTEM: FLARE REMOVAL UPON REQUEST.</li> <li>•EXISTING IN UGRB: CONTROL BY 98% OR ROUTE DISCHARGE STREAM TO SALES LINE, COLLECTION LINE, SUPPLY LINE OR OTHER CLOSED LOOP SYSTEM OR REPLACE WITH SOLAR, ELECTRIC OR AIR DRIVEN PUMP. NO CONTROL REMOVAL PERMITTED.</li> </ul>

**LIQUIDS UNLOADING**

<b>BLM: REQUIRED TO USE BEST MANAGEMENT PRACTICES– E.G., OPTIMIZE AUTOMATED PLUNGER LIFT SYSTEMS TO REDUCE VENTING; STAY ON SITE DURING MANUAL PURGING.</b>	
<b>CA<sup>2</sup></b>	<p>(1) BEGINNING 1/1/18, OWNERS/OPERATORS OF NG WELLS AT FACILITIES LISTED IN SECTION 95666 THAT ARE VENTED TO ATMOSPHERE FOR PURPOSE OF LIQUIDS UNLOADING SHALL PERFORM ONE OF THE FOLLOWING:</p> <p>(A) COLLECT THE VENTED NG WITH THE USE OF A VAPOR COLLECTION SYSTEM AS IN SECTION 95668(C); OR,</p> <p>(B) MEASURE THE VOLUME OF NG VENTED BY DIRECT MEASUREMENT; OR,</p> <p>(C) CALCULATE THE VOLUME OF NG VENTED AND,</p> <p>(D) RECORD THE VOLUME OF NG VENTED AND SPECIFY THE CALCULATION METHOD USED</p> <p>(2) RECORDKEEPING AND REPORTING REQUIREMENTS.</p>
<b>CO<sup>3</sup></b>	<p>REQUIRE MINIMIZATION OF HYDROCARBONS FROM WELL MAINTENANCE AND LIQUIDS UNLOADING ACTIVITIES.</p> <p>OPERATORS MUST USE BEST MANAGEMENT PRACTICES TO MINIMIZE THE NEED FOR WELL VENTING AND TO CONTROL EMISSIONS WHERE VENTING IS UNAVOIDABLE.</p> <p>RECORD KEEPING DOCUMENTING CAUSE, DATE, TIME AND DURATION OF VENTING.</p>
<b>OH<sup>5</sup></b>	NONE
<b>PA<sup>6</sup></b>	<p>EXEMPTION 38: EMISSIONS CANNOT EXCEED 2.7 TPY THRESHOLD.</p> <p>PROPOSED: OPERATOR MUST USE BMPS TO MINIMIZE EMISSIONS DURING UNLOADING</p>
<b>UT<sup>8</sup></b>	NONE
<b>WY<sup>9</sup></b>	<p>USE BMPS DURING MANUAL AND AUTOMATED BLOW DOWN/VENTING EPISODES TO MINIMIZE EMISSIONS TO EXTENT PRACTICABLE. DURING MANUAL BLOW DOWN/VENTING, PERSONNEL SHALL REMAIN ON SITE TO ENSURE MINIMAL GAS VENTING OCCURS</p> <p>SPECIFIC RECORDKEEPING &amp; REPORTING REQUIREMENTS.</p>

**STORAGE TANKS**

**BLM: OPERATORS MUST CAPTURE OR FLARE GAS FROM STORAGE TANKS THAT VENT MORE THAN SIX TONS OF VOLATILE ORGANIC COMPOUNDS PER YEAR, WITHIN ONE YEAR. LDAR AT TANKS WITH VOC EMISSIONS GREATER THAN 6 TONS PER YEAR**

<p><b>CA<sup>2</sup></b></p>	<p>TANKS WITH 10 METRIC TONS OF METHANE OR MORE MUST ROUTE EMISSIONS TO VAPOR COLLECTION SYSTEM. COMBUSTION USING LOW-NOX FLARE ONLY ALLOWED IF CAPTURE IS DEMONSTRATED INFEASIBLE.</p> <p>VRU AND TANKS SUBJECT TO LDAR.</p>
<p><b>CO<sup>3</sup></b></p>	<p>95% CONTROL OF HYDROCARBONS FROM NEW AND EXISTING STORAGE TANKS MANIFOLDED TOGETHER WITH 6 TPY OF UNCONTROLLED VOCS.</p> <p>ALL TANKS WITH AT LEAST 1.5 TPY OF UNCONTROLLED VOCS MUST CONTROL HYDROCARBONS BY 95% DURING THE FIRST 90 DAYS OF PRODUCTION.</p> <p>98% DRE REQUIRED FOR COMBUSTION DEVICES</p> <p>OPERATORS MUST CONDUCT INSTRUMENT-BASED LDAR AT FREQUENCY TIERED TO TANK VOC EMISSIONS.</p> <p>PROHIBITION OF VENTING FROM ACCESS POINTS AT TANKS</p> <p>OPERATORS MUST CERTIFY THAT TANK FACILITIES ARE DESIGNED PROPERLY TO MINIMIZE VENTING</p>
<p><b>OH<sup>5</sup></b></p>	<p>WELL PRODUCTION (HYDRAULIC FRACUTRED WELLS):</p> <p>I. COMBINED CAPACITY OF NO MORE THAN 6,000 BARRELS</p> <p>II. TOTAL VOC EMISSIONS CANNOT EXCEED 4.28 TONS PER MONTH AVERAGED OVER 12-MO ROLLING PERIOD</p> <p>NSPS (0.5 TON PER MONTH VOC LIMIT REQUIRES CONTROL)</p>
<p><b>PA<sup>6</sup></b></p>	<p>EXEMPTION 38: 95% CONTROL OF VOCS FROM ALL TANKS.</p> <p>PROPOSED: IF EMISSIONS ARE 200 TPY OF CH<sub>4</sub>, 2.7 TPY OF VOC, 0.5 TPY OF SINGLE HAP, OR 1.0 TPY OF TOTAL HAP, 98% CONTROL</p>
<p><b>UT<sup>8</sup></b></p>	<p>NEW: VOC EMISSIONS FROM PRODUCED CONDENSATE, OIL OR WATER MUST BE ROUTED TO PROCESS OR A VOC CONTROL DEVICE MEETING A 98% DESTRUCTION EFFICIENCY. MONTHLY</p>

INSPECTIONS OF THIEF HATCHES AND GASKETS AND REPLACEMENT OF GASKETS IF NOT IN GOOD WORKING ORDER. NO INSTRUMENT SPECIFIED.

**WY<sup>9</sup>**

NEW: CONTROL FLASH EMISSIONS BY AT LEAST 98%. CONTROL REMOVAL OF FLASHING EMISSIONS CONTROL DEVICES ALLOWED AFTER 1 YEAR IF VOC FLASHING EMISSIONS HAVE DECLINED TO LESS THAN, AND ARE REASONABLY EXPECTED TO REMAIN BELOW, 4 TPY.  
EXISTING: REQUIREMENTS ONLY APPLY IN UPPER GREEN RIVER BASIN NON-ATTAINMENT AREA

**LDAR – APPLICABILITY**

<b>BLM: WELL SITES AND COMPRESSOR STATIONS</b>	
<b>CA<sup>2</sup></b>	(1) ONSHORE & OFFSHORE CRUDE OIL OR NG PRODUCTION (2) CRUDE OIL, CONDENSATE, AND PRODUCED WATER SEPARATION AND STORAGE (3) NG UNDERGROUND STORAGE (4) NG GATHERING AND BOOSTING STATIONS (5) NG PROCESSING PLANTS (6) NG TRANSMISSION COMPRESSOR STATIONS
<b>CO<sup>3</sup></b>	WELL PRODUCTION FACILITIES, NATURAL GAS COMPRESSOR STATIONS, AND NATURAL GAS PROCESSING PLANTS
<b>ND<sup>4</sup></b>	UNDERGROUND GATHERING PIPELINES; UNDERGROUND CARBON DIOXIDE STORAGE FACILITIES; TREATING PLANTS; <b>NO WELL PRODUCTION SITES</b>
<b>OH<sup>5</sup></b>	UNCONVENTIONAL, HORIZONTAL, NON-TITLE V WELL SITES; GATHERING AND BOOSTING COMPRESSOR STATIONS
<b>PA<sup>6</sup></b>	NATURAL GAS GATHERING AND BOOSTING STATIONS; UNCONVENTIONAL WELL SITES WHOSE OVERALL VOC EMISSIONS REMAIN BELOW 2.7 TPY; ADDITIONAL MEASURES <b>PROPOSED</b> FOR UNCONVENTIONAL WELL SITES, REMOTE PIGGING STATIONS, NG COMPRESSION STATIONS, PROCESSING PLANTS, AND TRANSMISSION STATIONS
<b>TX<sup>7</sup></b>	(1) PETROLEUM REFINERIES; NATURAL GAS PROCESSING PLANTS IN OZONE NON-ATTAINMENT AREAS; (2) OIL AND GAS PRODUCTION AND PROCESSING SITES WITH THE POTENTIAL TO EMIT AT LEAST 10 OR 25 TPY OF UNCONTROLLED VOCS (DEPENDING ON DISTANCE FROM SENSITIVE RECEPTOR)
<b>UT<sup>8</sup></b>	WELL SITES; TANK BATTERIES
<b>WY<sup>9</sup></b>	WELL SITES

**LDAR – SCOPE**

<b>BLM: NEW AND EXISTING</b>	
<b>CA<sup>2</sup></b>	NEW AND EXISTING
<b>CO<sup>3</sup></b>	NEW AND EXISTING
<b>ND<sup>4</sup></b>	NEW AND EXISTING
<b>OH<sup>5</sup></b>	NEW AND MODIFIED (RELATIVE TO APRIL 4, 2014)
<b>PA<sup>6</sup></b>	NEW AND MODIFIED (RELATIVE TO AUGUST 10, 2013)
<b>TX<sup>7</sup></b>	NEW
<b>UT<sup>8</sup></b>	NEW (RELATIVE TO JUNE 5, 2014)
<b>WY<sup>9</sup></b>	NEW, MODIFIED, AND EXISTING SOURCES IN UPPER GREEN RIVER BASIN OR THE JONAH AND PINEDALE ANTICLINE DEVELOPMENT AREA AND NORMALLY PRESSURED LANCE

**LDAR – THRESHOLD FOR INSPECTION**

<b>BLM: NONE</b>	
<b>CA<sup>2</sup></b>	NONE
<b>CO<sup>3</sup></b>	NONE
<b>ND<sup>4</sup></b>	NONE
<b>OH<sup>5</sup></b>	NONE
<b>PA<sup>6</sup></b>	NONE
<b>TX<sup>7</sup></b>	PRODUCTION FACILITY: VOC EMISSIONS GREATER THAN 10 TPY OR 25 TPY, DEPENDING ON DISTANCE FROM SENSITIVE RECEPTOR
<b>UT<sup>8</sup></b>	PROJECTED ANNUAL THROUGHPUT OF CRUDE OIL AND CONDENSATE COMBINED THAT IS GREATER THAN OR EQUAL TO 10,000 BARRELS.
<b>WY<sup>9</sup></b>	FUGITIVE EMISSIONS ARE GREATER THAN OR EQUAL TO 4 TPY OF VOCS.



**LDAR – THRESHOLD FOR REPAIR**

<b>BLM: 500 PPM REPAIR THRESHOLD IF USING METHOD 21.</b>	
<b>CA<sup>2</sup></b>	1,000 PPM TOTAL HYDROCARBON LEAK THRESHOLD WHEN FULLY IMPLEMENTED.
<b>CO<sup>3</sup></b>	500 PPM LEAK THRESHOLD (NEW) AND 2,000 PPM (EXISTING COMPRESSOR STATIONS), IF USE METHOD 21.
<b>ND<sup>4</sup></b>	NONE
<b>OH<sup>5</sup></b>	10,000 PPM FOR ALL COMPONENTS EXCEPT COMPRESSOR AND CLOSED VENT SYSTEM (500 PM), IF USE ANALYZER
<b>PA<sup>6</sup></b>	2.5% METHANE USING A GAS LEAK DETECTOR AND A VOC CONCENTRATION OF 500 PPM
<b>TX<sup>7</sup></b>	THRESHOLD FOR PRODUCTION FACILITY DEPENDS ON COMPONENT, DISTANCE FROM SENSITIVE RECEPTOR AND EMISSION THRESHOLD: 500 PPMV VOC, 2,000 PPMV OR 10,000 PPMV
<b>UT<sup>8</sup></b>	500 PPM OR GREATER WITH AN ANALYZER OR A TUNED DIODE LASER ABSORPTION SPECTROSCOPY (TDLAS) ANALYZER.
<b>WY<sup>9</sup></b>	NONE

**LDAR – FREQUENCY**

<b>BLM: SEMI-ANNUAL FOR ALL SITES OTHER THAN COMPRESSOR STATIONS; QUARTERLY INSPECTIONS FOR COMPRESSOR STATIONS</b>	
<b>CA<sup>2</sup></b>	QUARTERLY
	INSPECTION FREQUENCY DEPENDS ON ACTUAL FUGITIVE VOC TON PER YEAR EMISSIONS FOR COMPRESSOR STATIONS:  COMPRESSOR STATIONS: 0-12: ANNUAL 13-50: QUARTERLY OVER 50: MONTHLY
<b>CO<sup>3</sup></b>	INSPECTION FREQUENCY DEPENDS ON ACTUAL UNCONTROLLED VOC EMISSIONS FROM STORAGE TANKS OR FACILITY, IF NO TANKS, AT WELL SITES  WELL SITES: 0-6: ONE-TIME 7-12: ANNUAL 13-50: QUARTERLY 50 AND ABOVE: MONTHLY  MULTI-WELL SITES >20 WITHOUT TANKS: MONTHLY
<b>ND<sup>4</sup></b>	N/A
<b>OH<sup>5</sup></b>	INITIAL INSPECTION WITHIN 90 DAYS OF STARTUP; QUARTERLY INSPECTIONS FOR NEXT 4 QUARTERS; STEP DOWN TO SEMI-ANNUAL AFTER 4 CONSECUTIVE QUARTERS WITH NO MORE THAN 2% OF COMPONENTS LEAKING; STEP DOWN TO ANNUAL AFTER 2 CONSECUTIVE SEMI-ANNUAL INSPECTIONS IF NO MORE THAN 2% OF COMPONENTS LEAKING; STEP UP TO ORIGINAL QUARTERLY INSPECTIONS WHENEVER 2% OF MORE OF COMPONENTS ARE LEAKING
<b>PA<sup>6</sup></b>	ANNUAL INSPECTION FOR UNCONVENTIONAL WELL SITES; QUARTERLY INSPECTIONS FOR G&B STATIONS
<b>TX<sup>7</sup></b>	QUARTERLY WITH POSSIBILITY TO REDUCE TO SEMI-ANNUAL OR ANNUAL IF CERTAIN CONDITIONS ARE MET
<b>UT<sup>8</sup></b>	QUARTERLY INSPECTIONS FOR NEW WELL SITES/TANK BATTERIES WITH A PROJECTED ANNUAL CRUDE OIL OR CONDENSATE COMBINED THROUGHPUT OF >25,000 BARRELS. POTENTIAL TO REDUCE FREQUENCY TO SEMI-ANNUAL IF NO LEAKS DETECTED AFTER 1 YEAR AND TO ANNUAL IF NO LEAKS DETECTED FOR 2 YEARS.

	ANNUAL INSPECTIONS AT FACILITIES WITHOUT TANKS AND THOSE WITH LESS THAN 25,000 COMBINED ANNUAL CRUDE AND CONDENSATE THROUGHPUT.
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<b>WY<sup>9</sup></b>	QUARTERLY
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## References

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<http://deq.wyoming.gov/media/attachments/Air%20Quality/New%20Source%20Review/Guidance%20Documents/5-12-2016%20Oil%20and%20Gas%20Guidance.pdf>; WDEQ, Air Quality Division Rules, Chapter 8, section 6 (May 19, 2015).

## **Appendix 2**

### **Methodology**

In order to be as conservative as possible when estimating the impact of the one-year BLM Rule Suspension, we performed a series of analyses in order to identify and separate all BLM-covered wells that are also covered by state regulations or permits requiring LDAR. Note that this analysis is extremely conservative, as it ignores differences between state LDAR requirements and BLM LDAR requirements (in almost all cases, BLM requirements are more stringent). Seven states have at least some LDAR standards that could apply to well sites: California, Colorado, Wyoming, Texas, Pennsylvania, Ohio, and Utah. We also identified and separated all wells covered by the EPA NSPS LDAR requirements (this step is also conservative because a stay of the NSPS is currently proposed). Removing all state- and NSPS-covered wells yielded 87,908 wells covered by BLM requirements only (denoted BLM-only wells). Below we outline how we removed wells for each state and for the EPA NSPS.

California and Colorado LDAR standards cover new and existing wells without any throughput or emission thresholds, so all of the BLM-covered wells in California and Colorado are covered under state LDAR requirements. Therefore, these wells are removed for the BLM-only well dataset.

Wyoming rules apply to new, modified, and existing sources in the Upper Green River Basin (UGRB) with fugitive emissions greater than or equal to 4 tpy of VOCs. In performing their analysis, BLM ignored the 4 tpy threshold and removed all wells in the UGRB, an overly conservative assumption. To determine how many of these wells would have fugitive emissions greater than or equal to 4 tpy, an analysis was completed of permits issued in the UGRB, which list fugitive emissions. Of a sample of 386 permits issued for the UGRB, 16% had fugitive emissions greater than or equal to 4 tpy VOC. Therefore, we assumed 16% of all BLM-covered wells in the UGRB would have fugitive emissions greater than or equal to 4 tpy. Thus, 16% of BLM-covered wells in the UGRB are removed for the BLM-only well dataset (as described in Section III of the main text, we assume the same emission rate per well regardless of throughput or production; therefore, the analysis does not depend on which 16% of wells were removed).

Texas LDAR requirements only apply to wells required to apply for the Standard Permit, which is based on uncontrolled VOC emissions (>10 or 25 tpy) and distance from a sensitive receptor, such as a home or school. Because we could not find a definitive date at which the LDAR requirements were put in place, we conservatively assumed the requirements would apply to all wells. To estimate the number of BLM-covered wells covered under the Standard Permit, the 10 tpy VOC

threshold was converted to a gas volume.<sup>6</sup> This is conservative, as it was assumed that the lower threshold was applicable rather than a combination of the lower and upper thresholds. The annual gas production of each BLM-covered well in Texas was multiplied by 2% as an estimated leak rate per well. This leak rate is also conservative, as it represents the higher end of leak rates in the state. The leak rate volumes for each well were compared to the threshold volume to estimate the number of BLM-covered wells in Texas that would be subject to the state permit, and these wells were removed for the BLM-only well dataset.

Pennsylvania's current non-mandatory permit exemption program provides an exemption for operators who conduct leak detection and repair. The LDAR program covers unconventional well sites whose overall VOC emissions remain below 2.7 tpy that are new and modified relative to August 10, 2013. New and modified wells were determined by filtering the BLM-covered wells by first production date; a first production date before August 10, 2013 was assumed to be an existing well and therefore not covered under this permit exemption.

DrillingInfo indicates in Pennsylvania whether a well is unconventional, so the BLM-covered wells in Pennsylvania were filtered using this criteria. To be conservative, it was assumed that all unconventional wells in Pennsylvania have

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<sup>6</sup> Assumed a conversion ratio of 3.6 CH<sub>4</sub>/VOC, per EPA assumptions. Then applied the density of methane to the mass in order to find the methane volume. Assumed a 78.8% volume of methane in gas to convert to a gas volume.

emissions below 2.7 tpy. This assumption is reasonable because many sources are excluded from contributing to the 2.7 tpy threshold (e.g., well drilling, completion and work-over activities and other sources meeting the exemption criteria). The resulting list of unconventional wells new or modified relative to August 10, 2013 were removed for the BLM-only well dataset.

The Ohio permit requiring LDAR covers unconventional, horizontal, non-Title V well sites that are new and modified relative to April 4, 2014. New and modified wells were determined by filtering the BLM-covered wells by first production date; a first production date before April 4, 2014 was assumed to be an existing well and therefore not covered under this permit. DrillingInfo indicates whether a well is horizontal but does not indicate whether it is unconventional (for Ohio). Therefore, to be conservative, all horizontal wells in Ohio were assumed to be unconventional and therefore to qualify for the state permit requiring LDAR. The resulting list of horizontal wells new or modified relative to April 4, 2014 were removed for the BLM-only well dataset.

Utah rules cover new wells relative to June 5, 2014. BLM-covered wells were again filtered by first production date relative to this date. LDAR is only required for sources with “a projected annual throughput of crude oil and condensate combined that is greater than or equal to 10,000 barrels.” DrillingInfo does not provide a way to estimate projected throughput. Therefore, annual



throughput in 2016 was used instead. If the total amount of liquid reported for 2016 was greater than 10,000 barrels, LDAR was assumed to apply to this well. The resulting list of wells new relative to June 5, 2014 and with more than 10,000 barrels of liquid reported in 2016 were removed for the BLM-only well dataset.

The 2016 NSPS LDAR requirements apply to new and modified wells relative to September 18, 2015. BLM-covered wells were filtered by first production date relative to this date. Any wells with first production dates after this date were assumed to be covered by this LDAR requirement, and these wells were removed for the BLM-only well dataset.

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## Education

**Ph.D., Chemical Engineering** **2016**  
California Institute of Technology Pasadena, CA  
Advisor: Dr. John H. Seinfeld  
National Science Foundation Graduate Research Fellowship (GRFP)  
National Science Foundation Graduate Research Opportunities Worldwide (GROW) Award

**M.S., Chemical Engineering** **2014**  
California Institute of Technology Pasadena, CA  
Advisor: Dr. John H. Seinfeld GPA: 4.0

**B.S., Chemical Engineering** **2011**  
Texas A&M University College Station, TX  
Minors in Chemistry and Spanish GPA: 4.0  
International Engineering Certificate

## Experience

**Environmental Defense Fund** Austin, TX  
**Research Analyst** 2017-Present  
Research Focus: Using emission inventories to develop state and region-specific emission profiles from the oil and gas sector.

**Cooperative Institute for Research in Environmental Sciences (CIRES)** Boulder, CO  
**Postdoctoral Fellow** 2016-2017  
Research Focus: Modeling atmospheric chemistry and secondary organic aerosol (SOA) formation using the Weather Research and Forecasting model coupled to Chemistry (WRF-Chem).

**California Institute of Technology** Pasadena, CA  
**Ph.D. Candidate** 2011-2016  
Advisor: Dr. John H. Seinfeld  
Research Focus: Modeling secondary organic aerosol (SOA) formation from the gas-phase oxidation of volatile organic compounds to compare with experimental observations in environmental chambers

**Laboratoire Interuniversitaire des Systèmes Atmosphériques** Paris, France  
**International Research Collaboration** Jan-May 2015  
Advisor: Dr. Bernard Aumont  
Research Focus: Working with and updating the Generator for Explicit Chemistry and Kinetics of Organics in the Atmosphere (GECKO-A) and comparing model predictions to experimental observations

**Eastman Chemical Company** Longview, TX  
**Engineering Intern** Summer 2010  
Job Focus: Material balances, rate studies, and sampling programs

## Publications and Presentations

### Peer-Reviewed Journal Publications

Schwantes, Rebecca H., Katherine A. Schilling, [Renee C. McVay](#), Hanna Lignell, Matthew M. Coggon, Xuan Zhang, Paul O. Wennberg, and John H. Seinfeld. Formation of Highly Oxygenated Low-Volatility Products from Cresol Oxidation, *Atmos. Chem. Phys. Discuss.*, **2017**, 17, 3453-3474, doi:10.5194/acp-17-3453-201.

T. Nah, R. C. McVay, J. R. Pierce, J. H. Seinfeld, and N. L. Ng. Constraining uncertainties in particle wall-deposition correction during SOA formation in chamber experiments, *Atmos. Chem. Phys.*, **2017**, *17*, 2297-2310 doi:10.5194/acp-17-2297-2017.

Nah, Theodora, Renee C. McVay, Xuan Zhang, Christopher M. Boyd, John H. Seinfeld, and Nga L. Ng. Influence of Seed Aerosol Surface Area and Oxidation Rate on Vapor-Wall Deposition and SOA Mass Yields: A case study with  $\alpha$ -pinene Ozonolysis, *Atmos. Chem. Phys.*, **2016**, *16*, 9361-9379, doi:10.5194/acp-16-9361-2016.

McVay, Renee C., Xuan Zhang, Bernard Aumont, Richard Valorso, Marie Camredon, Yuyi S. La, Paul Wennberg and John H. Seinfeld. SOA formation from the photooxidation of  $\alpha$ -pinene: Systematic exploration of the simulation of chamber data, *Atmos. Chem. Phys.*, **2016**, *16*, 2785-2802, doi:10.5194/acp-16-2785-2016.

Zhang, Xuan, Renee C. McVay, Dan D. Huang, Nathan F. Dalleska, Bernard Aumont, Richard E. Flagan, and John H. Seinfeld. Formation and evolution of molecular products in  $\alpha$ -pinene secondary organic aerosol. *Proc. Natl. Acad. Sci.*, **2015**, *112*, 14168-14173, doi:10.1073/pnas.1517742112.

Zhang, X., R. H. Schwantes, R. C. McVay, H. Lignell, M. M. Coggon, R. C. Flagan, and J. H. Seinfeld. Vapor wall deposition in Teflon chambers. *Atmos. Chem. Phys.*, **2015**, *15*, 4197-4214.

McVay, Renee, Christopher Cappa, and John Seinfeld. Vapor Wall Deposition in Chambers: Theoretical Considerations. *Environ. Sci. and Technol.*, **2014**, *48*, 10251-10258.

Zhang, Xuan, Christopher Cappa, Shantanu Jathar, Renee McVay, Joseph Ensberg, Michael Kleeman, and John Seinfeld. Influence of vapor wall loss in laboratory chambers on yields of secondary organic aerosol. *Proc. Natl. Acad. Sci.*, **2014**, *111*, 5802-5807.

### ***Conference Presentations***

McVay, Renee, Theodora Nah, Jeffrey R. Pierce, John Seinfeld, Nga Lee Ng. Uncertainties in Particle Wall Loss Correction during Secondary Organic Aerosol Formation in Chamber Experiments. American Association for Aerosol Research, 27-21 October 2016, Portland.

McVay, Renee, Xuan Zhang, Bernard Aumont, Richard Valorso, Marie Camredon, Stéphanie La, and John Seinfeld. Uncertainties in SOA Formation from the Photooxidation of  $\alpha$ -pinene. American Geophysical Union, 14-18 December 2015, San Francisco.

McVay, Renee, Xuan Zhang, Christopher Cappa, and John Seinfeld. Vapor Wall Loss in Chambers: Theoretical Considerations. American Geophysical Union, 15-19 December 2014, San Francisco.

**HILLARY F HULL**  
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**Education:** **Master of Science, Environmental Engineering: Atmosphere and Energy, January 2012**  
Stanford University

**Relevant Coursework Includes:** Air Pollution Physics and Chemistry; Energy Resources; Environmental Planning Methods; Distributed Generation and Grid Integration of Renewables; Air Pollution: Urban Smog to Global Change; Energy Efficient Buildings; Greenhouse Gas Mitigation; Indoor Air Quality; Electric Power: Renewables and Efficiency; Air Quality Mgmt; Lifecycle Assessment; Research, Analysis, and Writing for the Public

**Bachelor of Science, Civil Engineering, May 2010**

The University of Texas at Austin  
Overall GPA: 3.67/4.00

**Relevant Coursework Includes:** Environmental Sampling and Analysis; Air Pollution Engineering; Introduction to Environmental Engineering; Water and Wastewater Treatment and Design

**Experience**

06/2014 - Current **Research and Analytics Manager, Environmental Defense Fund (San Francisco, CA)**

09/2012 – 06/2014 **Senior Project Engineer, Environmental Resources Management (Austin, TX & Walnut Creek, CA)**  
Managed and worked on projects in the Air Quality and Performance & Assurance practice areas. Experience writing state and federal air permits, completing calculations for air emissions inventories, performing environmental site assessments, compiling Spill Prevention, Control and Countermeasure plans, and performing regulatory compliance reviews.

06/2011 - 08/2011 **Climate and Air Intern, Environmental Defense Fund (Washington, DC)**  
Worked with Dr. Jason Funk and the international climate team to help construct and support climate policies worldwide. In particular, completed extensive research on the use of alternative fuels for aviation as well as an overall biofuels profile.

05/2008 - 08/2008 **Engineering Intern, Bechtel (Richland, WA)**  
Worked as an intern on the nuclear waste vitrification project at the Department of Energy Hanford site in the Civil, Structural and Architectural department of Bechtel. Completed a variety of tasks pertaining to: concrete/steel structural design, radiation shielding design, steel embedment calculations, and drawing inspections.

**Academic Experience** **Study Abroad (Ankara, Turkey)**  
Studied abroad in Ankara during the summer of 2009. Took a course pertaining to the fundamentals of fuel cell engines, and a Turkish language course. Interacted routinely with Turkish engineering students to design fuel cell systems and evaluate cultural differences during time of study at the Middle Eastern Technical University in Ankara.

**Engineers Without Borders (Limbe, Cameroon)**

**HILLARY F HULL**

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As a member of Engineers Without Borders and the Project Lead for the Cameroon Project, worked to implement a sanitary, reliable water supply for the Saker Baptist College in Limbe, Cameroon. Traveled to Limbe in January of 2008 for exploration, and again in January of 2009 for assessment. Work completed for the project includes: CADD designs for the existing and proposed tank and pipeline system, travel logistics, and intensive water testing.

**Study Abroad (London, England)**

Studied abroad in the summer of 2007 in London, England. Took a course in sustainable architecture and a course in energy. The architecture course included visits to many prominent architecture firms and engineering firms in London and the energy course explored the many facets of the energy market, as well as different energy sectors, such as: nuclear, coal, solar, biofuel, geothermal and wind.

**Skills**

Proficient in Microsoft Word, Power Point, and Excel  
Experience using Marlab, Fortran, SolidWorks, Microstation, SketchUp, Pipe2000  
Experience in surveying and project site assessment  
Basic Spanish and limited Turkish language skills

**Accomplishments**

Honors Engineering Program, University of Texas at Austin  
Cameroon Project Lead and Internal Education Chair, Engineers Without Borders  
Director of Operations, Engineers Without Borders  
Member, American Society of Civil Engineers  
Published Article on-line in the Stanford Magazine: "Finding the Greenest Car"  
([http://alumni.stanford.edu/get/page/magazine/article/?article\\_id=46694](http://alumni.stanford.edu/get/page/magazine/article/?article_id=46694))

**Certifications**

Engineer in Training (E.I.T.)  
40-Hour Hazardous Waste Operations and Emergency Response Standard (HAZWOPER)  
Heartsaver First Aid CPR AED

# **Attachment 58**

**Declaration of Pete Eschallier, Kokopelli Bike and Board**

IN THE UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF CALIFORNIA

**DECLARATION OF PETE ESCHALLIER**

I, Pete Eschallier, declare as follows:

1. I am the owner of Kokopelli Bike and Board in Cortez, Colorado. I have owned the company for over 16 years.
2. Kokopelli Bike and Board is part of the growing outdoor recreation industry, one of our nation's largest economic sectors. Our business is dependent on access to mountain bike trails on public lands, particularly BLM lands in good condition with healthy air quality.
3. The outdoor recreation industry brings jobs to communities across the country in numerous ways and is an economic driver in many western communities, including in Cortez. In Colorado, for example, the outdoor recreation economy generates 229,000 direct jobs; \$28.0 billion in consumer spending; \$9.7 billion in wages and salaries; and \$2 billion in state and local tax revenue. Outdoor Industry Association Statistics *available at* <https://outdoorindustry.org/state/colorado/>.
4. Nationally, the outdoor recreation economy generates: 7.6 million direct jobs, \$887 billion in consumer spending, \$65.3 billion in federal tax revenue, and

\$59.2 billion in state and local tax revenue. *Report: The Outdoor Recreation*

*Economy*, Outdoor Industry Association, available at

<https://outdoorindustry.org/wp->

[content/uploads/2017/04/OIA\\_RecEconomy\\_FINAL\\_Single.pdf](https://outdoorindustry.org/wp-content/uploads/2017/04/OIA_RecEconomy_FINAL_Single.pdf).

5. It is critical to maintain access to healthy public lands in order to keep the outdoor economy growing and vibrant. My business depends on access to trails on multi-use BLM lands. And in the case of oil and gas development in the Four Corners area of Colorado, Utah, Arizona, and New Mexico, where my customers utilize public lands, un-managed methane, volatile organic compounds (VOCs), and other harmful air emissions can impair use of public lands.

6. I am aware that the U.S. Bureau of Land Management (BLM) has finalized waste prevention standards (“waste prevention standards”) to limit methane waste and curb pollution from oil and natural gas production on federal and tribal lands. These standards are crucial to minimizing the waste of natural gas on public lands and will also reduce emissions of harmful pollutants where our customers recreate. The waste prevention standards reduce emissions of hazardous air pollutants, including benzene, a known human carcinogen, and VOCs, which form smog.

7. I also understand that BLM has proposed suspending the January 2018 compliance dates for several key sections of the waste prevention standards,



delaying these vital rules on federal and tribal lands. Waste Prevention, Production Subject to Royalties, and Resource Conservation; Delay and Suspension of Certain Requirements, 82 Fed. Reg. 58,050 (December 8, 2017) (“suspension rule”). As a result of this suspension rule, BLM estimates that these wells will emit an additional 175,000 tons of methane and 250,000 tons of VOCs in year one of the delay. *Id.* at 58,056-58,057.

8. Suspension of these standards threatens the outdoor recreation industry because our customers rely on good air quality on public lands to bike, hike, camp, fish, hunt, view wildlife, or just enjoy the pristine outdoors. Oil and gas operations on public lands threaten these uses because poor air quality has a direct effect on my business, my customers, and the reputation of my community. Our public lands and waterways belong to every American, and they are the backbone of our outdoor recreation economy, which is growing consistently and providing reliable jobs in our community and across the country.

I declare that the foregoing is true and correct.



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Pete Eschallier

Dated: December 14, 2017