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GUARDIANS ♦ WILDERNESS WORKSHOP ♦  
WYOMING OUTDOOR COUNCIL**

September 23, 2014

The Honorable Sally Jewell  
Secretary  
U.S. Department of the Interior  
1849 C Street N.W.  
Washington, DC 20240

Dear Secretary Jewell,

We respectfully submit these Supplemental Comments in response to certain oil and gas industry comments on the Bureau of Land Management's pending methane waste rule and its Venting and Flaring Forums held this past Spring.

Industry commenters, including trade associations and individual oil and gas companies, offered a number of arguments seeking to impede the Department of the Interior in updating its methane waste rule. Our Supplemental Comments are intended to support the Department's efforts to modernize its methane waste rule by providing specific rebuttals to the main assertions put forward by these commenters.

As you are aware, President Obama this past March issued a Strategy to Reduce Methane Emissions as a key part of the Administration's Climate Action Plan. The Strategy tasks BLM with developing a rule "To reduce the loss of natural gas through the venting or flaring of methane produced from Federal and Indian oil and gas leases ...."

Our comments support the timely development of this rule, and we are confident that it can be structured to dovetail with methane reduction actions taken by the U.S. Environmental Protection Agency and individual states.

Further, the Department has the clear duty and authority under the Mineral Leasing Act and the Federal Land Management and Policy Act to prevent methane waste from oil and gas activity, and to prevent the unnecessary and undue degradation of air and atmospheric values.

Low cost technologies and practices to reduce or eliminate methane waste are readily available to industry. The BLM rule should require lessees to employ these measures. Further, with adequate planning to ensure orderly and efficient upstream development, as well as synchronization of upstream and midstream operations, the BLM can prevent the venting and flaring of methane and ensure that captured gas contributes to the nation's energy supplies.

We also note that significant waste is occurring in regions where natural gas is produced in association with oil but where adequate midstream infrastructure is lacking, most notably in North Dakota's Bakken formation. With adequate resource planning and controls on development, the BLM can reduce or eliminate this avoidable waste on other Federal lands.

Finally, the current BLM rule requires industry to conduct gas capture planning in conjunction with its approvals for venting or flaring. This practice falls far short of actually reducing venting or flaring, and the waste rule, in contrast, should require industry to conduct gas capture planning, consistent with higher level planning and management decisions, before BLM issues permits to drill, so that gas can be captured and marketed and not lost and wasted.

Our Supplemental Comments are intended to support the Department as it moves forward with its methane waste rulemaking, and we welcome the opportunity to discuss our recommendations in more detail.

Sincerely,



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**Draft Supplemental Response to Oil and Gas Industry  
Comments on BLM Venting and Flaring Forums**

**Submitted By:**

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September 23, 2014

## I. INTRODUCTION

We are pleased to submit these supplemental comments in response to comments provided by various oil and gas industry associations and individual companies on BLM's Venting and Flaring Forums. In these supplemental comments, we present a summary of each industry claim and the proponents of each claim followed by our response comments.

As a general proposition, we contend that venting, flaring or leaking of methane, in most circumstances, can be avoided at a very reasonable cost and therefore constitutes "waste" for purposes of the Mineral Leasing Act. According to its statutory mandates, BLM must, in the course of promulgating its methane waste rule, known currently as Onshore Oil and Gas Order Number 9 ("Order No. 9"), take action to prevent this waste. As acknowledged in our initial comments of May 30, 2014, while there are limited circumstances where venting or flaring may be necessary, the front-end planning and back-end mitigation technologies we have recommended provide BLM with tools to avoid waste by ensuring that the vast bulk of natural gas produced by the industry can be productively captured and marketed, whether by sending it to a sales line or using it in the field.

Contrary to the industry's admonitions that planning or mitigation requirements would render wells uneconomic and lead to shut-ins, our recommendations would curb wasteful oil and gas practices, improve well economics by planning for the availability of midstream infrastructure after wells are completed and production begins, and enable the marketing of captured gas. Our recommendations comport with Secretary Jewell's recent statement that "[What] we really need to do, when we think about things like energy, in particular, is move from sort of random acts to strategic focus." Transcript, 8/11/14 Quadrennial Energy Review, Santa Fe, NM. Overall, industry's comments rely on vague generalizations about hypothetical conditions under which our recommended measures or those being considered by BLM would be infeasible—conditions we believe to be the exception rather than the rule. We therefore encourage BLM to move through its Order No. 9 rulemaking process swiftly, and we look forward to constructive engagement with the agency and stakeholders in further refinement of a rule to prevent methane waste from oil and gas development on Federal lands.

## II. RESPONSE COMMENTS TO GENERAL INDUSTRY CLAIMS

**Industry claim #1:** BLM's waste rule update could be redundant and/or contradictory to current rules and is premature.

**Proponents:** American Petroleum Institute (API), Armstrong Energy, Colorado Oil and Gas Association (COGA), Colorado Petroleum Association (CPA), Concho, Devon Energy, Independent Petroleum Association of America (IPAA), Petroleum Association of Wyoming (PAW), QEP Energy, Western Energy Alliance (WEA).

**Response comments:** First and foremost, BLM has the authority and responsibility to require that oil and gas lessees prevent methane waste and to provide for the orderly and efficient

development of publicly owned oil and gas resources pursuant to the Mineral Leasing Act (MLA). 30 U.S.C. §§ 187, 225; 43 C.F.R. § 3160.0-4. This authority is complemented by the Federal Land Policy and Management Act (FLPMA), which mandates that BLM prevent unnecessary or undue degradation of public lands and resources. 43 U.S.C. § 1732(b). Each of these authorities is grounded in the U.S. Constitution's property clause, Art. IV, Sec. 3, cl. 2. Put simply, BLM is statutorily mandated to prevent methane waste and to prevent the disorderly and inefficient development of publicly owned oil and gas resources notwithstanding the possibility of other Federal or state rulemaking.

It is also wrong to suggest that BLM action would be redundant or contradict other rulemaking efforts. BLM's duty to prevent waste—a duty that has many state analogues—operates as an essential complement to EPA's duty to protect air quality. Those two bookends, if developed in coordination, ensure optimal efforts to prevent waste *and* protect air quality (and public health). Given that President Obama's June 2013 Climate Action Plan and March 2014 Strategy to Reduce Methane Emissions call for interagency coordination, we have confidence that BLM can work effectively, and in harmony with, EPA and the states.

Second, this argument overlooks the distinctive tools available to BLM flowing from its statutory mandates to leverage front-end planning and management of oil and gas development to prevent waste and unnecessary or undue degradation of public lands and resources—a legal obligation that, at the federal level, is vested with BLM alone. Front-end planning is an important tool to prevent methane waste, as it identifies reasonably foreseeable development scenarios and enables BLM to guide the timing, location, and intensity of development through resource management plans, master leasing plans, leasing decisions, unitization agreements, master development plans, and applications for permits to drill (APD) approvals. Through BLM's planning and management framework, BLM Field Offices ensure that oil and gas development prevents waste and protects public lands resources and values from unnecessary or undue degradation through the establishment of oil and gas lease stipulations and conditions of approval. BLM, of course, also holds the authority and responsibility to forbid oil and gas development when such development would cause undue waste or interfere with other uses of the public lands, including preservation. Federal law explicitly grants BLM these distinctive planning and management authorities and responsibilities for resources and values on Federal lands.

The industry commenters' dubious assertions that a BLM rule would somehow be duplicative are exemplified by WEA's statement that "existing and planned state and Federal initiatives and regulation are already addressing the issue." WEA at 1. Such assertions seek to create the impression that there are comprehensive Federal and state efforts that already prevent methane waste. Yet the evidence of significant methane losses from oil and gas development compels precisely the opposite conclusion. Moreover, even a cursory review of existing Federal and state rules implicating methane emissions reveals major regulatory gaps that result in the waste of methane.

Only a single state, Colorado, directly regulates methane emissions from oil and gas production. The state's recently-adopted oil and gas methane rule requires methane controls on centrifugal

and reciprocating compressors, storage tanks, glycol dehydrators, liquids unloading, and both new and existing pneumatic devices. Fact Sheet on Revisions to Colorado's Air Quality Control Commission's Regulation Numbers 3, 6, and 7, Colorado Department of Health and the Environment. The Colorado rule also requires Leak Detection and Repair (LDAR) programs. Colorado's program, however, does not require front-end planning and management to control the timing, location, and intensity of development to prevent methane waste and to facilitate the orderly and efficient development of oil and gas resources. Nor does the Colorado rule regulate or otherwise encompass methane emissions from the processing, transmission, and storage segments of the industry.

Other states' rules are similarly devoid of requirements commensurate to BLM's front-end planning and management authorities and responsibilities and, if they address methane emissions at all, cover only a few methane emission sources. For example, Pennsylvania, Wyoming, and Ohio have requirements for instrument-based LDAR, but fail to address many other sources of methane leakage. North Dakota has adopted regulations to reduce flaring by requiring gas capture plans in APD, and Maryland is considering, but has not yet adopted, a similar rule. These rules do not, however, supplant BLM's broad authority and responsibilities pertaining to public lands and resources, and certainly do not ensure consistent and uniform action across all public lands and resources.

While some states have general statutory prohibitions on waste of oil or gas, and some have restrictions on, or require permits for, venting and flaring, implementation and enforcement of these state requirements to date has been inconsistent, incomplete, and uncertain. The uneven regulation of methane emissions and waste by states, and the limited intrastate reach of such rules, hardly "address[es] the issue" as industry claims.

If anything, the patchwork of disparate state efforts strengthens the case for action by BLM to provide for consistent and uniform development of Federal, publicly owned oil and gas resources. It is BLM's responsibility to prevent methane waste from Federal oil and gas resources in all states where such resources are developed. Such action, in particular in western U.S. states, could have a positive spillover effect, reducing methane losses on state and private lands that are often intermixed with Federal lands, whether through more orderly and efficient field-level development (facilitated by the integration of waste prevention measures in, e.g., unitization agreements) or by sparking more effective, uniform, and consistent state regulatory action to prevent methane waste.

Similarly, EPA's NSPS rule does not directly address methane waste prevention or the orderly and efficient development of oil and gas resources on Federal lands. Furthermore, while industry commenters cite the NSPS's coverage of well completions, storage vessels and tanks, and pneumatic devices, as well as some compressors and LDAR, the rule does not directly regulate methane. The NSPS rule also does not regulate emissions—methane or otherwise— from virtually all existing (versus new) sources, from oil wells, or from liquids unloading, some compressors and pneumatic devices, dehydrators, and pipeline repair and maintenance. This leaves major gaps in federal regulations that lead to the waste of methane from oil and gas development on Federal lands. Even if EPA and the states did directly regulate methane emissions from such sources, this

would not preclude or even suggest that BLM should not, also, impose its own requirements that are more stringent given the distinctive nature of the agency's authorities and responsibilities, and to seize site-specific opportunities to prevent waste above-and-beyond what may be required by EPA rule. Thus, contrary to the industry commenters' argument, a BLM rule on methane waste would not be redundant with other state and federal regulations.

Nor have the commenters shown any real potential for conflict between a new BLM methane waste rule and existing or potential state and Federal rules. This concern is, instead, purely hypothetical. Again, President Obama's methane strategy calls for interagency coordination and we have confidence that BLM can work in harmony with EPA and the states. While BLM should certainly strive to minimize any potential conflicts, it should do so by thoughtfully crafting the methane waste rule, not by abdicating the agency's distinctive authority and responsibilities to prevent methane waste. Indeed, ceding the issue to other Federal or state agencies exposes BLM to challenge for failing to comply with its distinctive statutory authorities and responsibilities, and raises the risk of inconsistent and conflicting action on BLM lands depending on whether the state wherein those lands are located has taken action to regulate methane and, if so, how.

The industry commenters' assertions also ignore the fact that the existing waste policy is deficient. Updating this policy through the waste rulemaking can align the agency's efforts to prevent methane waste with complementary Federal and state efforts, including the agency's own planning and management process, which is currently being reviewed through the "Planning 2.0" process. As Devon Energy acknowledges "updating provisions and requirements of the NTL4-A could significantly improve the current process." Devon at 8.

Finally, the industry commenters have called a new BLM methane waste rule premature and urges delay until EPA has assessed responses to its methane White Papers and issued any ensuing rules, and until states adopt "planned" or "likely" regulations. We reject these contentions. If anything, a BLM methane waste rule is long overdue. And, moreover, the factors the industry commenters cite justify BLM moving forward swiftly with a new methane rule. For example, CPA observes that "[t]he production rate of a well, including the condensate production, also declines over time. For example, the decline of a Bakken well and a Three Forks well shows that production decreases by 70-71 percent over the first year. The 3-year decline is 85-86 percent." CPA at 11-12. Gas well 3-year decline curves for the top five U.S. shale gas plays (Haynesville, Marcellus, Barnett, Fayetteville, and Woodford) average 84%. Nature, Vol. 494, February 2013. And API claims that "Any EPA final methane rule is not due until 2016." API at 5. As these comments indicate, and given extent of existing development as well as the torrid pace of new oil and gas development, every month that elapses without an updated BLM rule contributes to substantial waste of publically-owned resources. Further, nothing about EPA's White Paper process justifies further delay in issuing updated BLM rules. To the contrary, EPA's White Papers collect a substantial body of information regarding major sources of emissions in the oil and gas sector and demonstrated control technologies, which can and should inform BLM action that is carefully coordinated with EPA. Accordingly, BLM should neither delay nor postpone this rule-making until some indeterminate future date.

**Industry claim #2:** BLM lacks the statutory authority to regulate methane emissions and air quality.

**Proponents:** API, Concho, CPA, Devon, IPPA, PAW, WEA

**Response comments:** These industry comments are misplaced. Methane is the primary ingredient of natural gas and is, accordingly, an energy resource. BLM has the clear statutory authority and responsibility to prevent waste and thus to take action to prevent methane venting, flaring, and leaks. This authority and responsibility are set forth, as we have repeatedly noted, in the MLA. 30 U.S.C. §§ 187, 225. Although a methane waste rule would necessarily include many co-benefits—including improved air quality and reduced climate pollution—the plain intent of this rulemaking process is to modernize BLM’s current waste policies to ensure compliance with the MLA’s waste prohibitions.

The MLA imposes straightforward requirements to control the waste of oil and gas minerals, providing that “[a]ll leases of lands containing oil or gas ... shall be subject to the condition that the lessee will, in conducting his explorations and mining operations, use all reasonable precautions to prevent waste of oil or gas developed in the land....” 30 U.S.C. § 225; *see also* 30 U.S.C. § 187 (“Each lease shall contain...a provision...for the prevention of undue waste....”). As the MLA’s legislative history teaches, “conservation through control was the dominant theme of the debates.” *Boesche v. Udall*, 373 U.S. 472, 481 (1963) (citing H.R.Rep. No. 398, 66th Cong., 1st Sess. 12-13; H.R.Rep. No. 1138, 65th Cong., 3d Sess. 19 (“The legislation provided for herein...will [help] prevent waste and other lax methods....”)).

These industry arguments attempt to prevent BLM action, suggesting that any shift of the agency’s framework for managing oil and gas waste would not be reasonable or economic under the MLA. This framework is, however, neither static nor defined by industry predilection, and must necessarily be informed by the prevailing technologies and capabilities available to prevent the waste of oil and gas, as well as by BLM’s fundamental authority to revisit and revise rules as appropriate. Just as hydraulic fracturing has shifted the paradigm of what is now considered economically recoverable, the BLM should not limit itself to a waste prevention framework, NTL-4A, which was last revised in 1980. As detailed in our earlier comments, front-end planning and back-end mitigation provide readily available tools to dramatically reduce methane waste, and the waste of methane is a demonstrable problem not adequately addressed by BLM’s current waste policies.

Moreover, the argument that BLM has no authority to protect air quality and climate from BLM-authorized oil and gas development ignores the plain language of the agency’s “organic act” — FLPMA. Notwithstanding the mandates of the Clean Air Act (CAA), FLPMA vests BLM with the explicit authority and the duty to protect “air and atmospheric” values. 43 U.S.C. § 1701(a)(8). BLM has a general obligation and authority to “promulgate rules and regulations to carry out the purposes of” FLPMA, including protection of air and atmospheric values. § 1740, *accord* § 1701(a)(5), (a)(11). More broadly, BLM must “by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the lands.” 43 U.S.C § 1732(b).

FLPMA buttresses the MLA's mandate to prevent waste, in particular by creating opportunities at the planning and management stages to leverage complementary legal authorities to maximize reductions in waste and methane pollution while protecting other resources, such as our shared air and atmosphere. Specific to oil and gas, both FLPMA and the MLA's implementing regulations require "that all operations be conducted in a manner which protects other natural resources and the environmental quality, protects life and property and results in the maximum ultimate recovery of oil and gas with minimum waste and with minimum adverse effect on the ultimate recovery of other mineral resources." 43 C.F.R. § 3161.2 (referencing both MLA and FLPMA provisions as underlying authority).

Congress was presumably cognizant of the overlapping mandates of the CAA, FLPMA, and MLA, and these laws must be read in harmony. This rulemaking is squarely aimed at addressing the waste of oil and gas resources in accord with the MLA—and should be viewed according to this central purpose. Nevertheless, BLM has the express authority and obligation under FLPMA to protect air quality and the climate from BLM-authorized oil and gas development. BLM may, for example, impose air quality and climate-based—not just waste-based—requirements on oil and gas development in accord with FLPMA through waste regulations, RMPs, MLPs, lease stipulations, unitization agreements, MDPs, and APD approvals. These requirements may, notably, be more stringent than what EPA may impose pursuant to the CAA, reflecting BLM's distinctive and independent responsibilities under FLPMA to protect air and atmospheric values and, accordingly, public lands from unnecessary or undue degradation.

Given BLM's clear duties, pursuant to the MLA and FLPMA, to ensure that oil and gas lessees and operators prevent methane waste, protect air and atmospheric values, and prevent unnecessary or undue degradation, the industry comments questioning BLM's authority to undertake a methane waste rulemaking have no merit.

**Industry claim #3:** New BLM waste regulations will be costly, must be subject to an economic test, and could make gas more expensive due to more red tape.

**Proponents:** API, Armstrong, CPA, Devon, IPAA, PAW, QEP, WEA

**Response comments:** Contrary to the commenter's assertions that methane capture requirements will be costly and could render operations uneconomic, a substantial and growing body of research shows that methane waste reduction measures are low-cost, with payback periods ranging from less than six months to less than three years. Once investment in methane waste measures has been paid back, they can provide a stream of revenues through the end of their useful life. Information on the economics of various control technologies is widely available, including EPA's Natural Gas Star Program, NRDC's 2012 Leaking Profits report, CO Air Quality Control Commission's oil and gas rulemaking, and ICF's 2014 economic analysis of methane reduction opportunities. Further, adoption of the NSPS has not had any discernible impact on growth in the oil and natural gas sector, and adoption of green completion requirements in Colorado and Wyoming was accompanied by strong growth in oil and gas exploration and production in both states.

We also reject the commenters' proffered approach to economic analysis, which is limited to industry revenues and expenses to the exclusion of the broader public interest and economic well-being. As we recommended in our May 30, 2014 comments:

- BLM's new methane waste rule should ensure, to the degree that economics inform action, that the total production and marketing of oil and gas is used to gauge what is or is not economic.
- BLM's new methane waste rule should consider the true and full costs involved in oil and gas development, not just the narrow costs projected or incurred by oil and gas lessees or operators. This includes the costs that methane waste imposes on the climate, public health, water, wildlife, and other resources and values.
- The economic viability of methane waste prevention action should be evaluated at the basin or field level to ensure consistent action to prevent methane waste. This provides a basis for BLM to identify basin or field level economic barriers that contribute to methane waste and to thereby identify opportunities to overcome those barriers, opportunities that may not be apparent on a case-by-case basis.

It is ultimately a matter for BLM—not lessees—to decide what is or is not reasonable from an economic perspective, taking into account BLM's broad authority and responsibilities under the MLA and FLPMA.

In terms of current BLM policy, NTL-4a states that gas wells may not vent or flare, and for oil wells:

The Supervisor may approve an application for the venting or flaring of oil well gas if justified either by (1) the submittal of an evaluation report supported by engineering, geologic, and economic data which demonstrates to the satisfaction of the Supervisor that the expenditures necessary to market or beneficially use such gas are not economically justified ... or (2) an action plan that will eliminate venting or flaring of the gas within 1 year from the date of application.

Industry commenters argue that this test should be done on a case-by-case, operation-by-operation basis. As Devon Energy puts it, "[n]ot only is this practice consistent with past BLM precedent and existing lease rights, it is the only method practically by which operators could reasonably assess and pass costs on to other working interest owners. After all, oil and gas interests are not owned on a field-wide basis in most cases, they are owned as individual leases." Devon at 6.

BLM's sequential planning and management framework is compromised when key decisions are devolved to a case-by-case, operation-by-operation basis. BLM's methane waste rule should set a "floor" for action that is implemented through BLM's planning and management framework, from resource management plans to leasing decisions, down through unitization agreements and APD approvals. Starting from this presumptive set of requirements, case-by-case, operation-by-operation evaluation should then be used to strengthen and, in effect, secure that "floor."

Individual oil and gas lessees and operators could, of course, also use case-by-case, operation-by-operation analysis to request exceptions, but they would carry the burden to justify such requests. This provides BLM with a straightforward system to prevent waste consistent with the agency's front-end planning and management framework that nonetheless accommodates legitimate concerns that there may be practical conditions requiring exceptions.

Industry's comments also ignore economic barriers created and economic opportunities lost by narrow case-by-case, operation-by-operation analysis. Limiting the scope of economic analysis to a case-by-case, individual operations basis would undermine the efficacy of BLM's planning and management framework and hamstring efforts by BLM to consider field-level economics. This, in turn, would obscure and undermine field-level opportunities to prevent waste, such as controls on the timing, location, and intensity of development and requirements to synchronize upstream and midstream operations. Limiting economic evaluations to individual operations ignores economies of scale that could drive down the costs of waste reduction measures by multiple operators in geographical proximity. Industry itself acknowledges that it can take multiple operators to produce in volumes that are large enough and certain enough to justify midstream investment in gathering and processing infrastructure. It is entirely appropriate for BLM to require that any economic test used to inform BLM's authority and responsibility to prevent waste embrace the broad public interest and the broad economic context within which individual operators operate.

Our recommendations are fully consistent with BLM's legal authorities and policy imperatives, even though they may reflect a shift in current waste prevention practice as understood by oil and gas lessees. BLM's fundamental authority and responsibility to prevent waste is rooted in the MLA and FLPMA. The very reason that BLM is engaged in this rulemaking is because the agency's current waste prevention policy and practice is ineffective, contributing to the very waste that the MLA and FLPMA compel BLM to prevent. BLM's responsibility to faithfully comply with the MLA and FLPMA requires it to take action consistent with the best available science and evolving realities, including by making the appropriate changes we recommend to the framework for evaluating methane waste reductions. As we explained in our May 30, 2014 comments on page 19 (footnote omitted):

BLM, notably, is not bound by prior policy or practice, even if oil and gas lessees have relied on such policy and practice in acquiring or investing in leases. As the Supreme Court teaches, "[e]ven with respect to vested property rights, a legislature generally has the power to impose new regulatory constraints on the way in which those rights are used, or to condition their continued retention on performance." *U.S. v. Locke*, 471 U.S. 84, 104 (1985). That legislative power extends to BLM's authority to revise and promulgate rules in accord with such legislative power, in particular where such authority is designed to prevent the waste of publicly owned oil and gas resources held in trust for the American people. 30 U.S.C. § 189 ("The Secretary of the Interior is authorized to prescribe necessary and proper rules and regulations and to do any and all things necessary to carry out and accomplish the purposes of this chapter...").

Industry comments also seek to set up a "straw man" proposition that it is impermissible for BLM to update its waste rule to require that *all* methane should be deemed economically recoverable

and that *all* methane loss should be considered avoidable. While BLM should certainly strive to prevent the loss of methane, nowhere in their Forum presentations did BLM indicate that it would be considering adopting this expansive definition of waste. Indeed, in our previous comments we have acknowledged that opportunities to reduce methane waste may differ at different stages of development; i.e., exploration, delineation and infill/production, and at different levels of well dispersion or remoteness.

Finally, industry commenters assert that new waste reduction requirements on leases could drive down industry interest in leases and bonus bids, reduce supplies and increase prices. These concerns are speculative and exaggerated. It is equally plausible that the BLM waste rule could *increase* industry interest in lease sales and bonus bids by providing more regulatory certainty, uniformity, and consistency across BLM state and field offices, and more certainty about the availability of gathering and processing infrastructure. Further, the actual costs of waste reduction measures are clearly very low, on the order of few cents per produced MCF nationwide (ICF 2014), and the record shows that production has remained robust in CO and WY, states that have adopted methane control requirements.

**Industry claim #4:** Reducing waste of associated gas is hampered by uncertainty about the volumes of gas that will be produced, by operators “being at the mercy of third party gatherers,” Armstrong at 2, and by gas gathering infrastructure that typically lags behind new well production; i.e., being “the last piece of equipment put into place in the production system.” CPA at 10.

**Proponents:** API, Armstrong, CPA, PAW

**Response comments:** The barriers to capturing associated gas offered by industry commenters clearly require BLM as the manager of Federal, public oil and gas resources to conduct better planning and manage where, when, and how resources are developed more strategically, in line with Secretary Jewell’s statement above. The planning and management tools are already in place; i.e., RMPs, MLPs, lease sales, unitization agreements, MDPs, and APDs. Clearer direction to BLM Field Offices on how planning and management should be conducted to prevent waste is imperative. Continued waste of public oil and gas resources driven by a fragmented industry pursuing haphazard development must no longer be tolerated.

The methane waste rule—coupled with concurrent BLM policymaking efforts such as “Planning 2.0”—offers a critical opportunity to provide such direction. The rule should require smarter, better planning and management driven by in-depth development of Reasonably Foreseeable Development scenarios that identify not only where resources are located and future drilling activity is expected, but where existing midstream infrastructure is located and the current characteristics and capacity of that infrastructure. The rule should also require a hard look at all interrelated and interdependent oil and gas activities in a defined area regardless of land ownership or jurisdiction. This will allow BLM to address methane waste not only from wells, but also from operations on BLM rights-of-way, and from equipment including separators, treaters, compressors, pipelines, processing plants and other sources of waste in the oil and gas development chain.

Further, the waste rule should require that, once sufficient information has been obtained on expected production via exploration wells, delineation wells, and production testing, APDs for development should proceed in concert with infrastructure investment rather than precede it. Industry's claim that midstream permits and rights-of-way take longer to obtain than getting a permit to drill a well, and that this justifies venting and flaring of associated gas, is exactly backwards and the waste rule should work to reverse such business-as-usual practices that contribute to waste.

**Industry claim #5:** Industry claims that gas capture planning is not viable because producers lack control over midstream investment, that field-wide analysis versus case-by-case analysis is not viable because producers only control their own operations, and that planning can lead to requirements that will render operations uneconomic.

**Proponents:** API, Armstrong, COGA, Concho, CPA, Devon, IPPA, WEA

**Response comments:** The industry commenters mischaracterize of the nature and value of gas capture planning. It is not a mechanism to lock in midstream investment or to require operators to know the details of other operations in a given field and downstream of that field. Rather, it is a tool to tier RMP- and MLP-stage controls on oil and gas development to the site-specific level. In doing so, gas capture and marketing plans can provide Field Offices with specifics regarding both upstream and midstream development. This would enable Field Offices to assess opportunities to synchronize upstream and midstream operations, for example, aggregating production-stage approvals in a defined area to facilitate investment in midstream infrastructure or, alternatively, prioritizing production-stage approvals in areas with adequate midstream infrastructure. It would also enable Field Offices to assess when, because of the lack of such midstream infrastructure, waste is "undue" and, therefore to assess when drilling approvals are inappropriate. 30 U.S.C. § 187; 43 U.S.C. § 1732(b).

With gas capture planning, lessees demonstrate compliance with BLM requirements, such as RMP- and MLP-stage controls and lease stipulations when seeking approvals for specific drilling operations, rights-of-way, or other activities. As we have recommended, the methane waste rule should require gas capture and marketing plans to be submitted as a component of APDs. This approach was adopted in North Dakota in response to recommendations and wide support from industry. The rule should require operators to document their communications with midstream companies, provide forecasts of and specifications for production, map the location of relevant midstream infrastructure, identify targeted processing facilities, and disclose proposed field use of gas. Gas capture and marketing plans would help ensure that operators take a systematic hard look at their expected natural gas production, and how that gas will be used productively, whether by field operations or by transmission through gathering and processing systems so that it can be marketed.

Gas capture and marketing planning should therefore be a critical element of the methane rule's architecture, enabling BLM Field Offices to better understand the larger context of oil and gas development and to shape that development in the public interest. Rather than rendering

operations uneconomic, gas capture and marketing plans—developed consistently with higher-level RMPs, MLPs, leases, unitization agreements, and MDPs—can give individual lessees and operators greater economic certainty by ensuring that development is more orderly, and that all producers have the opportunity to obtain midstream services by reducing the advantage of affiliated companies who may otherwise steer midstream investment to support their own upstream production investments.

Again, the notion that the lack of reasonably foreseeable pipeline capacity provides an excuse for venting and flaring has it exactly backwards. Rather, better front-end planning and management of Federal oil and gas resources can lead to more rational pipeline and other midstream investment and eliminate the need for venting and flaring.

Finally, proposals to base gas capture planning on EPA’s GHG Reporting Program to focus on the “highest-emitting sources” ignores the reality that there are myriad sources of methane waste from oil and gas operations that individually are under the reporting rule’s threshold but in aggregate represent significant sources of waste. Indeed, addressing these myriad small emission sources should be a key target of BLM’s rulemaking and opportunity for the agency to secure methane emission reductions above-and-beyond what may be accomplished by other Federal or state rules.

**Industry claim #6:** Natural gas production has moved from first to second place as source of U.S. methane emissions.

**Proponents:** Devon, WEA

**Response comments:** This claim is irrelevant: the oil and natural gas sector as a whole accounts for nearly 30% of U.S. methane emissions and is ripe with opportunity for cost-effective reductions, and the failure to utilize these opportunities constitutes a waste of natural gas and undue degradation of federal lands. Industry’s contention that another sector has still higher methane emissions has no bearing on BLM’s obligation to control these emissions.

In addition to being irrelevant, this contention relies on treating oil and natural gas as separate sectors, which is inappropriate in light of their functional interconnection and BLM’s mandate. That is, while the 2014 U.S. GHG Inventory puts natural gas in second place as a source of methane emissions behind enteric fermentation, that same inventory demonstrates that when oil and natural gas emissions are added together, the combined total exceeds enteric fermentation (162 MMTCO<sub>2</sub>e vs. 141 MMTCO<sub>2</sub>e). Oil and natural gas production are appropriate to group together because of the functional interconnection between the two sectors, and the similarities in emission sources and abatement technologies across the two sectors. These are not true of the agriculture-related sectors. Accordingly, the problem before BLM—*i.e.*, the combined problem of oil and gas methane emissions, is indeed the single greatest source of U.S. methane emissions.

### III. Waste Mitigation Technology Response Comments

#### A. Liquids Unloading

**Industry claim #7:** Wells with plunger lifts emit more than wells without plunger lifts, and therefore considering plunger lifts to be a venting/emission control technology is not supported by fact or data.

**Proponent:** API

**Response comments:** First, this assertion is contradicted by extensive documentation that plunger lifts reduce venting of natural gas compiled by Natural Gas STAR and based on reports prepared by industry partners.

The assertion does not account for the differences in the population of wells with and without plunger lifts. If no technologies to reduce venting during liquids unloading were in use, emissions would be highly variable among wells, due to geological and other technical factors. Plunger lifts are typically voluntarily installed on wells which have higher liquids unloading emissions. Those wells would be emitting even more if they were not employing this technology. While API/ANGA's report (Characterizing Pivotal Sources of Methane Emissions from Natural Gas Production, Sept. 2012) found that wells without plunger lifts emit less than those with plunger lifts, this does not account for the fact that plunger lifts are installed on wells that had a higher level of baseline emissions during liquids unloading and thus does not provide evidence that plunger lifts at those wells are not reducing emissions. Finally, this claim also does not account for the fact that the majority of wells with plunger lifts report no liquids unloading emissions at all (79%, according to API/ANGA's report).

**Industry claim #8:** Plunger lifts do not eliminate the need to vent to atmosphere.

**Proponent:** API

**Response comments:** We are not aware of any argument that plunger lifts entirely eliminate venting emissions although they do eliminate venting at many wells. Instead, we argue, based on data from the EPA's Natural Gas Star Program, that plunger lifts can reduce venting by 70-90% (see p. 39 of our 5/30/14 comments).

**Industry claim #9:** For small operators with marginal wells, requiring the utilization of technologies, such as artificial lifts, to reduce liquids unloading venting can make the well uneconomic.

**Proponent:** Armstrong Energy

**Response comments:** In general measures to reduce emissions, including from liquids unloading, are very low cost. Nevertheless, even very reasonable measures may increase costs slightly. As a general matter, BLM must balance the economics of the industry against the waste and

environmental harm caused by certain practices of the industry.

All wells become uneconomic at some point as the resource is produced and depleted. We acknowledge that reasonable, low cost rules may move that date forward slightly. In light of BLM's statutory mandates, BLM must not allow continued wasteful practices, such as regular, highly inefficient blowdown of wells without the use of plunger lifts or other means to make liquids unloading more effective, simply to avoid the possibility of shutting in wells slightly earlier.

It is important to note that only a fraction of gas wells vent during liquids unloading, and that the lion's share of emissions comes from only a small portion of those wells that vent. In four basins where most of the wells are administered by BLM (San Juan, Piceance, Uintah, and Green River), 82% of all emissions from liquids unloading reported to EPA's GHG Reporting program are from 4,737 wells (8% of all the wells in those basins). These wells are *each* emitting over 900,000 cubic feet of methane per year (over 2.5 mcf per day). Only a small portion of operators allow these high emissions, and low-cost, proven measures are available to reduce or eliminate these emissions. BLM must end this wasteful practice.

**Industry claim #10:** There are a variety of different techniques that can be used for well deliquification, and it is a misconception that certain systems (e.g. plunger-lift systems, velocity tubing, shut-in cycles, soap or foam injections) are the single best emission control action for wells where venting for liquids unloading occurs.

**Proponents:** API, CPA, WEA

**Response comments:** BLM should focus on minimizing wasteful emissions during liquids unloading, rather than requiring single technologies. Other technologies (velocity tubing, surfactants) can eliminate the need to vent wells, and BLM should allow the use of any technology that minimizes or eliminates venting. The Colorado methane rules adopted this flexible approach to regulating liquids unloading.

Despite the many technologies available to eliminate or reduce venting of gas during unloading, some operators have chosen not to deploy these technologies and continue to simply blow down wells, resulting in large emissions which are clearly wasteful since technologies are available to reduce emissions. BLM must not allow this wasteful practice to continue. BLM must set rules or standards for the degree to which operators must reduce this waste, considering available technologies, such as plunger lifts with proper management procedures. It has been demonstrated that these can reduce venting enormously. BLM should require plunger lifts for venting wells or other technologies that operators can demonstrate will reduce emissions as effectively as a plunger lift, unless the operator demonstrates that another technology is more suitable for that particular well.

## **B. Pneumatic Devices**

**Industry claim #11:** “Continuous low-bleed pneumatic controllers and intermittent pneumatic controllers emit less than 6 scf/hr of gas.” API Attachment at 7.

**Proponent:** API

**Response comments:** While some intermittent pneumatic controllers emit less than 6 scf/hr, the available data shows that emissions from these devices are, on average, higher. For example, the EPA’s Greenhouse Gas Reporting Program uses an emissions factor of 13.5 scf/hr per intermittent controller, following the recommendation of API’s own *Compendium of Greenhouse Gas Emissions Methodologies for the Oil and Natural Gas Industry*. More recently, Allen *et al.* (2013) found that the average emissions rate for intermittent-bleed controllers was 17.4 scf/hr (see p. 42 of our 5/30/14 comments). High-emitting intermittent-bleed pneumatic devices should be replaced with low- or zero-bleed devices, whether continuous- or intermittent-bleed.

**Industry claim #12:** The NSPS at Subpart OOOO already requires new, modified, and reconstructed pneumatic devices to be low-bleed, so additional regulation is unnecessary.

**Proponents:** API, Armstrong Energy, WEA

**Response comments:** Existing federal regulation does not address the fact that hundreds of thousands of tons of methane are being emitted from existing high-bleed pneumatic controllers, and do not address intermittent controllers at all. ICF 2014 and API-ANGA 2012. Colorado recognized that these emissions can be feasibly and cheaply reduced by requiring operators to replace existing high-bleed controllers statewide. Colorado’s economic analysis shows that replacing a high-bleed controller with a low-bleed controller has a “payback time” of just 14 months, which is certainly much shorter than the lifetime of a pneumatic controller. Colorado used a 15-year lifetime in their analysis. Industry stakeholders in the Colorado rulemaking used a pneumatic controller lifetime of only 5 years, but this was attributed to a calculation in an EPA Gas STAR document that does not make any statement about the lifetime of a controller. To our knowledge, no concrete documentation of a lifetime shorter than 15 years is in the record. Even with a 5-year lifetime for a new controller, these stakeholders estimated that replacing high-bleed controllers pays for itself in under three years.

**Industry claim #13:** High-bleed devices are sometimes required due to the response time, safety, or positive actuation.

**Proponent:** API

**Response comments:** Safety exemptions should be part of any regulation. For example, Colorado required well operators in the urban parts of the Denver-Julesburg basin to replace high-bleed controllers in 2009, unless they could show that keeping the high-bleed controller in service was necessary for “safety and/or process purposes.” **No operator even requested such an exemption.**

While we support exemptions based on genuine safety requirements, it is clear that replacement of high-bleed pneumatic controllers is very feasible.

**Industry claim #14:** Emission reductions from pneumatic devices are already required under existing regulations, so new BLM rules are redundant and unnecessary.

**Proponents:** Armstrong Energy, CPA, Concho

**Response comments:** See discussion of Industry Claim #11 above. The OOOO regulation only applies to new pneumatic devices, not existing devices. BLM regulation of pneumatics should address the large amount of waste at existing pneumatics. Colorado recognized that emissions from high-bleed controllers are feasible and inexpensive to reduce by requiring replacement with low- or zero-bleed controller. BLM should make these requirements consistent across all Federal land.

### **C. Leak Detection and Repair (LDAR)**

**Industry claim #15:** Industry makes a distinction between what should and should not be considered a leak. Leaks are caused by normal wear, improper installation, improper maintenance, or other reasons. Industry asserts that emissions from equipment that is operating properly and as designed, equipment malfunction, and compressor seals should not be considered leaks.

**Proponents:** API, PAW

**Response comments:** Waste from leaks is characterized by the unintentional or neglectful escape of natural gas from static components such as connectors, valves, regulators, and hatches throughout the oil and natural gas sector. Because the aim of the waste rule must be to reduce methane waste from *all* sources, including venting, this distinction should not be used to artificially limit the efficacy of an LDAR program. Even though an LDAR program is only designed to find “leaks,” it has many co-benefits. As seen in the Carbon Limits study, an LDAR program can identify compressor seals and other pieces of equipment with excessive venting. Thus, an LDAR program is an obvious complement to existing maintenance programs, and would be a valuable means of reducing waste from leaks and some sources of excessive venting.

**Industry claim #16:** Instrument based LDAR with IR cameras is expensive, especially because BLM sites are very remote and travel times add to costs.

**Proponents:** API, PAW

**Response comments:** Colorado factored in travel times when it calculated costs for the LDAR requirement in its recent rule. Many BLM and non-BLM facilities in Colorado are remote and LDAR was still found to be cost-effective. LDAR is also required at new well production sites in Wyoming and has also long been required in Alberta, both regions characterized by remote and dispersed facilities.

Additionally, this comment is directly contradicted by industry testimony from the Colorado rulemaking process. For example, Encana submitted an analysis of their *actual* costs for their LDAR program in the remote Jonah field in Wyoming, where many, or most, wells are administered by BLM. Their actual cost of LDAR is less than \$150 per ton of avoided VOC emissions. This figure is about ten times lower than the (low) estimate of the cost of the rule produced by the Colorado Department of Public Health and Environment.

**Industry claim #17:** There are few contracting companies that have the expertise to perform LDAR at remote BLM sites.

**Proponents:** API, PAW

**Response comments:** LDAR contracting companies will quickly follow market demand; if BLM requires LDAR surveys, contractors will fill the demand. LDAR has been required in California, Colorado, Ohio, Pennsylvania, Wyoming, and western Canada. There is no evidence that operators in these jurisdictions have had any difficulty complying with these rules.

**Industry claim #18:** Unmanned facilities are visited only weekly or twice per month.

**Proponent:** API

**Response comments:** We are not suggesting that LDAR surveys occur more frequently than monthly, so an LDAR survey requirement would not increase visit frequency. And once leaks are identified, leak repair could take place during already-scheduled inspection and maintenance visits to sites.

**Industry claim #19:** Recordkeeping for LDAR programs is time-consuming, complicated, and costly.

**Proponents:** API, PAW

**Response comments:** Record keeping is an important part of an LDAR program, but it need not be overly complicated. We recommend that companies repair all leaks once they are found. Compared to other leak repair strategies (i.e. only repair leaks above a certain size or only repair leaks that are economical to repair), this strategy simplifies the record keeping substantially. Finally, recordkeeping is accounted for in estimates of LDAR costs, such as the Carbon Limits study on LDAR cost-effectiveness, Colorado's analysis of the cost of its rules, and the industry reports of LDAR program cost mentioned above.

**Industry claim #20:** LDAR is prohibitively expensive for operators of well sites, and implementation of an LDAR policy will make additional wells uneconomic.

**Proponent:** Armstrong Energy

**Response comments:** Recent studies have shown that instrument-based LDAR programs are a very cost-effective way to reduce wasteful leaks, and the costs of LDAR surveys are very limited. The

recent study of LDAR surveys by Carbon Limits showed that the cost of surveys is quite reasonable; for example, surveys of well sites cost about \$400 with the cost rising somewhat for larger facilities, and that once leaks are identified, it is in the operator's economic interest to repair them in almost every instance. Recognizing the low cost and high value of LDAR surveys (including Colorado, Ohio, Pennsylvania, Wyoming) several states have taken steps to reduce waste from leaks by requiring regular surveys. In February 2014, Colorado revised its oil and gas regulations to require instrument-based LDAR surveys for well production facilities as well as at natural gas gathering compressor stations. Several oil and gas producers in the state supported Colorado's rule. Those firms submitted data based on their own experience performing LDAR surveys during the Colorado rulemaking process. These data show that firms can perform LDAR surveys at even lower cost than the figures used in the Carbon Limits study discussed above.

**Industry claim #21:** LDAR is already required in Colorado.

**Proponent:** CPA

**Response comments:** The Colorado rule is a common-sense, affordable rule that will reduce emissions significantly. While it should be strengthened in some respects, we support the approach that it takes: requiring instrument-based inspections on regular basis, with inspection frequency based on facility size. Using this type of approach, BLM should ensure that LDAR is carried out across all Federal lands in every state.

**Industry claim #22:** Informal AVO (audio, visual, olfactory) leak detection programs are sufficient.

**Proponents:** Concho, WEA

**Response comments:** While AVO leak detection has benefits and should be carried out each time personnel are on site, instrument-based inspections are essential to reduce waste from oil and gas facilities. There is a clear record documented by Natural Gas STAR and other published studies that instrument-based inspections will efficiently find leaks that are missed in AVO inspections, and the record also shows that instrument-based inspections are low cost. Instrument-based inspections are required at a broad range of facilities in other sectors, such as refineries. Several states (Colorado, Wyoming, Pennsylvania, and Ohio) have recognized that instrument-based inspections are a critical means to reduce wasteful emissions from oil and gas production facilities. A number of oil and gas producers have chosen to establish instrument-based programs in areas where it is not required, and some have publicly supported regulations to require instrument-based inspections.

#### **D. Well Completions**

**Industry claim #23:** EPA's NSPS OOOO already covers well completions.

**Proponent:** Armstrong Energy

**Response comments:** EPA NSPS OOOO covers completions of hydraulically fractured gas wells, but not hydraulically fractured oil wells. In their White Paper on oil well completions, the EPA indicates that this is a significant source of methane emissions.

**Industry claim #24:** In order for reduced emission completions (REC, green completion, flare- less completions) to be used, the following minimum technical requirements must be met: 1) gas-gathering infrastructure must be in place, 2) the gas must be capable of flowing at high enough pressure for the pipeline system, and 3) the gas must be of high enough quality for the pipeline.

**Proponents:** API, PAW

**Response comments:** As discussed in our response comments above regarding front-end planning, BLM’s methane waste rule should ensure that operators are able to meet reduced emission completion requirements, including infrastructure requirements before field production is allowed.

Beyond the need for front-end planning, there are means to utilize associated gas beyond gathering with pipelines. Technologies that have been proven and deployed in US oil fields include generating power for local use or to be distributed on the grid; compressing gas for truck transport to gathering systems/processing plants/other consumption points; and removal of natural gas liquids from natural gas, either before it is used for other purposes (e.g., power generation) or before flaring off residual gas.

BLM must require proper planning to ensure that all hydrocarbons produced from Federal wells are beneficially utilized via pipelines or field use technologies, or re-injected. Given BLM’s responsibility to prevent waste through proper planning and the use of proven alternative technologies, allowing flaring during well completion is wasteful. As we have noted above, flaring may be appropriate in very limited circumstances, where neither capture nor on-site beneficial use is feasible. Allowing firms to vent gas during well completion compounds the waste of natural gas with additional environmental harm from directly venting methane, ozone precursors, and toxic compounds, compared to the lesser environmental harm from the carbon dioxide of a properly operated flare.

#### **E. Casinghead and Associated Gas**

**Industry claim #25:** Prohibiting venting of casinghead gas will decrease oil production in many marginal wells and may render them uneconomic.

**Proponent:** API

**Response comments:** Casinghead and associated gas are produced alongside oil, and BLM must require operators to incorporate the capture and use of this gas into their front-end planning. Allowing flaring of casinghead and associated gas is wasteful, and venting this gas is even more egregious. BLM’s methane waste rule must ensure that operators have the infrastructure to

capture the gas and the means to use or sell the gas.

Companies can set up contracts with midstream companies to sell gas in gathering pipelines. Beyond selling gas through gathering systems, companies can utilize other proven technologies, such as generating power for local use or to be distributed on the grid; compressing gas for truck transport to gathering systems/processing plants/other consumption points; and removal of natural gas liquids from natural gas, either before it is used for other purposes (e.g., power generation) or before flaring off residual gas.

Measures to capture and use gas that would otherwise be flared are technically feasible and have been deployed in US oil fields. While costs vary, even very reasonable measures may increase costs only slightly. As a general matter, BLM must balance the economics of the industry against the waste and environmental harm caused by certain industry practices. Field use or investment in infrastructure to capture and use gas should be a requirement for the vast majority of oil development on public lands. While we acknowledge that requirements for the use of low-cost measures to utilize all gas may, at least in theory, make a small number of wells uneconomic to develop, BLM must not allow wasteful practices such as flaring of casinghead and associated gas to continue in order avoid the possibility of making a small number of wells uneconomic.

**F. Storage Vessels and Tank Emissions**

**Industry claim #26:** Subpart OOOO already requires capture of emissions from storage tanks above a certain threshold.

**Proponents:** Armstrong Energy, CPA, WEA

**Response comments:** The OOOO regulation only applies to new storage tanks, not existing tanks. BLM regulation of storage tanks should address the large amount of waste at existing tanks.

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