



December 16, 2024

Submitted via Electronic Mail ([blm\\_hq\\_ntl5@blm.gov](mailto:blm_hq_ntl5@blm.gov))

David Rosenkrance

Assistant Director for Energy, Minerals, and Realty Management.

Bureau of Land Management

U.S. Department of the Interior

1849 C Street NW, Room 5646

Washington DC 20240

**Re:** Proposed Notice to Lessees No. 5: “Clarifying the Implementation of Certain BLM Oil and Gas Measurement Regulations,” 89 Fed. Reg. 90,037 (Nov. 14, 2024)

Dear Assistant Director Rosenkrance:

The American Petroleum Institute (API), the Alaska Oil and Gas Association (“AOGA”), the American Exploration and Production Council (“AXPC”), the North Dakota Petroleum Council (“NDPC”) and the Western Energy Alliance (“WEA”) appreciate this opportunity to provide comments in response to the Bureau of Land Management’s (BLM’s) Proposed Notice to Lessees No. 5 (“NTL-5”) entitled, “Compliance with the Site Security, Measurement of Oil, and Measurement of Gas, 43 CFR part 3170.” The Associations respectfully request that BLM consider these comments in resolving the various technical feasibility and enforcement fairness concerns associated with the proposal.

Thank you for your kind attention to these comments.

Sincerely,

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**Comments Submitted by the American Petroleum Institute (API), the Alaska Oil and Gas Association (“AOGA”), the American Exploration and Production Council (“AXPC”), the North Dakota Petroleum Council (“NDPC”) and the Western Energy Alliance (“WEA”)**

**BLM’s Proposed Notice to Lessees No. 5**

**“Clarifying the Implementation of Certain BLM Oil and Gas Measurement Regulations”**

**89 Fed. Reg. 90,037 (Nov. 14, 2024)**

*December 16, 2024*

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## I. The Associations' Interests in NTL-5

API is a national trade association representing nearly 600 member companies that operate throughout the United States and are involved in all aspects of the oil and gas industry, including exploration, development, production, transportation, refining, and marketing. Many of our members operate on federal lands, including onshore areas managed by the Bureau of Land Management. For many years, API has worked collaboratively with the Department of the Interior (DOI) and its agencies, including BLM, to help provide for the continued safety of industry workers, protection of the environment, and proper economic development of resources in fulfillment of federal law.

API was formed over one hundred years ago as a standards-setting organization and is the global leader in convening subject matter experts across segments to establish, maintain, and distribute consensus standards for the oil and gas industry. In its first 100 years, API has developed more than 800 standards to enhance operational safety, environmental protection and sustainability across the industry, especially through these standards being adopted globally. API standards are developed under API's American National Standards Institute accredited process, ensuring that the API standards are recognized not only for their technical rigor but also their third-party accreditation which facilitates acceptance by state, federal, and increasingly international regulators.

Since 1924, API has been a cornerstone in establishing and maintaining standards for the worldwide oil and gas industry. Our work helps the industry invent and manufacture superior products consistently, provide critical services, ensure fairness in the marketplace for businesses and consumers alike, and promote the acceptance of products and practices by industry and governments globally as outlined in *API Standards: International Usage and Deployment*.<sup>1</sup>

Of particular relevance here, API plays a central role in the development of standards and practices for the measurement of oil and gas in the field, including through the issuance of the API's "Manual of Petroleum Measurement Standards," which are incorporated into BLM's regulations. *See, e.g.*, 43 C.F.R. 3174.3 (incorporating by reference various API standards). API members are subject to the BLM requirements in the oil and gas measurement regulations found at 43 C.F.R. subparts 3174 and 3175, which became effective in January 2017 and which are the subject of NTL-5.

**The Alaska Oil and Gas Association ("AOGA")** is a professional trade association whose mission is to foster the long-term viability of the oil and gas industry in Alaska for the benefit of all Alaskans. AOGA's 16 member companies account for the majority of oil and gas exploration, development, production, transportation, refining, and marketing activities in Alaska.

**The American Exploration and Production Council ("AXPC")** is a national trade association representing the leading independent oil and natural gas exploration and production companies in the United States. AXPC companies produce some of the cleanest and safest oil and natural gas in the world, while supporting millions of Americans in high-paying jobs and investing

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<sup>1</sup> <https://www.api.org/-/media/apiwebsite/products-and-services/api-international-usage-and-deployment-report-2022.pdf>

a wealth of resources in our communities. Dedicated to safety, science, and technological advancement, our members strive to deliver affordable, reliable energy while positively impacting the economy and the communities in which we live and operate. As part of this mission, AXPC members understand and promote the importance of ensuring positive environmental and public-welfare outcomes and responsible stewardship of the nation’s natural resources. It is important that regulatory policy enables us to support continued progress on both fronts through innovation and collaboration. AXPC works with regulators and policymakers to create sound, fact-based public policies that enable responsible development of America’s vast oil and natural gas resources in order to meet domestic and global energy demands.

Established in 1952, the **North Dakota Petroleum Council (NDPC)** is the trade association and primary voice for the oil and gas industry in North Dakota. NDPC represents more than 550 companies involved in all aspects of the oil and gas industry, including oil and gas production, refining, pipeline development and operation, transportation, mineral leasing, consulting, legal work, and oil field service activities in North Dakota, South Dakota, and the Rocky Mountain Region. The mission of NDPC is to promote opportunities for open discussion, lawful interchange of information, and education concerning the petroleum industry; to monitor and influence legislative and regulatory activities on the state and national level; and to accumulate and disseminate information concerning the petroleum industry to foster the best interests of the public and industry.

Working with a vibrant membership base for over 50 years, **the Western Energy Alliance** stands as a credible leader, advocate, and champion of independent oil and natural gas companies in the West. Our expert staff, active committees, and committed board members form a collaborative and welcoming community of professionals dedicated to abundant, affordable energy and a high quality of life for all. Most independent producers are small businesses, with an average of fourteen employees.

## **II. Importance of Oil and Gas Development**

The U.S. is a global leader in both emission reductions<sup>2</sup> and energy production.<sup>3</sup> Oil and gas exploration and development on federal lands and waters provide enormous benefits to our nation and its citizens—for our economy, our environment, and our national security. Given the vital importance of energy production on public lands, overreaching land management regulations could place our domestic energy supply at risk, as do proposals that would undercut a balanced, all-of-the-above energy policy. Reduced production on public lands also harms local communities that depend upon the jobs and revenues generated by lawful energy development.

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<sup>2</sup> According to EPA, “Between 1970 and 2020, the combined emissions of the six common pollutants (PM2.5 and PM10, SO2, NOx, VOCs, CO and Pb) dropped by 78 percent. This progress occurred while U.S. economic indicators remain strong.” EPA, *Progress Cleaning the Air and Improving People’s Health* (May 1, 2023), <https://www.epa.gov/clean-air-act-overview/progress-cleaning-air-and-improving-peoples-health#pollution>.

<sup>3</sup> According to the Energy Information Administration (EIA), the United States is ranked first globally in total energy production from both natural gas and from petroleum and other liquids. U.S. Energy Info. Admin., *Total Energy Production from Natural Gas* (last visited June 14, 2023), <https://www.eia.gov/international/rankings/world?pa=287&u=2&f=A&v=none&y=01%2F01%2F2021>.

The oil and gas industry produces and delivers nearly 70% of the energy our country uses. Energy production on public lands, including oil and gas production, is a crucial part of the nation’s program for energy security and economic strength. Likewise, the oil and gas industry is essential to supporting a modern standard of living by providing communities with access to affordable and reliable energy. The Associations’ members remain focused on public health and safety and have well-established policies in place for proactive community engagement and feedback aimed at fostering a culture of trust, inclusivity, and transparency. We believe that all people should be treated fairly – regardless of race, color, national origin, or income – with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. In this regard, it is crucial to bear in mind that energy development on federal lands promotes investment in rural areas where State and local economies depend on the industry for jobs, continued economic prosperity and revenue generated from state severance tax and other local taxes generated from these projects.

### III. General Background on BLM Oil and Gas Measurement Regulations

BLM manages approximately 245 million acres of surface estate of public lands in the United States (more than any other federal agency).<sup>4</sup> BLM also manages the federal government’s onshore subsurface mineral estate (approximately 700 million acres).<sup>5</sup> The Congressional Research Service (CRS) recently explained the enormous importance of oil and gas production on federal lands to the federal government, the states, local communities, and the nation as a whole.<sup>6</sup> Production of oil and gas from onshore federal lands represents almost 10% of total domestic production of crude oil and natural gas. CRS found that total revenues from oil and gas leases on onshore federal lands exceeded \$4.2 billion in fiscal year 2019. This substantial return for the taxpayer is comprised of royalty payments, bonuses, interest payments on leases, rents, and other sources. In turn, these funds were disbursed to states (more than \$2 billion), the Reclamation Fund (more than \$1.5 billion), and the U.S. Treasury (\$444 million), among others.<sup>7</sup> More recent data published by the Interior Department’s Office of Natural Resources Revenue (ONRR) show that, for fiscal year 2023, energy production on federal and Tribal lands and federal offshore areas generated over \$18.1 billion in revenues (from royalties, bonus bids, rents, and other sources).<sup>8</sup> For FY 2023, ONRR disbursed over \$4.7 billion in funds collected from oil and gas-related activities on federal lands and waters to 33 states.<sup>9</sup> As stated by CRS, “[f]ederal revenues from oil and natural gas leases provide income streams that support a range of federal and state policies and programs.”

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<sup>4</sup> The White House, *Department of the Interior, in THE BUDGET FOR FISCAL YEAR 2024* (2023), [https://www.whitehouse.gov/wp-content/uploads/2023/03/int\\_fy2024.pdf](https://www.whitehouse.gov/wp-content/uploads/2023/03/int_fy2024.pdf).

<sup>5</sup> BLM, *About the BLM Oil and Gas Program* (last visited June 14, 2023), <https://www.blm.gov/programs/energy-and-minerals/oil-and-gas/about#:~:text=The%20BLM%20manages%20the%20Federal,benefit%20of%20the%20American%20public.>

<sup>6</sup> BRANDON S. TRACY, CONG. RES. SERV., R46537, REVENUES AND DISBURSEMENTS FROM OIL AND NATURAL GAS PRODUCTION ON FEDERAL LANDS (2020), <https://crsreports.congress.gov/product/pdf/R/R46537>.

<sup>7</sup> *Id.*

<sup>8</sup> DOI, *Interior Department Announces \$18.24 Billion in Fiscal Year 2023 Energy Revenue* (Nov. 9, 2023), <https://www.doi.gov/pressreleases/interior-department-announces-1824-billion-fiscal-year-2023-energy-revenue#:~:text=Today%2C%20Interior%E2%80%99s%20Office%20of%20Natural%20Resources%20Revenue%20announced,federal%20and%20Tribal%20lands%20and%20federal%20offshore%20areas.>

<sup>9</sup> *Id.*

Reliable oil and gas measurement systems are important for energy production in the United States. The Associations support robust gas measurement regulations along with codification of reasonable requirements in the Code of Federal Regulations. Ultimately, with regard to oil and gas measurements, the interests of BLM and the regulated community should be aligned. Our members are every bit as interested as BLM in fully measuring *all oil and gas production* because production is the basis on which our members are compensated for their efforts. In fact, because the Associations' members who produce oil and gas resources on federal lands generally receive 7/8ths interest in the production while the government generally receives 1/8 through the royalty payment, industry has an even greater incentive for proper measurements. To be clear, there is simply no incentive for the industry to underestimate oil and gas production on federal lands.

To that end, the Associations have a long history of participating cooperatively with BLM in the development of workable measurement rules. In 1989, BLM adopted "Onshore Oil and Gas Order No. 5, Measurement of Gas on Federal and Indian Oil and Gas Leases," which addressed (among other things) gas measurement by orifice meter and gas measurement by other methods.<sup>10</sup> Order No. 5's original purpose was to "establish requirements and minimum standards for the measurement of gas by the methods authorized [in the regulations existing at that time], i.e., measurement by orifice meter or other methods acceptable to the authorized officer."<sup>11</sup> This order also established expectations around compliance and enforcement of the measurement standards. *Id.* Importantly, this original Order No. 5 was "based on the standards and specifications" adopted by industry (including API standards).<sup>12</sup> The standards set forth in the original Order No. 5 applied to oil and gas measurements on federal and Indian lands for almost three decades.

In 2016, BLM promulgated a comprehensive replacement of Order No. 5 in the form of new regulations codified at 43 C.F.R. Subpart 3174 and Subpart 3175, which established new "minimum standards for accurate measurement and proper reporting" of oil (3174) and gas (3175) developed on federal or tribal leases and other federal areas covered by the regulations.<sup>13</sup> These new regulations provided overall oil and gas "measurement performance standards" and included, among other things, requirements for the "hardware and software" related to oil and gas metering equipment and reporting and recordkeeping. Central to this new regime was a new mandate that operators could only use BLM-approved equipment."<sup>14</sup>

For the most part, operators within the oil and gas industry agreed with the *intent* of the new regulations but expressed strong concerns that various requirements adopted in 2016 suffered from serious legal, procedural, economic, and technical problems (as described in prior API comments attached as Appendix A). Some, though not all, of those concerns were resolved by BLM, but a significant area of immediate concern in 2017 was BLM's plans for implementation and enforcement of this new comprehensive system of measurement regulations. In particular, API

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<sup>10</sup> See 54 Fed. Reg. 8100 (Feb. 24, 1989).

<sup>11</sup> *Id.* at 8106.

<sup>12</sup> *Id.* at 8107.

<sup>13</sup> 81 Fed. Reg. 81462 (Nov. 17, 2016) (adopting Subpart 3174 for measurement of oil); 81 Fed. Reg. 81,516 (Nov. 17, 2016) (adopting Subpart 3175 for measurement of gas).

<sup>14</sup> *Id.* See also 43 C.F.R. § 3170.9 ("Noncompliance with any of the requirements of this part or any order issued under this part may result in enforcement actions under 43 CFR subpart 3163 or any other remedy available under applicable law or regulation.").



explained that, under these new regulations, BLM was essentially mandating replacement of extensive networks of metering equipment across countless millions of acres of federal lands at enormous cost – all without knowing what specific equipment actually would be approved by BLM, and without any orderly process for such a large-scale equipment replacement effort.

Acknowledging these implementation and enforcement concerns, BLM issued Instruction Memorandum (IM) 2017-032 in January 2017.<sup>15</sup> IM 2017-032 recognized that BLM was not in a position to begin requiring compliance because, among other things, BLM had not yet completed the technical system (AFMSS FMP) for industry to apply for and obtain BLM approval for equipment, let alone begun the process of actually approving equipment. Accordingly, the IM explained that BLM “will delay implementation and enforcement of new oil measurement regulations under 3174 as they apply to permanent oil measurement facilities in place before January 17, 2017. The length of the delay will be the number of days between January 17, 2017, and the date when the BLM fully implements FMP functionality in [AFMSS]. The phase-in periods in § 3174.2(f) will apply this same delay.” While BLM has stated in the proposal that IM 2017-032 has “expired” in September 2020, the IM’s plain text suggests otherwise. BLM has not yet “fully” implemented FMP functionality given that “BLM remains unable to accept electronic FMP applications...”. Therefore, the terms of IM 2017-032, as they apply to the delay in implementation and enforcement of new oil measurement regulations under 3174, should remain valid until the date when FMP functionality has been fully implemented.

Likewise, in June 2018, BLM issued IM 2018-077 which provided additional enforcement relief from requirements found in Subparts 3174 and 3175 requiring operators to use BLM-approved equipment and software.<sup>16</sup> In IM 2018-077, BLM explained that “[t]here have been unforeseen delays in the formation and functioning of the [BLM Production Measurement Team, or “PMT”],” and that BLM “will not be able to approve the equipment and software versions required by these provisions until late 2018, at the earliest...” Thus, BLM announced that it would “delay enforcement” of various requirements found in Subparts 3174 and 3175 “insofar as they require the use of equipment and software approved by the BLM” until such time as BLM has “executed the requisite approvals of equipment and software, and operators have been afforded a reasonable opportunity to comply.”<sup>17</sup> BLM assured industry that “further guidance” will be provided “as approvals are made.”

While IM 2018-077 also expired in September 2020, BLM has so far not approved *any* equipment and software for use. As a result, the industry would be justified in concluding that the delay in enforcement to which BLM committed itself in IM 2018-77 remains in effect.

In promulgating measurement standards, including those found at 43 C.F.R. Subparts 3174 and 3175, BLM has relied upon the Secretary of the Interior’s “authority under various Federal

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<sup>15</sup> <https://www.blm.gov/policy/im-2017-032>

<sup>16</sup> <https://www.blm.gov/policy/im-2018-077-0>

<sup>17</sup> The provisions subject to this enforcement delay include: for “Oil Measurement,” 3174.6(b)(5)(ii)(A) (ATG systems), 3174.6(b)(5)(iii) (in-line meters), 3174.8(a)(1) (Coriolis meters and positive displacement meters), 3174.9(b) (Coriolis meters and associated software), 3174.13 (Any method of oil measurement other than tank gauging, LACT, or CMS); and for “Gas Measurement,” 3175.43 (Transducers), 3175.44 (Flow computer software), 3175.46 (Flow conditioners), 3175.47 (Differential meters other than flange-tapped orifice plates), 3175.48 (Linear devices), 3175.49 (Accounting systems).

and Indian mineral leasing laws to manage oil and gas operations, which authority has been delegated to the BLM.”<sup>18</sup> This includes, among other things, the Mineral Leasing Act,<sup>19</sup> the Federal Oil and Gas Royalty Management Act,<sup>20</sup> the Indian Mineral Leasing Act,<sup>21</sup> and the Federal Land Policy and Management Act.<sup>22 23</sup> Importantly, none of these statutes grants BLM unlimited discretion in setting standards nor do these statutes grant BLM unfettered enforcement discretion. Instead, like other federal agencies, BLM is subject to the constraints on agency action set forth in the Administrative Procedure Act (APA), including the prohibition against agency actions “found to be—(A) arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law; (B) contrary to constitutional right, power, privilege, or immunity; (C) in excess of statutory jurisdiction, authority, or limitations, or short of statutory right; (D) without observance of procedure required by law; (E) unsupported by substantial evidence in a case subject to sections 556 and 557 of this title or otherwise reviewed on the record of an agency hearing provided by statute; or (F) unwarranted by the facts to the extent that the facts are subject to trial de novo by the reviewing court.”<sup>24</sup>

#### IV. NTL-5

On November 14, 2024, BLM published a Federal Register notice proposing to adopt NTL-5 to “clarify[] when and how operators are expected to comply with certain requirements in the oil and gas measurement regulations, which became effective in January 2017.” 89 Fed. Reg. at 90037. NTL-5 declares, without explanation or discussion concerning ongoing implementation challenges, that “operators of onshore oil and gas leases have had sufficient time to prepare for compliance” with the oil and gas measurement rules found in Subpart 3174 and 3175. NTL-5 purports to set expectations for operators as to three specific areas, set forth below.

First, BLM states that, beginning 3 months after the effective date of this NTL, BLM will “no longer decline to enforce the requirements of subpart 3174 on operators of oil measurement facilities in use prior to January 17, 2017” notwithstanding the unavailability of the Automated Fluid Minerals Support System (AFMSS). Even though BLM acknowledges that it “remains unable to accept electronic [facility measurement point or “FMP”] applications,” BLM proposes to “no longer decline to enforcement the requirements of subpart 3174” beginning 3 months after the effective date.

As NTL-5’s second provision, BLM states that BLM will “delay enforcement of each of the requirements for BLM-approved equipment and software for 1 year following the BLM’s publication of applicable test procedures.” BLM acknowledges that IM 2018-077 delayed enforcement of the use of BLM-approved measuring equipment, but then says that this policy “expired on September 30, 2020,” without (again) explaining why or how operators have been afforded a reasonable opportunity to comply when, in fact, BLM lacks the systems or processes

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<sup>18</sup> 81 Fed. Reg. 81,516 (Nov. 17, 2016).

<sup>19</sup> 30 U.S.C. § 181 et seq.

<sup>20</sup> *Id.* § 1701 et seq.

<sup>21</sup> 25 U.S.C. § 396a et seq.

<sup>22</sup> 43 U.S.C. § 1701 et seq.

<sup>23</sup> See 43 C.F.R. § 3170.1 (identifying BLM’s statutory authority for regulations governing onshore oil and gas production).

<sup>24</sup> 5 U.S.C. § 706(2).

for approving equipment and to date has not approved *any* equipment for use.

As NTL-5's third and final provision, BLM states that, "in compliance with 43 CFR 3175.120(e), operators must submit gas analysis reports to the Authorized Officer (AO) upon request until such time as the Gas Analysis Reporting and Verification System (GARVS) becomes available for use." BLM proposed to require submission of reports through GARVS beginning three months after BLM publicly announces its availability.

## **V. Comments on NTL-5**

The Associations' principal concern with the proposed NTL-5 relates to BLM's proposed enforcement of the provisions in Subparts 3174 and 3175 concerning use of approved equipment and software for the measurement of oil and gas. Fundamentally, more than seven years after development of Subparts 3174/3175, BLM still lacks resources and procedures for timely approval of measurement equipment. To the Associations' knowledge, BLM has not approved *any* new oil and gas measurement equipment under the Subpart 3174/3175 standards. Threatening to take enforcement action in this context is improper and unworkable given BLM's current inability to approve equipment and software in a timely manner and the potential supply chain issues associated with operators of an estimated 89,000 wells seeking to acquire equipment that might be approved in the future. Moreover, NTL-5 fails to adequately explain how existing equipment would be treated for enforcement purposes. Many thousands of separate pieces of existing equipment in the field should not be rendered obsolete and non-compliant.

### **A. The Associations' Concerns with NTL-5's Oil and Gas Measurement Enforcement**

#### ***i. A functioning equipment approval program has not yet been established***

When it submitted its comments on BLM's proposed codification of Onshore Oil and Gas Order No. 5 in December 2015, API expressed serious concerns about the workability of the provisions requiring operators to use only approved measuring equipment. In particular, API noted its concerns regarding the availability of laboratories to perform required testing, the administrative burdens that would be placed on the Production Measurement Team (PMT) to process approvals for hundreds if not thousands of makes, models and sizes of equipment, and the resulting financial costs to operators attempting to comply with the requirements.<sup>25</sup> API reiterated those concerns in a June 2017 letter to BLM regarding the rule, which by then had been finalized.<sup>26</sup> More than seven years later, BLM has done little to assuage those concerns, which have now become more acute in light of BLM's position regarding enforcement of those provisions.

The task BLM set itself is daunting. Subparts 3174 and 3175 require the PMT to evaluate every piece of equipment used in the measurement of liquid and gaseous hydrocarbons by make, model, size, and software version (including routine firmware and software updates), as well as

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<sup>25</sup> Letter from API, Independent Petroleum Ass'n of America and Western Energy Alliance re RIN 1004-AE17, Comments re Onshore Oil and Gas Operations; Federal and Indian Oil and Gas Leases; Measurement of Gas, 80 Fed. Reg. 61,646 (Dec. 14, 2015), at 7.

<sup>26</sup> Letter from Richard Ranger, API, to Timothy Spisak, Acting Assistant Director, Energy, Minerals and Realty Management dated June 13, 2017 at 2.

the software systems utilized for data management. The regulations require that only approved devices and measurement software can be installed and utilized on Federal and Indian lands. Under proposed NTL-5, operators will need to comply with this mandate within one year after the testing procedures are posted by the PMT for each device.

In order for operators to comply with this requirement, a number of things must occur. First, for each make and model of measuring equipment the PMT must issue test procedures that manufacturers or other third parties are required to follow in order to generate data the PMT can use to determine whether to approve the use of the equipment. The data must then be generated at an independent qualified test facility and submitted to the PMT. With the data in hand, the PMT must evaluate whether the particular make and model of equipment tested warrants approval for use in the field and make a recommendation to BLM, after which the Bureau must make a final decision regarding approval. At the end of this road, approved makes and models of equipment are to be added to the lists of approved equipment maintained on BLM's website. With the requirement for approval applying to every make, model, size, and software/firmware version of every piece of equipment, as well as the software systems utilized for data management, there are hundreds, if not thousands, of approvals required.

The track record to date is not encouraging. The process of getting equipment approvals in place is taking a very long time, with little sign of progress in populating the lists of approved equipment. In fact, those lists are currently non-existent; in the seven-plus years since the Subpart 3174/3175 measurement regulations were adopted, BLM has not approved a single piece of equipment in any category for use in the field.

There are several reasons why BLM has not yet approved any equipment. One, as pointed out previously, is the sheer size of the task. Another is the limited number of facilities, outside of the manufacturers, available to perform the required testing. Yet another is the PMT's lack of resources to devote to the task. The PMT has an average of only four to five members at any given time. Moreover, the PMT's responsibilities are not limited to implementing the equipment approval program. Among other things, PMT members have spent a significant amount of their time over the past two years working on the Waste Prevention Rule. The PMT is also responsible for training Authorized Officials on the Measurement and Site Security Rules, providing technical guidance for questions and disputes with operators, etc. With all its responsibilities, it will likely take the PMT many years to approve all equipment, by which time manufacturers will have developed new makes and models that will need to be tested and approved.

Even if BLM could approve makes and models of equipment and software within one year of the publication of test procedures, the one-year deadline still promises to be difficult if not impossible to meet. For example, a make/model of equipment could be approved on Day 364 or 365 days, leaving operators one day to get approved equipment in place. Moreover, there is a very high likelihood that the approved equipment would not be available to all operators. A recent "Google" search indicates there are over 89,000 crude oil and gas wells on BLM-managed land. If only a fraction of those wells – for example, 10% or 8,900 wells – require replacement of equipment due to lack of approvals, the supply chain strain would be unmanageable.

ii. ***Examples of problems experienced***

Two examples of unsuccessful efforts to get test procedures in place and equipment approved illustrate the difficulties BLM and the industry face in developing a functional system for approving measuring equipment.

a. **Flow Conditioners**

BLM chose to start with approval of Flow Conditioners because data were available, and it was assumed that these approvals would be relatively easy to process. BLM began asking for data on flow conditioners approximately 4½ years ago. The Bureau released the testing protocol approximately two years ago. Upon review, BLM determined that the flow conditioner data did not meet the requirements of §3175.46 which states: “The operator or manufacturer must test the flow conditioner under API 14.3.2 / AGA 3.2, Annex D.”

The three primary manufacturers have been in discussions with BLM regarding the testing data required. White papers for testing have been provided, but no supporting data. Each manufacturer is required to submit their own data for approval. However, to our knowledge, no specific information has been exchanged. As a result, even though the testing procedure has been available for two years, no flow conditioners have been approved for use.

This leaves operators in the difficult position of utilizing flow conditioners that have not been approved. If flow conditioners are not approved, operators will be required to replace meter tubes with those that are significantly longer (up to 144 upstream diameters as opposed to the current 13). This presents significant challenges, including:

- The cost of replacing meter tubes;
- The space required to install the longer tubes (which can increase from 13 pipe diameters to 144 pipe diameters); and
- The availability of sufficient meter tubes (which are custom made and require significant machining) and personnel to install the meter tubes.

b. **Coriolis Meters**

A testing protocol for Coriolis meters was released approximately two years ago. Coriolis manufacturers submitted initial data to the PMT in 2022. Additional data requested by the PMT was submitted in 2023. The PMT did not respond until 2024, when it requested that the data be provided in a singular file in xls, csv, or text format (per the testing protocol). It is unclear if the PMT wants the data simply pasted into the singular file or if the PMT wants the data in raw form in individual cells. Moreover, the manufacturers have the results from the testing, but they do not have the raw data from the testing facilities. If raw data is required, recreating these tests would cost millions of dollars and take significant time. In the meantime, no Coriolis meters have been approved for use even though the test procedure has been available for two years.

It is important to note that the data submitted to the PMT was from testing performed in accordance with OIML (International Organization of Legal Metrology) standards and has been

relied on by two different international regulatory agencies as the basis for allowing the use of these meters for royalty and custody transfer measurement. The manufacture of these devices is ISO 9001 certified, and the calibration labs are ISO 17025 certified. Therefore, BLM should accept these test data as satisfying its requirements.

Also, when considering the requirement for approval of every make, model, size and software version (which affects calculations) one major Coriolis manufacturer has 230 versions, whereas another has 408 versions. It seems unlikely the PMT would be able to evaluate that many devices and provide recommendations for approval to the BLM, which would in turn have to add them to the approved equipment list during a one-year period.

*iii. Enforcement under these circumstances would be inequitable*

Under these circumstances, BLM's approach to enforcement would create uncertainty and impose unnecessary risks and costs on operators, who would suffer the consequences of BLM's inability to provide an approved list of equipment in a timely manner. As set forth in proposed NTL-5, operators would be subject to enforcement within one year after testing procedures are posted, or in the case of flow conditioners and Coriolis meters (test procedures for which were posted some time ago) within one year of the effective date of NTL-5.

BLM's proposed enforcement position would potentially create a host of issues for operators. First, based on experience to date, operators cannot have any confidence that BLM will approve any equipment in a timely manner to allow for compliance within a year of the publication of test methods. As discussed above, the PMT has issued two test procedures to date and BLM is 0 for 2 in issuing any approvals within a year of the publication of those test procedures. If history repeats itself and BLM continues to be unable to issue approvals for any makes or models of equipment within a year of test procedure publication, what are operators to do?

There is also the potential that after a year, only a partial approved list for a specific device will be available, forcing producers to change equipment to be in compliance only to see their original equipment on the approved list at a later date. In addition, the current plan may force operators to perform multiple retrofits on a single location, increasing costs exponentially. Further, as the year progresses during the approval process, the time to comply may shrink to days if an approval is actually issued. This problem would be exacerbated by the fact that once a make and model of equipment is approved, it might take some time for operators to receive the equipment from manufacturers, with supply chain issues potentially creating delays.

Moreover, manufacturers may not be able to provide enough equipment for companies to be compliant within the one-year period. It would likely take several years to obtain enough equipment for all the locations requiring upgrade. Some items (e.g., 8-inch Coriolis meters and positive displacement meters) may need to be special ordered and will therefore have longer lead times, making the one-year compliance deadline impossible to meet. These long-lead items likely will not have the necessary testing to meet BLM approval. Therefore, operators may have to bear additional costs from testing those pieces and the time needed to install them would be greatly increased..

BLM's proposed enforcement approach would also add complexity and cost to upgrades.

With regard to electronic devices in particular, it is common for manufacturers to provide regular updates to the firmware and software versions within a given unit (much like a Windows update to a personal computer). These updates often address operational issues, errors, and security issues. Some of the updates are designed to improve efficiency. The BLM approval requirement negates the possibility of implementing these upgrades because the upgrades will have to go into the queue for testing and approval. This can hamper critical upgrades necessary to ensure the most accurate, efficient, and safe operations. This would result in at least two significant issues for operators: (1) an operator may have to choose between security/safety and BLM compliance; and (2) an operator will have an undue burden as it will be forced to manage electronic equipment measuring BLM production differently than the same manufacture/model on non-BLM lands.

Operators using older versions of equipment may face another set of issues even if the older equipment is still functioning adequately and meeting BLM standards. Operators typically would replace such equipment when it reaches the end of its useful life. However, under the regulations such equipment must be tested if the operator wants to continue using it. Testing of such equipment may pose challenges given that operators and manufacturers may not have spare devices in stock which can be used for testing. Operators therefore could be forced to shut in locations in order to pull equipment offsite to perform the testing. The operator's other option will be to replace fully functioning equipment simply to satisfy BLM's mandate, resulting in significant and wholly unnecessary costs.

One of the most problematic aspects of the BLM approval program is the piecemeal approach it will force operators to take with respect to replacement of equipment. Rather than being able to address oil and gas measurement systems as a unit, operators may be put in the position of having to replace one component in order to remain in compliance with the approval mandate and then having to replace other components months later due to lack of equipment approvals. This approach would be costly for operators and would lead to serious inefficiencies.

In light of all these issues, BLM's determination to proceed with enforcement of an approval program which to date is non-functional would run counter to basic principals of administrative law requiring the regulated community to have fair notice of what is required of them. As the U.S. Supreme Court stated in *FCC v. Fox Television Stations, Inc.*, regulated parties "should know what is required of them so they may act accordingly; and precision and guidance are necessary so that those enforcing the law do not act in an arbitrary or discriminatory way."<sup>27</sup> In order to provide operators with the necessary guidance, BLM should refrain from enforcing compliance with the approval program until it can demonstrate that the program is actually working.

## **B. The Associations' Concerns with Gas Analysis Reporting**

The Associations are also concerned about BLM's proposed enforcement policy with respect to gas analysis reporting. As set forth in proposed NTL-5, BLM acknowledges that the GARVS remains unavailable and that it has no timeline for its development. Nevertheless, BLM states that operators will be required to report through GARVS beginning three months after BLM publicly announces the availability of the system on its website.

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<sup>27</sup> 132 S. Ct. 2307, 2309 (2012).

The Associations believe that the proposed three-month period is wholly inadequate. As BLM undoubtedly recognizes, moving to submitting reports through GARVS is not simply a matter of throwing a switch or a few clicks of a mouse. Once GARVS is available, operators will need to make software changes to accommodate the new reporting system, which will take time. Reporting is also part of the accounting system for operators; for larger operators, it may take as long as two years to modify their extensive accounting systems to ensure compliance with royalty obligations. There may be bugs in GARVS that will need to be addressed, which would also take time. Given that BLM has apparently not even begun to develop GARVS, neither BLM nor the operators can readily anticipate the issues that its rollout may present.

In light of these issues, the Associations believe that the better course for BLM would be to wait until GARVS is actually developed and is ready (or close to being ready) for rollout before determining how much time after publication is appropriate before reporting through GARVS is required. If BLM elects to include a phase-in period in NTL-5, a longer period is needed to allow BLM and operators to ensure that the new reporting system is working properly before reporting through GARVS is required. The Associations recommend that the proposed three-month period be extended to 24 months (12 months for beta-testing the system and 12 months to allow operators time to integrate the new reporting requirements into their systems). As an alternative to such a long period following an uncertain date, the Associations recommends the current NTL-5A provide that the period for compliance will be established together with industry when the GARVS system is ready for regular, reliable service.

## **VI. Specific Recommendations**

### **A. BLM Should Withdraw the Proposed NTL-5 in its Current Form**

In light of these concerns, the Associations believe that the most appropriate course for BLM would be to withdraw proposed NTL-5 and engage in further discussions with the industry regarding the practical realities of the oil and gas measurement regime adopted by the Bureau in 2016 and the difficult position BLM and the industry would be put in if it proceeds with its proposed enforcement approach. Such discussions would allow BLM to minimize unnecessary costs it might otherwise impose on operators. A withdrawal of the proposal would also give BLM time to better assess the demands on the PMT and the resources available to it and to develop a more realistic approach to implementing the oil and gas measurement provisions of Subparts 3174/3175.

Upon further analysis, BLM may decide that part of the solution is to amend some of the regulatory requirements that the Bureau is struggling to implement. As discussed above, the industry and BLM both have an interest in accurately measuring oil and gas produced. As a result, the Associations believes that the requirement for all equipment to be approved by BLM is unnecessary, particularly in its current form with BLM having to approve each of the hundreds (if not thousands) of individual makes and models of numerous components of an oil or gas measurement system. As BLM well knows, the oil and gas industry, through various consensus-based organizations, has developed standards by which equipment should be tested. While BLM is not a member of these organizations, BLM does attend meetings and is aware of the standards and any changes thereto. We believe that rather than develop its own standards, BLM should comply with Circular A-119 which “directs agencies to use standards developed or adopted by



voluntary consensus standards bodies rather than government-unique standards”. From a practical perspective, as recent experience has shown, BLM has neither the personnel nor the expertise to approve equipment in a timely manner, leaving a high degree of ambiguity for those operating on Federal and Indian lands. Equipment must meet specific uncertainty requirements to meet the rule. As long as the equipment meets that uncertainty, as verified during BLM audits, it should not require additional BLM approval for use.

**B. If It Does Not Remove the BLM-Approval Requirement, the Bureau Should Take Other Corrective Actions Before Allowing Enforcement**

If the Bureau does not remove the requirement that each make and model of equipment be approved by BLM, then it should modify its proposed enforcement position to provide operators with the “reasonable opportunity to comply” they were promised in IM 2018-077 and the Bureau with the opportunity and time to implement a functioning equipment approval process. The following key elements are essential to ensuring a workable and attainable solution:

- 1. Compliance Status of Existing Equipment:** BLM should not finalize NTL-5 without addressing the compliance status of existing equipment, particularly equipment that manufacturers no longer produce but is still functioning adequately and meeting BLM uncertainty standards. Manufacturers should still be required to submit test data to the PMT to the extent it is available, but operators should be free to use any piece of equipment the operator has a reasonable basis for believing meets BLM’s measurement standards unless and until BLM concludes that the equipment does not meet the necessary standards. In that case, the operator would be given a certain amount of time to replace the equipment determined to be non-compliant with BLM-approved equipment, provided that at that point, the BLM has identified and approved a meaningful range of equipment for use. The same approach should also apply to new equipment installed until a meaningful range of equipment has been approved for use.
- 2. Approving a Meaningful Range of Equipment:** To streamline the approval process and make a gradual transition to BLM-approved equipment achievable, the following steps should be taken:

First, BLM should identify third party providers which can approve equipment rather than requiring all approvals to be processed through the PMT. This approach has been successfully adopted by other countries and would serve to reduce the workload on the overburdened PMT and speed up the time for approval. For instance, Directive Article 24, Para 3 of 2014/32/EU provides a vehicle to adopt third party assessments: “Where the notifying authority delegates or otherwise entrusts the assessment, notification or monitoring referred to in paragraph 1 to a body which is not a governmental entity, that body shall be a legal entity and shall comply *mutatis mutandis* with the requirements laid down in Article 25. In addition, it shall have arrangements to cover liabilities arising out of its activities.”

Second, the requirement to use only BLM-approved equipment for types of equipment for which testing procedures have been published (e.g., Coriolis meters or Flow Conditioners) should only go into effect after a meaningful range of equipment of each

type has been approved for use and posted on the BLM website. Industry applications for each equipment type vary by size, with different sizes being used to meet different conditions (flow rates, volumes) in the field. Hence, different equipment sizes are not interchangeable, nor are different equipment types. Therefore, the requirement to use only BLM-approved equipment should take effect only once equipment of a given size and type has been tested and approved. To avoid market monopolization, at least three different manufacturers should be considered for each equipment type and size. The Associations are open to providing insights on the equipment sizes and types that most commonly occur in the field to help prioritize BLM's efforts.

- 3. Reasonable time for replacing equipment:** Once a meaningful range of equipment of each size and type is approved, operators need to be given a reasonable time to adopt the use of one of the pieces of equipment on the approved list for existing equipment that was deemed non-compliant by the BLM. Operators will need to go through their internal processes to get approval to proceed, engage in the appropriate engineering to accommodate the new equipment, order the equipment, wait for the equipment to be delivered (taking into account potential supply chain issues resulting from a surge in demand for approved equipment), and then install and test it in the field. Given these required steps, the Associations recommends a three-year compliance period once the list of approved equipment is available.

## **VII. Conclusion**

Thank you for your consideration of these comments. The Associations respectfully requests that BLM withdraw or substantially modify NTL-5 to address the significant concerns we have raised.



December 14, 2015

Neil Kornze, Director  
Bureau of Land Management  
U.S. Department of the Interior  
1849 C Street, N.W.  
Washington, D.C. 20240

Re: RIN: 1004-AE16, Comments re Onshore Oil and Gas Operations; Federal and Indian Oil and Gas Leases; Measurement of Oil, 80 Fed. Reg. 58,952 (Sep. 30, 2015)

Dear Mr. Kornze:

On September 30, 2015, the Bureau of Land Management (“BLM”) issued a proposed rule entitled “Onshore Oil and Gas Operations; Federal and Indian Oil and Gas Leases; Measurement of Oil” (80 Fed. Reg. 58,952, the “Proposed Rule” or “proposal”). This Proposed Rule would replace Onshore Oil and Gas Order No. 4, Measurement of Oil (“Onshore Order No. 4”), which prescribes standards for the measurement of oil produced from federal and Indian onshore oil and gas leases, with new, more expansive regulations that would be codified in Title 43 of the Code of Federal Regulations.

The American Petroleum Institute (“API”) is a national trade association representing over 640 member companies involved in all aspects of the oil and natural gas industry. API’s members include producers, refiners, suppliers, pipeline operators, and marine transporters, as well as service and supply companies that support all segments of the industry. API member companies are leaders of a technology-driven industry that supplies most of America’s energy, supports more than 9.8 million jobs and 8 percent of the U.S. economy, and since 2000, has invested nearly \$2 trillion in U.S. capital projects to advance all forms of energy, including alternatives. API appreciates the opportunity to submit comments on this Proposed Rule.

The Independent Petroleum Association of America represents thousands of independent oil and natural gas explorers and producers, as well as the service and supply industries that support their efforts. Independent producers drill roughly 95 percent of American oil and natural gas wells, and produce about 54 percent of American oil and more than 85 percent of American natural gas.

The Western Energy Alliance represents over 450 companies engaged in all aspects of environmentally responsible exploration and production of oil and natural gas in the West. Alliance members are independents, the majority of which are small businesses with an average of fifteen employees.

While we support robust oil measurement regulations and codification of those requirements in the Code of Federal Regulations, BLM's Proposed Rule creates serious implications for operators that are legal, procedural, economic, and technical in nature as described below and in the attached technical comments in Appendix A. Despite the fact that BLM for no stated reason has asked commenters to confine their comments only to those issues specifically identified by the agency as ripe for comment,<sup>1</sup> we are providing comments on all aspects of the proposal that are important to our members. Chief among these are:

1. BLM's inappropriately trifurcated rulemaking process, i.e., proposing revisions to the site security regulations,<sup>2</sup> oil measurement regulations, and gas measurement regulations<sup>3</sup> separately instead of in a single and straightforward rulemaking action, which underrepresents the true economic and regulatory impact of the interrelated proposals;
2. the prescriptive nature of the proposal's requirements, which repeats the error of the original Onshore Order No. 4 and will preclude implementation of newly-developed measurement practices and technologies as they become available; BLM's failure to provide a rational basis for prescribing many of the technologies, methodologies, and standards required by the Proposed Rule;
3. BLM's reluctance to recognize its obligation to adopt properly established industry standards;
4. the removal of critical standard-setting and adjudicatory functions from the notice-and-comment rulemaking process, placing them instead in the hands of a BLM-appointed "Production Measurement Team" ("PMT") or leaving standard-setting to future BLM discretion;
5. timelines that ignore the practical difficulties – both for industry and the agency – associated with compliance; and
6. removal of the enforcement regime from the regulations and placing it in as-yet unseen "guidance documents," presumably beyond the purview of the public notice and comment process.

In light of these issues, BLM should withdraw the Proposed Rule, and simultaneously re-propose the entire amended suite of regulations – including proposed revisions to the site security and gas measurement regulations – for comment at the appropriate time.

As with BLM's proposal to revise the site security and gas measurement regulations, other than citing the age of existing oil measurement rules, the Proposed Rule does not adequately explain, or present any evidence or data of, the putative benefits of more stringent regulation of oil production measurement and the associated additional regulatory burden. Unlike other regulatory contexts where the interests of the government and the regulated community may be in tension, here those interests are aligned. Our members are every bit as interested as BLM in

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<sup>1</sup> See 80 Fed. Reg. at 58,953 ("[p]lease make your comments as specific as possible by confining them to issues for which comments are sought in this notice"). BLM cannot insulate parts of its proposed rule from public comment.

<sup>2</sup> 80 Fed. Reg. 40,768 (Jul. 7, 2015).

<sup>3</sup> 80 Fed. Reg. 61,646 (Oct. 13, 2015).

accurately measuring all oil production because production is the basis on which our members are compensated for their efforts. In fact, our members are seven times more interested than the agency in accounting for all oil produced from their leases, since they generally tend to receive 7/8ths interest in the oil produced from federal and Indian leases, while the government and Indian lessors generally receive 1/8 through the royalty payment. This proposal does not deal with allocating revenues or calculating royalties. It simply addresses oil measurement, and from the perspective of both the industry and the government, accurately measured production means greater revenue.<sup>4</sup>

We and our members welcome continued dialogue with BLM to devise a more balanced and appropriate approach to the topics BLM proposes to cover in this proposed rule and the contemplated regulations that will supersede the site security and gas measurement rules. We share BLM's goals of improving production and royalty accountability and will continue to work with BLM to better achieve them.

I. The comment period is inappropriately brief, limiting the opportunity to develop needed analysis and frustrating the purpose of public notice and comment.

As previously explained in API's October 6, 2015, request for extension of the comment period, our review of the Proposed Rule is frustrated by an inordinately brief comment period. Although we appreciate BLM's agreement to some extension of the comment period for this proposal and the proposed revisions to the site security regulations,<sup>5</sup> BLM's failure to likewise extend the comment period for the related proposal to revise the gas measurement rules seriously diminishes our ability to consider the interplay between the three sets of regulations and the cumulative effect the entire suite of regulations will have on our members' operations. Our members have not yet been able to identify an effective path to timely comply with all three.

Although the Government Accountability Office ("GAO") has urged the Secretary of the Interior to direct the BLM to "meet its established timeframe for oil measurement,"<sup>6</sup> meeting this directive should not come at the expense of our opportunity to meaningfully comment on the suite of site security and production measurement regulations that would govern all federal and Indian onshore operations. The Proposed Rule is the first major revision to the oil measurement rules in over 25 years, and occupies 30 Federal Register pages. Like its companion proposals, it would apply to thousands of federal and Indian leases and facilities, both existing and future, spread out in often remote locations across the country. Also like its companions, this proposal addresses a multitude of complex technical production measurement issues, provides for the immediate assessment of violations, identifies new mandatory reporting requirements,

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<sup>4</sup> BLM's apparent justification for the Proposed Rule is a perception of systematic underreporting of oil production. Even if the proposed changes to the oil measurement rules were to improve measurement accuracy, the result would be to reduce the potential for both overreporting as well as underreporting of oil production.

<sup>5</sup> 80 Fed. Reg. 72,943 (Nov. 23, 2015).

<sup>6</sup> Report to Congressional Requesters, Oil and Gas Resources, Interior's Production Verification Efforts: Data Have Improved but Further Actions Needed, GAO 15-39 (Apr. 7, 2015).

establishes a new system for approved variances, empowers a Production Measurement Team (“PMT”) with quasi-adjudicatory authority to review and approve new measurement technologies, and prescribes technological standards and procedures that, once finalized, will likely remain for many years.

There is little, if anything, to be gained in adopting a piecemeal approach to such an interrelated, important, and far-reaching series of proposed changes to oil and gas operations, or by cutting corners on a public comment process that would remain extraordinarily brief given the context and the 25-year interval between revisions. The three sets of regulations are clearly three parts of a whole, and BLM may not underrepresent their impact by proposing them separately. Accordingly, BLM should withdraw all three proposals, consider the compliance and economic issues raised by the suite of proposed regulations, and re-propose a single rule for full public consideration and comment at the appropriate time.

II. In treating the revisions to the site security, oil measurement, and gas measurement rules as three independent proposals, BLM fails to consider paths to compliance and the cumulative impact to operators.

The resources of BLM, operators, and equipment and service vendors are likely to be seriously constrained if they are required to contemporaneously implement all three final rules. Cumulative expense and delay will result as operators request extensions and apply for variances from the PMT as they struggle to redesign their oil and gas site security, measurement, accounting, and reporting systems in extremely short order. Each of BLM’s three proposals presumes, without any basis, that electronic databases meeting all the new requirements will be immediately available to operators and readily integrated into existing systems. They also assume that the PMT will be able to quickly review and approve potentially thousands of applications, and that specialty service contractors and measurement equipment manufacturers and vendors will have the capacity to meet the demand to supply, install, and operate all the new equipment, software, and accounting and reporting methods required by all three new rules simultaneously. None of BLM’s regulatory proposals provides support for such assumptions.<sup>7</sup>

From an implementation standpoint, our members are striving to understand the sequencing of the regulatory trifecta and how timely compliance with all three regulations is possible. For example, it is uncertain that an operator can achieve compliance certainty under the two measurement rules to file for the facility measurement point (“FMP”) approvals under the

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<sup>7</sup> BLM provides virtually no supporting documentation for the assumptions underlying the Proposed Rule. In the preamble to the Proposed Rule, BLM requests public comments “supported by quantitative information or studies,” but doing so in this case is difficult for two reasons. First, BLM provides little detail in support of the Proposed Rule, limiting our ability to respond. Second, BLM has provided only 75 days for comment, which is insufficient time to assemble quantitative information or conduct industry-wide studies addressing technical, economic, and “best practices” issues. In the attached technical comments, we provide as much detailed information as possible given the circumstances.

proposed site security rule. It is also unclear whether operators must first obtain FMP approvals, revise facility diagrams, or revisit existing commingling agreements and off-lease measurement agreements (required by the proposed site security regulations), and, once receiving BLM approval, reconfigure and upgrade oil and gas measurement equipment and restrap tanks. The problem is exacerbated because many oil producing operations also produce gas, and therefore the implementation timelines for gas under the proposed gas measurement rules may render such an approach infeasible. The implementation timeframe for very-high-volume natural gas FMPs under BLM's proposed revisions to the gas measurement regulations is only six months,<sup>8</sup> and applying for and obtaining FMPs and facility diagram approvals under proposed revisions to the site security regulations very likely will take more than six months. This virtually ensures that the facility will be shut-in for noncompliance under the Proposed Rule while the operator is midway through the approval process under proposed changes to the site security rules. Facility shut-in is especially problematic because both gas and oil production would be suspended. Once the facility is shut-in for noncompliance with the instant proposal, any compliance required for the proposed gas measurement regulations becomes moot.

At a minimum, BLM must propose for comment regulations with which operators can reasonably comply. Providing anything less is simply arbitrary and capricious. See FCC v. Fox Television Stations, Inc., 132 S. Ct. 2307, 2309 (2012) (“[r]egulated parties should know what is required of them so they may act accordingly; and precision and guidance are necessary so that those enforcing the law do not act in an arbitrary or discriminatory way”). It is not clear from the language of the regulations how compliance with all three proposals reasonably can be achieved.

BLM must also recognize that operators will require time after the rules are finalized to digest the specific requirements and their applicability; identify changes needed to existing procedures, programs, and systems in order to accommodate the new requirements; develop a plan to address these changes and upgrade equipment; assign tasks and train employees and contractors/vendors in meeting all of the new requirements, and obtain any necessary state approvals. In setting the effective dates for the rules, BLM also must consider the level of effort required on the part of both BLM staff and operators to plan and prepare for implementation of such a sweeping and simultaneous overhaul of the site security, oil measurement, and gas measurement rules.

BLM should consider proposing implementation guidance with the proposed regulatory revisions that identifies the logical sequence of events for complying with the entire set of new rules and outlines the beginning-to-end implementation process that the agency will support. See id., at 2309-2310. The compliance process for new wells and facilities will be very different from the compliance process for existing wells and facilities as proposed. The guidance should provide direction to BLM staff, operators, and vendors to allow for efficient and directed use of their respective resources to avoid inconsistency, duplication, and inadequate submittals. The required new BLM databases and applications, and agency-preferred reporting forms, all must exist before operators can be expected to utilize them, and each should be supported by guidance that operators can incorporate into their training programs.

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<sup>8</sup> 80 Fed. Reg. at 61,657 (Oct. 13, 2015).

In sum, BLM should rescind the Proposed Rule and the other two proposals and re-propose a single integrated set of rules that provides a clear and realistic implementation strategy.

III. By proposing piecemeal regulations, BLM underestimates the regulatory and economic impact of the proposal, undermining the objectives of the Regulatory Flexibility Act and the Small Business Regulatory Enforcement Fairness Act.

As with the proposed site security and gas measurement rules, BLM has determined that the Proposed Rule “would not have a significant impact on a substantial number of small entities,” obviating the need for a final regulatory flexibility analysis under the Regulatory Flexibility Act (“RFA”), 5 U.S.C. § 601 *et seq.* Similarly, based on the assumption that the Proposed Rule would increase costs to industry of “about \$558,000 annually” or \$150 per regulated entity per year, BLM declined to perform a detailed economic analysis of the proposal’s impacts under the Small Business Regulatory Enforcement Fairness Act (“SBREFA”), 5 U.S.C. § 804(2), and Executive Order No. 12,866, Regulatory Planning and Review. Neither conclusion is supportable.

In each of its three proposals, BLM has significantly underestimated total compliance costs. These costs include expenses associated with upgrading or replacing equipment, increased sampling and inspection, re-strapping thousands of tanks, modifying thousands of tanks to make them vapor-tight and developing safety protocols for gauging now-vapor-filled tanks, changing computer programs and tools, designing company-wide implementation programs, training staff and contractors, and meeting increased documentation and reporting requirements.

Indeed, the very act of separately proposing revisions to the site security, oil measurement, and gas measurement rules, and estimating their economic impact individually rather than cumulatively, improperly minimizes the appearance of regulatory and economic impact. This “segmentation” of the economic analysis serves only to avoid confronting the true collective impact of BLM’s regulatory initiatives to revise the oil and gas production measurement and verification regulations, and helps the agency sidestep the more onerous analytical requirements of the RFA, SBREFA, and E.O. 12,866 that apply to “significant” regulatory actions such as these. Were these regulations proposed together – as BLM originally contemplated and as presented to the public in 2013 – the regulatory and economic impact of the consolidated proposal would certainly be far greater than any of the individual proposals represents, and would more likely require serious consideration of economic impacts under the RFA and SBREFA before implementation.

Segmenting a regulatory proposal to sidestep the administrative burden of conducting the appropriate level of economic analysis is akin to segmenting a project proposal to avoid the Environmental Impact Statement requirements of the National Environmental Policy Act (“NEPA”). See Save Barton Creek Ass’n v. Fed. Highway Admin., 950 F.2d 1129, 1140 (5th Cir. 1992). Neither scheme is permissible, and agencies in good faith should seek to avoid, rather than exploit, statutory ambiguity to frustrate public involvement in the regulatory process and hamper due consideration of economic impacts. Like NEPA, an agency’s compliance with the requirements of the RFA and SBREFA are judicially reviewable. See Montanans for Multiple Use v. Barbouletos, 542 F. Supp. 2d 9 (D.D.C. 2008) (RFA compliance reviewable);



Thompson v. Clark, 741 F.2d 401 (D.C. Cir. 1984) (SBREFA compliance reviewable). Accordingly, BLM should withdraw this Proposed Rule and conduct an economic evaluation of the impact of all three proposals and then re-propose them as a single regulatory action.

IV. The Proposed Rule is arbitrarily prescriptive, and will not readily accommodate future changes in technology or improved measurement methodologies.

Although BLM's primary purpose in updating the oil measurement regulations is "to reflect advancements in technology, industry standards, and changes in applicable legal standards," the agency appears to presume that all advancement has already occurred. BLM proposes to create a new set of prescriptive requirements that likely will become outdated as advancements in technology overtake them. 80 Fed. Reg. at 58,952, 58,954 (quoting the 2015 GAO report asserting that "Interior's measurement regulations do not reflect current measurement technologies"). In its attempt to so finely prescribe new measurement standards, BLM has created inflexible layers of prescriptive requirements that neither reflect current industry practice nor accommodate the swift evolution in measurement technologies and techniques currently taking place. The recent downturn in oil and gas production and revenue is spurring extensive industry efforts to improve operational efficiencies and all industry technologies, including measurement technologies. In proposing such prescriptive, inflexible requirements, BLM is simply re-creating the very problem it seeks to remedy with the Proposed Rule.

In the attached set of technical comments, we identify those places in the proposal where flexible performance-based standards should be used instead of prescriptive requirements specifying permissible technologies or methodologies. For example, proposed §§ 3174.9 and 3174.10 would require the generation of a list of Coriolis meter system ("CMS") components approved for use. Instead, we recommend a pure performance standard whereby BLM simply sets the allowable uncertainty level for operators to meet. In this way, newer, more efficient technologies can be permissible under the rule if they meet the rule's criteria and objectives. Similarly, while proposed § 3174.3 would set performance standards for individual Lease Automatic Custody Transfer ("LACT") meters and CMSs, those performance standards strictly prescribe mechanical component performance rather than overall measurement performance, and would only "accommodate the range of meters and related equipment [currently] available to operators." This would leave little room for accommodating new technologies absent a written variance from the PMT. Adopting industry's more flexible performance-based standards is all the more advisable in this context since BLM's proposal does not appear to contemplate incorporating new or updated component standards after the rule is finalized.

BLM's proposed rule underutilizes the extensive, industry-supported performance standards with which operators and regulators are familiar. Industry standards are vetted thoroughly and transparently and are typically performance-based rather than prescriptive. Complete adoption of these standards would serve to enhance the Proposed Rule, lend credibility to BLM's technical requirements, and provide industry with the certainty it requires. In the attached set of technical comments, we identify numerous current industry performance standards that were either consciously or inadvertently omitted from the Proposed Rule, resulting in a less than robust update of BLM measurement regulations. We additionally recommend that BLM

establish a regular process for periodically revising its regulations to incorporate the most current accepted industry practices.

V. BLM must explain why it chose certain industry standards while rejecting others.

As described in further detail in the attached technical comments, it appears that BLM selectively adopted certain industry standards while ignoring others without adequate explanation. For example, the only methodology the rule permits for determining gravity is Ch. 9.3 API Gravity by Thermohydrometer. However, as explained in the technical comments, there are a number of alternate, potentially more accurate methods available for determining gravity that do not appear to be permitted. Yet BLM offers no rationale to support its adoption of the gravity by Thermohydrometer standard or its rejection of all other means of determining gravity. This is not only inconsistent with the stated purpose of the regulation to ensure that “advancements...in industry standards” are accommodated, but also at odds with the Administrative Procedure Act (“APA”), 5 U.S.C. § 551 *et seq.*, which requires agencies to provide rational bases for their regulatory determinations.

Additionally, BLM’s proposal relies on obsolete API standards. This appears to be unintentional because adopting obsolete standards undermines the stated purpose of the Proposed Rule. However, BLM may not simply substitute the proper current versions of the standards for the first time in the final rule. Incorporating by reference a standard in a rulemaking is the same as promulgating a new substantive regulatory provision with identical language. See PPG Industries, Inc. v. Costle, 659 F.2d 1239 (D.C. Cir. 1981). Accordingly, BLM must first identify, and seek public comment on, precisely those standards it proposes to incorporate into its regulations before finalizing them. Before it can finalize its proposed revisions to the oil measurement regulations, BLM must re-publish a proposed rulemaking that identifies the updated standards BLM proposes to incorporate by reference. See Fertilizer Inst. v. EPA, 935 F.2d 1303 (D.C. Cir. 1991).

Furthermore, BLM is statutorily prohibited from cherry-picking industry standards for inclusion in the Proposed Rule, and may not create new standards from whole cloth. Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (“NTTAA”), 15 U.S.C. § 272(d), which codified the policies of OMB Circular A-119, requires “all Federal agencies and departments [to] use technical standards that are developed or adopted by voluntary consensus standards bodies, using such technical standards as a means to carry out policy objectives or activities determined by the agencies and departments.” Agencies and departments also “shall consult” with those bodies and “shall ... participate” with them in developing voluntary consensus standards “when such participation is in the public interest and is compatible with agency and departmental missions, authorities, priorities, and budget resources.” BLM may disregard existing technical standards developed by voluntary consensus standards bodies only where using them would be “inconsistent with applicable law or otherwise impractical.” Even then, before using any standard other than a voluntary consensus standard, the head of the agency or department must send the Office of Management and Budget (“OMB”) “an explanation of the reasons for using such standards.” OMB transmits to Congress and its committees an annual report summarizing all explanations received that year.

There is no doubt that API practices for oil measurement are “technical standards ... developed by [a] voluntary consensus standards body.” API practices are painstakingly and transparently developed by its members with the input of industry experts from around the world, including BLM employees. API standards and practices are generally regarded as the “industry standard” for oil and gas measurement, and represent accepted practice at operations across the U.S. Pursuant to § 12(d) of the NTTAA, BLM must use these standards in the Proposed Rule. At a minimum, it may not pick and choose which standards to apply and which to ignore without explaining its decisions to OMB. Accordingly, BLM should first engage in a meaningful dialogue with API regarding the latest industry standards, and then incorporate by reference all relevant API practices and standards into its Proposed Rule rather than adopt its own prescriptive standards.

We further recommend that BLM establish a system for periodically revising the rule to incorporate new industry standards and practices as they emerge. Other federal agencies, such as the Pipeline and Hazardous Materials Safety Administration (“PHMSA”), have adopted this approach. PHMSA has chartered an advisory group, which includes API, under the Federal Advisory Committee Act, 5 U.S.C. §§ 1-16, for the purpose of incorporating the most current industry standards and practices into its regulations. We recommend that BLM do the same here (as well as in its proposals to revise the site security and gas measurement rules). BLM also should make variances from the incorporated practices available to small operators that may have difficulty implementing the most current industry practice for good cause shown.

VI. BLM failed to consider the reasonably foreseeable environmental consequences of the proposal in its Environmental Assessment (“EA”).

Under NEPA, BLM is required to consider the reasonably foreseeable environmental consequences of implementing the Proposed Rule prior to finalization. 42 U.S.C. 4332(C); Balt. Gas and Elec. Co. v. NRDC, 462 U.S.87 (1983). Just as BLM underestimates the magnitude of the regulatory and economic effects of the Proposed Rule, so too it underestimates the environmental consequences associated with implementing its provisions. As described above and in the attached technical comments, BLM consistently and erroneously assumes that the Proposed Rule generally reflects current industry practice, and as such, represents a minimal deviation from the status-quo. For example, Proposed § 3174.2 assumes that tank strapping to 1/8” gauging accuracy “would match the current industry standard,”<sup>9</sup> and therefore tacitly assumes that requiring operators to adopt 1/8” gauging accuracy would have negligible, if any, environmental effect. However, the industry standard is in fact 1/4” (as required by the current Onshore Order No. 4). Changing the standard to 1/8” would require re-strapping thousands of tanks all over the country, with associated economic and environmental impacts, none of which BLM considered. As explained further in the attached technical comments, the Proposed Rule is replete with failures to acknowledge the operational consequences of the proposed standards, each of which incrementally contributes to BLM’s underestimation of the environmental effects associated with the Proposed Rule.

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<sup>9</sup> 80 Fed. Reg. 58,959.

Additionally, due to BLM's improper "segmentation" of this regulatory initiative into three independent regulatory proposals, the EA grossly underestimates the cumulative impact of the proposed changes to the oil measurement rules when added to the environmental consequences associated with the simultaneously-proposed site security and gas measurement rules. See 40 C.F.R. §§ 1508.7 – 1508.9.

Accordingly, BLM should withdraw the proposal and circulate a new EA for public review that fully considers the environmental consequences of BLM's proposed changes from the status-quo and the environmental consequences of all three proposals, and also considers an alternative that accurately reflects current industry practice. See 40 C.F.R. § 1508.9(b).

VII. The process of adjudicating variances should be prescribed by regulation, and the variance decisions of the PMT should be administratively reviewable.

The only flexibility in the Proposed Rule with respect to selection of a measurement methodology is at the discretion of the PMT, a quasi-adjudicatory body that would review and approve "new measurement technologies that are demonstrated to be reliable and accurate." 80 Fed. Reg. at 58,953. Under Proposed § 3174.15, only manual tank gauging, a LACT system, or CMS will be permitted without a written variance from the PMT. Thus, the function of the PMT is both adjudicatory and legislative in nature. On the one hand, it would adjudicate applications and grant permission to operators allowing the use of alternate technologies. On the other hand, the methods approved would become permissible under the rule, while those methods that fail to obtain variances will not. But the agency legally must treat like cases alike, and the PMT determinations would effectively become regulatory requirements without the benefit of public notice and comment procedures. Accordingly, the means by which the PMT makes its determinations, and the criteria for BLM concurrence or rejection of PMT recommendations should be published for public notice and comment. See FCC v. Fox Television Stations, Inc., 132 S. Ct. 2307, 2310-18 (2012); Chrysler Corp. v. Brown, 441 U.S. 281, 303 (1979).

At a minimum, the proposed regulations should include provisions governing the procedure and conduct of the PMT and expressly provide for any party adversely affected by a variance denial to seek administrative review. Such amendments to the proposal may also have the benefit of reducing litigation in the federal courts.

VIII. BLM may not promulgate new binding regulations in internal "guidance" documents.

The proposed regulations would completely eliminate the enforcement system prescribed in Onshore Order No. 4, including major and minor violations, corrective actions, and abatement periods. Instead, BLM summarily proposes to "address" these issues in "internal guidance documents, (handbooks, manuals or instruction memoranda (IMs))." 80 Fed. Reg. 58,955. Removing these provisions from the realm of transparent, publicly reviewable regulations that were promulgated with public notice and comment, and concealing them in non-public policy documents that can be altered without notice and in the absence of public input, is inconsistent with the requirements of the APA. If BLM intends to make these enforcement provisions binding on the regulated community, it must duly promulgate them as legislative rules.

IX. BLM continues to underestimate the extensive burden the current suite of proposals and other BLM regulatory initiatives would place on agency resources.

BLM fails to recognize that the Proposed Rule will place an extensive and ongoing implementation burden on BLM personnel and resources. For example, the proposal only would allow FMP equipment that is susceptible to independent verification by BLM of the accuracy and validity of all inputs, factors, and equations that are used to determine the quality or quantity of oil to be measured. Verification of such equipment is a lengthy process (we estimate six months per device at a cost of hundreds of thousands of dollars per device). BLM entirely ignores the burden that would be placed on the agency to contract and administer such work for the thousands of different devices currently and proposed to be used.

Implementing the painstaking review, approval, verification, accounting, testing, and inspection regimes established in the Proposed Rule would create a formidable workload for existing BLM staff – which have already been subject to Congressional criticism for the inability to meet the demands of their current obligations,<sup>10</sup> much less the increased demands of other recent regulatory initiatives such as the recently-issued (and now stayed) hydraulic fracturing rule (80 Fed. Reg. 16,128 (Mar. 26, 2015)) and the proposed revisions to the site security and gas measurement rules. The Proposed Rule cites no corresponding increase in funding from the Department of the Interior for more staff to discharge these new duties while maintaining the current level of mandatory agency inspections. Site inspections and calibration witnessing are two recurring concerns of the recent GAO reports, but the Proposed Rule would only reduce the likelihood of BLM field offices addressing these concerns by requiring additional approvals from BLM for thousands of ongoing oil and gas operations nationwide. Adding unnecessary compliance reporting to the process does very little to improve accuracy, ensure compliance, or prevent noncompliance. Consequently, BLM should issue regulations that reduce, rather than increase, the number of administrative actions and approvals necessary to conduct business on federal and Indian oil and gas leases.

X. BLM's proposal is impermissibly retroactive.

Similar to the proposed revisions to the site security and gas measurement rules, the requirements of the Proposed Rule are effectively retroactive, giving existing operations 180 days to bring their oil measurement equipment into compliance. We strongly urge BLM to reconsider this position and properly apply the new requirements only to new and significantly modified operations. Retroactive application of the proposed regulations will have profound effects both legally and practically for thousands of existing operations across the country. Retroactive application of the Proposed Rule, with the attendant costs and potential for delay, may lead to temporary or permanent cessation of existing production, raising breach of

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<sup>10</sup> See GAO, Oil and Gas Development: BLM Needs Better Data to Track Permit Processing Times and Prioritize Inspections, GAO-13-572, (Aug. 23, 2013), available at <http://www.gao.gov/products/GAO-13-572> (identifying significant and still unresolved administrative issues related to timely permit processing and adequate inspections).

contract, due process, and takings issues. Retroactive application of these regulations also poses significant economic consequences for existing operations that far exceed those estimated in BLM's regulatory impact analysis. This is not only unfair to those who have reasonably relied on prior agency standards to design and operate their facilities, but also threatens the very viability of such operations, particularly those that are currently marginally economic.

BLM also fails to acknowledge that the costs of retrofitting measurement devices and associated equipment for separate measurement of individual lease production is by nature more expensive than new facility costs due to siting and related constraints and lost production and royalties while the retrofit work takes place. Though it purports to include exceptions and variances from these new requirements, the Proposed Rule makes clear that exceptions and variances are to be seldom used. Operators have no advance assurance that they and local BLM staff will view situations in the same way, that BLM can act expeditiously on variance requests given its expanded workload, or that any appeal of an unfavorable variance determination will be adjudicated expeditiously. In an era of rising economic challenges and increasingly important domestic energy security, BLM should not add unnecessary costs on oil and gas development.

Administrative convenience is not a justifiable basis for imposing a one-size-fits-all standard for all operations, disregarding the governing standards when operations were approved and to which those operations conformed. It is not unusual in federal regulations for different requirements to apply to existing and new facilities and equipment. Similarly, numerous regulations with varying trigger dates exist at the local, state, and Tribal levels, and in all sectors. Operators are subject to hundreds of requirements, which vary between jurisdictions and regions. Having different sets of requirements in place for existing operations or equipment on the one hand, and new operations or equipment on the other, does not appreciably add to the complexity of the numerous requirements already in place.

We recommend exempting all existing equipment from the purview of the new rule. Where new installations or repairs of a measurement facility would cost more than 50 percent of the cost of a new, installed measuring station, the new regulations would apply.

#### XI. The timeframes for compliance should be extended.

As explained further in our attached technical analysis in Appendix A, the proposed timeframes to implement broad-scale changes across thousands of federal and Indian lease operations are impracticably and unreasonably short. The Proposed Rule contains many unrealistic deadlines to undertake multiple actions and submissions that would require operator compilation of complex information from several sources, visits to thousands of leases and operations sites across the country, and other extensive efforts, some of which cannot even begin until approvals are obtained from BLM. Some requirements imposed by the regulations, e.g., notifying the authorized officer within 24 hours of any LACT system failure or equipment malfunction that "may have resulted in a measurement error," requires the reporting of information that may not even be known by the operator within the specified reporting period. Proposed § 3174.6(e).

In any case, the proposed 180-day time period to bring all existing equipment into compliance is unreasonable given the practical realities of many oil and gas operations and likely supply disruptions that will result from the implementation of the Proposed Rule.

As discussed further in the attached technical comments, the timeframes for compliance should be expanded based on reasonably achievable schedules in a variety of environments, or depend on a prudent operator standard. In any case, BLM should expressly preserve the opportunity for any entity to seek and obtain extensions of time for good cause shown. In particular, BLM should expressly allow a waiver of the 180-day compliance period for an operator that submits a proposed alternative measurement method for PMT review during the first 180 days after the rule is finalized.

At a minimum, the ambiguity of critical compliance-related timeframes should be clarified. With respect to the example above, it would be more reasonable to require notification within 24 hours after the operator *has knowledge* of a LACT system failure. Also, the threshold for reporting should be made more realistic, such that reporting would be required only in situations where the operator *has reason to know* that the equipment malfunctions at issue *could reasonably have* resulted in measurement error. The agency should revise the proposal such that any prudent operator would be able to clearly identify its compliance obligations.

Similarly, suspensions of the compliance-related timeframes should be available to accommodate practical difficulties beyond the control of the operator. For example, depending on times of year, access to certain FMPs may be severely limited. During spring mud conditions, travel on county roads or BLM roads is discouraged because of safety and avoidable rutting and road erosion issues. Winter storms may make access unsafe or impossible. In many cases, BLM may restrict access. Leases and permits often contain seasonal stipulations to minimize surface disturbance and noise, or to protect wildlife during calving, nesting, or brooding seasons. The compliance timelines for field activities such as reconfiguring, upgrading, or inspecting equipment, measuring or sampling production, or re-strapping tanks should account for these ubiquitous access issues.

\* \* \* \* \*

For the reasons stated above and the technical comments attached as Appendix A, we respectfully request that BLM withdraw the current regulatory proposal and re-propose it simultaneously with the proposed revisions to the site security and gas measurement rules, as well as with any companion materials such as manuals or guidance.

Should you have any questions, please contact Richard Ranger at 202.682.8057 or [rangerr@api.org](mailto:rangerr@api.org), Dan Naatz at 202.857.4722 or [dnaatz@ipaa.org](mailto:dnaatz@ipaa.org), or Kathleen Sgamma at 303.623.0897 or [ksgamma@westernenergyalliance.org](mailto:ksgamma@westernenergyalliance.org).

Very truly yours,

A handwritten signature in black ink that reads "Richard Ranger". The signature is written in a cursive style with a large, prominent initial "R".

Richard Ranger  
Senior Policy Advisor  
Upstream and Industry Operations  
American Petroleum Institute

A handwritten signature in black ink that reads "Dan T. Naatz". The signature is written in a cursive style with a large, prominent initial "D".

Dan Naatz  
Vice President of Federal Resources  
Independent Petroleum Association of America

A handwritten signature in black ink that reads "Kathleen Sgamma". The signature is written in a cursive style with a large, prominent initial "K".

Kathleen Sgamma  
Vice President of Government & Public Affairs  
Western Energy Alliance



# Appendix A

## Technical Responses or Comments to 43 CFR Part 3170 Subpart 3174

### General Comments

The section by section comments that follow in this attachment are the result of consultation with subject matter experts in the technical discipline of measurement of crude oil and natural gas production from among API's member companies as well as other industry representatives. The detailed comments that follow provide a critique of many elements of the text BLM has presented as proposed 43 CFR §3174. API supports the objectives for the revisions to the Onshore Orders that BLM has described previously: to ensure accurate measurement, production accountability, and royalty payments, and to prevent theft and loss of crude oil and natural gas during production. However, we believe that many elements of the proposed rule present serious procedural, economic, and technical implications for operators, equipment manufacturing and service-supply industry, and the BLM administrators and staff as well. In some cases, costs of compliance are underestimated to a degree that some operators might choose to cease production rather than to absorb those costs. Likewise, we believe that certain elements of the proposed rule fail to take cognizance of current industry standards, or are written so prescriptively as to place the agency and operators in a position of being unable to accommodate future technologies and practices. Operators support the adoption and usage of new industry standards as a basis for updating governmental regulation. Where possible, we offer alternative wording or alternative approaches for BLM to consider. In this context, API recommends that in a new rule, BLM not restrict approval to certain prescribed oil production technologies as referenced in the proposed rule. Our industry is as interested as BLM in the accurate measurement of crude oil production because production is the basis on which operators are compensated for their efforts.

We believe that BLM can accomplish much of what it seeks through this proposed rule by simply updating the content of Onshore Orders No. 4 and No. 5 to reflect current voluntary consensus standards, incorporating these standards by reference wherever possible. Additionally, BLM should consider citing standards such as API Manual of Petroleum Measurement Standards (MPMS) Chapter 13.3 which is available for public review as it concludes its final consensus ballot stage, and which will allow for the introduction of the most up to date technology and proven engineering practices. For example, see a recent Bureau of Safety and Environmental Enforcement (BSEE) notice of proposed rulemaking: <https://www.federalregister.gov/articles/2015/02/24/2015-03609/oil-and-gas-and-sulphur-operations-on-the-outer-continental-shelf-requirements-for-exploratory>. In this rule, BSEE "proposes to incorporate, with certain exclusions discussed later in this proposed rule, draft proposed API RP 2N, Third Edition, which is available for free public viewing during the API balloting process on API's Web site at <http://mycommittees.api.org/standards/ecs/sc2/default.aspx> (click on the title of the document to open)."

Thus, while BLM has not described a path/process whereby new or updated standards are incorporated into this rule after it is finalized, the above BSEE example provides such a model. Another best practice would be to consider forming an industry-government technical

committee similar to the Pipeline and Hazardous Materials Safety Administration (PHMSA) Technical Advisory Committees, which meet on a semi-annual basis to review PHMSA's proposed regulatory initiatives to assure the technical feasibility, reasonableness, cost-effectiveness and practicality of each proposal. The committees also regularly discuss updates to reference standards, and provide a mechanism for PHMSA staff to understand the status of the reference standards. We recommend that BLM consider the approaches taken by BSEE and PHMSA as models to assist the agency in establishing its own protocol and process to review industry consensus standards on a regular basis to ensure up-to-date standards are cited.

In addition, we would recommend that BLM include a provision incorporating by reference the definitions used in the other portions of the BLM oil and gas regulations, e.g., Part 3160, to ensure consistency in terminology among the different areas where the agency regulates onshore oil and gas operations.

In summary, by referencing voluntary consensus standards, as mandated by the National Technology Transfer and Advancement Act, PL 104-113 and following the guidelines outlined in OMB Circular A-119 (see <https://standards.gov/nttaa/agency/index.cfm?fuseaction=home.main>) BLM will meet its goal in the most effective and efficient manner possible.

### **Section-by Section Comments**

The following are comments on the recently released proposed rule BLM 43 CFR parts 3160 and 3170, RIN 1004-AE16, Onshore Oil and Gas Operations; Federal and Indian Oil and Gas Leases; Measurement of Oil.

#### **Section 3174.1 Definitions and Acronyms.**

The addition of definitions to the proposed rule by BLM is beneficial because it reduces the confusion around the terms used in the context of the rule. However, we recommend that BLM include a provision incorporating by reference the definitions used in the other portions of the BLM oil and gas regulations, e.g., Part 3160, to ensure consistency and that there is no confusion.

*Authorized Officer.* The agency needs to add a definition or reference for Authorized Officer.

CA. There is no definition of CA. Add definition or reference for CA.

*Coriolis Measurement System.* This definition should be dropped in favor of a LACT system which could include a Coriolis or other meter type. In this way, all of the standard custody transfer required hardware is specified.

*LACT system.* Throughout this document, BLM refers to a Lease Automatic Custody Transfer system as a system that uses a “Positive Displacement” meter. For example, in the definition of “Registered Volume” it is stated that this “...means the uncorrected volume registered by the positive displacement meter in a LACT system...”. A LACT system, as defined in the API Manual of Petroleum Measurement Standards Chapter 6.1, is “an arrangement of equipment designed for the unattended custody transfer of liquid hydrocarbons from producing leases to the transporting carrier. The system must determine net volume and quality, provide for fail-safe and tamperproof operation, and meet requirements of accuracy and dependability as agreed to by mutually concerned parties, such as the producer, the transporter, the royalty owner, and federal, state, and municipal regulatory bodies.” A LACT system is defined by a required set of equipment that includes (but is not limited to) a custody meter, a sample system or sample port, temperature and pressure measurements, proving connections, and a back pressure regulation valve. Any custody transfer quality meter appropriate for the conditions and hydrocarbon can be part of the LACT system. Positive displacement meters, Turbine meters, and Coriolis meters are all examples of meters that can be part of a LACT system.

*PA.* There is no definition of PA. Add definition or reference for PA.

*Registered Volume.* Registered volume is not a preferred term. The term more commonly used by the industry is Indicated Volume, to mean the change in meter reading that occurs during a receipt or delivery. Indicated Volume is not corrected for meter performance.

*Resistance Thermal Device.* The industry/ API defines the “RTD” as a “Resistance Temperature Detector”. This could become confusing if BLM introduces an additional definition for RTD.

*Turbine Meters.* Turbine meters are a well-respected and industry recognized means of liquid hydrocarbon measurement. They should be included as an approved type of meter. The definition of a turbine meter is a meter in which the measuring element is a multi-bladed rotor to which the metered stream imparts a rotational velocity that is proportional to the mean velocity of the stream. Measured volume is registered by rotor revolutions. This definition should be added as a LACT meter type.

*Turbulent Flow.* In the document, turbulent flow is defined as a type of flow in which random eddying flow patterns are superimposed upon the general flow progressing in a given direction. While this definition helps to visualize the physics of the fluid flow, it does not capture or define how to tell when turbulent flow is present in practice. The commonly used measure for determining if a flow is turbulent is the Reynolds number, which is a more accurate term to define turbulent flow. Onshore Order 5 provides a definition for turbulent flow and uses the Reynolds number to define turbulent flow, and that definition should be incorporated here as well.

## Section 3174.2 General Requirements.

(e) This section specifies that all of the equipment used to measure oil for royalty purposes in use on the date of this rule publication must comply with the requirements of this subpart within 180 days. We have the following reservations about meeting this time table.

Tanks currently strapped to ¼" must now be re-strapped or tables recalculated to 1/8" increments. Typically, each tank requires a minimum of 30 days for an appropriately qualified engineering firm to perform the strapping and make the calculations to create a certified tank table. Therefore, the proposed period of 180 days as specified by this subpart to bring existing field equipment used to measure oil for royalty purposes into compliance is not feasible. As written, the proposed rule would require that the engineering companies that perform tank strappings and generate tables, to strip the insulation from tanks (note: this cannot be performed in winter months), strap tanks, and generate new tables for approximately 267 tanks per day industry-wide. These tables would have to be communicated to BLM for processing and recording. The proposed incremental improvement in accuracy for manual gauging is inconsistent with current industry standards (API MPMS Chapter 18.1), and excessive compared with the proposed accepted uncertainty on generally higher volume production systems with LACT units.

**Recommendation:** The 1/4" increment standard should be continued.

Very few older LACT units currently use pressure compensation in the calculation of oil gross standard volume (GSV). Pressure compensation for crude oil in the 0 psig-150 psig range where lease oil is typically measured introduces a maximum of 0.070% error in the calculation. To install pressure transmitters on existing LACT systems to resolve this very small error is not economically feasible.

**Recommendation:** Allow this error to become part of the error in the volumetric uncertainty calculation (i.e. with a composite meter factor) required in order to meet the uncertainty requirements specified in 3174.3.

It is not clear in the rule if re-strapping to 1/8" increments and the reporting requirement also applies to inventory tanks where a LACT is present and a monthly TOV is reported? This would be a deviation from current industry standards (API MPMS Chapter 3.1A).

**Recommendation:** Do not require re-strapping of where production is measured using LACT and supported a monthly Total Oil Volume (TOV) measurement.

Companies budget future work each year in advance. The requirements of this order place a significant financial burden the oil industry.

**Recommendation:** Allow a staggered approach to implement the changes as proposed in this rule (instead of the 180 day requirement), similar to the approach proposed in

the proposed On Shore Order 3. Example: 6 months for FMPs greater than 10,000 bbl/month, 12 months for FMPs greater than 100 bbl/month and less than 10,000 bbl/month, and 18 months for FMPs less than 100 bbl/month.

### **Section 3174.3 Performance Requirements.**

(a) Volume measurement uncertainty levels. The overall volume uncertainty limit of +/-0.35% for measurement installations with throughput greater than of 10,000 bbl/month is unreasonably and excessively small given the potential number of sources of measurement error. The error should be calculated as described in API MPMS Chapter 13 and include the uncertainty from all sources of error in the oil volumetric calculation chain. The BLM has not articulated any benefit for these uncertainty levels.

**Recommendation:** Measurement systems installed for the production of less than 100bbl/month (volumetric uncertainty of +/-2.5%) should have the option to pay royalties at the rate of 100bbl/month and forgo the necessity to install measurement equipment that could be economic infeasible. Publish the BLM calculations that show meeting the proposed uncertainty levels makes and the resulting economic impact.

We believe that volume uncertainties are a good performance indicator for custody measurement systems, but care must be exercised to understand the interaction and nonlinear effects of the calculations on the uncertainty. We also believe that it is grossly unnecessary to specify equipment models that are acceptable for use in custody measurement when uncertainty metrics can be uniformly employed. If any hardware meets the appropriate uncertainty-performance constraint on a measurement system, and that uncertainty can be validated and maintained, that hardware should be allowed as an acceptable custody transfer measurement system for oil quantity determination. After validation, no further action after that should be required.

BLM is considering the development of an uncertainty calculator similar to the BLM's gas uncertainty calculator currently in use. The details of the new oil uncertainty calculator need to be defined and published for review and comments.

**Recommendation:** BLM should publish the uncertainty calculator for review and comment prior to finalizing the proposed rule.

(b) Bias. We agree that bias will always be present in measurement systems because statistical errors associated with measurement systems tend not to be uniformly distributed random errors. In most cases the errors are one sided and deterministic but unknown. The rule states that for all FMPs, no statistically significant bias would be allowed. While this is the goal in all measurement systems, it is highly impractical in most cases, and can be dependent on many variables (temperature, pressure, gravity, etc.). BLM states that it does not consider apparent bias less than the uncertainty of two devices combined to be statistically significant. While this is the expected minimum, this section goes on to discuss

bias between the two devices under laboratory (read as “ideal”) conditions. BLM presents no data or calculations to verify that bias issues will not exist under field conditions where many additional variables impact the statistical calculations. The BLM language essentially assumes that uncertainties that can be demonstrated in laboratory conditions are true under field conditions, which are not practical in a production scenario.

**Recommendation:** We recommend that this requirement (3174.3 (b)) be deleted.

(c) BLM provides no basis for the allowable volume uncertainty calculations. While the rule text indicates that for a 10,000 bbl/mo FMP, the implied uncertainty calculation (+/-0.35%) includes the effects of maximum allowable meter-factor drift between meter proving, the minimum standard for repeatability during proving the accuracy of pressure and temperature transducers for volumetric correction, and the uncertainty in the VCF correction. No detail is offered on these calculations nor are any references provided to the same. BLM should provide a detailed explanation to justify the designated uncertainty of +/-0.35%. For FMPs in the 100-10,000 bbl/mo range, similar calculations based upon errors in tank gauging (presumably gauging to 1/8”) yield an overall volumetric measurement uncertainty limit of +/-1.0%, yet no data or calculation is provided to show this to be true. The calculations to determine this uncertainty alone may demonstrate it to be economically infeasible to support continued operations on these leases. In such cases, an “all or nothing” approach should be adopted whereby royalties can be paid on the basis of a fixed maximum volume (e.g. 100bbl/mo) to simplify both processing for the producer and for BLM.

**Recommendation:** BLM provide details for justifying the designated uncertainty for all uncertainty levels specified (+/- 0.35%, +/- 1.0%, and +/- 2.5%).

(d) Under the proposed rules, the BLM State Director is the only person that can grant a deviation from the uncertainty rules with written concurrence of the BLM director. The proposed rules then goes on to say that the PMT (Production Measurement Team) will make any determination under 3170.6(a)(4) of this part regarding whether a proposed variance in measurement procedures meets or exceeds the objectives of this section. This process will rely on the timely availability of the PMT and State Director to review and evaluate requests for variances. These BLM technical specialty resources are typically overloaded, and therefore this process is likely to require considerable time and hinder an operators’ effective development of federal oil and gas resources.

**Recommendation:** BLM allow AOs to approve any deviation or variance request.

(e) The proposed rule only allows FMP equipment that is suitable for independent verification by BLM of the accuracy and validity of all inputs, factors, and equations that are used to determine the quality or quantity. This verifiability includes the ability to independently recalculate the volume and quality based on source records. Verification of such equipment is a lengthy process (estimated six months per device by an independent

laboratory) and cost upwards of \$500M for each device, and, according to the proposed rule, could be triggered by something as simple as a software revision to a device. Is BLM prepared to contract such work for the thousands of different devices currently and proposed to be in use in the measurement of oil for royalties, and if so, when will this process begin? Will the verified equipment list be built out well in advance of the enactment of the rule, or will there be some grandfathering of the thousands of devices currently in use? BLM should outline the criteria that will be considered in deciding if and when an independent verification is necessary. BLM should also make clear the consequences of the outcome on an independent verification if the production volumes were under or over reported.

#### **Section 3174.4 Incorporation by Reference.**

(b) API Standards. BLM has incorporated some existing standards by reference in the proposed rule. All API MPMS standards should be incorporated by reference in their latest published revisions. Absent from the list (and date range) are several standards that: 1) have been published since BLM started work on this order, 2) are recognized as applicable technologies for custody transfer throughout the petrochemical industry, and 3) are currently in the development stage.

**Recommendation:** BLM should review all of the industry standards again before final publishing of this rule and include all pertinent standards by reference.

BLM is apparently discriminating in the selection of standards for inclusion, consequently making decisions to include some technologies for measurement and not others. No basis or supporting data was provided for the inclusion or rejection of these standards. BLM should provide a detailed explanation to justify the selection of certain technologies while excluding others. API standards are written for technologies which are mature and have a proven track record for providing sound custody transfer data. Many of the standards have specific performance criteria for which a technology must meet in order to be used in custody transfer systems. BLM should adopt rules and standards that are performance based such that any device (e.g. a meter or temperature measuring device, no matter what the device may be) which meets the specified performance criteria can be used without rigorous type testing. This could be accomplished by simply adopting the industry standard in its entirety. Sections missing include, but are not limited to, API MPMS Chapters 5.1, 5.2, 5.3, 5.4, 5.6, 6.6, 8.2, 8.3, 9.1 and 9.2.

Certain standards were apparently inadvertently omitted from the list of standards incorporated by reference API MPMS Chapter 8.2 for Automatic Sampling (used and discussed many places in the proposed rules) and Chapter 8.3 for Mixing of Samples are curiously not on the list, yet the technologies are required for water and sediment determination at LACT units. Chapters for other technologies including Automatic Tank Gauging (API MPMS Chapter 3.1B), a mature technology with very specific and well defined performance criteria for custody transfer is likewise missing from the list. Chapter 9.3 API

gravity by Thermohydrometer is the only methodology available for gravity determination, when there are many other better and more accurate methods available for custody transfer (e.g. API MPMS Chapter 9.1). Similarly, API MPMS Chapter 10.4, the Field Centrifuge Method for the determination of water, sediment, or both is the only standard and methodology included by reference, when all of the other water and sediment technologies in API MPMS Chapter 10 (except Chapter 10.4) have published precision and bias statements in the standards, making them better and more accurate methodologies to determine water and sediment. Finally, API MPMS Chapter 11.1 (latest revision 2004 including Addendum 1 2007, reaffirmed 2013) is included by reference.

**Recommendation:** BLM should simply adopt the industry standards entirely (i.e. reference the entire API MPMS published as of a specific date).

ASTM D-1250 1980 Table 5A and Table 6A are no longer valid and should be removed from the reference list (equivalent to API MPMS Chapter 11.1-1980, which is now been superseded by the 2004 edition). The correction for thermal glass expansion of a thermohydrometer is explicitly expressed in API MPMS Chapter 9.1 (section 10 part 2). A conflict in results can arise if the ASTM D1250 1980 tables are used for this calculation.

**Recommendation:** Remove references to ASTM D-1250 1980 from the proposed rule.

Specific priority should be given to the incorporation of API MPMS Chapter 18.2 (unpublished currently) because it specifically addresses custody transfer from closed lease tanks using standard methods already available in the API MPMS. BLM representatives participate in the working group developing this standard and understand the criticality of the ability to protect people from hazardous vapors and gases while performing custody transfer. API MPMS Chapter 13.3 should also be incorporated as it proved the methodology to determine uncertainty of measurement systems once it is published.

**Recommendation:** Adopt API MPMS Chapter 13.3 as the methodology used for calculating the uncertainty of measurement systems.

BLM has not described a path/ process whereby new or updated standards are incorporated into this rule after it is finalized. This rulemaking should follow the process for the incorporation of new standards similar to that which exists for the BSSE rules or the PHMSA rules, as discussed below. We feel this could be a potential strength in the new rule, if new industry standards are incorporated on a regular basis (e.g. every six months), thus keeping the rule current.

**Recommendation:** Establish a process whereby new and/or updated industry standards can be incorporated on a regular basis (e.g. every six months).

If industry established standards (i.e. API MPMS) are now incorporated by reference and represent applicable requirements under BLM's proposed rules, do deviations from these



standards then constitute a potential BLM violation? What degree of deviation from the standards would be considered a violation? If BLM considers deviations from the industry standards a violation, BLM should only consider deviations that result in a material loss of accuracy and reliability in measurement of production volumes as violations. Do the variance process cover instances where operators can seek broad variances to deviate from industry standards where they must be modified due to special conditions? BLM should clarify when deviations can be allowed.

**Recommendation:** Clarify where deviations from the industry standards as referenced are allowed.

If an operator relies on a third party for transportation (i.e. a trucking company) for managing and measuring production volumes, will the operator or the transporter be cited for violations if the industry standards are not properly followed? We need more guidance on how this might occur.

BLM's enforcement guidance handbook should address how deviations from industry standards will be assessed.

Additionally, BLM should consider citing standards like API MPMS Chapters 18.2 and 13.3 that are available for public review as they conclude their final consensus ballot stage to allow for the introduction of the most up to date technology and proven engineering practices. For example, in a recent Bureau of Safety and Environmental Enforcement (BSEE) notice of proposed rulemaking, see <https://www.federalregister.gov/articles/2015/02/24/2015-03609/oil-and-gas-and-sulphur-operations-on-the-outer-continental-shelf-requirements-for-exploratory>. In this rule, BSEE "proposes to incorporate, with certain exclusions discussed later in this proposed rule, draft proposed API RP 2N, Third Edition, which is available for free public viewing during the API balloting process on API's Web site at <http://mycommittees.api.org/standards/ecs/sc2/default.aspx> (click on the title of the document to open)."

Therefore, while BLM has not described a path/ process whereby new or updated standards are incorporated into this rule after it is finalized the above BSEE example provide such a model. Another best practice would be to consider forming an industry-government technical committee similar to the Pipeline and Hazardous Materials Safety Administration (PHMSA) Technical Advisory Committees which meet on a semi-annual basis to review PHMSA's proposed regulatory initiatives to assure the technical feasibility, reasonableness, cost-effectiveness and practicality of each proposal. The committees also regularly discuss updates to reference standards, and provide a mechanism for PHMSA staff to understand the status of the reference standards.

## Section 3174.5 – Oil Measurements by Tank Gauging – General Requirements.

(b) New requirements are presented for pressure-vacuum relief valves and vapor lines on oil storage tanks to minimize hydrocarbon gas lost to the atmosphere by ensuring venting is done under controlled conditions primarily in response to changes in ambient temperature. Clarification is needed to understand the details of these installations with multiple tanks in batteries and the end disposition for the gas. Clarification is needed that thief hatches provide pressure and vacuum protection and may not fit the definition of vapor tight in the general statement. Definition is needed for “vapor tight” to insure the envisioned system does not negatively impact emergency vent operations. It is common practice in the oil industry to use thief hatches as pressure/ vacuum relief devices as outlined in API RP 12 R1 section 4.4. Some companies vent through secondary blow-down valves in order to avoid exposing people to unsafe pressure on the tanks. Without this measure, people are exposed to potentially dangerous levels of vapors. Changes to install pressure-vacuum relief systems on all tanks may require more than the 180 day compliance period to resolve. Vacuum relief should be written as “greater than or equal to the thief hatch vacuum setting”. Much of the vapor discussion requiring vapor recovery and vapor tightness is in the purview of the EPA and not the BLM. Care must be taken such that conflicts in the rules won’t occur.

**Recommendation:** Clarify Installation details for multiple tank batteries, definitions for vapor tight and vapor tight thief hatch.

The proposed requirement that all oil storage tanks, hatches, connections, and other access points are vapor tight and that all venting occur through a pressure-vacuum relief valve may not be realistically achievable depending on the definition of venting versus inadvertent loss of fugitive vapors. Requiring manual tank gauging on a monthly basis will result in opening of thief hatches and loss of hydrocarbon vapors. Beside a potential environmental concern, manual gauging of tanks represents a worker health and safety hazard. Exposure to hydrocarbon and other (i.e. hydrogen sulfide) vapors during manual gauging of tanks by opening the thief hatch should be minimized by reducing the frequency of gauging. Opening of thief hatches will also result in the loss of hydrocarbon vapors (including VOCs and methane, a greenhouse gas). Federal and state regulations exist and are being proposed to further reduce fugitive emissions of these hydrocarbon vapors. Clarification is also needed to understand the details of these installations with multiple tanks in batteries and the end disposition for the gas. Much of the vapor discussion requiring vapor recovery and vapor tightness is in the purview of the EPA and not the BLM. Care must be taken such that conflicts in the rules won’t occur.

Operators that need to rely on manual tank gauging to fulfill reporting of “end of month” inventories cannot possibly direct field staff to measure each and every tank at the end of each month, when operators may utilize 1000s of tanks for liquid hydrocarbon storage.

**Recommendation:** Allow alternatives to manual gauging of liquid hydrocarbon volumes in tanks. Allow the use of automatic tank gauging systems (ATGs) and automatic tank thermometers (ATTs) in accordance with API MPMS Chapter 3.1B and Chapter 7. In addition, designate a threshold limit where manual gauging of liquid hydrocarbon volumes is not required on a monthly basis. Tanks that accumulate less than a barrel of oil or condensate per day should not have to be subject to monthly gauging requirements.

(c) Per the proposed rules, sales tank calibrations apparently can only be made using API MPMS Chapter 2.2A – Tank Strapping by Manual Method, when in fact other methodologies in Chapter 2 (2.2B – Optical Line Reference, 2.2C – Optical Triangulation Method) are faster, cheaper, and more accurate than 2.2A.

**Recommendation:** All methods in Chapter 2 should be available for the calibration of sales tanks.

Sales tanks are currently strapped to  $\frac{1}{4}$ " , but, as proposed, must now be re-strapped or tables recalculated to  $\frac{1}{8}$ " increments. ATGs previously approved for service may need to be replaced to meet the new  $\frac{1}{8}$ " increment as well. This is a deviation from current industry standards (i.e. API MPMS Chapter 18.1), and could have significant cost implications to the oil industry, not included in the economic analysis provided by BLM. Typically, each tank requires a minimum of 30 days for a suitable engineering firm to perform the strapping and make the calculations to create a certified tank table. Therefore, the proposed period of 180 days as specified by this subpart to bring existing field equipment used to measure oil for royalty purposes into compliance is not feasible. As written, it would require that the engineering companies that perform tank strappings and generate tables to generate a total of approximately 267 tables per day (basis 40,000 sales tanks in the USA). In addition, these tables would have to be communicated to BLM for processing and recording. The cost to re-strap and/ or generate new strapping tables has not been fully accounted for in the BLM's economic analysis.

The error in measurement between  $\frac{1}{4}$ " and  $\frac{1}{8}$ " is about 0.05% absolute (based on a 20 foot tall, 400 bbl sales tank). The allowable error for a lease with a LACT system in the 100 to 50,000 bbl/mo is +/-1.0%, or twenty times this error. Therefore it does not appear that requiring measurement of lease tanks to  $\frac{1}{8}$ " improves the accuracy or reduces the uncertainty over the current  $\frac{1}{4}$ " enough to justify the investment. Relief should be provided for tanks used for low (volume) production wells (<100 bbl/mo) to allow existing  $\frac{1}{4}$ " strapping tables and not require re-strapping unless the tank is modified (relocated, repaired, etc.).

The proposed BLM rule does not state if this requirement also applies to flow-back and temporary tanks. The rule suggests that tanks that are moved must be re-strapped. Does this requirement apply to flow-back and other temporary tanks as well (i.e. they must be re-strapped every time they are moved)? BLM should state clearly that the proposed rule only

applies to permanent production storage tanks in liquid hydrocarbon service. Re-strapping of flow-back or temporary tanks used prior to establishing permanent production is not necessary as this production is transferred to production sales tanks that are subject to BLM measurement requirements.

New strapping charts are required to be submitted to BLM 30 days after the calibration. The strapping process and the generation of strapping tables by the engineering companies typically requires at least 30 days. Therefore this proposed requirement would likely not be met. In addition, since the entire oil industry will be requesting this same service from a limited number of engineering companies over a short time horizon, the cost of these services may increase sharply, causing a large shift in production economics towards the possibility of shutting wells in and forgoing royalties on these wells until the calibration services can be reasonably obtained. We recommend the requirement be changed to read: "The operator will submit the sales tank calibration charts (tank tables, or strapping tables) to the AO within 30 days from the time that such charts (tables) are received by the operator".

**Recommendation:** State clearly that the proposed rule only applies to permanent production storage tanks in liquid hydrocarbon service. The 1/4" increment industry standard should be continued. For FMP revision, the requirement be that the operator will submit the sales tank calibration charts (tank tables, or strapping tables) to the AO within 30 days from the time that such charts (tables) are received by the operator.

#### **Section 3174.6 – Oil Measurement by Manual Tank Gauging – Procedures.**

(b) In general, the activities of this section are not aligned with the industry standard API MPMS Chapter 18.1. Level and temperature measurements should be accomplished in conjunction with each other without intervening activities and after taking the samples for sediment and water (S&W) and gravity determinations. The general industry practice is to take the oil level followed by the oil temperature. As the temperature is used to correct the volume derived from the level measurement, failure to measure the temperature and level at or near the same time may result in an error in the volume so determined.

**Recommendation:** Tank measurements should be conducted in accordance with the recognized industry standard API MPMS Chapter 18.1.

(b)(2)(i) Glass thermometers must be free of mercury separation. Congress passed the Mercury Export Ban Act in 2008 which prohibited the export of mercury starting in 2013. Various states have initiated programs banning the sales of mercury containing devices for use in the USA. To that end, the API and the oil and gas industry no longer references mercury containing devices as those used in our industry. BLM should the follow the US Government's lead in not referencing mercury devices.

**Recommendation:** Glass thermometers must be free of internal liquid separation.

(b)(2)(ii), (iii), & (iv) The reported graduation and accuracy requirements for temperature measurement devices are different based on the technology employed (minimum graduation of 1.0F for liquid-in-glass thermometer vs. minimum graduation of 0.1F for Portable Electronic Thermometers). But this is not consistent with the mandate to keep the uncertainty in the measured quantity to within a specified value, nor is it consistent with existing industry standards (API MPMS Chapter 7). We recommend that BLM specify a minimum accuracy and number of graduations; as read and recorded that any device used to measure temperature must comply with. For example, BLM could specify that any temperature measurement device used in custody transfer of oil must have a minimum accuracy of 0.5F and a minimum graduation of 0.1F, reading to 0.1F (or as specified in API MPMS Chapter 7 for custody transfer). This specification is much simpler and uniform approach that will result in a consistent uncertainty calculation and the implied nonlinear impact from the VCF.

**Recommendation:** Temperature measurements should conform to the industry standard API MPMS Chapter 7.

(b)(2)(iii) & (3)(i) These sections require opening the roof of a tank for the purposes of determining tank temperature and collecting samples. Given that liquid hydrocarbons evolve hazardous materials when exposed to the atmosphere, it would be more appropriate to say “Where safety and environmental considerations allow, ...”. Other means should be provided where safety and environmental concerns make opening the roof impractical. Considerations: If, for example, manual gauging frequency of light crude/condensate tanks should be avoided in ozone non-attainment areas (NAAs), does this mean that automatic tank gauging becomes a BMP and a possible regulatory requirement (i.e. ozone control technique guideline)? Should operators be encouraged to install automatic tank gauging equipment for new wells with high production volumes (i.e. > 1000 bbl/mo)? If so, what incentive can be provided to operators to do so under this rule if BLM-approved equipment is used? This part of the rule may conflict with EPA rules.

(b)(3)(i) Transferring oil to centrifuge tubes assumes the centrifuge method for determining sediment and water. Additional methodologies from API MPMS Chapter 10 can be more accurate (given the basis of the precision and bias statements contained in all Chapter standards except for API MPMS Chapter 10.4) Therefore, BLM should incorporate all of API MPMS Chapter 10 by reference.

**Recommendation:** Incorporate by reference all of industry standard API MPMS Chapter 10.

(b)(4) Determine oil gravity by API MPMS Chapter 9.3. Additional methods for the determination of gravity in Chapter 9 can be more appropriate to use (basis: the conditions of the oil at sample time). Therefore, BLM should simply specify any API MPMS Chapter 9 methodology as appropriate for determining gravity. The procedure outlined in this section

is not consistent with API MPMS Chapter 9.3. The procedure does not address the hydrometer glass expansion correction. API MPMS Chapter 9.3 includes instructions on how to determine and apply this correction. ASTM D1250-80 Table 5A incorporates this correction but has now been superseded by API MPMS Chapter 11.1-2004. API MPMS Chapter 11.1-2004 requires this correction be applied prior to its application. Failure to properly account for the hydrometer glass expansion correction will cause a measurement error. Therefore, we recommend that the API gravity should be determined in accordance with API MPMS Chapter 9.3.

**Recommendation:** API gravity should be determined in accordance with API MPMS Chapter 9.3.

(b)(5)(ii) The opening measurement should be taken with a matched (bob and tape) and currently “Certified” gauging tape.

**Recommendation:** Specify that the tape and bob shall be certified within the last year as is specified in API MPMS Chapter 3.1A.

(b)(6) API MPMS Chapter 10.4 was updated since this proposed rule has been written. Many of the sections discussed no longer exist. BLM should revise this section to simply reference the procedure in Chapter 10.4–2013 and remove the restatement of the standard in the proposed rule. In addition, the rule advises to record the S&W to three decimal places. This S&W determination methodology does not have precision and bias (it is not a recognized ASTM standard), and is widely understood to be the least accurate of any of the Chapter 10 S&W determination methodologies (see API TR 2573 Standard Guide for Sediment and Water Determination in Crude Oil). When the S&W is recorded on a measurement ticket after testing, the number should be recorded according to the guidance in Table 4 in Chapter 10, Section 10.4;

(b)(6)(i) The final temperature specified in the regulation for the S&W test is not consistent with the requirement specified in the API MPMS Chapter 10.4 industry standard test. The regulation specifies a final temperature 115 degrees F when using diluents that do not require water saturation whereas API MPMS Chapter 10.4 specifies the final test temperature shall be within 15 degrees of the test temperature, meaning 125 degrees for a normal test temperature of 140 degrees F. Use of a final test temperature other than specified in the industry standards may create an error in the test results, and, therefore, error in the volumes. We recommend that if the sediment and water content of crude oil is to be determined by the field centrifuge method, industry standard - API MPMS Chapter 10.4 should be followed verbatim.

**Recommendation:** Follow API MPMS Chapter 10.4 precisely when using the Field centrifuge method for determining S&W.

(b)(10)(i) A conflict exists between the two cited standards for correcting oil gravity. The cited ASTM Table 5A is only valid for the ASTM 1250–1980 version using four significant digits, whereas the cited reference of API MPMS Chapter 11.1 is the 2004 version which does not have tables (but rather equations) for gravity correction, but has 5 significant digits. Use of both standards in the calculation process will generate differences in the oil quantity. Care must be taken in selecting the proper reference for the reduction of the API gravity at an observed temperature to API gravity at standard temperature. The appropriate reference to be used depends upon whether or not the hydrometer glass correction has been applied as part of 3174.6 (b) (4). ASTM D1250 Table 5A incorporates the thermohydrometer glass expansion correction whereas API MPMS Chapter 11.1-2004 does not. Permitting the use of two different standards with different requirements for the reduction of API gravity at observed temperature to API gravity at reference temperature can lead to confusion and result in errors in the reported API gravity. BLM should drop the reference to ASTM D1250-1980 in favor of API MPMS Chapter 11.1/Adjunct to ASTM D1250–2004 to make the calculations consistent.

**Recommendation:** Remove references to ASTM D-1250 1980 from the proposed rule and reference API Chapter 11.1. API gravity should be determined in accordance with API MPMS Chapter 9.3.

(b)(10)(iii) and (v) A conflict exists between the two cited standards for correcting the volume of oil due to temperature. The cited ASTM Table 6A is only valid for ASTM D1250–1980 version using four significant digits, whereas the cited reference API MPMS Chapter 11.1 is the 2004 version which does not have tables (but rather equations) for gravity correction, but has 5 significant digits. Use of both standards in the calculation process will generate differences in the oil quantity. ASTM D1250-80 and API MPMS Chapter 11.1-2004 may yield slightly different Correction for the Effect of Temperature on Liquid (CTL) results. API MPMS Chapter 11.1 includes provisions for the change in temperature standard from International Practical Temperature Scale of 1968 (IPTS-68) to International Temperature Scale 1990 (ITS-90). The standard density of water has been updated in API MPMS Chapter 11.1-2004. API MPMS Chapter 11.1-2004 incorporates different rounding conventions. API MPMS Chapter 11.1-2004 includes provisions for correcting flowing density (API gravity) under temperature and pressure to density (API gravity) at reference temperature and pressure whereas ASTM D1250-80 only includes correction of observed density (API gravity) to density at reference temperature. Permitting the use of two different standards may yield different volumes. BLM should drop ASTM D1250-1980 in favor of API MPMS Chapter 11.1/Adjunct to ASTM D1250–2004 to make the calculations consistent in the determination of CTL and Correction for the Effect of Pressure on Liquid (CPL).

**Recommendation:** Remove references to ASTM D-1250 1980 from the proposed rule and refer to API MPMS Chapter 11.1 for CPL and CTL determinations.

## Section 3174.7 – LACT System – General Requirements.

(e)(1) and (2) The operator must notify the AO within 24 hours of any LACT system failures or equipment malfunctions which may have resulted in measurement error. It is not possible to know if a failure occurs that may have resulted in a measurement error and notify the AO within 24 hours. BLM should revise this section to state: Any LACT system failures that will cause a documented mismeasurement of Oil by 0.05% or more must be reported to the AO within 24 business operating hours of discovering the failure. For example, it may not make sense for the operator to report a failure of a LACT system to BLM at 3AM on a Sunday as neither party may take any actions until the following business day. Electrical failures may not be problematic as some or all equipment may have battery back-up. The temporary failure of part of a measurement system does not automatically mean that measurements were made outside the acceptable limits of the specified uncertainty. Can this notification be submitted electronically? Can this notification be placed into an online database maintained by the operator that the AO has continuous access to? Can it be done via email? Do the documents require an original signature? BLM should provide detailed procedures for this reporting requirement. Electronic filing of reports is advantageous to both BLM and operators.

**Recommendation:** Any LACT system failures that will cause a documented mismeasurement of Oil by 0.05% or more must be reported to the AO within 24 business operating hours of discovering the failure. Notification can take place electronically.

(f) The rule states that “samples extracted from LACT system samplers from determination of temperature, oil gravity, and S&W content must meet the requirements and minimum standards in 3174.6(b)(2), (4), and (6).” LACT system samplers are **never** used to determine oil temperature, and this should be removed from the rule (see API MPMS Chapter 6.1 for proper temperature measurement on LACT systems). LACT systems require the use of automatic sample systems as per API MPMS Chapter 8.2 (not included by reference) and Chapter 8.3 (sample mixing) for the subsequent determination of oil gravity and S&W. Those portions of the rule cited, 3174.6(b)(2), (4), and (6) pertain to (static) tank sampling using API MPMS Chapter 8.1, not LACT systems that must use automatic sampler systems as per Chapter 8.2. BLM should remove references to the incorrect methods and provide the correct method references for this requirement.

**Recommendation:** Remove this reference from the proposed rule.

(g) This section prohibits automatic temperature, and temperature and gravity compensators. We recommend that these compensators should be allowed in service as long as an audit trail exists whereby the raw data is available (so that the final result from the compensator can be recreated from the data). The BLM should provide scientific research that concludes that the use of automatic temperature and gravity compensators are less effective than electronic temperature averaging devices. We also suggest that



older systems that cannot provide such data be grandfathered under the rule. The consequence of replacing automatic compensators is more significant than presented in the BLM's economic analysis, the ramifications of which could be as great as producing wells shut in because the upgrade is not economically feasible.

**Recommendation:** Grandfather LACT systems with existing temperature and gravity compensators.

### **Section 3174.8 – LACT System – Components and Operating Requirements.**

(a) LACT system components are clearly set out in API MPMS Chapter 6.1. There is no reason to restate that information here as it is not clearly written or organized. For example, (5) states that an "S&W monitor" be installed, when in fact, there is no such thing as an "S&W monitor"; only water monitors (water probes) exist and they are used for diverting loads of high water from sales. Therefore this should be removed.

**Recommendation:** Remove this section.

(a)(2) No industry standard is referenced for automatic sampling systems to be used for LACT and CMS. Failure to provide minimal requirements for sampling systems may result in samples which are not representative and, therefore, erroneous volumes. We recommend that automatic sampling systems shall be designed in accordance with API MPMS Chapter 8.2.

**Recommendation:** Make reference to automatic sampling systems per API MPMS Chapter 8.2.

(a)(7) states that a LACT system includes a "Positive Displacement Meter", when in fact any custody transfer quality meter appropriate for the hydrocarbon mixture that is to be measured, that can be proven can be used as the meter in a LACT system (including Coriolis and positive displacement meters). BLM should use the industry standard (API) definition of a LACT system in this proposed rule.

**Recommendation:** Use the industry standard definition of a LACT system as defined in API MPMS Chapter 6.1.

(a)(10) cites the requirement for a meter back-pressure valve. The purpose of the backpressure valve is to ensure accuracy of measurement by maintaining single phase flow throughout the meter and the proving system. However, the appropriate backpressure can be maintained in other ways. For instance, it is common to have a pump placed downstream of a LACT system in place of a back-pressure valve. The pump would be the driving force that would allow the fluid to flow. If proper automation were present, the required back pressure could be maintained based upon a live pressure reading rather than a stagnant valve setting. This will help prevent pressure drops, pump cavitation, and

increased costs, while maintaining the same level of measurement accuracy. For LACT systems that employ composite meter factors, a mechanism is not only required to maintain a minimum backpressure to ensure a single phase liquid, but it also required to maintain a constant pressure.

**Recommendation:** Replace the language requiring the backpressure valve with language requiring the necessary equipment to maintain an appropriate backpressure to ensure single phase flow.

(b)(1) states that “LACT systems must include an electrically driven pump that has a discharge pressure compatible with the meter used and sized to assure that the turbulent flow in the LACT main stream piping and that the measurement uncertainty levels in 3174.3(a) of this subpart are met.” While this is a good engineering practice, the requirements of the meter proving repeatability cause this requirement to be met, and is a better test to see if the meter is operating in its linear region (in turbulence) than the calculation of a Reynolds number or the initial design of the pump on a LACT system. Alternatively, BLM should specify that the LACT system meet the uncertainty requirements from 3174.3(a) and not specify how those requirements are met. Additionally, gas driven pumps appear to be excluded from consideration.

**Recommendation:** Specify that the LACT system should meet the uncertainty requirements from 3174.3(a) rather than specify how those requirements are met. Additionally, remove the requirement for an “electric pump”, as gas driven pumps are also adequate.

(b)(2) discusses sample probe locations, when standards for automatic sample systems have not been incorporated into this rule as of this point. If BLM wishes to incorporate automatic samplers and the standards for them, BLM should incorporate API MPMS Chapters 8.2 and 8.3 in their entirety, and not restate parts of the standard in the proposed rule.

**Recommendation:** Incorporate API MPMS Chapters 8.2 and 8.3 in their entirety, and not restate parts of the standard in the proposed rule.

(b)(4) should simply reference API MPMS Chapter 8.3, since this is the appropriate requirement for mixing samples.

**Recommendation:** Incorporate API MPMS Chapters 8.2 and 8.3 in their entirety, and not restate parts of the standard in the proposed rule.

(b)(7) The definition of S&W monitor is unnecessarily restrictive. Many existing technologies in use in the field would require a variance for continued use.

**Recommendation:** Grandfather existing S&W monitoring technologies.

(b)(8) Reference is made to a “positive displacement meter” on the LACT system. This reference to a specific type of meter should be removed because, again, any meter type that is custody transfer quality appropriate for the hydrocarbon mixture that is to be measured, that can be proven can be used as the meter in a LACT system (including Coriolis and positive displacement meters). References to pre-determined S&W limits for sales and mention of sales contracts have no place in the proposed BLM rules.

**Recommendation:** Remove this section from the proposed rule.

(b)(9) states that a LACT system includes a “Positive Displacement Meter”, when in fact any custody transfer quality meter appropriate for the hydrocarbon mixture that is to be measured, that can be proven accurate can be used as the meter in a LACT system (including Coriolis and positive displacement meters). BLM should use the industry standard (API) definition of a LACT system. In addition, the proposed language specifies the number of pulses/barrel. The 8,400 is not appropriate for turbine meters. Rather than specifying an arbitrary number of pulses, BLM should specify that the number of pulses should be adequate to meet the measurement, reliability and uncertainty requirements of the installation.

**Recommendation:** Use the industry standard definition of a LACT system in API MPMS Chapter 6.1.

(b)(11) (iv) and (v). The proposed rules state the accuracy of temperature devices must be +/-0.5F but read out in 0.1F. BLM should follow API MPMS Chapter 7 in the proposed rule.

**Recommendation:** Follow the industry standard API MPMS Chapter 7 for temperature devices and measurements.

### **Section 3174.9 – Coriolis Measurement Systems (CMS) – General Requirements and Components.**

(a) BLM provides no explanation how the list of approved Coriolis meters can be developed in a timely manner. BLM should specify that all equipment including temperature and pressure instruments meet or exceed the requirements of the industry standards API MPMS Chapter 7 and Chapter 21.2. Any meter that can be shown by the operator to meet this uncertainty level can be used. BLM should allow all Coriolis meters currently in use at the effective date of this order to be automatically approved and grandfathered for royalty calculations since, otherwise, it will take time and financial resources to verify and grant permission to use existing meters. In such cases, leases may otherwise be shut down and loss of royalties will result.

**Recommendation:** Specify that all equipment including temperature and pressure instruments meet or exceed the requirements of the industry standards API MPMS

Chapter 7 and Chapter 21.2 instead of the proposed language in this section. In addition, grandfather all meters in use at the time of the effective date of the rule.

(b) BLM continues with text indicating that this newly defined “CMS” is different from a LACT system, when in fact, a Coriolis meter could be one component of a LACT system. Therefore, to avoid confusion, BLM should use industry standard terminology; the measurement system is a LACT system, using a Coriolis meter and the associated hardware necessary for the operation of a Coriolis meter.

**Recommendation:** Use the industry standard definition of a LACT system in API MPMS Chapter 6.1.

(d) The sections of the API standards referenced in CMS requirements table are not current. The standards have been updated since the writing of this rule. BLM should update the table to reflect current and new prospective API Standards. The list should include all of the standards in the API MPMS.

**Recommendation:** Review all of the industry standards again before final publishing of this rule and include all pertinent standards by reference.

(e) The list of minimum components and sequence of order in the flow path disagrees with those required by a standard LACT system covered under API MPMS Chapter 6.1. In practice, block valves are **never** installed immediately following a pump, and density measurement verification points and sampling systems are **always** installed upstream of the meter. This section should be deleted, and API Chapter 6.1 should be incorporated by reference.

**Recommendation:** Delete this section and reference industry standard API MPMS Chapter 6.1.

(e)(5) & (6) BLM provides no explanation how the list of approved temperature and pressure instruments can be developed in a timely manner. Alternatively, BLM should specify an easier approach where BLM sets the allowable uncertainty level that any temperature or pressure instrument can exhibit for use in oil custody transfer. Any device that can be shown by the operator to meet this uncertainty level can be used. BLM should also specify that all instruments currently in use at the effective date of this order be automatically approved and grandfathered for royalty calculations since, otherwise, it will take time to verify and grant permission to use existing devices. In such cases, leases may otherwise be shut down and loss of royalties will result.

**Recommendation:** Specify the uncertainty a device must meet and allow any device that can be shown to meet or exceed that uncertainty to be used. In addition, grandfather all instruments in use at the time of the effective date of the rule.

(e)(6) The specified calibration tolerance for a pressure transmitter is inconsistent with API MPMS Chapter 21.2, Section 11.6.2.2. API MPMS Chapter 21.2 specifies a tolerance of 3 psi whereas the regulation proposes a tolerance of +0.25 psi or +0.25% reading, whichever is greater. The impact of errors in pressure measurement on the overall measured liquid volume is minimal. Typically, a one psi error in pressure will result in 0.0005 percent error in volume for crude oil. Impact: Requiring excessively tight tolerance for the pressure transmitter will increase project costs for installations involving Coriolis meters for essentially no value added and, as a result, discourage the use of Coriolis meters. We recommend that the tolerance for pressure measurement should be as specified in API MPMS Chapter 21.2.

**Recommendation:** The tolerance for pressure measurement should be as specified in API MPMS Chapter 21.2

(e)(7) BLM should clarify that the density verification measurement point is just a tap to obtain a representative sample.

**Recommendation:** Clarify that the density verification measurement point is a tap close to the online density measurement.

(e)(8) The proposed rule allows operators to forgo an S&W measurement and count the S&W (existing in the oil) as oil for royalty determination. In accordance with the industry standard API MPMS Chapter 12.2.2, S&W should always be included in the determination of NSV, to do otherwise creates an error in the volume which is not consistent with the requirements as outlined in 3174.3(b).

**Recommendation:** BLM should follow the industry standard API MPMS Chapter 12.2.2 for calculating NSV.

(e)(9) If BLM intends to use the term “in order” for the components requirements of the CMS, it would require a variance application for virtually all of the current LACT systems in use today making the addition of this section more costly to both the public and the industry.

**Recommendation:** Use the industry standard definition of a LACT system in API MPMS Chapter 6.1.

(e)(10) Section cites the requirement for a meter back-pressure valve. The purpose of the backpressure valve is to ensure accuracy of measurement by maintaining single phase flow throughout the meter and the proving system. However, the appropriate backpressure can be maintained in other ways. For instance, it is common to have a pump placed downstream of a LACT system in place of a back-pressure valve. The pump would be the driving force that would allow the fluid to flow. If proper automation were present, the required back pressure could be maintained based upon a live pressure reading rather than

a stagnant valve setting. This will help prevent pressure drops, pump cavitation, and increased costs, while maintaining the same level of measurement accuracy. We recommend a change in the language requiring the requirement around the backpressure valve include language requiring the necessary equipment to maintain an appropriate backpressure to ensure single phase flow.

**Recommendation:** Follow the system requirements in the industry standard API MPMS Chapter 6.1.

### **Section 3174.10 – Coriolis Measurement Systems – Operating requirements.**

(b) & (c) The data required in this section is not required if BLM adopts an uncertainty maximum that all Coriolis meters must meet in order to be used in oil royalty calculations. BLM should adopt this approach and remove these data requirements.

**Recommendation:** Uncertainty limits for Coriolis meters should be adopted and remove the data requirements.

(d) The requirement of operators to report changes in parameters like meter factors, pulse scaling factors, flow-calibration factors, etc. within 24 hours is not feasible. For example, it may not make sense for the operator to report parameter changes to BLM at 3AM on a Sunday as neither party may make any actions until the following business day. In addition, BLM does not explain what advantage this information provides BLM or how the data could be used on Sunday. These factors are always available to AO personnel during audits, and records are kept by the operator that indicate the date and time when the parameters were changed. Meter factors, density meter factors, etc. are normally maintained external to the meter electronics, normally in a flow computer. Consequently, these items should not be governed by under this rule. We recommend that the internal parameters (pulse scaling factors, other constants established at the factory) should be secured to prevent unauthorized or unintended changes. Changes to the meter zero should be logged and available for audit by the AO.

**Recommendation:** Require internal parameters (pulse scaling factors, other constants established at the factory) be secured to prevent unauthorized or unintended changes. Parameter changes must be reported to the AO within 24 business operating hours of discovery. Notification can take place electronically.

(f) Stopping flow to perform a zero verification of the Coriolis meter in conjunction with each meter proving may disrupt operations. The need to stop flow will result in lost production and royalties paid to the government. We recommend BLM considers revising the requirement to permit the zero verification to be accomplished on a monthly basis not necessarily in conjunction with meter proving.

**Recommendation:** Permit the zero verification to be accomplished on a monthly basis not necessarily in conjunction with meter proving.

(g) This section requires the Coriolis meter to calculate NSV. No flow meter, including a Coriolis meter, is currently capable of calculating NSV directly without an associated S&W measurement. The calculation of NSV requires a water analysis on a sample of the oil that passed through the meter. Also, no allowance is made for incorporating an oil shrinkage factor (of particular interest in situations where the metering of non-weathered oil occurs under pressure just post separator (where shrinkage of up to 15% can occur). We recommend allowing the application of a shrinkage factor basis to the testing of pressurized oil samples as approved by the Authorized Officer.

**Recommendation:** Follow API MPMS Chapter 12.2.2 for NSV calculations. Allow the application of a shrink factor approved by the AO.

(h)(1) Composite samplers have not been incorporated by reference to standards or described in this rule. Alternatively, BLM should reference API MPMS Chapter 8.2 and 8.3 for this purpose.

**Recommendation:** Incorporate API MPMS Chapters 8.2 and 8.3 by reference.

(h)(2) A conflict exists between the two cited standards for correcting oil gravity (density). The cited ASTM Table 5A is only valid for ASTM 1250–1980 version using four significant digits, whereas the cited reference API MPMS Chapter 11.1 is the 2004 version which does not have tables (but rather equations) for gravity correction, but has 5 significant digits. Use of both standards in the calculation process will generate differences in the oil quantity. Use of ASTM D1250-80 Table 6A to correct the density (API gravity) from the Coriolis (density meter) is by itself inappropriate as it does not account for the pressure effect on the flowing density. According to API 12.2.1, Appendix B, an iterative calculation (included in API MPMS Chapter 11.1) is required to properly correct the density at flowing temperature and pressure to density at standard temperature and pressure. Failure to properly account for the pressure when reducing the flowing density to reference temperature and pressure may introduce a small, but sometimes significant, error in the volume. BLM should delete the reference to ASTM D1250-1980 in favor of API MPMS Chapter 11.1/Adjunct to ASTM D1250–2004 to make the calculations consistent and that the flowing density (API gravity) obtained from the Coriolis should be corrected for temperature and pressure in accordance with API MPMS Chapter 11.1.

**Recommendation:** Remove references to ASTM D-1250 1980 from the proposed rule and reference API Chapter 11.1. API gravity should be determined in accordance with API MPMS Chapter 9.3.

(i) The CMS display described apparently refers to a flow computer that is commonly part of a LACT system. All of the information requested in this provision is commonly available in the LACT flow computer or associated Coriolis instrumentation.

**Recommendation:** Follow the system requirements in the industry standard API MPMS Chapter 6.1.

(i)(2)(iii) Daily volume totals may not be available depending upon the close-out period for the operation. Volume close-out could be on a monthly basis. However, cumulative volume totals are always available.

(i)(4) No information is provided as to the form of the parameter log. Can the log be electronic? Should the log have the FMP associated with it? It may be advantageous for this data to be kept centrally by the operator yet accessible by the AO at any time. BLM should provide more detailed descriptions of the reporting requirements. Electronic filing of reports is advantageous to both BLM and the operator.

**Recommendation:** Provide more detailed descriptions of the reporting requirements. Allow electronic filing of reports.

#### **Section 3174.11 – Meter Proving Requirements.**

(c)(1) The repeatability requirement for calibration of a master meter is inconsistent with the requirements specified in API MPMS Chapter 4.5. A repeatability of 0.0002 (0.02%) derived from five consecutive runs is specified whereas API MPMS Chapter 4.5, Section 6.5 (Table 2) specifies a repeatability of 0.02% from three proving runs or 0.05% from five proving runs. Specifying a significantly tighter repeatability tolerance may require unnecessary and costly repairs of master meters with little value added. We recommend specifying that the repeatability tolerance and corresponding number of runs for the calibration of a master meter shall conform to the requirements set forth in API MPMS Chapter 4.5. Note: Master meters calibrated every 90 days will see very limited field use since they will spend a majority of their time in the shop being calibrated.

**Recommendation:** Specify that the repeatability tolerance and corresponding number of runs for the calibration of a master meter shall conform to the requirements set forth in the industry standard API MPMS Chapter 4.5.

(c)(4) Replace the language with “Provers must be operated within the design parameters set forth by the manufacturer and by API MPMS Chapter 4.2.”

**Recommendation:** Replace the language with “Provers must be operated within the design parameters set forth by the manufacturer and by API MPMS Chapter 4.8 and 4.9.”



(d)(1) The proposed rule says that meter proving must occur under normal conditions. This section then goes on to discuss what normal flow, pressure, and gravity are considered, but no mention of the definition of normal temperature.

**Recommendation:** Include normal temperature in the discussion.

(d)(3) Proving tolerance is not normally limited by exactly **five** consecutive runs, but rather the requirements are determined based on the number of consecutive runs. The industry standard API MPMS Chapter 4 should be used as the guide and the tolerance in meter factor resolution based on the number of runs taken from the published tables in the standard. The underlying implication in the five times 0.05 is that we have stabilized fluids. For separator type applications with fast acting valves, slug flow or volatile liquids, this is quite impractical. Section 3174.9 acknowledges the difficulty of using sampling equipment in separator outflow applications, but the document does not accommodate it under the proving sections.

**Recommendation:** Follow industry standard API MPMS Chapter 13.

(d)(4) Requirement to utilize the average of intermediate meter factors from five consecutive runs is inconsistent with API 12.2.3, Section 8.4 which also permits the use of average data from various proving runs to determine the meter factor. Requirement may necessitate substantial costs for reconfiguring or upgrading of field and proving flow computers, and/or revision of corporate accounting computer systems with little added value. We recommend that the meter factor shall be determined from five consecutive proving runs using the average data method or intermediate meter factor method in accordance with API MPMS Chapter 12.2.3.

**Recommendation:** The meter factor shall be determined from five consecutive proving runs using the average data method or intermediate meter factor method in accordance with API MPMS Chapter 12.2.3.

(d)(6) Averaging meter factors will be valid only if the meter factors were determined in regions where the impact of nonlinearities are minimal. Operators with advanced measurement skills will be able to understand when this occurs, but others may not, which can greatly impact the uncertainty of the measurement of the meter. Many flow computers today allow meter factors (and other constants where applicable) to be scheduled in place (commonly called “gain scheduling in process controllers”). Therefore meter factors can be used at every 10% difference in process variable as needed. We recommend deleting Section (d)(6)(i).

**Recommendation:** Delete section (d)(6)(i).

(e)(1) Does this mean that meters used for flow-back must be calibrated every time they are moved? Since the effect of the upstream and downstream piping installation may affect

the performance of the master meter, it is preferred that a master that is proved on site be flow calibrated against a reference (e.g. portable prover) if moved to a different location.

**Recommendation:** Clarify when master meters must be calibrated and explain the technical basis for the schedule.

(e)(2) The 50,000 bbl proving requirement can lead to excessive proving of meters. A meter operating at 2,500 bbl/hr would require proving twice per day. BLM should change the language to state that meters are not proved more than once per batch or once per month. The language should at very least allow for reduced proving once a meter performance history is established. Repeatedly proving a meter to achieve meter factors that have no significant deviation adds operational and maintenance burden with no improvement in uncertainty. BLM must provide evidence and supporting documentation that shows that a LACT meter must be reproved at 50,000 barrel intervals in order to meet uncertainty requirements. BLM should provide the financial study as referenced that identifies the 5 percent of the existing LACT systems nationwide this would impact. Note that the 50,000 bbl minimum proving requirement conflicts with the North Dakota NDIC requirement of a maximum of one proving per month. Therefore the requirement should be relaxed to state prove every 50,000 bbls or at a maximum frequency of once per month. The actual volume that has passed through a LACT or meter may or may not be monitored to permit scheduling of meter proving on a throughput basis. Requirements to prove meters on a throughput basis may necessitate the installation of remote telemetry, flow computer and other electronic equipment at substantial cost. We recommends that meter proving shall be conducted on a scheduled (time) basis which may be related to throughput (e.g., monthly if the monthly throughput of the facility is in excess of some fixed quantity, quarterly otherwise, etc.)

**Recommendation:** Require proving on a scheduled (time) basis which may be related to throughput (e.g., monthly if the monthly throughput of the facility is in excess of some fixed quantity, quarterly otherwise, etc.) Therefore, prove every 50,000 bbls or at a maximum frequency of once per month.

(e)(7) The term “opened” in this context is too vague. It could imply that the meter should be reprove after the readout housing has been opened to clean the protective glass. This term should be removed and something more descriptive used; e.g. “a change to the meter that would impact the calculation of the flow quantity”.

**Recommendation:** Detail the conditions that would require reproveing.

(f)(1) This part of the rule is erroneous and should be deleted because it is technically incorrect. In certain parts of the USA, the temperature extremes can be very large (e.g. Alaska or North Dakota), and as a result the meter factor change from prove to prove can be very large. This is not a situation where the meter should be removed from service and checked for damage or wear, adjusted or repaired. This condition is simply the result of

normal temperature impact on meter factor. In such situations, it means that proving needs to take place on an accelerated schedule. If some situations dictate that the frequency needs to be increased to meet the maximum meter factor shift, then the requirement can be met.

**Recommendation:** Delete this section ((f)(1)) from the proposed rule.

(g) Verification of the temperature averaging devices conflicts with the earlier requirements for temperature resolution and accuracy. Sections 3174.6(b)(2)(i) & (ii) have different requirements for temperature measurement devices.

**Recommendation:** Set an appropriate limit on the precision and accuracy for temperature measurement that is not device dependent.

(h) The preamble states that temperature and pressure transducers used as part of a LACT (or CMS) system must be verified as part of every proving. This subpart, however does not mention the verification of pressure transducers for each prove. In addition, it appears that pressure transmitter verification is only required for CMS systems and not LACT systems? This section should be further clarified to state the true intent of this section. The requirement to verify instrumentation prior to each prove (rather than on a scheduled time period) can become excessive, particularly if the proving frequency, as outlined in the proposed rule, is less than 30 days. Example: If a LACT system processes 25,000 bbl of oil per day, the requirement, as stated in the proposed rule, are to verify the instruments and prove daily. It is not probable that instruments would cause measurement error within a 24 hour period, and the additional time needed to verify the instruments could keep the LACT system off-line, reducing the throughput of the LACT and thus reducing the daily royalty total.

(i) This section refers to a reference for comparing the density measurement from a Coriolis meter to an independent device. If the sample to be compared is a composite sample from an automatic sample system, API MPMS Chapter 8.1, 8.2 and 8.3 should be referenced.

**Recommendation:** Incorporate API MPMS Chapters 8.2 and 8.3 in their entirety, and not restate parts of the standard in the proposed rule (Chapter 8.1 already incorporated by reference).

(j)(1) Meter proving requirements include reporting all meter-proving and volume adjustments after any LACT system or "CMS" malfunction, including excessive meter factor deviation etc. using the forms in API Chapters 12.2.2 or 5.6. No reporting requirements are specified in this provision. Can this be done electronically? Can this be placed into an online database maintained by the operator that the AO has continuous access to? Can it be done via email? Do the documents require an original signature? BLM should provide more detailed descriptions of the reporting requirements. Electronic filing of reports is advantageous to both BLM and operators. Note: The requirement to provide both (i) FPM,

and (ii) Lease number, CA number, or Unit number are not congruent with the requirements from On Shore Order #5. These requirements should be revisited and reconciled to the same.

**Recommendation:** Better define the circumstances when data needs to be communicated to BLM. Allow electronic notification and communication of data.

(j)(3)(v) Operator must submit the meter proving report to the AO no later than 14 days after proving. Can this be done electronically? Can this be placed into an online database maintained by the operator that the AO has continuous access to? Can it be done via email? Do the documents require an original signature? BLM should provide more detailed descriptions of the reporting requirements. Electronic filing of reports are advantageous to both BLM and operators.

**Recommendation:** Clarify the requirements for proving reports. Allow proving reports to be communicated electronically.

#### **Section 3174.12 – Measurement Tickets.**

(a)(9) API oil gravity is typically not reported as corrected to 60 degrees Fahrenheit on a ticket by crude haulers. This is not normal practice and should be removed. Crude oil haulers do not use API MPMS Chapter 9.3 to correct the gravity of crude oil back to 60 degrees Fahrenheit in the field. It is not part of the industry standard API MPMS Chapter 18.1.

**Recommendation:** Delete this requirement.

(a)(14) & (15) Check for measurement accuracy is made when the tickets are submitted to the operator by the truck operator, which can be up to 30 days later than the measurement. The AOs office can be notified monthly, at the same frequency as the operators accounting system gathers and records tickets. This provision makes no mention of electronic ticketing. BLM should state that electronic ticketing be allowed for truck gathering to improve the effectiveness of the entire accounting process.

**Recommendation:** Any time a measurement check is performed leading to a disagreement this information should be forwarded to the AO if it cannot be resolved within 30 days. Allow electronic ticketing since it will improve the effectiveness of the accounting process.

(b) (1) We concur with the tickets generated every month. Mention is made of electronic tickets yet no details or requirements are provided on format, etc. BLM should provide more detailed descriptions of the reporting requirements. Electronic filing of reports is advantageous to both BLM and operators.

(b)(1)(xvi) BLM should define the term “certifying”. From the context of the proposed rule, the definition used is not clear.

**Recommendation:** Define what is intended by the term “certifying”.

(b)(2) Data from LACT systems, when ticketed on a 30 day cycle may not be received into the accounting system and reconciled until the following 30 day cycle. As a consequence, operators will not be able to notify the AO within 7 days of the reasons for an operator’s disagreement with a LACT system measurement. The ensuing investigation may take several days or weeks in order to resolve the disagreement or determine if the difference actually exists. Therefore this reconciliation period should be extended to 60 days for notice and the verification of a discrepancy that is not resolved. It is prudent to avoid any misunderstanding that simple questions relating to a volume calculation are somehow interpreted as a disagreement with a LACT system measurement result. BLM should explain this requirement further. It is not clear that the BLM has an established process for notification of the AO. Current practice is to open the ticket after meter proving. Creating a new ticket before the meter factor is established may be awkward if the new meter factor indicates the meter must be removed from service for repair or cleaning (e.g., the meter factor deviates more than  $\pm 0.0025$  from the previous meter factor). With the requirement as proposed, the volume accumulated after the ticket is opened will not have an associated valid meter factor. We recommend that the rule be modified to specify that the ticket generated at the time of meter proving be opened after a valid meter factor has been established.

**Recommendation:** Allow some time to identify and correct simple discrepancies without reporting to BLM. Modify the proposed rule to specify that the ticket generated at the time of meter proving be opened after a valid meter factor has been established.

(c) Without a technology list included in this proposed rule, all technologies that are currently in use in the field are technically new to BLM. Therefore the only avenue for using an existing technology (in place for many years, but not falling into the “alternative oil measurement equipment” category) is by requesting a variance. Therefore variances should always be allowed and either granted or rejected strictly based on their merit in resolving oil measurement for royalty payments. If BLM provides a technology list in the final rule, the list should be performance-based rather than technology-based, allowing at a minimum, a broad range of technologies already in use on BLM administered federal mineral leases and units, precluding the need for variances for existing LACT systems.

**Recommendation:** Variances to allow continued use of an existing technology should be granted or rejected strictly based on their merit in resolving oil measurement for royalty payment purposes. Any technology list provided in the final rule should be performance-based, and should allow a broad range of technologies in use on BLM leases at the time a final rule is published to minimize the need to obtain variances for existing LACT systems.

### **Section 3174.13 –Oil Volumes by Other Methods.**

The language in Executive Summary suggests that the role of the PMT is to evaluate new technologies (i.e. not specific equipment) and approve them as suitable. 3174.13 (2) discusses approval of specific models, ranges and software versions. Section 3174.9 references model numbers etc. as well. This is misaligned. Using an example (applicable to all technologies: Metering, gauging, temperature, pressure measurement, etc.), if BLM tested and approved Coriolis technology, would it now maintain a list of every Coriolis meter including all the new model numbers as time goes on. If an operator purchased Brand X model 3 which meets the requirements, would model 4 which is newer and improved require specific approval? Would the operator either be forced to purchase older equipment or have to resubmit data on the new model (including software changes) if it is not on the BLM approved list. In addition, this tedious and cumbersome process may hinder the development of new technologies. The language should be changed to have the BLM list approved technology types and not specific bands, model and firmware. The technology types should in turn meet the uncertainty requirements listed. Finally, it is not clear when the variance process should be used over the technology approval process. BLM should provide clear criteria and examples of when the variance process should be used for technology, and when the technology approval process should be used for new or alternative technologies.

**Recommendation:** The BLM should list approved technology types and not specific bands, model and firmware. The technology types should in turn meet the uncertainty requirements listed. Provide clear examples of when the variance process should be used for technology, and when the technology approval process should be used for new or alternative technologies.

### **Section 3174.14 – Determination of Oil Volumes by Methods Other Than Measurement**

**Recommendation:** Better define the term slop oil (i.e., Does this apply to salt water disposal sites, spill clean-ups, etc.?).

### **Section 3174.15 – Immediate Assessments.**

We object to the proposed expansion of immediate assessments as this circumvents due process. BLM should also allow incidents of noncompliance to be issued as a warning for operators to take corrective action by a required timeframe to address an issue without being subject to an immediate assessment. If an operator fails to come into compliance by the stipulated deadline, then BLM should impose an immediate assessment.

Many requirements in the table “violations subject to an immediate assessment” simply cannot be met. (2) & (4) have time requirements that are not realistic. Can these be submitted electronically? Can this be placed into an online database maintained by the operator that the AO has continuous access to? Can it be done via email? Do the

documents require an original signature? BLM should extend the notification for a LACT failure from 24 hours to 7 days, and reporting be allowed to occur electronically (by email or on line in a database that BLM has continuous access to). BLM should provide more detailed descriptions of the reporting requirements. Electronic filing of reports is advantageous to both BLM and operators.

We have concerns with the expansion of the number and types of violations that would be subject to immediate assessments. We do not support the BLM's decision to raise the penalty amount from \$200 to \$1000 on each immediate assessment. If BLM increases the penalty amount, they should at least provide a warning and a reasonable amount of time for an operator to come into compliance. More importantly, these violations need to be clearly explained within the rule. For instance, an immediate assessment for any required FMP LACT system components missing or nonfunctioning is very ambiguous. First, BLM needs to provide a list of the FMP LACT system components. Since it seems that every tank will have an FMP and industry is required to tank-gauge the reference height, will a missing stick when a person arrives to gauge a tank be considered an immediate violation? The point again being, if BLM is going to eliminate the notification and time for correction from the Onshore Orders, BLM needs to be much more explicit on what factors lead to an immediate assessment.

**Recommendation:** Specify a "grace period", a period of time to begin when a violation is identified so that the proper course of correction can take place before a penalty is assessed. Publish the violation handbook in advance of the final rule.

## **General Notes**

The proposed regulation specifies detailed requirements on issues that are covered by current industry standards. Potential impacts therefore are: 1) specifying detailed requirements that vary from industry standards creates confusion and will lead to inferior measurement results and 2) by so doing, a potential and likely real conflict is created between the regulatory requirements and legally binding commercial agreements between producers and transporters, and sellers and buyers which reference the industry standards. A significant number of agreements and tariffs may require revision. We recommend that the rules specify requirements by reference of appropriate industry standards only.

The proposed rule does not allow "grandfathering" of existing equipment. A better solution would be to "grandfather" all existing equipment. All new installations must then meet the new proposed rules. BLM should also specify that repairs of a measuring station that cost more than 50% of the cost of a new, installed measurement station would need to meet the new requirements.

The proposed rule states that BLM will develop an internal handbook and that the handbook will be in place by the effective date of the final rule. This has the appearance that the AO may have a different set of rules by which the compliance with Order 4 would

be administered. BLM should publish this handbook so that that all may see what to expect when compliance with this order is effective.

Environmental Impact Assessment. BLM indicated that the proposed rule would not result in additional surface disturbances and the only environmental impact, believe to be negligible, would be attributed to the slight increase in traffic, including one-time trips to FMPs for retrofitting activities and additional trips for meter-proving activities. However, BLM claims that impacts to air quality or wildlife would remain unchanged since all oil storage tanks, hatches, connections, and other access points should be vapor-tight and storage tanks should maintain a pressure-vacuum integrity in order to minimize hydrocarbon gas loss to the atmosphere. BLM assumes that these tank systems already are and will remain vapor-tight and does not account for costs to make and keep tanks vapor-tight. BLM makes no mention of potential exposure of workers to hydrocarbon vapors from more frequent manual gauging of liquid hydrocarbon inventories in tanks.

The proposed rule requires proving and maintenance based upon totalizer volumes rather than using specific time period frequencies. Most field totalizer volumes are not real time measurements from the field transmitted back into field maintenance offices where they could be monitored to allow the proposed volumetric proving and maintenance frequencies to be completed. Strict adherence to maintenance schedules dictated by totalizer volumes may require the installation of remote telemetric equipment at all measurement facilities in order to remotely monitor totalizer volumes. The cost for the installation of such equipment could outweigh the production value of the hydrocarbon stream, and be counter-productive to sustaining royalty collections.

BLM should provide an additional opportunity for operator comments to address concerns with BLM's flawed economic analysis.