

Attachment 2
Public Comments and Agency Response
Wind River / Bighorn Basin District
August 2016 Oil & Gas Lease Sale
DOI-BLM-WY-R000-2016-0001-EA

#	Comment By	Comment	Agency Response
n/a	WR/BBD		<p>The 30-day public comment period for Version 1 of the Wind River / Bighorn Basin District EA for the August 2016 Competitive Oil and Gas Lease Sale (DOI-BLM-WY-R000-2016-0001-EA) began January 19, 2016, and closed February 18, 2016. The 30-day public comment period is established in Washington Office IM 2010-117 <i>Oil and Gas Leasing Reform – Land Use Planning and Lease Parcel Reviews</i>. Comments received after the close of the public comment period will be handled in accordance with BLM’s NEPA Handbook (H-1790-1), which states that the Authorized Officer: ”is not required to respond to comments that are not substantive or comments that are received after the close of the comment period, but you may choose to reply.”</p>
01	Wyoming Game and Fish Department (WGFD)	<p>The staff of the Wyoming Game and Fish Department has reviewed the Environmental Assessment for August 2016 Oil and Gas Lease Parcels. We offer the following comments for your consideration.</p> <p>We support Alternative B - Proposed action. However, we have the following concerns:</p> <p>We weren't sure why some of the parcels in core were deferred and some were not. WY-1608-086, 87, 88 and 101 are partially in core but not deferred. The appropriate stipulations are applied however.</p> <p>Thank you for the opportunity to comment. If you have any questions</p>	<p>Thank you for your review and comments.</p> <p>After careful review of the parcels, the BLM determined that it was appropriate to defer certain parcels nominated for inclusion in the August 2016 oil and gas lease sale. These deferrals were made consistent with the BLM's sage-grouse conservation plans and strategy, which direct the BLM to prioritize oil and gas leasing and development in a manner that minimizes resource conflicts in order to protect important habitat and reduce development time and costs.</p>

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		<p>or concerns, please contact Rick Huber, Staff Aquatic Biologist, at 307-777-4558.</p> <p>Sincerely, John Kennedy, Deputy Director.</p>	<p>The parcels remain eligible for leasing consideration in the future.</p>
02	Wyoming Outdoor Council (WOC)	<p>Please accept these comments from the Wyoming Outdoor Council regarding the above- referenced environmental assessment prepared by the Bureau of Land Management. The Wyoming Outdoor Council is the state’s oldest independent conservation organization. We’ve worked for more than four decades to protect Wyoming’s environment and quality of life for future generations.</p> <p>The Wyoming Outdoor Council supports the decisions made through the screening process, which deferred parcels WY-1608-073, -074, -075, -076, -077, -081, -082, -083, -084, and -085 in the Lander Field Office. The nine parcels just west of the Beaver Rim encompass important greater sage-grouse habitat and other important wildlife values, as well as other open space values, and we support the Lander Resource Management Plan decisions that apply no-surface occupancy stipulations to the Hudson to Atlantic City region. We agree Parcel -085, also deferred, is also inappropriate for leasing. Oil and gas leasing is a discretionary activity and we heartily support the BLM exercising discretion and deferring these parcels from this lease sale, when as is the case here, management for other values should take precedence.</p>	<p>Thank you for your interest.</p>
03	WOC	<p>However, we ask that the BLM also defer parcels WY-1608-057, 092, -093, -094, -095, -096, -097, -098, -099, -100, -101, and -104. These parcels have irreplaceable values in ecologically and socially important landscapes and these parcels currently have inadequate stipulations for</p>	<p>Beyond the scope of this document. Stipulations are developed during Land Use Planning. Stipulations applied to these parcels are consistent with the Lander RMP.</p>

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		the resources that deserve protection.	
04	WOC	<p>Absaroka-Beartooth Front Parcels The Absaroka-Beartooth Front is a sweeping, uplifted, landscape from rolling sagebrush hills to lofty and rugged mountains. This deeply eroded transitional landscape provides crucial open spaces for seasonal wildlife migrations and crucial winter habitats for big game species that summer in the high country of the Greater Yellowstone Ecosystem. It provides important habitat for predators, sagebrush obligates, and numerous raptors. A master leasing plan, which is uniquely designed to organize leasing and development and reduce conflicts, is especially suited to this special landscape. In the Cody and Worland Resource Management Plans, sections of the Front are to be managed according to a master leasing plan; other areas are included in special recreation management areas and extensive recreation management areas.</p>	Thank you for your interest.
05	WOC	<p>We appreciate that parcel WY-1608-091, in the Absaroka Mountain Foothills special recreation management area has been deferred. We would like to ask for the additional deferrals of -092, -093, -094 -095, -096, -097, -098, -099, -100, and -101. Like parcel - 091, these additional parcels all contain priceless wildlife habitats important for the ecological integrity of the region and the quality of life enjoyed by Wyoming residents. Most of these parcels have strong timing limitation stipulations, or some portion of no- surface occupancy, but these are inadequate (as we made clear during our engagement with the Bighorn Basin resource management plan revision and the Absaroka-Beartooth Front master leasing plan) given the values at stake.</p> <p>We are particularly concerned that parcel -098 is offered for sale. This</p>	<p>Beyond the scope of this document. Stipulations are developed during Land Use Planning. Stipulations applied to these parcels are consistent with the Worland RMP.</p> <p>For the August 2016 lease sale, stipulations have been applied to lease parcels for resource protections of:</p> <ul style="list-style-type: none"> • big game crucial winter range habitat outside of Oil and Gas Management Areas on Worland parcels WY-1608-050, -051, -052, -053, -054, -055, -056, -057, -058, -059, -091, -092, -093, -

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		<p>parcel, within the master leasing plan boundary, is within the plan's zone three for crucial elk winter range. We support the limitation on the the number of disturbances allowed within this zone. Combining this parcel with parcels -099 and -100 is necessary for full implementation of the master leasing plan's intentions—to reduce disturbance. However, we find the other stipulations inadequate and ask that the BLM defer leasing this parcel until leasing and development strategies are developed that will not harm the irreplaceable values of the Front.</p>	<p>094, -095, -096, -097, -and -100.</p> <ul style="list-style-type: none"> • federal mineral estate within the Absaroka Front Management Area on Worland parcels WY-1608-098, -099, and -100. • Absaroka Front MLP area for the protection of resources on Worland parcel WY-1608-098. • water, riparian/wetland: within 500 feet perennial surface water, and riparian/wetland areas on Worland parcel WY- 1608-055, -092, and -098. • riparian habitat supporting special status fish species on Worland parcels WY-1608-092, and -098. • recreation areas and developed recreation sites on Worland parcels WY-1608-091, -092, -093, -094, -095, -096, -097, -098, -099, and -100. • VRM: Class II on Worland parcels WY-1608-091, -092, -093, -094, -095, -096, -097, -098, -099, and -100. • recreation areas and developed recreation sites on Worland parcels WY-1608-091, -092, -093, -094, -095, -096, -097, -098, -099, and -100.
06	WOC	<p>We are also particularly concerned that parcel -104 has been reoffered for lease sale. This split estate parcel near Clark is within the the master leasing plan boundary the Wyoming Outdoor Council advocated, but not within the finalized Absaroka-Beartooth Front master leasing plan area. This parcel does contain a no-surface occupancy stipulation applied to a .25 mile radius from a greater sage-grouse lek; however,</p>	<p>Parcel WY-1608-104 has previously been leased four times, from 1983 through 2007 as: WYW082212, WYW117049, WYW123803, and WYW140921.</p> <p>As required by BLM leasing policy, WO IM 2010-117, where parcels are split estate, a notification</p>

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		<p>this 80 acre parcel is split into two pieces that are about 1/3 mile apart, so it is difficult for the interested public—and possibly the landowner—to know how that NSO stipulation will apply to each piece of land, depending on the location of the lek. We believe this information should be made available prior to leasing, in order to better inform consultation with the landowner and the public about whether—or how or where—leasing and development will be appropriate. Answers to these questions may have been addressed in the site visit recommended by BLM’s Oil and Gas Leasing Reform, Instruction Memorandum No. 2010-117, which we did not attend, but we believe this information would be appropriate to include in the EA.</p>	<p>letter of the lease nomination, and another notification letter of the EA review and possibility to comment, is sent to the surface owner based on the surface owner information provided by the party submitting the EOI.</p> <p>There are no impacts from the act of leasing on Split Estate parcels. If development should occur after leasing, the operator is responsible for negotiating with the private surface owner for a Surface Use Agreement. The BLM will offer the surface owner the same level of surface protection that the BLM provides on Federal surface.</p>
07	WOC	<p>Fifteenmile Basin Parcels The Fifteenmile Basin is an incredibly wild landscape that can take visitors back in time through the eons preserved in the stone. Fossil resources associated with the Paleocene- Eocene Thermal Maximum stratigraphic zone and the Fort Union and Willwood formations are “an internationally known marker for data on paleoclimate, carbon isotopes, past global warming, and mammalian evolution” according to the draft environmental impact statement for the Bighorn Basin Resource Management Plan. The solitude, wide open views, complex and artistic badlands, thrill of discovery, research importance, and vital sagebrush and salt scrub habitats are the values to be protected in this area. This is a landscape our members care deeply about and one in which we believe the BLM should have crafted a conflict-reducing and balanced master leasing plan.</p> <p>We ask that parcel -058 be deferred from this lease sale. This</p>	<p>Thank you for your interest.</p> <p>Beyond the scope of this document. Stipulations are developed during Land Use Planning, which includes public participation. Stipulations applied to these parcels are consistent with the Worland RMP.</p> <p>Stipulations applied to parcel -058 are for the protection of big game crucial winter range habitat outside of Oil and Gas Management Areas; important cultural sites, up to 3 miles or the visual horizon; and Special Designations (Scenic and Cultural Resources) up to 2 miles from Other Trails.</p>

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		<p>Fifteenmile Basin parcel has the controlled surface use stipulations applied that are outlined in the finalized land- use plan, but we believe these to be inadequate, as we put forth in our comments and protests of the resource management plan. Until there is consideration of how to develop a sound leasing plan that incorporates public comment, we do not think leasing in this area is appropriate.</p>	
08	WOC	<p>Impacts from development should be considered at the leasing stage For the Absaroka-Beartooth Front and Fifteenmile Basin parcels, we ask for more thorough consideration of how development will happen. We believe the fragility and importance of these irreplaceable landscapes necessitate consideration of how development will happen at this time—prior to the BLM’s leasing decision. The BLM has the responsibility to take into account the impacts of potential development at the leasing stage. It is not appropriate to avoid consideration of post-leasing impacts given the very likely event that these leases will be developed.</p> <p>The BLM must take the legally required “hard look” at the impacts associated with oil and gas development <u>prior</u> to offering parcels for competitive lease sale. <i>Kleppe v. Sierra Club</i>, 427 U.S. 390, 410 n.21 (1976). In the oil and gas leasing context the BLM must adequately assess the impacts of reasonably foreseeable post-leasing oil and gas development <u>before</u> any leases are issued. <i>See Pennaco Energy, Inc. v. U.S. Dept. of Interior</i>, 377 F.3d 1147 (10th Cir. 2004); <i>New Mexico ex rel. Richardson v. Bureau of Land Mgmt.</i>, 565 F.3d 683 (10th Cir. 2009); <i>Southern Utah Wilderness Alliance</i>, 166 IBLA 270 (2005).</p>	<p>Beyond the scope of this document. The August 2016 Competitive Oil and Gas Lease Sale is not a regulatory action, but rather an administrative action. The act of leasing land for oil and gas development in itself does not cause development or degradation of the lands.</p> <p>All parcels for the August 2016 Competitive Oil and Gas Lease Sale are in conformance with the existing land use plans as required by 43 CFR 1610.5, and the August 2016 DOI-BLM-WY-R000-2016-0001-EA has adequately analyzed the issues raised by this comment. Site specific NEPA analysis will occur at the development stage that will analyze resource conflicts and identify mitigation for specific impacts.</p> <p>In accordance with IM 2004-110, Change 1 and Lease Notice No. 3 any new standards/mitigation/stipulations coming forth from that process can be applied to post-lease actions (i.e., APDs, Sundry Notices, Rights-of-Way, etc.).</p>

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			<p>In accordance with H-1624-1 – Planning For Fluid Mineral Resources Rel. 1-1749, 1/28/2013: The Federal Government retains certain rights when issuing an oil and gas lease. While the BLM may not unilaterally add a new stipulation to an existing lease that it has already issued, the BLM can subject development of existing leases to reasonable conditions, as necessary, through the application of Conditions of Approval at the time of permitting. The new constraints must be consistent with the applicable land use plan and not in conflict with rights granted to the holder under the lease. The Interior Board of Land Appeals has made clear that, when making a decision regarding discrete surface-disturbing oil and gas development activities following site-specific environmental review, the BLM has the authority to impose reasonable protective measures not otherwise provided for in lease stipulations, to minimize adverse impacts on other resource values. See 30 U.S.C. §226(g); 43 CFR 3101.1-2. See Yates Petroleum Corp., 176 IBLA 144 (2008); National Wildlife Federation, 169 IBLA 146, 164 (2006).</p>
09	WOC	<p>We do not believe the stipulations applied to these parcels will adequately mitigate the impacts of reasonably foreseeable development. Additionally, we ask that additional analysis be included in the EA that would describe how the agency intends to achieve the “no net loss” and “net gain” mitigation requirements outlined in the President’s Memorandum on Mitigation. It is our opinion that the</p>	<p>All parcels for the August 2016 Competitive Oil and Gas Lease Sale are in conformance with the existing land use plans as required by 43 CFR 1610.5, and the August 2016 DOI-BLM-WY-R000-2016-0001-EA has adequately analyzed the issues raised by this comment. Site specific NEPA analysis will occur at</p>

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		<p>master leasing plans for these two landscapes are flawed, because they were not made available for public comment. The agency discussed the possibility of the master leasing plans in an appendix to the draft RMP but did not include details—such as stipulations, disturbance densities, or phased leasing decisions until the proposed plan, which was too late for public input to be included. As a result, the master leasing plans’ provisions will not protect the values at stake. Accordingly, we request that our recommendations concerning deferrals and lease stipulations be incorporated into the EA as additional alternatives and carefully analyzed, providing the legally required “hard look” at environmental impacts and the effectiveness of proposed lease stipulations. If the agency takes a “hard look” at reasonably foreseeable development impacts, as it must, it is clear that the impacts from oil and gas development on the Fifteenmile Basin and Absaroka-Beartooth Front will be detrimental to the open spaces, viewsheds, wild lands, and wildlife herds these incredible landscapes contain. We ask these parcels be deferred until that “hard look,” which didn’t occur during the land-use planning process, can be completed. We also ask that public comment questioning the adequacy of lease stipulations in the two MLP areas receive a detailed written response from BLM, a response that was not provided during the RMP revision process.</p>	<p>the development stage that will analyze resource conflicts and identify mitigation for specific impacts. In accordance with IM 2004-110, Change 1 and Lease Notice No. 3 any new standards/mitigation/stipulations coming forth from that process can be applied to post-lease actions (i.e., APDs, Sundry Notices, Rights-of-Way, etc.).</p> <p>Beyond the scope of this document. Stipulations are developed during Land Use Planning, which includes public participation. Stipulations applied to these parcels are consistent with the Worland RMP.</p> <p>Beyond the scope of this document. Master Leasing Plans are developed during Land Use Planning, which includes public participation.</p>
10	WOC	<p>Conclusion In addition to the parcels already deferred, we also ask that the agency defer leasing parcels WY-1608-057, -092, -093, -094, -095, -096, -097, -098, -099, -100, -101, and - 104. Thank you for your consideration of these comments. Julia Stuble Public Lands Advocate</p>	<p>Thank you for your interest.</p>

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11	Rocky Mountain Wild and WildEarth Guardians (RMW/WEG)	<p>The following are the lands and wildlife comments from Rocky Mountain Wild and WildEarth Guardians on the Wyoming BLM’s August 2016 Lease Sale EA. For many years, the BLM has prioritized oil and gas leasing and development over other multiple uses such as wildlife, wilderness quality lands, watersheds, public health and public recreation. It is time for the BLM to restore some balance among resource uses in Wyoming, and render extractive industries more compatible with maintaining healthy ecosystems and public enjoyment of the land. Generally speaking, we would support a modified version of the BLM Preferred Alternative adjusted to address our concerns.</p> <p>BLM attaches a number of stipulations, most notably timing stipulations, and relies upon them to reduce impacts to sensitive wildlife resources without ever analyzing the effectiveness of these stipulations. Many of these stipulations are known to be ineffective as outlined below. See Attachment 1 (Rocky Mountain Wild’s Assessment of Biological Impacts (ABI) GIS Screen) for a full list of values impacted by this proposed leasing decision.</p>	<p>Values impacted by this proposed leasing action are adequately addressed in DOI-BLM-WY-R000-2016-0001-EA, and were thoroughly analyzed in the information and analysis contained in the Environmental Impact Statements (EIS), Records of Decisions (ROD) and Approved Resource Management Plans (RMP) for the Lander Field Office (LFO 2014), the Worland Field Office (WFO 2015), and the Cody Field Office (CyFO 2015);</p> <p>The BLM’s responsibility under the FLPMA is to ensure that public lands are managed “under principals of multiple use and sustained yield.” 43 USC§1732(s): “Multiple use management’ is a deceptively simple term that describes the enormously complicated task of striking a balance among the many competing uses to which lands be put, ‘including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and [uses serving] natural scenic, scientific and historical values.’“ Norton v. S. Utah Wilderness Alliance, 542 US 55, 58 (2004) (quoting 43 USC §1702(c). BLM’s second goal, sustainable yield, “requires BLM to control depleting uses over time, so as to ensure a high level of valuable uses in the future.” Id.)(citing 43 USC 1702§ (h)). Accordingly, BLM is not required, under FLPMA, to adopt the practices best</p>

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			<p>suited to protecting wildlife, but instead to balance the protection of wildlife with the nation’s immediate and long-term need for energy resources. (See TRCP vs. Salazar, No. 08 Civ. 1047 (RJL) (C.A. D.C., Sept. 29, 2010)).</p> <p>Beyond the scope of this document. Stipulations are developed during Land Use Planning. Stipulations applied to these parcels are consistent with the Lander, Worland, and Cody RMPs.</p>
12	RMW/WEG	<p>Sage Grouse</p> <p>We agree with BLM’s recommendations to defer in whole or in part the offering of many parcels which fall entirely or partially within Core Areas. See Attachment 1. However, the failure to defer parcels 086, 087, 088, and 101 is improper. These parcels are also within core areas and should be deferred from leasing and development.</p>	<p>After careful review of the parcels, the BLM determined that it was appropriate to defer certain parcels nominated for inclusion in the August 2016 oil and gas lease sale. These deferrals were made consistent with the BLM's sage-grouse conservation plans and strategy, which direct the BLM to prioritize oil and gas leasing and development in a manner that minimizes resource conflicts in order to protect important habitat and reduce development time and costs.</p> <p>The parcels remain eligible for leasing consideration in the future.</p> <p>Parcels -086, 087, and -088 are in the Lander Field Office. Parcel 101 is within the Cody Field Office. Stipulations applied to these parcels are consistent with the Approved RMPs, and include protections</p>

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13	RMW/WEG	<p>Under NEPA, BLM must consider a range of reasonable alternatives, including those that are outside the agency’s authority to implement. In this case, an alternative deferring all parcels within 4 miles of a lek would be fully within BLM’s authority to analyze and implement.</p> <p>We request that all parcels listed herein be deferred from the lease sale. BLM should do its best to keep largely unleased areas of public land in Core Areas unleased, regardless of mineral ownership patterns. Wyoming sage grouse populations are some of the largest left in the nation and were relatively stable until the last decade, when sage grouse populations experienced major declines range-wide. The Wyoming Game and Fish Department reported that since 1952, there has been a 20% decline in the overall Wyoming sage grouse population, with some fragmented populations declining more than 80%; one of WGFD’s biologists reported a 40% statewide decline over the last 20 years. As of 2014, WGFD data reports a 60% population decline statewide since 2007. <i>See also</i> Attachment 1. Since these figures were published, grouse populations have continued to decline over the long term. These declines are attributable at least in part to habitat loss due to mining and energy development and associated roads, and to habitat fragmentation due to roads and well fields. Oil and gas development poses perhaps the greatest threat to sage grouse viability in the region. The area within 2 to 3 miles of a sage grouse lek is crucial to both the breeding activities and nesting success of local sage grouse populations. In a study near Pinedale, sage grouse from disturbed leks where gas development occurred within 3 km of the lek site showed lower</p>	<p>The RMPs in the WR/BBD incorporated the Core Area strategy for Greater Sage-Grouse conservation. Appropriate stipulations are applied including seasonal limitations protecting breeding and nesting areas and other prescriptions within Core Area. Outside of Designated Development Areas, these seasonal limitations are applied to operations and maintenance activities as well as drilling. Additionally, Required Design Features and best management practices are applied to limit the adverse impacts of oil and gas development on Greater Sage-Grouse.</p> <p>The request to defer all parcels is imbedded in the No Action Alternative of the EA. The No Action Alternative would mean that an Expressions of Interest to lease, a parcel nomination, would be denied or rejected at this time, and a lease would not be offered for that parcel in the August 2016 sale.</p>

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		<p>nesting rates (and hence lower reproduction), traveled farther to nest, and selected greater shrub cover than grouse from undisturbed leks. According to this study, impacts of oil and gas development to sage grouse include (1) direct habitat loss from new construction, (2) increased human activity and pumping noise causing displacement, (3) increased legal and illegal harvest, (4) direct mortality associated with reserve pits, and (5) lowered water tables resulting in herbaceous vegetation loss. These impacts have not been thoroughly evaluated with full NEPA analysis.</p>	
14	RMW/WEG	<p>Lease parcels should also be screened against Sage Grouse ACECs proposed in the context of the statewide Sage Grouse Plan Amendments EIS process. Many of the proposed ACECs have for proposed management withdrawal from future oil and gas leasing. Parcels in each of these areas should be deferred pending the outcome of the Sage Grouse Plan Amendments process, so that a proper decision can be made regarding whether or not to lease them and/or appropriate stipulations can be attached, per IM 2004-110 Change 1. BLM should also consider whether any parcels fall within proposed Sage Grouse ACECs. In the forthcoming RMP revisions, it is our expectation that the BLM will be considering the designation of several Core Areas as Sage Grouse ACECs, to be managed for no future leasing for oil and gas development.</p>	<p>The RMPs in the WR/BBD were full revisions and were not part of the Sage Grouse Plan Amendments you are referencing. Areas designated as open or closed to leasing are determined through the RMP process.</p>
15	RMW/WEG	<p>Parcels 8, 9, 11, 12, 14, 21, 22, 23, 25, 32, 33, 34, 35, 40, 41, 42, 44, 45, 46, 52, 53, 54, 57, 78, 79, 80, 86, 87, 88, 89, 90, 101, and 104 fall within the 4-mile buffer around an occupied lek. These parcels should also be considered for deferral based on the impacts to the greater sage- grouse. The lands within 4 miles of active leks are typically used for nesting, a sensitive life history period when sage grouse are</p>	<p>The RMPs in the WR/BBD incorporated the Core Area strategy for Greater Sage-Grouse conservation. Appropriate stipulations are applied including seasonal limitations protecting breeding and nesting areas and other prescriptions within Core Area. Outside of Designated Development Areas, these</p>

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		<p>sensitive to disturbance from oil and gas drilling and production activities. The current standard sage grouse stipulations that apply outside Core Areas are biologically inadequate, and their effectiveness has not been established by BLM. Indeed, scientific studies demonstrate that these mitigation measures fail to maintain sage grouse populations in the face of full-field development, and significant impacts in terms of displacement of sage grouse from otherwise suitable habitat as well as significant population declines have been documented. BLM should not issue these sage grouse parcels unless a rigorous set of stipulations, far stronger than those provided in the EA (such as NSO stipulations), are applied to the parcels. This should include 4-mile No Surface Occupancy stipulations around active leks. If these stipulations are implemented together with even stronger measures for Core and Connectivity Areas, the BLM could make a credible case that impacts from leasing would not result in significant impacts.</p> <p>Outside Core Areas, current sage grouse lease stipulations provide an NSO stipulation of ¼ mile around active sage grouse leks. This is inadequate amount of protection for the lekking grouse during the breeding period, never mind for hens nesting on lands surrounding the lek. Studies have shown that the majority of hens nest within 3 miles of a lek, and that a 5.3-mile buffer would encompass almost all nesting birds in some cases. For Core Areas, the most scientifically supportable metric for NSO buffers would be 2 miles from the lek to protect breeding birds (after Holloran 2005, finding impacts from post-drilling production extend 1.9 miles from the wellsite) and 5.3 miles to protect nesting birds, with the understanding that the impacts of drilling and production activity</p>	<p>seasonal limitations are applied to operations and maintenance activities as well as drilling. Additionally, Required Design Features and best management practices are applied to limit the adverse impacts of oil and gas development on Greater Sage-Grouse.</p>

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		<p>would extend into the NSO buffer area from wells arrayed along its edge.</p> <p>Because leks sites are used traditionally year after year and represent selection for optimal breeding and nesting habitat, it is crucially important to protect the area surrounding lek sites from impacts. In his University of Wyoming dissertation on the impacts of oil and gas development on sage grouse, Matthew Holloran stated, “current development stipulations are inadequate to maintain greater sage grouse breeding populations in natural gas fields.” (Notably, these exact stipulations are being applied by BLM in this lease sale for non-Core Area sage grouse habitat parcels). The area within 2 or 3 miles of a sage grouse lek is crucial to both the breeding activities and nesting success of local sage grouse populations. Dr. Clait Braun, the world’s most eminent expert on sage grouse, has recommended NSO buffers of 3 miles from lek sites, based on the uncertainty of protecting sage grouse nesting habitat with smaller buffers. Thus, the prohibition of surface disturbance within 3 miles of a sage grouse lek is the absolute minimum starting point for sage grouse conservation.</p> <p>Other important findings on the negative impacts of oil and gas operations on sage grouse and their implications for the species are contained in three studies recently accepted for publication. Sage grouse mitigation measures have been demonstrated to be ineffective at maintaining this species at pre-development levels in the face of oil and gas development by Holloran (2005) and Naugle et al. (2006). This study found an 85% decline of sage grouse populations in the Powder River Basin of northeastern Wyoming since the onset</p>	

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		<p>of coalbed methane development there. BLM has repeatedly failed to provide any analysis, through field experiments or literature reviews, examining the effectiveness of the standard quarter-mile buffers where disturbance would be “avoided.” There is substantial new information in recent studies to warrant supplemental NEPA analysis of the impacts of oil and gas development to sage grouse. It is incumbent upon BLM to consider the most recent scientific evidence regarding the status of this species and to develop mitigation measures which will ensure the species is not moved toward listing under the Endangered Species Act. It is clear from the scientific evidence that the current protections are inadequate and are contributing to the further decline of the bird’s populations. This information constitutes significant new information that requires amendment of the Resource Management Plans before additional oil and gas leasing can move forward.</p>	
16	RMW/WEG	<p>Wyoming Game and Fish Department biologists have reached a consensus that the Timing Limitation Stipulations proposed for sage grouse in this lease sale are ineffective in the face of standard oil and gas development practices. These stipulations have likewise been condemned as inadequate by the U.S. Fish and Wildlife Service and renowned sage grouse expert Dr. Clait Braun. The BLM itself has been forced to admit that “New information from monitoring and studies indicate that current RMP decisions/actions may move the species toward listing...conflicts with current BLM decision to implement BLM’s sensitive species policy” and “New information and science indicate 1985 RMP Decisions, as amended, may not be adequate for sage grouse.” Continued application of stipulations known to be ineffective in the face of strong evidence that they do not</p>	<p>Referencing comment #1, the WGFD has reviewed the August 2016 leasing EA, parcels, and stipulations, and has concluded the appropriate stipulations are applied to the parcels.</p> <p>The Records of Decisions (ROD) and Approved Resource Management Plans (RMP) for the WR/BBD have been updated since 1985 and are: Lander Field Office 2014 Worland Field Office 2015 Cody Field Office 2015.</p>

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		work, and continuing to drive the sage grouse toward ESA listing in violation of BLM Sensitive Species policy, is arbitrary and capricious and an abuse of discretion under the Administrative Procedures Act.	
17	RMW/WEG	<p>The vague stipulations included in BLM’s Notice of Competitive Oil and Gas Lease Sale for particular parcels do little to clarify to the interested public or potential lessees what restrictions might actually apply to protect sage grouse populations. For example, for some parcels, BLM imposes a Timing Limitation Stipulation and a Controlled Surface Use Stipulation. Such acceptable plans for mitigation of anticipated impacts must be prepared prior to issuing the lease in order to give the public full opportunity to comment, and to abide by the Department of Interior’s stated new policy to complete site-specific environmental review at the leasing stage, not the APD stage. Without site-specific review and opportunity for comment, neither the public nor potential lessees can clearly gauge how restrictive or lax “acceptable plans for mitigation” might be, and whether they comply with federal laws, regulations, and agency guidelines and policies. Thus, absent such review, the leases should not issue at all. BLM has the scientific information needed to recognize that any use of these parcels will result in further population declines. Again, it is in all interested parties favor (conservation groups, potential lessees, BLM and other federal agencies) for BLM to determine specific “modifications” prior to issuing leases, such as NSO restrictions.</p> <p>We recommend against the sale of any lease parcels which contain sage grouse leks, nesting habitat, breeding habitat, wintering habitat and brood-rearing habitat. We request that these parcels be</p>	<p>Beyond the scope of this document. Areas open or closed to leasing, and leasing stipulations, are developed during Land Use Planning, which includes public participation. Stipulations applied to these parcels are consistent with the Approved RMPs. The FEIS’ have full discussions of the methodology of stipulation development and application.</p> <p>As stated in the introduction to DOI-BLM-WY-R000-2016-0001-EA, pursuant to 40 CFR § 1508.28 and § 1502.21, the EA tiers to and incorporates by reference the information and analysis contained in the Environmental Impact Statements (EIS), Records of Decisions (ROD) and Approved Resource Management Plans (RMP) for the Lander Field Office (LFO 2014), the Worland Field Office (WFO 2015), and the Cody Field Office (CyFO 2015); therefore, a new EIS for leasing is not necessary.</p>

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		<p>withdrawn from the lease sale. Failing withdrawal of the parcels, parcel-by-parcel NEPA analysis should occur, and NSO stipulations must be placed on all lease parcels with sage grouse leks. In addition, three-mile buffers must be placed around all leks. It is critical that these stipulations be attached at the leasing stage, when BLM has the maximum authority to restrict activities on these crucial habitats for the protection of the species, and that no exceptions to the stipulations be granted. BLM’s failure to do so will permit oil and gas development activities which will contribute to declining sage grouse populations and ultimately could result in listing by the U.S. Fish and Wildlife Service as a threatened or endangered species, in violation of BLM’s duty to take all actions necessary to prevent listing under its Sensitive Species Manual.</p> <p>We remain concerned that development activities on the sage grouse parcels noted above will result in significant impacts to sage grouse occupying these parcels and/or the habitats nearby, and the BLM’s programmatic NEPA underlying this lease sale does not adequately address these significant impacts in light of new information. Therefore, the requisite NEPA analysis to support the leasing of the sage grouse parcels listed above in the absence of an Environmental Impact Statement does not exist.</p>	
18	RMW/WEG	<p>ACEC BLM should not lease parcels that are within Areas of Critical Environmental Concern (“ACEC”). Parcels 47 and 48 are within the Green Mountain ACEC and parcels 63 and 65 are within the Sheep Mountain ACEC. Even with NSO stipulations for the Green Mountain ACEC accessing and developing this parcel will impact the ACEC.</p>	<p>Beyond the scope of this document. Areas open or closed to leasing, and leasing stipulations are developed during Land Use Planning, which includes public participation. Stipulations applied to these parcels are consistent with the Approved RMPs.</p>

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		<p>However, the Sheep Mountain ACEC would not receive this same level of protection. The stipulation attached to parcels 63 and 65 states: NSO No surface occupancy is permitted (1) within the center of the Sheep Mountain Anticline ACEC (2) protection of geologic resources CSU Surface occupancy or use will be restricted or prohibited within the Northern and southern portion of the Sheep Mountain Anticline ACEC (1) unless the operator and surface managing agency arrive at an acceptable plan for mitigation of anticipated impacts; (2) as mapped on the Cody Field Office GIS database; (3) protecting Special Designations (Geologic Resources).</p> <p>This limited NSO stipulation will not ensure the ACEC’s values are protected. The plan to “mitigate” anticipated impacts is uncertain and any such mitigation should be analyzed in this NEPA process. The resource values warrant and deserve better protection than that being afforded. With low demand for resource extraction, it would be wise and proper to defer this parcel. The EA fails to adequately analyze the impacts of accessing the resources below these parcels or an alternative that would defer this parcel. Failure to conduct this analysis is arbitrary and capricious.</p>	<p>Parcels WY-1608-047 and 048 are within the Lander Field Office (LFO 2014); parcels WY-1608-063 and 065 are within the Cody Field Office (CyFO 2015). Stipulations applied to these parcels are consistent with the Approved RMPs.</p>
19	RMW/WEG	<p>Hydraulic Fracturing The EA fails to consider the impacts of hydraulically fracturing these oil and gas wells. There is not adequate analysis of wildlife impacts, seismic activity, health impacts, or many of the other known impacts of hydraulic fracturing. Around 90 percent of wells have used hydraulic fracking to get more gas flowing, according to the drilling industry. With the very high probability that this practice will occur on the specific parcels it is arbitrary and capricious of BLM to neglect</p>	<p>Beyond the scope of this document. Since development cannot be reasonably determined at the leasing stage, any site specific impacts cannot realistically be analyzed at this time. Hydraulic Fracturing is a specific development scenario. Should the parcels be sold and development proposed, an analysis of hydraulic fracturing would be completed and the impacts to resources affected will also be</p>

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		<p>this highly controversial and impactful practice in its environmental analysis.</p> <p>At a minimum, “the agency’s [Environmental Assessment] must give a realistic evaluation of the total impacts and cannot isolate a proposed project, viewing it in a vacuum.” <i>Grand Canyon Trust v. F.A.A.</i>, 290 F.3d 339, 342 (D.C. Cir. 2002). More specifically, “an environmental impact statement must analyze not only the direct impacts of a proposed action, but also the indirect and cumulative impacts.” <i>Utahns for Better Transp. v. U.S. Dep’t of Transp.</i>, 305 F.3d 1152, 1172 (10th Cir. 2002) (citing <i>Custer County Action Assoc. v. Garvey</i>, 256 F.3d 1024, 1035 (10th Cir.2001)) (internal quotation omitted); <i>see also</i> 40 C.F.R. § 1509.25(a)(2) (2009) (scope of EIS is influenced by cumulative actions and impact); <i>Greenpeace v. Nat’l Marine Fisheries Serv.</i>, 80 F. Supp. 2d 1137, 1149 (W.D. Wash. 2000) (management plans were unlawful for failing to consider cumulative impacts on species). <i>Conner v. Burford</i> holds that the inability at the lease sale stage to fully ascertain effects of development “is not a justification for failing to estimate what those effects might be.” <i>Conner v. Burford</i>, 848 F.2d 1441 (9th Cir. 1988); <i>see also Methow Valley Citizens Council</i>, 490 U.S. 332 (1989).</p> <p>Cumulative impact is defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.” 40 C.F.R. § 1508.7 (2009). The Tenth Circuit</p>	<p>analyzed under that site specific NEPA document.</p>

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		<p>recently noted that the BLM’s own Handbook for Fluid Mineral Resources recognizes that “BLM has a statutory responsibility under NEPA to analyze and document the direct, indirect and cumulative impacts of past, present and reasonably foreseeable future actions resulting from Federally authorized fluid minerals activities.” <i>Pennaco Energy Inc., v. U.S. Dep’t of Interior</i>, 377 F.3d 1147, 1160 (10th Cir. 2004).</p> <p>BLM must conduct a thorough analysis of hydraulic fracturing to comply with its NEPA responsibilities. The analysis of hydraulic fracturing should require an Environmental Impact Statement due to its significant environmental impacts that have heretofore never been analyzed in the programmatic EISs underlying oil and gas leasing in these Field Offices. The failure to analyze this anticipated future action is arbitrary and capricious.</p>	
20	RMW/WEG	<p>Conclusion Thank you for considering our comments on the August 2016 Leasing EA. For the reasons outlined in this comment BLM should consider deferring additional parcels, a broader range of alternatives and conduct further analysis about the impacts of leasing these parcels. BLM is tasked with managing its lands for multi-use and leasing within important sage-grouse habitat and ACECs violates this mandate.</p> <p>Matthew Sandler, Staff Attorney Rocky Mountain Wild, 1536 Wynkoop St., Suite 900, Denver, CO</p>	No comment necessary.

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		80202, Phone: 303-546-0214 ext. 1 Jeremy Nichols, Climate and Energy Director 1536 Wynkoop St., Suite 310, Denver, CO 80202	
21	Center for Biological Diversity (CBD)	<p>The Center for Biological Diversity writes to submit the following comments on the preliminary environmental assessment (“PEA”) of Wind River/ Bighorn Basin District Oil and Gas Lease Parcels for the August 2016 Sale.</p> <p>The Center is a non-profit environmental organization dedicated to the protection of native species and their habitats through science, policy, and environmental law. The Center also works to reduce greenhouse gas emissions to protect biological diversity, our environment, and public health. The Center has over 991,000 members and activists, including those living in Wyoming who have visited these public lands in the Wind River / Bighorn Basin planning areas for recreational, scientific, educational, and other pursuits and intend to continue to do so in the future, and are particularly interested in protecting the many native, imperiled, and sensitive species and their habitats that may be affected by the proposed oil and gas leasing.</p>	Thank you for your interest.
22	CBD	The Bureau of Land Management (“BLM”) is asking the public to review and comment on the PEA for the oil and gas lease sale of 50 parcels totaling 66,642.82 acres within the Wind River / Bighorn Basin District (“WR/BB”) that are being offered for the August 2016 Competitive Oil and Gas Lease Sale. The EA does not satisfy the requirements of the National Environmental Policy Act	If the analysis in an EA shows the action would not have a significant effect, a “Finding of No Significant Impact” (FONSI) documents that there is no need for an EIS (40 CFR 1508.13). The WR/BBD RMP EISs have already evaluated potentially significant impacts arising from the BLM’s land use

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		<p>(“NEPA”), and its proposed lease sale violates the Mineral Leasing Act (“MLA”) and the Federal Lands Policy and Management Act (“FLPMA”). BLM should produce a full Environmental Impact Statement (“EIS”) for the lease sale, and if it decides to move forward with the sale, it must require controls on natural gas emissions and reinitiate consultation with the U.S. Fish and Wildlife Service (“USFWS”) as required by the Endangered Species Act (“ESA”).</p> <p>The PEA and proposed lease sale are fatally flawed because they fail to take account of, or incorporate Resource Management Plan (RMP) mandated mitigation measures to address, impacts to the greater sage-grouse (“GRSG” in BLM documents) and its habitat. The PEA tiers to the EIS for, and asserts conformance with, the 2014 Lander Field Office Resource Management Plan and FEIS and 2015 Bighorn Basin Resource Management Plan Amendment and FEIS. The plan amendments incorporate the objective of “conserv[ing] the sage-grouse so that it is no longer in danger of extinction or likely to become in danger of extinction in the foreseeable future.” However, despite the acknowledged presence of sage-grouse and their habitat in a full 97% of the proposed lease areas, the EA fails to disclose or even discuss potential impacts to the species, fails to provide the public or the BLM with critical information regarding the impacted habitats and populations, and fails to conform to a critical objective of the RMP Amendments: to “[p]rioritize the leasing and development of fluid mineral resources outside GRSG habitat.”</p>	<p>planning decisions. See 43 CFR § 46.140(c), therefore, the BLM anticipates a “finding of no <u>new</u> significant impacts” (FONNSI).</p> <p>As stated in the introduction to DOI-BLM-WY-R000-2016-0001-EA, pursuant to 40 CFR § 1508.28 and § 1502.21, the EA tiers to and incorporates by reference the information and analysis contained in the Environmental Impact Statements (EIS), Records of Decisions (ROD) and Approved Resource Management Plans (RMP) for the Lander Field Office (LFO 2014), the Worland Field Office (WFO 2015), and the Cody Field Office (CyFO 2015); therefore, a new EIS for leasing is not necessary. These FEIS documents analyzed the effects of development on wildlife, and the specific management goals, plans, and monitoring actions are addressed in the RMPs.</p> <p>The Mineral Leasing Act of 1920, as amended [30 U.S.C. § 181 et seq.], and the Mineral Leasing Act for Acquired Lands of 1947, as amended, give the BLM responsibility for oil and gas leasing on about 564 million acres of BLM, national forest, and other federal lands, as well as State and private surface lands where mineral rights have been retained by the federal government. The BLM works to ensure that mineral resources are developed in an environmentally responsible manner.</p>

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			<p>The Lander, Worland, and Cody RMPs identified the parcels nominated for the lease sale as available for leasing. The RMPs identify leasing stipulations for application to the parcels, including stipulations for sage grouse protection.</p>
23	CBD	<p>Moreover, we are deeply concerned that new fossil fuel leasing within the WR/BB would contribute to worsening the climate crisis. To preserve any chance of averting catastrophic climate disruption, the vast majority of all <i>proven</i> fossil fuels must be kept in the ground. Opening up new areas to oil and gas exploration and unlocking new sources of greenhouse gas pollution would only fuel greater warming and contravenes BLM’s mandate to manage the public lands “without permanent impairment of the productivity of the land and the quality of the environment.” BLM should end all new leasing in the WR/BB and all other areas that it manages to limit the climate change effects of its actions; at a minimum, it should defer any such leasing until such time as it can conduct a comprehensive review of the climate consequences of its leasing activities, at the national and/or regional scale.</p>	<p>Beyond the scope of this document. There are no direct impacts to air quality or climate change through the administrative action of leasing. Should the leases be developed in the future, impacts to air quality or climate change will be analyzed through additional site and project-specific NEPA analysis, and conformance with State and Federal air quality standards and regulations will be evaluated. As new information is gathered, it will be incorporated into BLM decisions and may require conditions of approval to mitigate adverse impacts to air quality or climate change.</p>
24	CBD	<p>Exploration and development likely involves the highly controversial industry practices of hydraulic fracturing or “fracking” and horizontal drilling. As discussed further below these practices deplete enormous water resources, risk toxic spills, contaminate air, and fragment and degrade habitat for species. The extraction of fossil fuels with these</p>	<p>Beyond the scope of this document. The August 2016 Competitive Oil and Gas Lease Sale is not a regulatory action, but rather an administrative action. The act of leasing land for oil and gas development in itself does not cause hydraulically fracturing</p>

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		<p>dangerous techniques further undermines the protection of our public lands. Full compliance with the spirit and objectives of NEPA and other federal environmental laws and regulations requires BLM to avoid these dangers altogether. Therefore BLM should also ban new hydraulic fracturing and other unconventional well stimulation activities in the planning area.</p> <p>At the very least, BLM must fully address these issues in an Environmental Impact Statement (“EIS”) and in an amended Resource Management Plan (“RMP”). The current WR/BB September 2015 RMP does not address the relatively new and dangerous extraction methods of fracking and horizontal drilling, or the increased seismic risks from such extraction methods. Nor does it include adequate analyses of the impacts that potential greenhouse gas (“GHG”) emissions of federal fossil fuels (leased and unleased) have on the environment. BLM must fully analyze the public health, environmental justice, and industrialization impacts of unconventional fossil fuel extraction and especially hydraulic fracturing across the entire WR/BB planning area.</p> <p>For the reasons set forth in this letter, we insist that BLM: (1) cease all new leasing of fossil fuels in the planning area, including oil and natural gas; or, at a minimum (2) defer the proposed August 2016 Sale pending a programmatic review of all U.S. fossil fuel leasing which must consider “keep it in the ground” and “no fracking” plan amendments (“no-leasing-no- fracking”). Should BLM proceed with the sale, BLM must: (1) initiate formal consultation with the Fish and Wildlife Service, as required by the Endangered Species Act (“ESA”); and (2) prepare a full EIS for the proposed lease sale in consideration</p>	<p>and/or horizontal drilling to occur.</p> <p>Since development cannot be reasonably determined at the leasing stage, any site specific impacts cannot realistically be analyzed at this time. Hydraulic fracturing and/or horizontal drilling are specific development scenarios. Should the parcels be sold and development proposed, an analysis of hydraulic fracturing and/or horizontal drilling would be completed and the impacts to resources affected will also be analyzed under that site specific NEPA document.</p> <p>Under current law and regulation, the State of Wyoming requires and regulates hydraulic fracturing under Wyoming Oil and Gas Regulation, Ch. 3, Section 45 (September 2010): ‘Approval must be sought to acidize, cleanout, flush, fracture, or stimulate a well. The sundry notice must include depth to perforations or the openhole interval, the source of water and/or trade name of fluids, type of proppants, as well as estimated pump pressures.’</p>

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		<p>of significant unexamined impacts from the consequences of leasing. Any such EIS must consider a full range of alternatives, including an alternative that bans new hydraulic fracturing and other unconventional well stimulation activities, and require strict controls on natural gas emissions and leakage.</p> <p>The Dangers of Hydraulic Fracking and Horizontal Drilling</p> <p>NEPA regulations and case law require that BLM evaluate all “reasonably foreseeable” direct and indirect effects of its leasing. 40 C.F.R. § 1508.8; <i>Davis v. Coleman</i>, 521 F.2d 661, 676 (9th Cir. 1975); <i>Center for Biological Diversity (“CBD”) v. Bureau of Land Management</i>, 937 F. Supp. 2d 1140 (N.D. Cal. 2013) (holding that oil and gas leases were issued in violation of NEPA where BLM failed to prepare an EIS and unreasonably concluded that the leases would have no significant environmental impact because the agency failed to take into account all reasonably foreseeable development under the leases).</p> <p>The proposed leasing action is part of a dramatic recent increase in oil and gas leasing in the areas at issue, and reflects increased industry interest in developing Wyoming’s fossil fuel resources. The entire basis for this surge of interest is the possibility that hydraulic fracturing and other advanced recovery techniques will allow the profitable exploitation of geologic formations previously perceived as insufficiently valuable for development. The EA cannot ignore the demonstrated likelihood of use of hydraulic fracturing and/or other unconventional recovery techniques within the WR/BB. Elements of these technologies have been used individually for decades. However, the combination of practices employed by industry recently is new: “Modern formation stimulation</p>	

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		<p>practices have become more complex and the process has developed into a sophisticated, engineered process in which production companies strive to design a hydraulic fracturing treatment to emplace fracture networks in specific areas.” Hydraulic fracturing brings with it all of the harms to water quality, air quality, the climate, species, and communities associated with traditional oil and gas development, but also brings increased risks in many areas. An adequate analysis of the consequences of this practice, prior to irrevocable consequences, is therefore required at the leasing stage.</p> <p>Hydraulic fracturing, a dangerous practice in which operators inject toxic fluid underground under extreme pressure to release oil and gas, has greatly increased industry interest in developing tightly held oil and gas deposits such as those in the proposed lease area. The first aspect of this technique is the hydraulic fracturing of the rock. When the rock is fractured, the resulting cracks in the rock serve as passages through which gas and liquids can flow, increasing the permeability of the fractured area. To fracture the rock, the well operator injects hydraulic fracturing fluid at tremendous pressure. The composition of fracturing fluid has changed over time. Halliburton developed the practice of injecting fluids into wells under high pressure in the late 1940s; however, companies now use permutations of “slick-water” fracturing fluid developed in the mid-1990s. The main ingredient in modern fracturing fluid (or “frack fluid”) is generally water, although liquefied petroleum has also been used as a base fluid for modern fracking. The second ingredient is a “proppant,” typically sand, that becomes wedged in the fractures and holds them open so that passages remain after pressure is relieved. In addition to the base fluid and proppant, a mixture of chemicals are used, for purposes such as increasing the viscosity of the fluid, keeping proppants suspended, impeding bacterial growth or mineral deposition.</p>	

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		<p>Frack fluid is hazardous to human health, although industry’s resistance to disclosing the full list of ingredients formulation of frack fluid makes it difficult for the public to know exactly how dangerous. A congressional report sampling incomplete industry self-reports found that “[t]he oil and gas service companies used hydraulic fracturing products containing 29 chemicals that are (1) known or possible human carcinogens, (2) regulated under the Safe Drinking Water Act for their risks to human health, or (3) listed as hazardous air pollutants under the Clean Air Act.” Recently published scientific papers also describe the harmfulness of the chemicals often in fracking fluid. One study reviewed a list of 944 fracking fluid products containing 632 chemicals, 353 of which could be identified with Chemical Abstract Service numbers. The study concluded that more than 75 percent of the chemicals could affect the skin, eyes, and other sensory organs, and the respiratory and gastrointestinal systems; approximately 40 to 50 percent could affect the brain/nervous system, immune and cardiovascular systems, and the kidneys; 37 percent could affect the endocrine system; and 25 percent could cause cancer and mutations.</p> <p>The impacts associated with the fracking-induced oil and gas development boom has caused some jurisdictions to place a moratorium or ban on fracking. For instance, in 2011 France became the first country to ban the practice. In May, Vermont became the first state to ban fracking. Vermont’s governor called the ban “a big deal” and stated that the bill “will ensure that we do not inject chemicals into groundwater in a desperate pursuit for energy.” New York State halted fracking within its borders in 2008, continued the moratorium in 2014 and banned the practice in 2015. The state’s seven-year review concluded that fracking posed risks to land, water, natural resources and public health. Also, New</p>	

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		<p>Jersey’s legislature recently passed a bill that would prevent fracking waste, like toxic wastewater and drill cuttings, from entering its borders, and Pennsylvania, ground zero for the fracking debate, has banned “natural-gas exploration across a swath of suburban Philadelphia” Numerous cities and communities, like Buffalo, Pittsburgh, Raleigh, Woodstock, and Morgantown have banned fracking.</p> <p>Separate from hydraulic fracturing, the second technological development underlying the recent shale boom is the use of horizontal drilling. Shale oil and shale gas formations are typically located far below the surface, and as such, the cost of drilling a vertical well to access the layer is high. The shale formation itself is typically a thin layer; however, such that a vertical well only provides access to a small volume of shale—the cylinder of permeability surrounding the well bore. Although hydraulic fracturing increases the radius of this cylinder of shale, this effect is often itself insufficient to allow profitable extraction of shale resources. Horizontal drilling solves this economic problem: by drilling sideways along the shale formation once it is reached, a company can extract resources from a much higher volume of shale for the same amount of drilling through the overburden, drastically increasing the fraction of total well length that passes through producing zones. The practice of combining horizontal drilling with hydraulic fracturing was developed in the early 1990s.</p> <p>A third technological development is the use of “multi-stage” fracking. In the 1990s industry began drilling longer and longer horizontal well segments. The difficulty of hydraulic fracturing increases with the length of the well bore to be fractured, however, both because longer well segments are more likely to pass through varied conditions in the rock and because it becomes difficult to create the high pressures required in a</p>	

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		<p>larger volume. In 2002 industry began to address these problems by employing multi-stage fracking. In multi-stage fracking, the operator treats only part of the wellbore at a time, typically 300 to 500 feet. Each stage “may require 300,000 to 600,000 gallons of water,” and consequently, a frack job that is two or more stages can contaminate and pump into the ground over a million gallons of water.</p> <p>Notwithstanding the grave impacts that these practices have on the environment, this new combination of multi-stage slickwater hydraulic fracturing and horizontal drilling has made it possible to profitably extract oil and gas from formations that only a few years ago were generally viewed as uneconomical to develop. The effect of hydraulic fracturing on the oil and gas markets has been tremendous, with many reports documenting the boom in domestic energy production. A recent congressional report notes that “[a]s a result of hydraulic fracturing and advances in horizontal drilling technology, natural gas production in 2010 reached the highest level in decades.” A 2011 U.S. EIA report notes how recently these changes have occurred, stating that “only in the past 5 years has shale gas been recognized as a ‘game changer’ for the U.S. natural gas market.” With respect to oil, the EIA notes that oil production has been increasing, with the production of shale oil resources pushing levels even higher over the next decade:</p> <p>Domestic crude oil production has increased over the past few years, reversing a decline that began in 1986. U.S. crude oil production increased from 5.0 million barrels per day in 2008 to 5.5 million barrels per day in 2010. Over the next 10 years, continued development of tight oil, in combination with the ongoing development of offshore resources in the Gulf of Mexico, pushes domestic crude oil production higher.</p>	

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		<p>Thus, it is evident that fracking, including fracking with the most recent techniques that have been associated with serious adverse impacts in other areas of the country, is poised to expand; it is further evident that the oil and gas industry is still exploring new locations to develop, and the nation has not yet seen the full extent of fracking’s impact on oil and gas development and production.</p> <p>In large part through the use of fracking, the oil and gas sector is now producing huge amounts of oil and gas throughout the United States, rapidly transforming the domestic energy outlook. Fracking is occurring in the absence of any adequate federal or state oversight. The current informational and regulatory void on the state level makes it even more critical that the BLM perform its legal obligations to review, analyze, disclose, and avoid and mitigate the impacts of its oil and gas leasing decisions.</p> <p>The PEA makes no mention of hydraulic fracturing, horizontal drilling, or unconventional gas and oil. The Center’s review of this material finds the PEA is severely deficient for purposes of the intended function of an environmental assessment, which is to determine whether or not a proposed action may have significant effects on the human environment. The PEA contains no discussion whatsoever of the impact of fracking on specific geological formations, surface and ground water resources, seismic potential, or human, animal, and plant health and safety concerns present in the area to be leased.</p>	
25	CBD	<p>II. BLM Must Cancel the Lease Sale and Halt All New Leasing Until It Properly Considers the Climate Change Effects of New Leasing and Fracking</p> <p>Climate change is a problem of global proportions resulting from the</p>	<p>Beyond the scope of this document. The August 2016 Competitive Oil and Gas Lease Sale is not a regulatory action, but rather an administrative action. There are no direct impacts to air quality or climate</p>

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		<p>cumulative greenhouse gas emissions of countless individual sources, which cannot simply be addressed on a project-by-project basis and for making such land management decisions. A comprehensive look at the impacts of fossil fuel extraction, and especially fracking, across all of the planning areas affected by the leases in updated RMPs is absolutely necessary. BLM has <i>never</i> thoroughly considered the cumulative climate change impacts of <i>all</i> potential fossil fuel extraction and fracking (1) within each of the Wyoming planning areas, (2) across all of these states, and (3) across all public lands. Proceeding with new leasing proposals <i>ad hoc</i> in the absence of a comprehensive plan that addresses climate change and fracking is premature and risks irreversible damage before the agency and public have had the opportunity to weigh the full costs of oil and gas and other fossil fuel extraction and consider necessary limits on such activities. Therefore BLM must cease all new leasing at least until the issue is adequately analyzed in a programmatic review of all U.S. fossil fuel leasing, or at least within amended RMPs.</p> <p>1) BLM Must Limit Greenhouse Gas Emissions By Keeping Federal Fossil Fuels In the Ground Expansion of fossil fuel production will substantially increase the volume of greenhouse gases emitted into the atmosphere and jeopardize the environment and the health and well being of future generations. BLM’s mandate to ensure “harmonious and coordinated management of the various resources <i>without permanent impairment of the productivity of the land and the quality of the environment</i>” requires BLM to limit the climate change effects of its actions. Keeping all unleased fossil fuels in the ground and banning fracking and other unconventional well stimulation methods would lock away millions of tons of greenhouse gas pollution and limit the destructive effects of these practices.</p>	<p>change through the administrative action of leasing. Should the leases be developed in the future, impacts to air quality or climate change will be analyzed through additional site and project-specific NEPA analysis, and conformance with State and Federal air quality standards and regulations will be evaluated. As new information is gathered, it will be incorporated into BLM decisions and may require conditions of approval to mitigate adverse impacts to air quality or climate change.</p> <p>A discussion of Air Quality and Climate Change have been addressed in the EA in part 3.4.5.</p>

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		<p>A ban on new fossil fuel leasing and fracking is necessary to meet the U.S.'s greenhouse gas reduction commitments. On December 12, 2015, 197 nation-state and supra-national organization parties meeting in Paris at the 2015 United Nations Framework Convention on Climate Change Conference of the Parties consented to an agreement (Paris Agreement), committing its parties to take action so as to avoid dangerous climate change. As the Paris Agreement opens for signature in April 2016 and the United States is expected to sign the treaty as a legally binding instrument through executive agreement, the Paris Agreement commits the United States to critical goals—both binding and aspirational—that mandate bold action on the United States' domestic policy to rapidly reduce greenhouse gas emissions.</p> <p>The United States and other parties to the Paris Agreement recognized “the need for an effective and progressive response to the urgent threat of climate change on the basis of the best available scientific knowledge.” The Paris Agreement articulates the practical steps necessary to obtain its goals: parties including the United States have to “reach global peaking of greenhouse gas emissions <i>as soon as possible</i> . . . and to <i>undertake rapid reductions</i> thereafter in accordance <i>with best available science</i>,” imperatively commanding that developed countries specifically “should continue taking the lead by undertaking economy-wide absolute emission reduction targets” and that such actions reflect the “highest possible ambition.”</p> <p>The Paris Agreement codifies the international consensus that climate change is an “urgent threat” of global concern, and commits all signatories to achieving a set of global goals. Importantly, the Paris Agreement commits all signatories to an articulated target to hold the long-term global average temperature “to <i>well below</i> 2°C above pre-</p>	

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		<p>industrial levels and to <i>pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels</i>” (emphasis added).</p> <p>In light of the severe threats posed by even limited global warming, the Paris Agreement established the international goal of limiting global warming to 1.5°C above pre-industrial levels in order to “prevent dangerous anthropogenic interference with the climate system,” as set forth in the UNFCCC, a treaty which the United States has ratified and to which it is bound. The Paris consensus on a 1.5°C warming goal reflects the findings of the IPCC and numerous scientific studies that indicate that 2°C warming would exceed thresholds for severe, extremely dangerous, and potentially irreversible impacts. Those impacts include increased global food and water insecurity, the inundation of coastal regions and small island nations by sea level rise and increasing storm surge, complete loss of Arctic summer sea ice, irreversible melting of the Greenland ice sheet, increased extinction risk for at least 20-30% of species on Earth, dieback of the Amazon rainforest, and “rapid and terminal” declines of coral reefs worldwide. As scientists noted, the impacts associated with 2°C temperature rise have been “revised upwards, sufficiently so that 2°C now more appropriately represents the threshold between ‘dangerous’ and ‘extremely dangerous’ climate change.” Consequently, a target of 1.5 °C or less temperature rise is now seen as essential to avoid dangerous climate change and has largely supplanted the 2°C target that had been the focus of most climate literature until recently.</p> <p>Immediate and aggressive greenhouse gas emissions reductions are necessary to keep warming below a 1.5° or 2°C rise above pre-industrial levels. Put simply, there is only a finite amount of CO₂ that can be released into the atmosphere without rendering the goal of meeting the 1.5°C target virtually impossible. A slightly larger amount could be</p>	

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		<p>burned before meeting a 2°C became an impossibility. Globally, fossil fuel reserves, if all were extracted and burned, would release enough CO₂ to exceed this limit several times over.</p> <p>The question of what amount of fossil fuels can be extracted and burned without negating a realistic chance of meeting a 1.5 or 2°C target is relatively easy to answer, even if the answer is framed in probabilities and ranges. The IPCC Fifth Assessment Report and other expert assessments have established global carbon budgets, or the total amount of remaining carbon that can be burned while maintain some probability of staying below a given temperature target. According to the IPCC, total cumulative anthropogenic emissions of CO₂ must remain below about 1,000 gigatonnes (GtCO₂) from 2011 onward for a 66% probability of limiting warming to 2°C above pre-industrial levels. Given more than 100 GtCO₂ have been emitted since 2011, the remaining portion of the budget under this scenario is well below 900 GtCO₂. To have an 80% probability of staying below the 2°C target, the budget from 2000 is 890 GtCO₂, with less than 430 GtCO₂ remaining.</p> <p>To have even a 50% probability of achieving the Paris Agreement goal of limiting warming to 1.5°C above pre-industrial levels equates to a carbon budget of 550-600 GtCO₂ from 2011 onward, of which more than 100 GtCO₂ has already been emitted. To achieve a 66% probability of limiting warming to 1.5°C requires adherence to a more stringent carbon budget of only 400 GtCO₂ from 2011 onward, of which less than 300 GtCO₂ remained at the start of 2015. An 80% probability budget for 1.5°C would have far less that 300 GtCO₂ remaining. Given that global CO₂ emissions in 2014 alone totaled 36 GtCO₂, humanity is rapidly</p>	

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		<p>consuming the remaining burnable carbon budget needed to have even a 50/50 chance of meeting the 1.5°C temperature goal.</p> <p>According to a recent report by EcoShift Consulting commissioned by the Center and Friends of the Earth, unleased federal fossil fuels represent a significant source of potential greenhouse gas emissions:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Potential GHG emissions of federal fossil fuels (leased and unleased) if developed would release up to 492 gigatons (Gt) (one gigaton equals 1 billion tons) of carbon dioxide equivalent pollution (CO₂e); representing 46 percent to 50 percent of potential emissions from all remaining U.S. fossil fuels. <input type="checkbox"/> Of that amount, up to 450 Gt CO₂e have not yet been leased to private industry for extraction; <input type="checkbox"/> Releasing those 450 Gt CO₂e (the equivalent annual pollution of more than 118,000 coal- fired power plants) would be greater than any proposed U.S. share of global carbon limits that would keep emissions below scientifically advised levels. <p>Fracking has also opened up vast reserves that otherwise would not be available, increasing the potential greenhouse gas emissions that can be released into the atmosphere. BLM must consider a ban on this dangerous practice and a ban on new leasing to prevent the worst effects of climate change.</p> <p>2) BLM Must Consider A Ban on New Oil and Gas Leasing and Fracking in a Programmatic Review and Halt All New Leasing and Fracking in the Meantime</p> <p>Development of unleased oil and gas resources will fuel climate</p>	

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		<p>disruption and undercut the needed transition to a clean energy economy. As BLM has not yet had a chance to consider no leasing and no-fracking alternatives as part of any of its RMP planning processes or a comprehensive review of its federal oil and gas leasing program, BLM should suspend new leasing until it properly considers this alternative in updated RMPs or a programmatic EIS for the entire leasing program. BLM would be remiss to continue leasing when it has never stepped back and taken a hard look at this problem at the programmatic scale. Before allowing more oil and gas extraction in the planning area, BLM must: (1) comprehensively analyze the total greenhouse gas emissions which result from past, present, and potential future fossil fuel leasing and all other activities across all BLM lands and within the various planning areas at issue here, (2) consider their cumulative significance in the context of global climate change, carbon budgets, and other greenhouse gas pollution sources outside BLM lands and the planning area, and (3) formulate measures that avoid or limit their climate change effects. By continuing leasing and allowing new fracking in the absence of any overall plan addressing climate change BLM is effectively burying its head in the sand.</p> <p>A programmatic review and moratorium on new leasing would be consistent with the Secretary of Interior’s recent order to conduct a comprehensive, programmatic EIS (PEIS) on its coal leasing program, in light of the need to take into account the program’s impacts on climate change, among other issues, and “the lack of any recent analysis of the Federal coal program as a whole.” <i>See</i> Secretary of Interior, Order No. 3338, § 4 (Jan. 15, 2016). Specifically, the Secretary directed that the PEIS “should examine how best to assess the climate impacts of continued Federal coal production and combustion and how to address those impacts in the management of the program to meet both the Nation's</p>	

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		energy needs and its climate goals, as well as how best to protect the public lands from climate change impacts.” <i>Id.</i> § 4(c).	
26	CBD	<p>The Secretary also ordered a moratorium on new coal leasing while such a review is being conducted. The Secretary reasoned:</p> <p>Lease sales and lease modifications result in lease terms of 20 years and for so long thereafter as coal is produced in commercial quantities. Continuing to conduct lease sales or approve lease modifications during this programmatic review risks locking in for decades the future development of large quantities of coal under current rates and terms that the PEIS may ultimately determine to be less than optimal. This risk is why, during the previous two programmatic reviews, the Department halted most lease sales with limited exceptions.... Considering these factors and given the extensive recoverable reserves of Federal coal currently under lease, I have decided that a similar policy is warranted here. A pause on leasing, with limited exceptions, will allow future leasing decisions to benefit from the recommendations that result from the PEIS while minimizing any economic hardship during that review.</p> <p>The Secretary’s reasoning is also apt here. A programmatic review assessing the climate change effects of public fossil fuels is long overdue. And there is no shortage of oil and gas that would preclude a moratorium while such a review is conducted, as evidenced by very low natural oil and gas prices. More importantly, BLM should not “risk[] locking in for decades the future development of large quantities of [fossil fuels] under current...terms that a [programmatic review] may ultimately determine to be less than optimal.” <i>Id.</i> BLM should cancel the sale and halt all new leasing and fracking until a programmatic review is completed.</p>	<p>No comment necessary. The WR/BBD does not have nor anticipate having coal leases.</p> <p>The preparation of this leasing EA was done in compliance with all Federal rules, regulations, and laws. The commenter’s desire for national guidance is outside the scope of this EA and is a policy issue, not a NEPA issue.</p>

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27	CBD	<p>III. BLM Has Violated the National Environmental Policy Act</p> <p>BLM’s EA fails to comply with the National Environmental Policy Act (“NEPA”) because its analysis of environmental impacts fails to take a “hard look” at foreseeable impacts, arbitrarily refuses to consider relevant issues; and capriciously declines to prepare an environmental impact statement (“EIS”) despite potentially significant impacts. The PEA does not provide <i>any</i> site-specific analyses of the foreseeable impacts that this sale would have (on air, climate change, soil, water, sensitive species, public health and safety). Instead the PEA tiers to various RMPs and the associated EIS. BLM attempts to defer the required analysis to the APD stage, which is improper. Another reason for these failures to comply with federal regulations, is that the agency has arbitrarily and capriciously restricted, in its analysis, the amount of activity that could result from the lease sale.</p> <p>1) Overview NEPA demands that a federal agency prepare an EIS before taking a “major [f]ederal action[] significantly affecting the quality’ of the environment.” <i>Kern v. U.S. Bureau of Land Mgmt.</i>, 284 F.3d 1062, 1067 (9th Cir. 2002). In order to determine whether a project’s impacts may be “significant,” an agency may first prepare an EA. 40 C.F.R. §§ 1501.4, 1508.9. If the EA reveals that “the agency’s action may have a significant effect upon the . . . environment, an EIS must be prepared.” <i>Nat’l Parks & Conservation Ass’n v. Babbitt</i>, 241 F.3d 722, 730 (9th Cir. 2001) (internal quotations omitted). If the agency determines that no significant impacts are possible, it must still <i>adequately</i> explain its decision by supplying a “convincing statement of reasons” why the action’s effects are insignificant. <i>Blue Mountains Biodiversity Project v. Blackwood</i>, 161 F.3d 1208, 1212 (9th Cir. 1998) (emphasis added). Further, an agency</p>	<p>As stated in the introduction to DOI-BLM-WY-R000-2016-0001-EA, pursuant to 40 CFR § 1508.28 and § 1502.21, the EA tiers to and incorporates by reference the information and analysis contained in the Environmental Impact Statements (EIS), Records of Decisions (ROD) and Approved Resource Management Plans (RMP) for the Lander Field Office (LFO 2014), the Worland Field Office (WFO 2015), and the Cody Field Office (CyFO 2015); therefore, a new EIS for leasing is not necessary.</p> <p>All parcels for the August 2016 Competitive Oil and Gas Lease Sale are in conformance with the existing land use plans as required by 43 CFR 1610.5, and the August 2016 DOI-BLM-WY-R000-2016-0001-EA has adequately analyzed the issues raised by this comment. Site specific NEPA analysis will occur at the development stage that will analyze resource conflicts and identify mitigation for specific impacts.</p> <p>In accordance with IM 2004-110, Change 1 and Lease Notice No. 3 any new standards/mitigation/stipulations coming forth from that process can be applied to post-lease actions (i.e., APDs, Sundry Notices, Rights-of-Way, etc.).</p> <p>In accordance with H-1624-1 – Planning For Fluid Mineral Resources Rel. 1-1749, 1/28/2013: The Federal Government retains certain rights when</p>

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		<p>must prepare all environmental analyses required by NEPA at “the earliest possible time.” 40 C.F.R. § 1501.2. “NEPA is not designed to postpone analysis of an environmental consequence to the last possible moment,” but is “designed to require such analysis as soon as it can reasonably be done.” <i>Kern</i>, 284 F.3d at 1072.</p> <p>2) BLM Unlawfully Restricted Its Analysis BLM has unlawfully restricted its NEPA analysis by failing to analyze sufficiently site- specific impacts. Instead, the PEA impermissibly defers analysis of all site-specific impacts to the APD (Applications for Permit to Drill) stage. However, if a lease is sold, the lessee acquires certain contractual rights constraining BLM authority. For example, according to 43 CFR § 3101.1-2, once a lease is issued to its owner, that owner has the “right to use as much of the lease lands as is necessary to explore for, drill for, mine, extract, remove and dispose of the leased resource in the leasehold” subject to specific nondiscretionary statutes and lease stipulations. Furthermore, piecemeal analyses of individual lease sales do not provide the appropriate perspective for examining the cumulative effects of hydraulic fracturing and climate change impacts at the regional and landscape scale and for making land management decisions.</p> <p>NEPA requires that an agency conduct all environmental analyses at “the earliest possible time.” 40 C.F.R. § 1501.2; <i>see also N. Alaska Env'tl. Ctr. v. Kempthorne</i>, 457 F.3d 969, 973, 977- 78 (9th Cir. 2006); <i>N.M. ex rel. Richardson v. Bureau of Land Mgmt.</i>, 565 F.3d 683, 718 (10th Cir. 2009). In <i>Richardson</i>, the Tenth Circuit specifically found “issuing an oil and gas lease with a [No Surface Occupancy] stipulation constitutes” an irrevocable commitment of resources. 565 F.3d at 718. Under this decision, and the terms of the BLM’s own NEPA Handbook, the consequences of conveying the right to surface disturbance must be</p>	<p>issuing an oil and gas lease. While the BLM may not unilaterally add a new stipulation to an existing lease that it has already issued, the BLM can subject development of existing leases to reasonable conditions, as necessary, through the application of Conditions of Approval at the time of permitting. The new constraints must be consistent with the applicable land use plan and not in conflict with rights granted to the holder under the lease. The Interior Board of Land Appeals has made clear that, when making a decision regarding discrete surface-disturbing oil and gas development activities following site-specific environmental review, the BLM has the authority to impose reasonable protective measures not otherwise provided for in lease stipulations, to minimize adverse impacts on other resource values. See 30 U.S.C. §226(g); 43 CFR 3101.1-2. See <i>Yates Petroleum Corp.</i>, 176 IBLA 144 (2008); <i>National Wildlife Federation</i>, 169 IBLA 146, 164 (2006).</p> <p>Since development cannot be reasonably determined at the leasing stage, any site specific impacts cannot realistically be analyzed at this time. Hydraulic fracturing, fluid injection, and horizontal drilling are specific development scenarios. Should the parcels be sold and development proposed, an analysis of drilling and completion methods would be completed and the impacts to resources affected would also be</p>

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		<p>analyzed now, when the BLM still has the right to prohibit or regulate comprehensively the scope of surface activity. Here, this means that BLM must make reasonable effort to anticipate and analyze all reasonably foreseeable impacts now, before it has leased the land and is unable to prevent environmental impacts.</p> <p>3) BLM’s PEA Fails to Take a Hard Look at Potential Impacts from the Lease Sale, Oil and Gas Development, and the Use of Hydraulic Fracking Technologies NEPA establishes “action-forcing” procedures that require agencies to take a “hard look” at environmental consequences.” <i>Ctr. for Biological Diversity v. United States DOI</i>, 623 F.3d 633, 642 (9th Cir. 2010). Chief among these procedures is the preparation of an environmental impact statement (“EIS”). <i>Id.</i> As demonstrated by the agency’s generic and meager discussion of potential problems that could result from fracking and its failure to analyze the actual impacts of the lease sale, BLM’s PEA fails to take the requisite hard look at environmental impacts.</p> <p>A. BLM Failed to Adequately Disclose or Analyze the Project’s Impacts to Water Resources Oil and gas activities pose significant danger to water resources. This includes harms that are common to oil and gas operations in general, and damages fracking in particular can cause. While much remains to be learned about fracking, it is clear that the practice poses serious threats to water resources. Across the U.S., in states where fracking or other types of unconventional oil and gas recovery has occurred, surface water and groundwater have been contaminated. Recent studies have concluded that water contamination attributed to unconventional oil and gas activity has occurred in several states, including Colorado, Wyoming, Texas, Pennsylvania, Ohio, and West Virginia.</p>	<p>analyzed under that site specific NEPA document.</p> <p>Beyond the scope of this document. The August 2016 Competitive Oil and Gas Lease Sale is not a regulatory action, but rather an administrative action. There are no direct impacts to water depletion or sensitive species dependent on water through the administrative action of leasing. Indirect effects from leasing may occur to water if development were to occur. At the time of a site-specific application, such as an APD, surface and subsurface water resources, including special status species, will be identified, evaluated, and conditions of approval to mitigate adverse impacts to the water related resources may be imposed at that time.</p>

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		<p>BLM appears to assume that it does not have to consider all site-specific impacts because it has authority to prevent oil and gas activities later at the APD stage. That belief is incorrect. The lease sale could result in impacts that BLM will not be able to avoid once the lease sale is finalized because the agency’s ability to prevent lessees from engaging in lawful activities on issued leases will be limited. BLM regulations provide that lessees “have the right to use so much of the leased lands as is necessary to explore for, drill for, mine, extract, remove and dispose of all the leased resource in a leasehold subject to” limited conditions, including lease stipulations, “specific, nondiscretionary statutes,” and limited “reasonable measures” that do not preclude all development activities. 43 C.F.R. § 3101.1-2.</p> <p>The likelihood that the sale will result in fracking raises several issues that BLM must address:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Where will the water come from and what are the impacts of extracting it? <input type="checkbox"/> What chemicals will be used in the drilling and fracking process? <input type="checkbox"/> How will BLM ensure the collection and disclosure of that information? <input type="checkbox"/> What limitations will BLM place on the chemicals used in order to protect public health and the environment? <input type="checkbox"/> What measures will BLM require to ensure adequate monitoring of water impacts, both during and after drilling? <input type="checkbox"/> What baseline data is available to ensure that monitoring of impacts can be carried out effectively? How will BLM collect baseline data that is not currently available? <input type="checkbox"/> Much of the fracking fluid return to the surface as toxic waste. Where will the discharge go? 	

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		<input type="checkbox"/> Is there the potential for subsurface migration of fracking fluids, or the potential for those fluids to escape into the groundwater by way of a faulty casing? <input type="checkbox"/> What kinds of treatment will be required? <input type="checkbox"/> What is the potential footprint and impact of the necessary treatment facilities?	
28	CBD	<p>The PEA’s discussion of potential impacts to water resources fails to adequately and specifically address significant issues that are likely to arise from the sale, thereby violating the requirements of NEPA. BLM must at the very least prepare a full EIS that addresses the following issues.</p> <p><i>1. Surface Water Contamination</i> Surface waters can be contaminated in many ways from unconventional well stimulation. In addition to storm water runoff, surface water contamination may also occur from chemical and waste transport, chemical storage leaks, and breaches in pit liners. The spilling or leaking of fracking fluids, flowback, or produced water is a serious problem. Harmful chemicals present in these fluids can include volatile organic compounds (“VOCs”), such as benzene, toluene, xylenes, and acetone. As much as 25 percent of fracking chemicals are carcinogens, and flowback can even be radioactive. As described below, contaminated surface water can result in many adverse effects to wildlife, agriculture, and human health and safety. It may make waters unsafe for drinking, fishing, swimming and other activities, and may be infeasible to restore the original water quality once surface water is contaminated. BLM should consider this analysis in the EIS.</p> <p>i. Chemical and Waste Transport</p>	<p>As stated in the introduction to DOI-BLM-WY-R000-2016-0001-EA, pursuant to 40 CFR § 1508.28 and § 1502.21, the EA tiers to and incorporates by reference the information and analysis contained in the Environmental Impact Statements (EIS), Records of Decisions (ROD) and Approved Resource Management Plans (RMP) for the Lander Field Office (LFO 2014), the Worland Field Office (WFO 2015), and the Cody Field Office (CyFO 2015); therefore, a new EIS for leasing is not necessary.</p> <p>Surface and subsurface water is addressed in the August 2016 leasing DOI-BLM-WY-R000-2016-0001-EA at 3.7.2, which tiers to Lander FEIS Section 4.1.3, and the Bighorn Basin FEIS 4.1.4. Additional water protections occur throughout the ROD when the water protection is secondary to another resource, such as management of fisheries habitat to improve and enhance its value through the implementation of management practices such as vegetation manipulation and planting, installing sediment and erosion control structures, fencing, and acquiring,</p>

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		<p>Massive volumes of chemicals and wastewater used or produced in oil and gas operations have the potential to contaminate local watersheds. Between 2,600 to 18,000 gallons of chemicals are injected per hydraulically fracked well depending on the number of chemicals injected.</p> <p>Several billions of gallons of wastewater are produced by oil and gas production per year. Onshore oil and gas operations in the United States create about 56 million barrels of produced water <i>per day</i>. California wells, for instance, produced roughly 3 billion barrels of wastewater in 2013, which is about 15 times the amount of oil the state produced. Approximately 2,019 billion gallons of wastewater are produced by oil and gas production per year in Colorado. This waste can reach fresh water aquifers and drinking water.</p> <p>Fluids must be transported to and/or from the well, which presents opportunities for spills. Unconventional well stimulation relies on numerous trucks to transport chemicals to the site as well as collect and carry disposal fluid from the site to processing facilities. A U.S. GAO study found that up to 1,365 truck loads can be required just for the drilling and fracturing of a single well pad while the New York Department of Conservation estimated the number of “heavy truck” trips to be about 3,950 per horizontal well (including unloaded and loaded trucks). Accidents during transit may cause leaks and spills that result in the transported chemicals and fluids reaching surface waters. Chemicals and waste transported by pipeline can also leak or spill. There are also multiple reports of truckers dumping waste uncontained into the environment.</p> <p>Produced waters that fracking operations force to the surface from deep</p>	<p>developing, and maintaining water sources, in WFO Decision 4055 and CyFO Decision 4056. This management for fish habitat secondarily benefits water resources or reduces adverse impacts to water resources. Also reference CyFO/WFO Appendix F. Wyoming Bureau of Land Management Mitigation Guidelines for Surface-Disturbing and Disruptive Activities.</p> <p>Parcels offered for sale are subject to the stipulations shown in Attachment 1, which includes the protection of perennial surface waters, riparian-wetland areas, playas, water, disturbance within 500 feet perennial surface water, and protection of riparian habitat supporting special status fish species. Further protections are implemented through Lease Stipulation No. 2</p> <p>Beyond the scope of this document. The August 2016 Competitive Oil and Gas Lease Sale is not a regulatory action, but rather an administrative action. The act of leasing land for oil and gas development in itself does not cause resource damage or contamination. All parcels for the August 2016 Competitive Oil and Gas Lease Sale are in conformance with the existing land use plans as required by 43 CFR 1610.5, and the August 2016 DOI-BLM-WY-R000-2016-0001-EA has adequately analyzed the issues raised by this</p>

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		<p>underground can contain high levels of total dissolved solids, salts, metals, and naturally occurring radioactive materials. If spilled, the effects of produced water or brine can be more severe and longer- lasting than oil spills, because salts do not biodegrade or break down over time. The only way to deal with them is to remove them. Flowback waters (i.e., fracturing fluids that return to the surface) may also contain similar constituents along with fracturing fluid additives such as surfactants and hydrocarbons. Given the massive volumes of chemicals and wastewater produced and their potentially harmful constituents, and their persistence in the environment, the potential for environmental disaster is real.</p> <p>The EIS should evaluate how often accidents can be expected to occur, and the effect of chemical and fluid spills. Such analysis should also include identification of the particular harms faced by communities near oil and gas fields. The EIS must include specific mitigation measures and alternatives based on a cumulative impacts assessment, and the particular vulnerabilities of environmental justice communities in both urban and rural settings.</p> <p>ii. On-site Chemical Storage and Processing</p> <p>Thousands of gallons of chemicals can be potentially stored on-site and used during hydraulic fracturing and other unconventional well stimulation activities. These chemicals can be susceptible to accidental spills and leaks. Natural occurrences such as storms and earthquakes may cause accidents, as can negligent operator practices.</p> <p>Some sites may also use on-site wastewater treatment facilities. Improper use or maintenance of the processing equipment used for these facilities may result in discharges of contaminants. Other spill causes include</p>	<p>comment. Site specific NEPA analysis will occur at the development stage that will analyze resource conflicts and identify mitigation for specific impacts.</p>

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		<p>equipment failure (most commonly, blowout preventer failure, corrosion and failed valves) and failure of container integrity. Spills can result from accidents, negligence, or intentional dumping.</p> <p>The EIS should examine and quantify the risks to human health and the environment associated with on-site chemical and wastewater storage, including risks from natural events and negligent operator practices. Again, such analysis must also include an analysis of potential impacts faced by environmental justice communities in both rural and urban settings.</p> <p><i>2. Groundwater Contamination</i></p> <p>Studies have reported many instances around the country of groundwater contamination due to surface spills of oil and gas wastewater, including fracking flowback. Fracking and other unconventional techniques likewise pose inherent risks to groundwater due to releases below the surface, and these risks must be properly evaluated. Once groundwater is contaminated, it is very difficult, if not impossible, to restore the original quality of the water. As a result, in communities that rely on groundwater drinking water supplies, groundwater contamination can deprive communities of usable drinking water. Such long-term contamination necessitates the costly importation of drinking water supplies.</p> <p>Groundwater contamination can occur in a number of ways, and the contamination may persist for many years. Poorly constructed or abandoned wells are recognized as one of the most likely ways by which contaminants may reach groundwater. Faulty well construction, cementing, or casing, as well as the injection of fracking waste underground, can all lead to leaks. Older wells that may not have been designed to withstand the stresses of hydraulic fracturing but which are</p>	

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		<p>reused for this purpose are especially vulnerable. Improper well construction and surface spills are cited as a confirmed or potential cause of groundwater contamination in numerous incidents at locations across the U.S. including but not limited to Colorado, Wyoming, Pennsylvania, Ohio, West Virginia, and Texas. These sorts of problems at the well are not uncommon. Dr. Ingraffea of Cornell has noted an 8.9 percent failure rate for wells in the Marcellus Shale. Also, the Draft EPA Investigation of Ground Water Contamination near Pavillion, Wyoming, found that chemicals found in samples of groundwater were from fracked wells. These results have been confirmed with follow-up analyses.</p> <p>Moreover, another study based on modeling found that active transport of fracking fluid from a fracked well to an aquifer could occur in less than 10 years.</p> <p>Current federal rules do not ensure well integrity. The well casing can potentially fail over time and potentially create pathways for contaminants to reach groundwater. Well casing failure can occur due to improper or negligent construction. The EIS should study the rates of well casing failures over time and evaluate the likelihood that well casing failures can lead to groundwater contamination.</p> <p>Also, fluids and hydrocarbons may contaminate groundwater by migrating through newly created or natural fractures. Many unconventional techniques intentionally fracture the formation to increase the flow of gas or oil. New cracks and fissures can allow the additives or naturally occurring elements such as natural gas to migrate to groundwater. “[T]he increased deployment of hydraulic fracturing associated with oil and gas production activities, including techniques such as horizontal drilling and multi-well pads, may increase the</p>	

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		<p>likelihood that these pathways could develop,” which, “in turn, could lead to increased opportunities for impacts on drinking water sources.” Fluids can also migrate through pre-existing and natural faults and fractures that may become pathways once the fracking or other method has been used.</p> <p>According to the EPA, “evidence of any fracturing-related fluid migration affecting a drinking water resources...could take years to discover.” The EIS must consider long-term studies on the potential for fluid migration through newly created subsurface pathways. Fluid migration is of particular concern when oil and gas operations are close to drinking water supplies.</p> <p>Fracking fluid can also spill at the surface during the fracking process. For instance, mechanical failure or operator error during the process has caused leaks from tanks, valves, and pipes. At the surface, pits or tanks can leak fracking fluid or waste. Surface pits, in which wastewater is often dumped, are a major source of pollution. In California, a farmer was awarded \$8.5 million in damages after his almond trees died when he irrigated them with well water that had been contaminated by nearby oil and gas operations. The contamination was traced to unlined pits where one of California’s largest oil and gas producers for decades dumped billions of gallons of wastewater that slowly leached pollutants into nearby groundwater. Also, New Mexico data shows, over the course of 3 decades, 743 instances of all types of oil and gas operations polluting groundwater – the source of drinking water for 90 percent of the state’s residents.</p> <p>Unfiltered drinking water supplies, such as drinking water wells, are especially at risk because they have no readily available means of removing contaminants from the water. Even water wells with filtration</p>	

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		<p>systems are not designed to handle the kind of contaminants that result from unconventional oil and gas extraction. In some areas hydraulic fracturing may occur at shallower depths or within the same formation as drinking water resources, resulting in direct aquifer contamination. The EIS must disclose where the potential for such drilling exists.</p> <p>Setbacks may not be adequate to protect groundwater from potential fracking fluid contamination. A recent study by the University of Colorado at Boulder suggests that setbacks of even up to 300-feet may not prevent contamination of drinking water resources. The study found that 15 organic compounds found in hydraulic fracturing fluids may be of concern as groundwater contaminants based on their toxicity, mobility, persistence in the environment, and frequency of use. These chemicals could have 10 percent or more of their initial concentrations remaining at a transport distance of 300 feet, the average “setback” distance in the U.S. The effectiveness and feasibility of any proposed setbacks must be evaluated.</p> <p><i>3. Disposal of Drilling and Fracking Wastes</i> Finally, disposal of wastes from oil and gas operations can also lead to contamination of water resources. Potential sources of contamination include:</p> <ul style="list-style-type: none"> <input type="checkbox"/> leaching from landfills that receive drilling and fracking solid wastes; <input type="checkbox"/> spreading of drilling and fracking wastes over large areas of land; <input type="checkbox"/> wastewaters discharged from treatment facilities without advanced “total dissolved solids” removal processes, or inadequate capacity to remove radioactive material removal; and <input type="checkbox"/> breaches in underground injection disposal wells. <p>The EIS must evaluate the potential for contamination from each of these</p>	

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		<p>disposal methods.</p> <p><i>4. More Intensive Oil and Gas Development Will Increase Storm Water Runoff</i></p> <p>Oil and gas operations require land clearance for access roads, pipelines, well pads, drilling equipment, chemical storage, and waste disposal pits. As a result, new oil and gas development will cause short-term disturbance as well as long-term disturbance within the areas for lease. While undisturbed land can retain greater amounts of water through plants and pervious soil, land that has been disturbed or developed may be unable to retain as much water, thereby increasing the volume of runoff. The area of land that is able to retain water will be significantly decreased if unconventional oil and gas extraction methods are permitted to expand.</p> <p>Water from precipitation and snowmelt can serve as an avenue through which contaminants travel from an operation site to sensitive areas, including population centers. Contaminated water runoff may seep into residential areas, polluting streets, sidewalks, soil, and vegetation in urban areas, adversely affecting human health. Thus, not only do these oil and gas activities create pollution, they create greater conduits for storm water runoff to carry those pollutants from the operation site, into areas in which significant harm can be caused.</p> <p>Rapid runoff, even without contaminants, can harm the environment by changing water flow patterns and causing erosion, habitat loss, and flooding. Greater runoff volumes may also increase the amount of sediment that is carried to lakes and streams, affecting the turbidity and chemical content of surface waters. Because a National Pollutant Discharge Elimination System permit is not required for oil and gas operations, it is particularly important that the impact of runoff is</p>	

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		<p>considered as part of the NEPA process.</p> <p><i>5. Fossil Fuel Development Depletes Enormous Amounts of Water</i> Some unconventional extraction techniques, most notably fracking, require the use of tremendous amounts of freshwater. Typically between 2 and 5.6 million gallons of water are required to frack each well. These volumes far exceed the amounts used in conventional natural gas development. Such high levels of water use are unsustainable. Water used in large quantities may lead to several kinds of harmful environmental impacts. The extraction of water for fracking can, for example, lower the water table, affect biodiversity, harm local ecosystems, and reduce water available to communities.</p> <p>BLM must also take into account the higher fresh water requirements of drilling, completion, and fracking of horizontal wells. These wells typically require much greater amounts of freshwater than do vertical or directional wells.</p> <p>Withdrawal of large quantities of freshwater from streams and other surface waters will undoubtedly have an impact on the environment. Withdrawing water from streams will decrease the supply for downstream users, such as farmers or municipalities. Rising demand from oil and gas operators has already led to increased competition for water between farmers and oil and gas operators. For example, in prior years, farmers in Colorado have paid at most \$100 per acre-feet of water in auctions held by cities with excess supplies, but in 2013 energy companies paid \$1200 to \$2,900 per acre-feet. Reductions in stream flows may also lead to downstream water quality problems by diminishing the water bodies' capacity for dilution and degradation.</p>	

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		<p>Furthermore, withdrawing large quantities of water from subsurface waters to supply oil and gas production will likely deplete and harm aquifers. Removing water from surface water or directly from underground sources of water faster than the rate that aquifers can be replenished will lower the volume of water available for other uses. Depletion can also lead to compaction of the rock formation serving as an aquifer, after which the original level of water volume can never be restored. Depleted aquifer water resources may also adversely affect agriculture, species habitat and ecosystems, and human health.</p> <p>The freshwater in the area therefore would be greatly affected by the increased demand for water if fracking and other unconventional oil and gas extraction are permitted. A no- fracking alternative would preserve scarce water resources and keep critical sources of drinking water in the planning area safe and clean. The EIS must analyze where water will be sourced, how much, and the effects on water sources under different alternatives. All of these effects must be analyzed in the context of increasing water scarcity in Wyoming due to climate change, drought, and increasing population growth.</p> <p><i>6. Oil and Gas Developments Harm Aquatic Life and Habitat</i> When streams and other surface waters are depleted, the habitat for countless plants and animals will be harmed, and the depletion places tremendous pressure on species that depend on having a constant and ample stream of water. Such impacts must (a) be adequately analyzed in an EIS and (b) undergo full and up-to-date consultation with the Fish and Wildlife Service under Section 7 of the Endangered Species Act, using the best and most recent scientific data regarding river flows.</p> <p>Physical habitats such as banks, pools, runs, and glides (low gradient river</p>	

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		<p>sections) are important yet susceptible to disturbance with changing stream flows. Altering the volume of water can also change the water's temperature and oxygen content, harming some species that require a certain level of oxygenated water. Decreasing the volume of streamflow and stream channels by diverting water to fracking would have a negative impact on the environment and should be included in the EIS.</p> <p>The physical equipment itself that is designed to intake and divert water may also pose a threat to certain wildlife. If not properly designed, such equipment and intake points may be a risk to wildlife. BLM further points out that releases of contaminants (e.g. wastewater, fracking fluids, and petroleum products) and sediments from roads, pad, and pipeline construction "can contribute to adverse changes in water quality and/or prompt system changes that can lead to mortality in aquatic vertebrates through acute or chronic toxicity . . ."</p> <p>Given the great risks and inevitable harm to endangered and BLM-sensitive species, BLM must provide a complete analysis of impacts and mitigation measures, instead of kicking the can down the road and waiting until the APD stage to evaluate the significant impacts of the sale.</p> <p><i>7. Harm to Wetlands</i> Oil and gas development, and particularly the practice of fracking, pose an immense threat to water resources. High volume removal of surface or groundwater can result in damage to wetlands, which rely on ample water supplies to maintain the fragile dynamics of a wetland habitat. Damage can also occur from spills of chemicals or wastewater, filling operations, and sediment runoff. BLM in its environmental document must fully vet the impacts from every potential aspect of the proposed sale.</p>	

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		<p>Many plant and animal species depend on wetland habitats, and even small changes can lead to significant impacts. Wetlands provide a variety of “eco-service” functions, including water purification, protection from floods, and functioning as carbon sinks. The ecological importance of wetlands is unquestionable, and their full protection is paramount. The EIS must analyze these potential impacts to wetlands, and the related, potential indirect impacts that may stem from such impacts.</p>	
29	CBD	<p>B. BLM Failed to Adequately Disclose or Analyze the Project’s Harm to Air Quality Given the likelihood that fracking and other similarly harmful techniques would be employed in the exploration and development of the parcels, BLM has an obligation to analyze and disclose the potential impacts resulting from such frequently used practices. BLM cannot set aside site-specific analysis of air impacts until the APD stage. The purpose of an environmental assessment is for BLM to look at the impacts in total, and to take a hard look at all “reasonably foreseeable” impacts now, before leasing the land. NEPA regulations and case law clearly establish that uncertainty about the precise extent and nature of environmental impacts does not relieve an agency of the obligation to disclose and analyze those impacts utilizing the best information available. <i>See</i> 40 C.F.R. § 1502.22(a),(b).</p> <p>Oil and gas operations emit numerous air pollutants, including volatile organic compounds (VOCs), NO_X, particulate matter, hydrogen sulfide, and methane. Fracking operations are particularly harmful, emitting especially large amounts of pollution, including air toxic air pollutants. Permitting fracking and other well stimulation techniques will greatly increase the release of harmful air emissions in these and other regions. BLM should adopt the no-leasing (or no action) alternative, or else adopt</p>	<p>Beyond the scope of this document. The August 2016 Competitive Oil and Gas Lease Sale is not a regulatory action, but rather an administrative action. There are no direct impacts to air quality or climate change through the administrative action of leasing. Should the leases be developed in the future, impacts to air quality and climate change will be analyzed through additional site and project-specific NEPA analysis, and conformance with State and Federal air quality standards and regulations will be evaluated. As new information is gathered, it will be incorporated into BLM decisions and may require conditions of approval to mitigate adverse impacts to air quality or climate change.</p> <p>A discussion of Air Quality and Climate Change have been addressed in the EA in part 3.4.5.</p> <p>As stated in the introduction to DOI-BLM-WY-R000-2016-0001-EA, pursuant to 40 CFR § 1508.28 and § 1502.21, the EA tiers to and incorporates by</p>

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		<p>a no-fracking alternative, which would prevent further degradation of local air quality, respiratory illnesses, premature deaths, hospital visits, as well as missed school and work days.</p> <p><i>1. Types of Air Emissions</i></p> <p>BLM failed to provide adequate analysis of the type, extent, or source of emissions from unconventional oil and gas extraction methods, such as fracking; instead BLM arbitrarily and capriciously restricted its analysis to conventional oil and gas. The rapid expansion of unconventional oil makes the impacts associated with fracking foreseeable.</p> <p>Unconventional oil and gas operations emit large amounts of toxic air pollutants, also referred to as Hazardous Air Pollutants, which are known or suspected to cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental effects. The reporting requirements recently implemented by the California South Coast Air Quality Management District (“SCAQMD”) have shown that at least 44 chemicals known to be air toxics have been used in fracking and other types of unconventional oil and gas recovery in California. Through the implementation of these new reporting requirements, it is now known that operators have been using several types of air toxics in California, including crystalline silica, methanol, hydrochloric acid, hydrofluoric acid, 2- butoxyethanol, ethyl glycol monobutyl ether, xylene, amorphous silica fume, aluminum oxide, acrylic polymer, acetophenone, and ethylbenzene. Many of these chemicals also appear on the U.S. EPA’s list of hazardous air pollutants. EPA has also identified six “criteria” air pollutants that must be regulated under the National Ambient Air Quality Standards (NAAQS) due to their potential to cause primary and secondary health effects. Concentrations of these pollutants—ozone, particulate matter, carbon monoxide, nitrogen oxides, sulfur dioxide and lead—will</p>	<p>reference the information and analysis contained in the Environmental Impact Statements (EIS), Records of Decisions (ROD) and Approved Resource Management Plans (RMP) for the Lander Field Office (LFO 2014), the Worland Field Office (WFO 2015), and the Cody Field Office (CyFO 2015); therefore, a new EIS for leasing is not necessary.</p> <p>All parcels for the August 2016 Competitive Oil and Gas Lease Sale are in conformance with the existing land use plans as required by 43 CFR 1610.5, and the August 2016 DOI-BLM-WY-R000-2016-0001-EA has adequately analyzed the issues raised by this comment. Site specific NEPA analysis will occur at the development stage that will analyze resource conflicts and identify mitigation for specific impacts.</p> <p>In accordance with IM 2004-110, Change 1 and Lease Notice No. 3 any new standards/mitigation/stipulations coming forth from that process can be applied to post-lease actions (i.e., APDs, Sundry Notices, Rights-of-Way, etc.).</p> <p>In accordance with H-1624-1 – Planning For Fluid Mineral Resources Rel. 1-1749, 1/28/2013: The Federal Government retains certain rights when issuing an oil and gas lease. While the BLM may not unilaterally add a new stipulation to an existing lease that it has already issued, the BLM can subject</p>

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		<p>likely increase in regions where unconventional oil and gas recovery techniques are permitted.</p> <p>VOCs can form ground-level (tropospheric) ozone when combined with nitrogen oxides (“NOX”), from compressor engines, turbines, other engines used in drilling, and flaring, and sunlight. This reaction can diminish visibility and air quality and harm vegetation. Tropospheric ozone can also be caused by methane, which is leaked and vented at various stages of unconventional oil and gas development, as it interacts with nitrogen oxides and sunlight. In addition to its role as a greenhouse gas, methane contributes to increased concentrations of ground-level ozone, the primary component of smog, because it is an ozone precursor. Methane’s effect on ozone concentrations can be substantial. One paper modeled reductions in various anthropogenic ozone precursor emissions and found that “[r]educing anthropogenic CH4 emissions by 50% nearly halves the incidence of U.S. high-O3 events”</p> <p>Like methane, VOCs and NOX are also ozone precursors; therefore, many regions around the country with substantial oil and gas operations are now suffering from extreme ozone levels due to heavy emissions of these pollutants. Ozone can result in serious health conditions, including heart and lung disease and mortality. A recent study of ozone pollution in the Uintah Basin of northeastern Utah, a rural area that experiences hazardous tropospheric ozone concentrations, found that oil and gas operations were responsible for 98 to 99 percent of VOCs and 57 to 61 percent of NOX emitted from sources within the Basin considered in the study’s inventory.</p> <p>Oil and gas operations can also emit hydrogen sulfide. The hydrogen</p>	<p>development of existing leases to reasonable conditions, as necessary, through the application of Conditions of Approval at the time of permitting. The new constraints must be consistent with the applicable land use plan and not in conflict with rights granted to the holder under the lease. The Interior Board of Land Appeals has made clear that, when making a decision regarding discrete surface-disturbing oil and gas development activities following site-specific environmental review, the BLM has the authority to impose reasonable protective measures not otherwise provided for in lease stipulations, to minimize adverse impacts on other resource values. See 30 U.S.C. §226(g); 43 CFR 3101.1-2. See Yates Petroleum Corp., 176 IBLA 144 (2008); National Wildlife Federation, 169 IBLA 146, 164 (2006).</p> <p>As noted in your comments, the Council on Environmental Quality (CEQ), which oversees NEPA compliance for all federal agencies, has issued “Revised Draft Guidance for Greenhouse Gas Emissions and Climate Change Impacts ” (Dec. 2014). To date this draft guidance has not been finalized, nor has the BLM issued its own formal guidance for analyzing climate change in NEPA documents. If and when final agency guidance is received, the BLM will comply. BLM has adequately disclosed reasonably foreseeable impacts resulting</p>

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		<p>sulfide is contained in the natural gas and makes that gas “sour.” Hydrogen sulfide may be emitted during all stages of operation, including exploration, extraction, treatment and storage, transportation, and refining. Long-term exposure to hydrogen sulfide is linked to respiratory infections, eye, nose, and throat irritation, breathlessness, nausea, dizziness, confusion, and headaches.</p> <p>The oil and gas industry is also a major source of particulate matter. The heavy equipment regularly used in the industry burns diesel fuel, generating fine particulate matter that is especially harmful. Vehicles traveling on unpaved roads also kick up fugitive dust, which is particulate matter. Further, both NO_X and VOCs, which as discussed above are heavily emitted by the oil and gas industry, are also particulate matter precursors. Some of the health effects associated with particulate matter exposure are “premature mortality, increased hospital admissions and development of chronic respiratory disease.”</p> <p>Fracking results in additional air pollution that can create a severe threat to human health. One analysis found that 37 percent of the chemicals found at fracked gas wells were volatile, and that of those volatile chemicals, 81 percent can harm the brain and nervous system, 71 percent can harm the cardiovascular system and blood, and 66 percent can harm the kidneys. Also, the SCAQMD has identified three areas of dangerous and unregulated air emissions from fracking: (1) the mixing of the fracking chemicals; (2) the use of the silica, or sand, as a proppant, which causes the deadly disease silicosis; and (3) the storage of fracking fluid once it comes back to the surface. Preparation of the fluids used for well completion often involves onsite mixing of gravel or proppants with fluid, a process which potentially results in major amounts of particulate matter emissions. Further, these proppants often include silica sand, which</p>	<p>from climate change whether positive or negative, as required by NEPA.</p> <p>The Council on Environmental Quality (CEQ) regulations at 40 CFR 1502.23, state (in part), “...for the purposes of complying with the Act, the weighing of the merits and drawbacks of various alternatives need not be displayed in a monetary cost-benefit analysis and should not be when there are important qualitative considerations.”</p> <p>The Social Cost of Carbon (SCC) protocol was developed by the Office of Management and Budget using an interagency working group in response to Executive Order 12866, which requires federal agencies, to the extent permitted by law, “to assess both the costs and the benefits of the intended regulation and, recognizing that some costs and benefits are difficult to quantify, propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs.” SCC estimates the monetary cost incurred by the emission of one additional metric ton of carbon dioxide (CO₂), and is not applicable to non-CO₂ GHG emissions, such as methane. Estimating SCC is challenging because it is intended to model effects on the welfare of future</p>

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		<p>increases the risk of lung disease and silicosis when inhaled. Finally, as flowback returns to the surface and is deposited in pits or tanks that are open to the atmosphere, there is the potential for organic compounds and toxic air pollutants to be emitted, which are harmful to human health as described above.</p> <p>The EIS should study the potential for oil and gas operations sites in the planning area to emit such air toxics and any other pollutants that may pose a risk to human health, paying particular attention to the impacts of air pollution on environmental justice communities that already bear the burden of disproportionately high levels of air pollution. The EIS should rely on the most up-to-date information regarding the contribution of oil and gas operations to VOC and air toxics levels.</p> <p><i>2. Sources of Air Emissions</i> Harmful air pollutants are emitted during every stage of unconventional oil and gas recovery, including drilling, completion, well stimulation, production, and disposal. Drilling and casing the wellbore require substantial power from large equipment. The engines used typically run on diesel fuel, which emits particularly harmful types of air pollutants when burned. Similarly, high-powered pump engines are used in the fracturing and completion phase. This too can amount in large volumes of air pollution. Flaring, venting, and fugitive emissions of gas are also a potential source of air emissions. Gas flaring and venting can occur in both oil and gas recovery processes when underground gas rises to the surface and is not captured as part of production. Fugitive emissions can occur at every stage of extraction and production, often leading to high volumes of gas being released into the air. Methane emissions from oil and gas production is as much as 270 percent greater than previously estimated by calculation. Recent studies show that emissions from</p>	<p>generations at a global scale caused by additional carbon emissions occurring in the present and does not account for the complexity of multiple stressors and indicators. The SCC was developed to support agencies in responding to EO 13514, not for use in making land management decisions.</p>

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		<p>pneumatic valves (which control routine operations at the well pad by venting methane during normal operation) and fugitive emissions are higher than EPA estimates.</p> <p>Evaporation from pits can also contribute to air pollution. Pits that store drilling waste, produced water, and other waste fluid may be exposed to the open air. Chemicals mixed with the wastewater—including the additives used to make fracking fluids, as well as volatile hydrocarbons, such as benzene and toluene, brought to the surface with the waste—can escape into the air through evaporation. Some pits are equipped with pumps that spray effluents into the air to hasten the evaporation process. Even where waste fluid is stored in so-called “closed loop” storage tanks, fugitive emissions can escape from tanks.</p> <p>As mentioned above, increased truck traffic will lead to more air emissions. Trucks capable of transporting large volumes of chemicals and waste fluid typically use large engines that run on diesel fuel. Air pollutants from truck engines will be emitted not only at the well site, but also along truck routes to and from the site.</p> <p>The EIS must provide an adequate analysis and disclosure of the effects the lease sale could have on air quality, including the impacts that would result from fracking. The EAs cannot postpone the discussion of air pollution and climate change impacts until site-specific plans are proposed. Because BLM must analyze impacts at “the earliest practicable time,” and no benefit would be gained from postponing the analysis, BLM must discuss these cumulative impacts before the lease sale.</p> <p><i>3. Impact of Increased Air Pollution</i> The potential harms resulting from increased exposure to the dangerous</p>	

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		<p>air pollutants described above are serious and wide ranging. The negative effects of criteria pollutants are well documented and are summarized by the U.S. EPA's website:</p> <p><i>Nitrogen oxides (NO_x)</i> react with ammonia, moisture, and other compounds to form small particles. These small particles penetrate deeply into sensitive parts of the lungs and can cause or worsen respiratory disease, such as emphysema and bronchitis, and can aggravate existing heart disease, leading to increased hospital admissions and premature death. NO_x and volatile organic compounds react in the presence of heat and sunlight to form ozone.</p> <p><i>Particulate matter (PM)</i> – especially fine particles – contains microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems. Numerous scientific studies have linked particle pollution exposure to a variety of problems, including: premature death in people with heart or lung disease, increased mortality, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms, such as irritation of the airways, coughing or difficulty breathing.</p> <p><i>Sulfur Dioxide (SO₂)</i> has been shown to cause an array of adverse respiratory effects including bronchoconstriction and increased asthma symptoms. Studies also show a connection between short-term exposure and increased visits to emergency departments and hospital admissions for respiratory illnesses, particularly in at-risk populations including children, the elderly, and asthmatics.</p> <p><i>Carbon Monoxide (CO)</i> can cause harmful health effects by reducing oxygen delivery to the body's organs (like the heart and brain) and tissues.</p>	

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		<p>At extremely high levels, CO can cause death. Exposure to CO can reduce the oxygen-carrying capacity of the blood. People with several types of heart disease already have a reduced capacity for pumping oxygenated blood to the heart, which can cause them to experience myocardial ischemia (reduced oxygen to the heart), often accompanied by chest pain (angina), when exercising or under increased stress. For these people, short-term CO exposure further affects their body's already compromised ability to respond to the increased oxygen demands of exercise or exertion.</p> <p><i>Ozone</i> (O₃) can trigger or worsen asthma and other respiratory ailments. Ground level ozone can have harmful effects on sensitive vegetation and ecosystems. Ozone may also lead to loss of species diversity and changes to habitat quality, water cycles, and nutrient cycles.</p> <p>Air toxics and hazardous air pollutants, by definition, can result in harm to human health and safety. The full extent of the health effects of exposure is still far from being complete, but already there are numerous studies that have found these chemicals to have serious health consequences for humans exposed to even minimal amounts. The range of illnesses that can result are summarized in a study by Dr. Theo Colburn, which charts which chemicals have been shown to be linked to certain illnesses.</p> <p>Natural gas drilling operations result in the emissions of numerous non-methane hydrocarbons (NMHCs) that have been linked to numerous adverse health effects. A recent study that analyzed air samples taken during drilling operations near natural gas wells and residential areas in Garfield County, detected 57 chemicals between July 2010 and October 2011, including 44 with reported health effects. For example:</p>	

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		<p>Thirty-five chemicals were found to affect the brain/nervous system, 33 the liver/metabolism, and 30 the endocrine system, which includes reproductive and developmental effects. The categories with the next highest numbers of effects were the immune system (28), cardiovascular/blood (27), and the sensory and respiratory systems (25 each). Eight chemicals had health effects in all 12 categories. There were also several chemicals for which no health effect data could be found.</p> <p>The study found extremely high levels of methylene chloride, which may be used as cleaning solvents to remove waxy paraffin that is commonly deposited by raw natural gas in the region. These deposits solidify at ambient temperatures and build up on equipment. While none of the detected chemicals exceeded governmental safety thresholds of exposure, the study noted that such thresholds are typically based on “exposure of a grown man encountering relatively high concentrations of a chemical over a brief time period, for example, during occupational exposure.” Consequently, such thresholds may not apply to individuals experiencing “chronic, sporadic, low-level exposure,” including sensitive populations such as children, the elderly, and pregnant women. For example, the study detected polycyclic aromatic hydrocarbon (PAH) levels that could be of “clinical significance,” as recent studies have linked low levels of exposure to lower mental development in children who were prenatally exposed. In addition, government safety standards do not take into account “the kinds of effects found from low-level exposure to endocrine disrupting chemicals..., which can be particularly harmful during prenatal development and childhood.</p> <p>Another study reviewed exposures to emissions from unconventional natural gas development and noted that trimethylbenzenes are among the largest contributors to non-cancer threats for people living within a half</p>	

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		<p>mile of a well, while benzene is the largest contributor to cumulative cancer risk for people, regardless of the distance from the wells.</p> <p>The EIS should incorporate a literature review of the harmful effects of each of these chemicals known to be used in fracking and other unconventional oil and gas extraction methods. Without knowing the effects of each chemical, the EIS cannot accurately project the true impact of unconventional oil and gas extraction.</p> <p><i>4. Air Modeling</i></p> <p>BLM should use air modeling to understand what areas and communities will most likely be affected by air pollution. It is crucial to gather independent data rather than relying on industry estimates, which may be inaccurate or biased. Wind and weather patterns, and atmospheric chemistry, determine the fate and transport of air pollution over a region, over time. The EIS should be informed by air modeling to show where the air pollution will flow.</p> <p>C. BLM Failed to Adequately Disclose or Analyze the Project’s Impact on Climate Change</p> <p>BLM cannot ignore climate change in its analysis of fossil fuel planning and leasing actions. Piecemeal analyses of individual APDs or lease sales do not provide the appropriate perspective for examining the cumulative effects of fracking and resulting greenhouse gas emission at the regional and landscape scale. The PEA itself briefly mentions climate change, but omits any analysis of the cumulative effects of oil and gas leasing on <i>contributing</i> to the effects of climate change. Instead it attempts to bury climate change impacts from oil and gas development under other activities that the PEA claims occur in the area and contribute to climate change “including large wildfires, activities using combustion engines,</p>	

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		<p>changes to the natural carbon cycle, changes to radioactive forces and reflectivity, and emissions of greenhouse gases (GHGs).</p> <p>BLM cannot ignore the mounting evidence proving that oil and gas operations are a major cause of climate change. This is due to emissions from the operations themselves, and emissions from the combustion of the oil and gas produced. Every step of the lifecycle process for development of these resources results in significant carbon emissions, including but not limited to:</p> <p><i>End-user oil and gas combustion emissions.</i> The combustion of extracted oil, gas, and coal will add vast amounts of carbon dioxide to the atmosphere, further heating the climate and moving the Earth closer to catastrophic and irreversible climate change. Though much of the oil is used as gasoline to fuel the transportation sector, the produced oil may also be used in other types of products. The EIS should study all end-uses as contributors to climate change.</p> <p><i>Combustion in the distribution of product.</i> To the extent that distribution of raw and end- use products will rely on rail or trucks, the combustion of gasoline or diesel to transport these products will emit significant greenhouse gas emissions.</p> <p><i>Emissions from Refineries and Production.</i> Oil and gas must undergo intensive refinery and production processes before the product is ready for consumption. Refineries and their auxiliary activities constitute a significant source of emissions.</p> <p><i>Vented emissions.</i> Oil and gas wells and coal mining operations may vent gas that flows to the surface at times where the gas cannot otherwise be</p>	

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		<p>captured and sold. Vented gas is a significant source of greenhouse gas emissions and can also pose a safety hazard.</p> <p><i>Combustion during construction and extraction operations.</i> Operators rely on both mobile and stationary sources of power to construct and run their sites. The engines of drilling or excavation equipment, pumps, trucks, conveyors, and other types of equipment burn large amounts of fuel to operate. Carbon dioxide, methane, and nitrous oxide (another potent greenhouse gas) are emitted from oxidized fuel during the combustion process. Engines emit greenhouse gases during all stages of oil and gas recovery, including drilling rig mobilization, site preparation and demobilization, completion rig mobilization and demobilization, well drilling, well completion (including fracking and other unconventional extraction techniques), and well production. Transportation of equipment and chemicals to and from the site is an integral part of the production process and contributes to greenhouse gas emissions. Gas flaring is another important source of carbon dioxide emissions. Significant sources of emissions in oil production include pneumatic devices, dehydrators and pumps, and compressors, and system upsets.</p> <p><i>Fugitive emissions.</i> Potent greenhouse gases can leak as fugitive emissions at many different points in the production process, especially in the production of gas wells. Recent studies suggest that previous estimates significantly underestimate leakage rates. New research shows methane leakage from some gas wells may be as high at 17.3 percent. Moreover, new research has shown that unconventional gas wells are up to 2.7 times more likely than a conventional well to have a cement or casing impairment, which can lead to methane leaks. The intersection of new fractures with nearby abandoned wells can also result in methane migration to the surface. Leakage can also occur during storage,</p>	

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		<p>processing, and distribution to customers. Natural gas emissions are generally about 84 percent methane. Methane is a potent greenhouse gas that contributes substantially to global climate change. Its global warming potential is approximately 34 times that of carbon dioxide over a 100 year time frame and at least 86 times that of carbon dioxide over a 20 year time frame. Oil and gas operations release large amounts of methane. While the exact amount is not clear, EPA has estimated that “oil and gas systems are the largest human-made source of methane emissions and account for 37 percent of methane emissions in the United States and is expected to be one of the most rapidly growing sources of anthropogenic methane emissions in the coming decades.” That proportion is based on an estimated calculation of methane emissions, rather than measured actual emissions, which indicate that methane emissions may be much greater in volume than calculated. BLM, in its PEA, concludes that the development of the lease “would have no measurable impact on the climate” and attempts to support this conclusion by showing that its RFD emissions “are a fraction of EPA modeled emissions from a 1500MW coal-fired power plant.” Even assuming the accuracy of the EPA model and RFD assumptions, the fact that an individual lease sale involves less emission than one power plant is not a valid argument to forego climate analysis. Rather, it bolsters the argument that fossil fuel emissions should be considered in the context of a program-wide analysis.</p> <p>Fracked wells leak an especially large amount of methane, with some evidence indicating that the leakage rate is so high that shale gas is worse for the climate than coal. In fact, a research team associated with the National Oceanic and Atmospheric Administration recently reported that preliminary results from a field study in the Uinta Basin of Utah suggest that the field leaked methane at an eye-popping rate of nine percent of total production.</p>	

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		<p>BLM’s excuse for not providing the required analysis as it relates to oil and gas development is that “it is difficult to determine spatial and temporal variability and change of climatic conditions.” However, BLM’s own 2010 Climate Change Supplementary Information Report for Montana, North Dakota, and South Dakota (“2015 SIR”) demonstrates that BLM is indeed able to conduct the required analysis. The SIR provides detailed information, including attempts to quantify anticipated greenhouse gas emissions from leasing through 2028, then estimated at approximately 2 million metric tons per year of CO₂e. Exclusion of this readily- available information obscures the role of the regional leasing program in contributing to climate change. A full EIS should address the findings of the 2010 SIR, update them to reflect developments in technology, science, and industry trends since 2010. The SIR also enumerates numerous opportunities for technological mitigation of some of the fugitive emissions associated with oil and gas production and gathering/processing. It even includes an estimate of potential emission reductions from use of technological mitigation including compressor electrification, zero-emission glycol dehydrators, vapor recovery units for oil storage tanks, and green completions. The PEA at present does not even consider any of these mitigation measures, much less incorporate them into an alternative as lease stipulations.</p> <p>A full EIS should analyze and consider, at a minimum, the consequences of alternatives other than simply leasing and no action, including (a) a no-fracking alternative, and (b) an alternative involving adoption of mandatory emission-reduction technologies as lease stipulations. The EIS must weigh the no-fracking alternative’s climate-change benefits against the impacts of allowing new leasing and fracking, and address the following:</p>	

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		<p><i>1. Quantity of Greenhouse Gases</i></p> <p>The PEA fails to quantify greenhouse gas emissions that could result from the lease sale, but instead merely states the obvious that “increasing concentrations of GHGs are likely to accelerate the rate of climate change.” This does not meaningfully inform the public as to the potential quantity of greenhouse gases that could be emitted by oil and gas extraction activities. Nor does it analyze at all the significance of these emissions.</p> <p>BLM does not bother to calculate or estimate total greenhouse gas emissions from federal leasing within the state, let alone the emissions that would result from developing the proposed areas for lease. Depending on the type of extraction (e.g., fracking v. conventional) emissions could be much higher than the proportionate share of overall production. These emissions are reasonably foreseeable and therefore must be taken into account. For example, for a recent lease sale, BLM’s Fillmore Field Office in Utah attempted a general analysis of GHG emissions from operational combustion, construction, and reclamation activities (although this analysis was also incomplete in its failure to analyze emissions from transportation, refining, and pipeline and casing leakage).</p> <p>The EA admits that “Indirect effects from leasing may occur to air quality or climate change if development were to occur,” but refuses to perform the required analysis of said effects even though they are foreseeable. “Indirect effects... are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.” 40 C.F.R. 1508.8(b). The development of an area for lease and subsequent oil and gas production would certainly result in combustion of the extracted</p>	

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		<p>product, which the EA implicitly acknowledges.¹⁹³ As courts have held in similar contexts, combustion emissions resulting from opening up a new area to development are “reasonably foreseeable,” and therefore a “proximate cause” of the leasing. <i>See Mid States Coal. for Progress v. Surface Transp. Bd.</i>, 345 F.3d 520, 549 (8th Cir. 2003) (holding that agency violated NEPA when it failed to disclose and analyze the future coal combustion impacts associated with the agency’s approval of a railroad line that allowed access to coal deposits); <i>High Country Conserv’n Advocates v. United States Forest Serv.</i>, 52 F. Supp. 3d 1174, 1197 (D. Colo. 2014) (same with respect to GHG emissions resulting from approval of coal mining exploration project).</p> <p>In both <i>Mid States Coalition</i> and <i>High Country</i>, the courts rejected the government’s rationale that increased emissions from combustion of coal was not reasonably foreseeable because the same amount of coal would be burned without opening up the areas at issue to new coal mining. Both courts found this argument “illogical at best” and noted that “increased availability of inexpensive coal will at the very least make coal a more attractive option to future entrants into the utilities market when compared with other potential fuel sources, such as nuclear power, solar power, or natural gas.” <i>See High Country</i>, 52 F. Supp. 3d at 1197 (quoting <i>Mid States Coalition</i>, 345 F.3d at 549). On similar grounds, the development of new wells over the proposed areas for lease will increase the supply of [oil and natural gas]. At some point this additional supply will impact the demand for [oil and gas] relative to other fuel sources, and [these minerals] that otherwise would have been left in the ground will be burned. This reasonably foreseeable effect must be analyzed, even if the precise extent of the effect is less certain.</p>	

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		<p><i>Id. See also WildEarth Guardians v. United States Office of Surface Mining, Reclamation & Enft</i>, 104 F. Supp. 3d 1208, 1229-30 (D. Colo. 2015) (coal combustion was indirect effect of agency’s approval of mining plan modifications that “increased the area of federal land on which mining has occurred” and “led to an increase in the amount of federal coal available for combustion”); Council on Environmental Quality (CEQ) Revised Draft Guidance for Greenhouse Gas Emissions and Climate Change Impacts at 12 (2014) (“NEPA analysis for a proposed open pit mine could include the <i>reasonably foreseeable effects</i> of various components of the mining process, such as clearing land for the extraction, building access roads, transporting the extracted resource, refining or processing the resource, <i>and using the resource.</i>” [emphasis added]).</p> <p>The EA’s failure to quantify reasonably foreseeable GHG emissions that could result from new leasing within the WR/BB areas for lease—including emissions from construction, operating fossil-fuel powered equipment during production, reclamation, transportation, processing and refining, and combustion of the extracted product—is unlawful and unsupported by evidence or reasoned analysis.</p> <p>2. <i>Sources of Greenhouse Gases</i> BLM’s only attempt at analyzing the sources of greenhouse gases was an unsupported blanket statement that “GHGs, including CO2, as well as, methane (CH4), nitrous oxide (N2O), and fluorinated gases, are created and emitted through human activities, including oil and gas development, and agricultural activities.” In performing a full analysis of climate impacts, BLM must consider all potential sources of greenhouse gas emissions (e.g. greenhouse gas emissions generated by transporting large amounts of water for fracking). BLM should also perform a full analysis</p>	

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		<p>of all gas emissions that contribute to climate change, including methane and carbon dioxide. The EIS should calculate the amount of greenhouse gas that will result on an annual basis from (1) each of the fossil fuels that can be developed within the planning area, (2) each of the well stimulation or other extraction methods that can be used, including, but not limited to, fracking, acidization, acid fracking, and gravel packing, and (3) cumulative greenhouse gas emissions expected over the long term (expressed in global warming potential of each greenhouse pollutant as well as CO₂ equivalent), including emissions throughout the entire fossil fuel lifecycle discussed above.</p> <p><i>3. Effects of Increased Greenhouse Gas Emissions, Including the Social Cost of Carbon</i></p> <p>In addition to quantifying the total emissions that would result from the lease sale, an EIS should consider the environmental effects of these emissions, resulting from climate disruption's ecological and social effects. Release of greenhouse gases (from extraction, leakage, and downstream combustion) is not merely a reasonably foreseeable consequence of fracking extraction, it is the necessary and intended consequence. CEQ and the courts have repeatedly cautioned federal agencies that they cannot ignore either climate change generally, or the combustion impacts of fossil fuel extraction in particular. The effects of cumulative greenhouse gas emissions will have far-reaching impacts on natural and social systems, but the EA fails to provide any meaningful analysis of the proposed action's contribution to these effects.</p> <p>i. The effects of cumulative GHG emissions will inflict extraordinary harm to natural systems and communities</p> <p>As explained above, the Paris Agreement codified the international consensus that the climate crisis is an urgent threat to human societies and the planet, with the parties recognizing that:</p>	

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		<p>Climate change represents an <i>urgent and potentially irreversible threat to human societies and the planet</i> and thus requires the widest possible cooperation by all countries, and their participation in an effective and appropriate international response, with a view to accelerating the reduction of global greenhouse gas emissions (emphasis added).</p> <p>Numerous authoritative scientific assessments have established that climate change is causing grave harms to human society and natural systems, and these threats are becoming increasingly dangerous. The Intergovernmental Panel on Climate Change (IPCC), in its 2014 Fifth Assessment Report, stated that: “Warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia. The atmosphere and ocean have warmed, the amounts of snow and ice have diminished, sea level has risen, and the concentrations of greenhouse gases have increased” and that “[r]ecent climate changes have had widespread impacts on human and natural systems.”</p> <p>The 2014 Third National Climate Assessment, prepared by a panel of non-governmental experts and reviewed by the National Academy of Sciences and multiple federal agencies similarly stated that “That the planet has warmed is ‘unequivocal,’ and is corroborated through multiple lines of evidence, as is the conclusion that the causes are very likely human in origin” and “[i]mpacts related to climate change are already evident in many regions and are expected to become increasingly disruptive across the nation throughout this century and beyond.” The United States National Research Council similarly concluded that: “[c]limate change is occurring, is caused largely by human activities, and poses significant risks for—and in many cases is already affecting—a</p>	

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		<p>broad range of human and natural systems.”</p> <p>The IPCC and National Climate Assessment further decisively recognize the dominant role of fossil fuels in driving climate change:</p> <p>While scientists continue to refine projections of the future, observations unequivocally show that climate is changing and that the warming of the past 50 years is primarily due to human-induced emissions of heat-trapping gases. These emissions come mainly from burning coal, oil, and gas, with additional contributions from forest clearing and some agricultural practices.</p> <p>CO₂ emissions from fossil fuel combustion and industrial processes contributed about 78% to the total GHG emission increase between 1970 and 2010, with a contribution of similar percentage over the 2000–2010 period (<i>high confidence</i>).</p> <p>These impacts ultimately emanating from the extraction and combustion of fossil fuels are harming the United States in myriad ways, with the impacts certain to worsen over the coming decades absent deep reductions in domestic and global GHG emissions. EPA recognized these threats in its 2009 Final Endangerment Finding under Clean Air Act Section 202(a), concluding that greenhouse gases from fossil fuel combustion endanger public health and welfare: “the body of scientific evidence compellingly supports [the] finding” that “greenhouse gases in the atmosphere may reasonably be anticipated both to endanger public health and to endanger public welfare.” In finding that climate change endangers public health and welfare, EPA has acknowledged the overwhelming evidence of the documented and projected effects of climate change upon the nation:</p>	

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		<p><i>Effects on air quality:</i> “The evidence concerning adverse air quality impacts provides strong and clear support for an endangerment finding. Increases in ambient ozone are expected to occur over broad areas of the country, and they are expected to increase serious adverse health effects in large population areas that are and may continue to be in nonattainment. The evaluation of the potential risks associated with increases in ozone in attainment areas also supports such a finding.”</p> <p><i>Effects on health from increased temperatures:</i> “The impact on mortality and morbidity associated with increases in average temperatures, which increase the likelihood of heat waves, also provides support for a public health endangerment finding.”</p> <p><i>Increased chance of extreme weather events:</i> “The evidence concerning how human induced climate change may alter extreme weather events also clearly supports a finding of endangerment, given the serious adverse impacts that can result from such events and the increase in risk, even if small, of the occurrence and intensity of events such as hurricanes and floods. Additionally, public health is expected to be adversely affected by an increase in the severity of coastal storm events due to rising sea levels.”</p> <p><i>Impacts to water resources:</i> “Water resources across large areas of the country are at serious risk from climate change, with effects on water supplies, water quality, and adverse effects from extreme events such as floods and droughts. Even areas of the country where an increase in water flow is projected could face water resource problems from the supply and water quality problems associated with temperature increases and precipitation variability, as well as the increased risk of serious adverse effects from extreme events, such as floods and drought. The severity of</p>	

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		<p>risks and impacts is likely to increase over time with accumulating greenhouse gas concentrations and associated temperature increases.”</p> <p><i>Impacts from sea level rise:</i> “The most serious potential adverse effects are the increased risk of storm surge and flooding in coastal areas from sea level rise and more intense storms. Observed sea level rise is already increasing the risk of storm surge and flooding in some coastal areas. The conclusion in the assessment literature that there is the potential for hurricanes to become more intense (and even some evidence that Atlantic hurricanes have already become more intense) reinforces the judgment that coastal communities are now endangered by human- induced climate change, and may face substantially greater risk in the future. Even if there is a low probability of raising the destructive power of hurricanes, this threat is enough to support a finding that coastal communities are endangered by greenhouse gas air pollution. In addition, coastal areas face other adverse impacts from sea level rise such as land loss due to inundation, erosion, wetland submergence, and habitat loss. The increased risk associated with these adverse impacts also endangers public welfare, with an increasing risk of greater adverse impacts in the future.”</p> <p><i>Impacts to energy, infrastructure, and settlements:</i> “Changes in extreme weather events threaten energy, transportation, and water resource infrastructure. Vulnerabilities of industry, infrastructure, and settlements to climate change are generally greater in high-risk locations, particularly coastal and riverine areas, and areas whose economies are closely linked with climate-sensitive resources. Climate change will likely interact with and possibly exacerbate ongoing environmental change and environmental pressures in settlements, particularly in Alaska where indigenous communities are facing major environmental and cultural</p>	

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		<p>impacts on their historic lifestyles.”</p> <p><i>Impacts to wildlife:</i> “Over the 21st century, changes in climate will cause some species to shift north and to higher elevations and fundamentally rearrange U.S. ecosystems. Differential capacities for range shifts and constraints from development, habitat fragmentation, invasive species, and broken ecological connections will likely alter ecosystem structure, function, and services, leading to predominantly negative consequences for biodiversity and the provision of ecosystem goods and services.”</p> <p>In addition to these acknowledged impacts on public health and welfare more generally, climate change is causing and will continue to cause serious impacts on natural resources that the Department of Interior is specifically charged with safeguarding.</p> <p><i>Impacts to Public Lands:</i> Climate change is causing and will continue to cause specific impacts to public lands ecosystem services. Although public lands provide a variety of difficult- to-quantify public benefits, one recent Forest Service attempt at quantification estimates the public land ecosystem services at risk from climate change at between \$14.5 and \$36.1 billion annually. In addition to the general loss of ecosystem services, irreplaceable species and aesthetic and recreational treasures are at risk of permanent destruction. High temperatures are causing loss of glaciers in Glacier National Park; the Park’s glaciers are expected to disappear entirely by 2030, with ensuing warming of stream temperatures and adverse effects to aquatic ecosystems. With effects of warming more pronounced at higher latitudes, tundra ecosystems on Alaska public lands face serious declines, with potentially serious additional climate feedbacks from melting permafrost. In Florida, the Everglades face severe</p>	

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		<p>ecosystem disruption from already-occurring saltwater incursion. Sea level rise will further damage freshwater ecosystems and the endangered species that rely on them.</p> <p><i>Impacts to Biodiversity and Ecosystems:</i> Across the United States ecosystems and biodiversity, including those on public lands, are directly under siege from climate change— leading to the loss of iconic species and landscapes, negative effects on food chains, disrupted migrations, and the degradation of whole ecosystems. Specifically, scientific evidence shows that climate change is already causing changes in distribution, phenology, physiology, genetics, species interactions, ecosystem services, demographic rates, and population viability: many animals and plants are moving poleward and upward in elevation, shifting their timing of breeding and migration, and experiencing population declines and extirpations. Because climate change is occurring at an unprecedented pace with multiple synergistic impacts, climate change is predicted to result in catastrophic species losses during this century. For example, the IPCC concluded that 20% to 30% of plant and animal species will face an increased risk of extinction if global average temperature rise exceeds 1.5°C to 2.5°C relative to 1980-1999, with an increased risk of extinction for up to 70% of species worldwide if global average temperature exceeds 3.5°C relative to 1980-1999.</p> <p>In sum, climate change, driven primarily by the combustion of fossil fuels, poses a severe and immediate threat to the health, welfare, ecosystems and economy of the United States. These impacts are felt across the nation, including upon the public lands the Secretary of the Interior is charged with safeguarding. A rapid and deep reduction of emissions generated from fossil fuels is essential if such threats are to be minimized and their impacts mitigated.</p>	

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		<p>ii. The EA ignores the social cost of carbon tool to analyze the cumulative contribution of increased oil and gas development on climate change</p> <p>Although cost-benefit analysis is not necessarily the ideal or exclusive method for assessing contributions to an adverse effect as enormous, uncertain, and potentially catastrophic as climate change, BLM does have tools available to provide one approximation of external costs and has previously performed a “social cost of carbon” analysis in prior environmental reviews. Its own internal memo identifies one available analytical tool: “For federal agencies the authoritative estimates of [social cost of carbon] are provided by the 2013 technical report of the Interagency Working Group on Social Cost of Carbon, which was convened by the Council of Economic Advisers and the Office of Management and Budget.” As explained in that report:</p> <p>The purpose of the “social cost of carbon” (SCC) estimates presented here is to allow agencies to incorporate the social benefits of reducing carbon dioxide (CO₂) emissions into cost-benefit analyses of regulatory actions that impact cumulative global emissions. The SCC is an estimate of the monetized damages associated with an incremental increase in carbon emissions in a given year. It is intended to include (but is not limited to) changes in net agricultural productivity, human health, property damages from increased flood risk, and the value of ecosystem services due to climate change.</p> <p>Leasing and development of unconventional wells could exact extraordinary financial costs to communities and future generations, setting aside the immeasurable loss of irreplaceable, natural values that can never be recovered. The EIS must provide an accounting of these</p>	

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		<p>potential costs.</p> <p>Development of the planning area’s oil and gas resources will fuel climate disruption and undercut the needed transition to a clean energy economy. Keeping fossil fuels in the ground is, therefore, not only reasonable but also imperative. As BLM has not yet had a chance to consider a no-leasing-no-fracking alternative as part of the WR/BB RMP planning process, BLM should suspend new leasing until it properly considers this alternative in an updated RMP or in the EIS. BLM would be remiss to continue leasing when it has never stepped back and taken a hard look at this problem at the appropriate scale. Before allowing more oil and gas extraction in the planning area, BLM must: (1) comprehensively analyze the total greenhouse gas emissions which result from past, present, and potential future fossil fuel leasing and all other activities across all BLM lands and within the WR/BB planning area, (2) consider their cumulative significance in the context of global climate change, carbon budgets, and other greenhouse gas pollution sources outside BLM lands and the planning area, and (3) formulate measures that avoid or limit their climate change effects. By continuing leasing in the absence of any overall plan addressing climate change BLM is effectively burying its head in the sand.</p>	
30	CBD	<p>D. BLM has Failed to Adequately Disclose or Analyze the Impacts to Sensitive Species of Plants and Wildlife</p> <p>The EA fails in three major respects to disclose or analyze indirect and cumulative impacts of leasing on sensitive species, particularly greater sage-grouse. It tiers to and relies on RMP decisions for management of Wyoming greater sage-grouse habitat that fail to follow the best available science regarding measures necessary to ensure the survival and recovery</p>	<p>As stated in the introduction to DOI-BLM-WY-R000-2016-0001-EA, pursuant to 40 CFR § 1508.28 and § 1502.21, the EA tiers to and incorporates by reference the information and analysis contained in the Environmental Impact Statements (EIS), Records of Decisions (ROD) and Approved Resource Management Plans (RMP) for the Lander Field</p>

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		<p>of the species. The proposed leasing action, moreover, violates FLPMA by failing to conform to a key management prescription of those plans – the obligation to “prioritize the leasing and development of fluid mineral resources outside GRSB habitat.” Furthermore, because the proposed leases are not in conformance with the 2015 RMP amendments and undermine significant assumptions of their accompanying FEISs (i.e., that new oil and gas development will tend to occur outside of greater sage-grouse habitat), the EA cannot tier to or rely on those EISs.</p>	<p>Office (LFO 2014), the Worland Field Office (WFO 2015), and the Cody Field Office (CyFO 2015); therefore, a new EIS for leasing is not necessary. The three Land Use Plans are in conformance with all laws and regulations, and the Wyoming greater sage-grouse conservation plan.</p> <p>After careful review of the parcels, the BLM determined that it was appropriate to defer certain parcels nominated for inclusion in the August 2016 oil and gas lease sale. These deferrals were made consistent with the BLM's sage-grouse conservation plans and strategy, which direct the BLM to prioritize oil and gas leasing and development in a manner that minimizes resource conflicts in order to protect important habitat and reduce development time and costs. The parcels remain eligible for leasing consideration in the future.</p> <p>The RMPs in the WR/BBD were full revisions and were not part of the Sage Grouse Plan Amendments you are referencing. Areas designated as open or closed to leasing are determined through the RMP process.</p> <p>Please give the specific FLPMA citation; FLPMA does not specifically address sage grouse, or sage grouse habitat, or prioritization of leasing.</p>

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31	CBD	<p><i>1. Greater Sage-Grouse</i></p> <p>The Bighorn Basin RMP Amendments RMP do not conform to the best available science or the recommendations of BLM’s own experts regarding necessary measures to protect sage grouse habitats and prevent population declines. We hereby incorporate by reference the June 27, 2015 protest of the Bighorn Basin RMP FEIS submitted by WildEarth Guardians, Prairie Hills Audubon Society, Western Watersheds Project, the Center for Biological Diversity, and the Sierra Club. As set forth in detail in that document, the Bighorn Basin RMP Amendments do not conform to the agency’s own expert determinations regarding management measures necessary to conserve greater sage-grouse populations in the face of oil and gas development.</p> <p>Even under the BLM’s own determinations, however, the proposed action is directly in conflict with a core provision of the 2015 sage-grouse RMP amendments. All the Rocky Mountain Region RMPs – significantly, including Wyoming – are subject to the following measure for <u>both</u> priority and general habitat management areas:</p> <p><i>Prioritization Objective</i>—In addition to allocations that limit disturbance in PHMAs and GHMAs, the ARMPs and ARMPAs prioritize oil and gas leasing and development outside of identified PHMAs and GHMAs. This is to further limit future surface disturbance and encourage new development in areas that would not conflict with GRSG. This objective is intended to guide development to lower conflict areas and as such protect important habitat and reduce the time and cost associated with oil and gas leasing development by avoiding sensitive areas, reducing the complexity of environmental review and analysis of potential impacts on sensitive species, and decreasing the need for compensatory mitigation.</p>	<p>Beyond the scope of this document. Areas open or closed to leasing, and leasing stipulations are developed during Land Use Planning, which includes public participation. Stipulations applied to these parcels are consistent with the Approved RMPs. The FEIS’ have full discussions of the methodology of stipulation development and application.</p> <p>The RMPs in the WR/BBD were full revisions and were not part of the Sage Grouse Plan Amendments you are referencing. Areas designated as open or closed to leasing are determined through the RMP process.</p> <p>August 2016 DOI-BLM-WY-R000-2016-0001-EA 1.1, page 1-2: ‘After careful review of the parcels, the BLM has determined that it was appropriate to defer certain parcels nominated for inclusion in the August 2016 oil and gas lease sale. These deferrals of certain nominated parcels were made consistent with the BLM’s sage-grouse conservation plans and strategy, which direct the BLM to prioritize oil and gas leasing and development in a manner that minimizes resource conflicts in order to protect important habitat and reduce development time and costs.’</p> <p>The parcels remain eligible for leasing consideration in the future.</p>

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		<p>The EA explicitly acknowledges that its greater sage-grouse conservation plans and strategy “direct the BLM to prioritize oil and gas leasing and development in a manner that minimizes resource conflicts in order to protect important habitat and reduce development time and costs.” EA at 1-2. Indeed, the EA states, although without further explanation, that 12 parcels containing 9,652.99 acres were deferred pursuant to the Plans’ prioritization requirement. EA at 1-2.</p> <p>The BLM is subject to clear direction in the RMP amendments that its sage-grouse RMP plans and conservation strategy rely not only on stipulations within designated habitats (stipulations acknowledged as insufficient, in Wyoming, to result in a net conservation gain for general habitat, <i>see</i> 2015 RMPA ROD at 1-30 to 1-31), but also on a larger strategy of prioritizing development outside of all sage-grouse habitats. Despite its acknowledgement of the prioritization requirement by deferring 12 parcels, however, the BLM’s proposed action would lease 50 parcels comprising 66,642.82 acres that fall 97% within greater sage-grouse habitat. It is simply impossible to understand how offering leases entirely within sage-grouse habitat is consistent with the RMP requirement to prioritize leasing outside such habitat, and the EA provides no rationale whatsoever for this decision. In particular, the EA fails offer any explanation as to why approximately 9,600 acres are deferred as “consistent” with the prioritization requirement but the remaining 64,785.23 acres of sage-grouse habitat (97% of the total lease sale) are not.</p> <p>An apparent BLM policy of leasing almost entirely within sage-grouse habitat is not only inconsistent with the RMPs and FLPMA’s consistency requirement, it also undermines a fundamental assumption of the RMP Amendment EISs – as well as the Fish and Wildlife Service’s “not</p>	<p>Please give the specific FLPMA citation regarding the consistency requirement you are referencing. The RMPs were developed in consistency with the direction given in FLPMA for Land Use Planning.</p>

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		<p>warranted” determination for the greater sage-grouse. That assumption is that the measures adopted in the RMP Amendments will tend to result in oil and gas development tending to occur outside of greater sage-grouse habitat. Proposing a lease sale for 97% sage-grouse habitat (including 1,857.59 acres of Priority Habitat Management Area) shortly following the finalization of the sage-grouse RMPs strongly undermines that assumption. It further undermines the assumption in the Fish and Wildlife Service’s “Not Warranted” finding for the greater sage-grouse that federal and state implementation of the “Wyoming Plan” for fluid minerals will continue the 2012-15 of reduced drilling within core areas. If BLM is not actually going to give meaningful content to its plan direction to prioritize leasing outside of sage-grouse habitats, it cannot rely on FEISs, such as the Bighorn Basin RMP FEIS, that assume the effectiveness of that plan direction.</p>	
32	CBD	<p><i>2. Other Sensitive Species</i> The expansion of oil and gas development activities will harm wildlife through habitat destruction and fragmentation, stress and displacement caused by development-related activities (e.g., construction and operation activities, truck traffic, noise and light pollution), surface water depletion leading to low stream flows, water and air contamination, introduction of invasive species, and climate change. These harms can result in negative health effects and population declines. Studies and reports of observed impacts to wildlife from unconventional oil and gas extraction activities are summarized in the Center’s “Review of Impacts of Oil and Gas Exploration and Development on Wildlife,” submitted herewith. Because the allowance of destructive oil and gas extraction runs contrary to BLM’s policy of managing resources in a manner that will protect the quality of ecological values and provide habitat for wildlife, a no-fracking alternative minimizing industrial development and its harmful effects on</p>	<p>As stated in the introduction to DOI-BLM-WY-R000-2016-0001-EA, pursuant to 40 CFR § 1508.28 and § 1502.21, the EA tiers to and incorporates by reference the information and analysis contained in the Environmental Impact Statements (EIS), Records of Decisions (ROD) and Approved Resource Management Plans (RMP) for the Lander Field Office (LFO 2014), the Worland Field Office (WFO 2015), and the Cody Field Office (CyFO 2015); therefore, a new EIS for leasing is not necessary.</p> <p>Reference DOI-BLM-WY-R000-2016-0001-EA 3.7.6 “There are no direct impacts to wildlife, fish, or wild horse habitat resources through the</p>

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		<p>wildlife must be considered.</p> <p>BLM must provide an analysis of the nature, intensity, and extent of potential impacts, along with supporting science and data; and further, it must consider the many effects that fracking in particular, and other unconventional methods, may have on these species. BLM has an obligation to analyze and discuss those impacts now at the leasing stage. Therefore, an EIS must be prepared to analyze the following issues.</p> <p><i>i. Habitat Loss</i></p> <p>Oil and gas development creates a network of well pads, roads, pipelines, and other infrastructure that lead to direct habitat loss and fragmentation, as well as displacement of wildlife from these areas due to increased human disturbance. Habitat loss occurs as a result of a reduction in the total area of the habitat, the decrease of the interior-to-edge ratio, isolation of one habitat fragment from another, breaking up of one habitat into several smaller patches of habitat, and decreasing the average size of a habitat patch.</p> <p>The indirect effects from unconventional oil and gas development can often be far greater than the direct disturbances to habitat. The impacts from the well site—including noise, light, and pollution—extend beyond the borders of the operation site and will consequently render even greater areas uninhabitable for some wildlife. Species dependent on having an “interior” habitat will lose their habitat as operation sites or other infrastructure fragment previously buffered and secluded areas. These and other indirect effects can be far greater than the direct disturbances to land. In the Marcellus shale</p> <p>of Pennsylvania, for instance, research shows that 8.8 acres of forest on</p>	<p>administrative action of leasing. The BLM manages a variety of habitats that possess the biological and physical attributes important in the life-cycles of many wildlife species. The diversity of habitats and landscapes provide important areas for breeding, birthing, foraging, wintering, and migration. Indirect effects from leasing may occur to the habitat if development were to occur. At the time of a site-specific application, such as an APD, wildlife, fish, or wild horse resources will be identified and conditions of approval to mitigate adverse impacts may be imposed at that time.” and, “Parcels offered for sale are subject to the stipulations shown in Attachment 1, with protections for wildlife, fish, and wild horses. The lease sale includes some LFO parcels that are open to oil and gas leasing subject to an NSO stipulation for the protection of wildlife.”</p> <p>All parcels for the August 2016 Competitive Oil and Gas Lease Sale are in conformance with the existing land use plans as required by 43 CFR 1610.5, and the August 2016 DOI-BLM-WY-R000-2016-0001-EA has adequately analyzed the issues raised by this comment. Site specific NEPA analysis will occur at the development stage that will analyze resource conflicts and identify mitigation for specific impacts.</p> <p>In accordance with IM 2004-110, Change 1 and Lease Notice No. 3 any new standards/mitigation/</p>

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		<p>average are cleared for each drilling pad along with associated infrastructure, but after accounting for ecological edge effects, each drilling station actually affected 30 acres of forest.</p> <p>While individual well sites may cause some disturbance and destruction, the cumulative impacts of oil and gas production using unconventional methods must receive attention as well. While the actual well pads may only occupy a small proportion of a particular habitat, their impact can be much greater when their aggregate impact is considered. As discussed above, interior habitats will be destroyed by removing the buffer between the interior habitat and the operation site. For example, one study found that grassland bird species' habitat have been degraded by oil development in the Baaken shale region, as evidenced by their avoidance of these areas. Grassland birds avoided areas within 150 meters of roads, 267 meters of single-bore well pads, and 150 meters of multi-bore well pads. In areas of dense development, these habitat effects are greatly multiplied for sensitive species, such as the Sprague's pipit (<i>Anthus spragueii</i>), which avoided areas within 350 meters of single-bore well pads. The EIS must quantify the potential cumulative loss of habitat for sensitive species.</p>	<p>stipulations coming forth from that process can be applied to post-lease actions (i.e., APDs, Sundry Notices, Rights-of-Way, etc.).</p> <p>In accordance with H-1624-1 – Planning For Fluid Mineral Resources Rel. 1-1749, 1/28/2013: The Federal Government retains certain rights when issuing an oil and gas lease. While the BLM may not unilaterally add a new stipulation to an existing lease that it has already issued, the BLM can subject development of existing leases to reasonable conditions, as necessary, through the application of Conditions of Approval at the time of permitting. The new constraints must be consistent with the applicable land use plan and not in conflict with rights granted to the holder under the lease. The Interior Board of Land Appeals has made clear that, when making a decision regarding discrete surface-disturbing oil and gas development activities following site-specific environmental review, the BLM has the authority to impose reasonable protective measures not otherwise provided for in lease stipulations, to minimize adverse impacts on other resource values. See 30 U.S.C. §226(g); 43 CFR 3101.1-2. See Yates Petroleum Corp., 176 IBLA 144 (2008); National Wildlife Federation, 169 IBLA 146, 164 (2006).</p>

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33	CBD	<p><i>ii. Water Depletion</i></p> <p>Water depletion affects even those species whose habitats are far removed from the actual well site. The PEA does not analyze the foreseeable cumulative water depletions likely to jeopardize the continued existence of the pallid sturgeon or any of the other special status aquatic wildlife. Hydraulic fracturing, for example, requires water volumes that far exceed the amounts used in conventional natural gas development.</p> <p>Nor does the PEA take into account the much higher fresh water requirements of horizontal drilling. For example, review of water depletion logs submitted by BLM to USFWS for drilling in watersheds of the Upper Colorado report on the water use of horizontal drilling separately from the water depletion of vertical wells. Those logs show that horizontal drilling typically entails fresh water depletion much greater than 2.62 acre feet per well. The average water use of horizontal drilling projects from 2011-2014 in the White River, Grand Junction, Kremmling, Colorado River Valley, Gunnison, Uncompahgre, San Juan Public Lands, and Little Snake analysis areas was 13.34 acre feet of water. Similarly, recent horizontal drilling projects in BLM Colorado's Grand Junction Field Office in 2014 depleted 68.3 and 70.8 acre feet of freshwater. The use of this technique is likely to increase. High-volume fracking or "massive fracs" requiring millions of gallons of water may even be performed on vertical wells and directional non-horizontal wells in the WR/BB. ("Although many horizontal wells are given massive fracs, many vertical wells and directional non- horizontal wells, such as those in the Williams Fork formation of western Colorado, are also given massive fracs.").</p> <p>BLM must complete formal consultation regarding the potential water depletions from this lease sale. The required reinitiation of formal</p>	<p>Beyond the scope of this document. The August 2016 Competitive Oil and Gas Lease Sale is not a regulatory action, but rather an administrative action. There are no direct impacts to water depletion or sensitive species dependent on water through the administrative action of leasing. Indirect effects from leasing may occur to water if development were to occur. At the time of a site-specific application, such as an APD, surface and subsurface water resources, including special status species, will be identified, evaluated, and conditions of approval to mitigate adverse impacts to the water related resources may be imposed at that time.</p> <p>A discussion of water has been discussed in DOI-BLM-WY-R000-2016-0001-EA in part 3.4.5; wildlife and fish have been discussed in 3.7.6. All parcels were reviewed and none were identified as having areas containing special status species.</p> <p>As a note, the pallid sturgeon has not been identified as being present in the WR/BBD. Water depletion has not been identified as an issue or reason for their decline in numbers in areas they do inhabit.</p> <p>Parcels offered for sale are subject to the stipulations shown in Attachment 1, which includes the protection of perennial surface waters, riparian-wetland areas, playas, water, disturbance within 500</p>

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		<p>consultation arises “where discretionary Federal involvement or control over the action has been retained or is authorized by law and...[i]f new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered.” 50 CFR § 402.16(b). New information reveals that horizontal drilling, hydraulic fracturing, and other related infrastructure projects in the WR/BB planning area will require water depletions to an extent not previously considered. Before leasing these lands, BLM must formally consult or reinitiate formal consultation regarding the lease sale’s water depletion effects on the endangered fish.</p> <p>Because of the high volume of water required for even a single well that uses unconventional extraction methods, the cumulative water depletion has a significant impact on the endangered species dependent upon water sources that serve to supply oil and gas operations. In addition, water depletion adversely impacts water temperature and chemistry, as well as amplifies the effects of harmful pollutants on wildlife that would otherwise be diluted without the depletion.</p> <p><i>iii. Contamination from Wastewater Causing Harm and Mortality</i> BLM also erroneously failed to complete formal consultation with USFWS regarding the heightened risk of spills and leaks that the lease sale poses to endangered fish and their habitat in nearby rivers. The PEA does not adequately analyze the increased risk of leaks and spills that will occur with increased fluid mineral development. These leaks and spills will pollute nearby streams, rivers, and stream-connected groundwater, exposing endangered fish to toxic pollutants and degrading their habitat. BLM must therefore complete formal consultation regarding the increased risk of spills and leaks from oil and gas development on endangered fish.</p>	<p>feet perennial surface water, and protection of riparian habitat supporting special status fish species. Further protections are implemented through Lease Stipulation No. 2</p> <p>No parcels were nominated in the August 2016 lease sale affecting sole source aquifers or public water supply areas in the WR/BBD. Referring to Appendix 1, for DOI-BLM-WY-R000-2016-0001-EA, a stipulation has been applied for the protection of spawning habitat in fish-bearing streams on Lander parcels WY-1608-045, -046, -047, -048. A stipulation has been applied for perennial surface waters, riparian-wetland areas, and playas on Lander parcels WY-1608-044, -045, -046, -047, -073, -074, -076, -077, -086, -089, and -090. A stipulation has been applied for the protection of water, riparian/wetland: within 500 feet perennial surface water, and riparian/wetland areas on Worland parcels WY- 1608-055, -092, and -098.</p>

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		<p>Accidental spills and leaks are foreseeable and likely to increase with the development of the lease. Accidental spills or intentional dumping of wastewater contaminate surface water and cause large-scale harm to wildlife. Numerous incidents of wastewater contamination from pipelines, equipment blowouts, and truck accidents have been reported, and have resulted in kills of fish, aquatic invertebrates, and trees and shrubs, as well as negative health effects for wildlife and domestic animals.</p> <p>Contamination incidents that have occurred actually demonstrate that wildlife harm from contamination is a real, not just theoretical, impact that must be considered. In 2013, a company admitted to dumping wastewater from fracking operations into the Acorn Fork Creek in Kentucky, causing a massive fish kill. Among the species harmed was the blackside dace, a threatened minnow species. An analysis of water quality of Acorn Creek and fish tissues taken shortly after the incident was exposed showed the fish displayed general signs of stress and had a higher rate of gill lesions, than fish in areas not affected by the dumping. The discharge of fracking wastewater into the Susquehanna River in Pennsylvania is suspected to be the cause of fish abnormalities, including high rates of spots, lesions, and intersex. In West Virginia, the permitted application of hydrofracturing fluid to an area of mixed hardwood forest caused extensive tree mortality and a 50-fold increase in surface soil concentrations of sodium and chloride.</p> <p>BLM's EA also fails to take into account the unprecedented sheer volume of chemicals and wastewaters that will be generated by increased hydraulic fracturing in the WR/BB. Millions of pounds of fracking chemicals will be transported to the WR/BB planning area, injected into the ground, and either reinjected underground or transported offsite for disposal.</p>	

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		<p>In addition, open air pits that store waste fluid pose risks for wildlife that may come into contact with the chemicals stored in the pits. Already, there have been several documented cases of animal mortality resulting from contact with pits. A field inspection of open pits in Wyoming found 269 bird carcasses, the likely cause of death being exposure to toxic chemicals stored in the open pits. Open pits can also serve as breeding grounds for mosquitoes, which serve as a vector for West Nile virus, a threat to humans and animals alike. In Wyoming, an increase of ponds led to an increase of West Nile virus among greater sage-grouse populations. Recently, new information has come to light that operators in California have been dumping wastewater into hundreds of unpermitted open pits. The EIS must take into account the impact of both unpermitted, illegal waste pits as well as those that are regulated.</p> <p>Contaminants from spills not only directly harm species exposed to these contaminants but can enter the food chain and harm predators. A recent study found that in watersheds where hydraulic fracturing occurs, a top predator, riparian songbird in headwater systems, the Louisiana Waterthrush (<i>Parkesia motacilla</i>), accumulated metals associated with the fracking process. “In both the Marcellus and Fayetteville shale regions, barium and strontium were found at significantly higher levels in feathers of birds in sites with fracking activity than at sites without fracking.” While the study did not resolve the pathway for these metals entering the food chain, their findings suggested that “hydraulic fracturing may be contaminating surface waters and underscores the need for additional monitoring and study to further assess ecological and human health risks posed by the increasingly widespread development of unconventional sources of natural gas around the world.”</p> <p><i>iv. Invasive Species</i></p>	

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		<p>Invasive species may be introduced through a variety of pathways that would be increasingly common if oil and gas activity is allowed to expand. Machinery, equipment, and trucks moved from site to site can carry invasive plant species to new areas. In addition, materials such as crushed stone or gravel transported to the site from other locations may serve as a conduit for invasive species to migrate to the well site or other areas en route.</p> <p>Aquatic invasive species may also spread more easily given the large amounts of freshwater that must be transported to accommodate new drilling and extraction techniques. These species may be inadvertently introduced to new habitats when water is discharged at the surface. Alternatively, hoses, trucks, tanks, and other water use equipment may function as conduits for aquatic invasive species to access new habitats.</p>	
34	CBD	<p><i>v. Climate Change</i></p> <p>Anthropogenic climate change poses a significant threat to biodiversity. Climate disruption is already causing changes in distribution, phenology, physiology, genetics, species interactions, ecosystem services, demographic rates, and population viability: many animals and plants are moving poleward and upward in elevation, shifting their timing of breeding and migration, and experiencing population declines and extinctions. Because climate change is occurring at an unprecedented pace with multiple synergistic impacts, climate change is predicted to significantly increase extinction risk for many species. The IPCC concludes that it is extremely likely that climate change at or above 4°C will result in substantial special extinction. Other studies have predicted similarly severe losses: 15-37 percent of the world's plants and animals committed to extinction by 2050 under a mid-level emissions scenario; the extinction of 10 to 14 percent of species by 2100 if climate change</p>	<p>Beyond the scope of this document. The August 2016 Competitive Oil and Gas Lease Sale is not a regulatory action, but rather an administrative action. There are no direct impacts to air quality or climate change through the administrative action of leasing. Should the leases be developed in the future, impacts to air quality or climate change will be analyzed through additional site and project-specific NEPA analysis, and conformance with State and Federal air quality standards and regulations will be evaluated. As new information is gathered, it will be incorporated into BLM decisions and may require conditions of approval to mitigate adverse impacts to air quality or climate change.</p>

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		<p>continues unabated. Another recent study predicts the loss of more than half of the present climatic range for 58 percent of plants and 35 percent of animals by the 2080s under the current emissions pathway, in a sample of 48,786 species. Because expansion of oil and gas production in the planning area will substantially increase the emissions of greenhouse gases, this activity will further contribute to the harms from climate change to wildlife and ecosystems.</p>	<p>A discussion of Air Quality and Climate Change have been addressed in the EA in part 3.4.5.</p>
35	CBD	<p><i>vi. Population Impacts</i> Oil and gas development has been linked to population-level impacts on wildlife, including lower reproductive success of sage grouse and declines in the abundance of songbirds and aquatic species. For example, young greater-sage grouse avoided mating near infrastructure of natural-gas fields, and those that were reared near infrastructure had lower annual survival rates and were less successful at establishing breeding territories compared to those reared away from infrastructure. In Wyoming, an increasing density of wells was associated with decreased numbers of Brewer's sparrows, sage sparrows, and vesper sparrows. In the Fayetteville Shale of central Arkansas, the proportional abundance of sensitive aquatic taxa, including darters, was negatively correlated with gas well density. The EIS must consider the population-level impacts that oil and gas development may have on wildlife in the WR/BB planning area.</p> <p><i>vii. Metrics</i> BLM should conduct a full assessment of the direct and indirect impacts of unconventional oil and gas development activities on wildlife and ecosystems through a suite of comprehensive studies on all species and ecosystems that could be affected. The studies should be particularly detailed for federally and state listed species, federal and state candidates</p>	<p>As stated in the introduction to DOI-BLM-WY-R000-2016-0001-EA, pursuant to 40 CFR § 1508.28 and § 1502.21, the EA tiers to and incorporates by reference the information and analysis contained in the Environmental Impact Statements (EIS), Records of Decisions (ROD) and Approved Resource Management Plans (RMP) for the Lander Field Office (LFO 2014), the Worland Field Office (WFO 2015), and the Cody Field Office (CyFO 2015); therefore, a new EIS for leasing is not necessary. These FEIS documents analyzed the effects of development on wildlife, and the specific management goals, plans, and monitoring actions are addressed in the RMPs.</p> <p>All parcels for the August 2016 Competitive Oil and Gas Lease Sale are in compliance with the existing land use plans as required by 43 CFR 1610.5, and the August 2016 DOI-BLM-WY-R000-2016-0001-EA has adequately analyzed the issues raised by this comment. Site specific NEPA analysis will occur at</p>

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		<p>for listing, and state species of special concern. The studies should address the following impacts: (1) habitat loss, degradation, and fragmentation, including edge effects; (2) water depletion; (3) air and water contamination; (4) introduction of invasive species; (5) climate change impacts; (6) health and behavioral effects such as increased stress and changes in life history behaviors; (7) changes in demographic rates such as reproductive success and survival; and (8) potential for population-level impacts such as declines and extirpations. These studies should consider these harms individually and cumulatively.</p>	<p>the development stage that will analyze resource conflicts and identify mitigation for specific impacts.</p>
36	CBD	<p>E. BLM has Failed to Adequately Disclose or Analyze the Human Health and Safety Risks Posed by Unconventional Extraction Techniques</p> <p>Ample scientific evidence indicates that well development and well stimulation activities have been linked to an array of adverse human health effects, including carcinogenic, developmental, reproductive, and endocrine disruption effects. This is all the more alarming when considering how close wells may be developed to schools, residences, and businesses in Wyoming. Just as troubling, is how much is <i>unknown</i> about the chemicals used in well stimulation activities. The potential human health dangers and the precautionary principle should further compel BLM to consider not allowing further development of oil and gas minerals in the areas for lease. In comparing the no-leasing and no-fracking alternatives to leasing and continued unconventional well development scenarios, the EIS should include a health impact assessment, or equivalent, of the aggregate impact that unconventional extraction techniques, including fracking, will have on human health and nearby communities.</p> <p>Due to the heavy and frequent use of chemicals, proximity to fracked</p>	<p>Beyond the scope of this document. The August 2016 Competitive Oil and Gas Lease Sale is not a regulatory action, but rather an administrative action. The act of leasing land for oil and gas development in itself does not cause hydraulically fracturing and/or horizontal drilling to occur.</p> <p>Since development cannot be reasonably determined at the leasing stage, any site specific impacts cannot realistically be analyzed at this time. Hydraulic fracturing and/or horizontal drilling are specific development scenarios. Should the parcels be sold and development proposed, an analysis of hydraulic fracturing and/or horizontal drilling would be completed and the impacts to resources affected will also be analyzed under that site specific NEPA document.</p>

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		<p>wells is associated with higher rates of cancer, birth defects, poor infant health, and acute health effects for nearby residents who must endure long-term exposure:</p> <p>Ample scientific evidence indicates that well development and well stimulation activities have been linked to an array of adverse human health effects, including carcinogenic, developmental, reproductive, and endocrine disruption effects. This is all the more alarming when considering how close wells may be developed to schools, residences, and businesses in Wyoming. Just as troubling, is how much is <i>unknown</i> about the chemicals used in well stimulation activities. The potential human health dangers and the precautionary principle should further compel BLM to consider not allowing further development of oil and gas minerals in the areas for lease. In comparing the no-leasing and no-fracking alternatives to leasing and continued unconventional well development scenarios, the EIS should include a health impact assessment, or equivalent, of the aggregate impact that unconventional extraction techniques, including fracking, will have on human health and nearby communities.</p> <p>Due to the heavy and frequent use of chemicals, proximity to fracked wells is associated with higher rates of cancer, birth defects, poor infant health, and acute health effects for nearby residents who must endure long-term exposure:</p> <p><input type="checkbox"/> In one study, residents living within one-half mile of a fracked well were significantly more likely to develop cancer than those who live more than one-half mile away, with exposure to benzene being the most significant risk.</p> <p><input type="checkbox"/> Another study found that pregnant women living within 10 miles of a fracked well were more likely to bear children with congenital heart defects and possibly neural tube defects. A separate study independently</p>	

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		<p>found the same pattern; infants born near fracked gas wells had more health problems than infants born near sites that had not yet conducted fracking.</p> <p><input type="checkbox"/> A study analyzed Pennsylvania birth records from 2004 to 2011 to assess the health of infants born within a 2.5-kilometer radius of natural-gas fracking sites. They found that proximity to fracking increased the likelihood of low birth weight by more than half, from about 5.6 percent to more than 9 percent. The chances of a low Apgar score, a summary measure of the health of newborn children, roughly doubled, to more than 5 percent. Another recent Pennsylvania study found a correlation between proximity to unconventional gas drilling and higher incidence of lower birth weight and small-for- gestational-age babies.</p> <p><input type="checkbox"/> A recent study found increased rates of cardiology-patient hospitalizations in zip codes with greater number of unconventional oil and gas wells and higher well density in Pennsylvania. The results suggested that if a zip code went from having zero wells to well density greater than 0.79 wells/km², the number of cardiology-patient hospitalizations per 100 people (or “cardiology inpatient prevalence rate”) in that zip code would increase by 27%. If a zip code went from having zero wells to a well density of 0.17 to 0.79 wells/km², a 14% increase in cardiology inpatient prevalence rates would be expected. Further, higher rates of neurology-patient hospitalizations were correlated with zip codes with higher well density.</p> <p><input type="checkbox"/> Recently published reports indicate that people living in proximity to fracked gas wells commonly report skin rashes and irritation, nausea or vomiting, headache, dizziness, eye irritation and throat irritation.</p> <p><input type="checkbox"/> In Texas, a jury awarded nearly \$3 million to a family who lived near a well that was hydraulically fractured. The family complained that they experienced migraines, rashes, dizziness, nausea and chronic nosebleeds.</p>	

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		<p>Medical tests showed one of the plaintiffs had more than 20 toxic chemicals in her bloodstream. Air samples around their home also showed the presence of BTEX — benzene, toluene, ethylbenzene and xylene —colorless but toxic chemicals typically found in petroleum products.</p> <p>Chemicals used for fracking also put nearby residents at risk of endocrine disruption effects. A study that sampled water near active wells and known spill sites in Garfield, County Colorado found alarming levels of estrogenic, antiestrogenic, androgenic, and antiandrogenic activities, indicating that endocrine system disrupting chemicals (EDC) threaten to contaminate surface and groundwater sources for nearby residents. The study concluded:</p> <p>[M]ost water samples from sites with known drilling-related incidents in a drilling-dense region of Colorado exhibited more estrogenic, antiestrogenic, and/or antiandrogenic activities than the water samples collected from reference sites[,] and 12 chemicals used in drilling operations exhibited similar activities. Taken together, the following support an association between natural gas drilling operations and EDC activity in surface and ground water: [1] hormonal activities in Garfield County spill sites and the Colorado River are higher than those in reference sites in Garfield County and in Missouri, [2] selected drilling chemicals displayed activities similar to those measured in water samples collected from a drilling-dense region, [3] several of these chemicals and similar compounds were detected by other researchers at our sample collection sites, and [4] known spills of natural gas fluids occurred at these spill sites.</p> <p>The study also noted a linkage between EDCs and “negative health outcomes in laboratory animals, wildlife, and humans”:</p>	

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		<p>Despite an understanding of adverse health outcomes associated with exposure to EDCs, research on the potential health implications of exposure to chemicals used in hydraulic fracturing is lacking. Bamberger and Oswald (26) analyzed the health consequences associated with exposure to chemicals used in natural gas operations and found respiratory, gastrointestinal, dermatologic, neurologic, immunologic, endocrine, reproductive, and other negative health outcomes in humans, pets, livestock, and wildlife species.</p> <p>Of note, site 4 in the current study was used as a small-scale ranch before the produced water spill in 2004. This use had to be discontinued because the animals no longer produced live offspring, perhaps because of the high antiestrogenic activity observed at this site. There is evidence that hydraulic fracturing fluids are associated with negative health outcomes, and there is a critical need to quickly and thoroughly evaluate the overall human and environmental health impact of this process. It should be noted that although this study focused on only estrogen and androgen receptors, there is a need for evaluation of other hormone receptor activities to provide a more complete endocrine-disrupting profile associated with natural gas drilling.</p> <p>Operational accidents also pose a significant threat to public health. For example in August 2008, Newsweek reported that an employee of an energy-services company got caught in a fracking fluid spill and was taken to the emergency room, complaining of nausea and headaches. The fracking fluid was so toxic that it ended up harming not only the worker, but also the emergency room nurse who treated him. Several days later, after she began vomiting and retaining fluid, her skin turned yellow and she was diagnosed with chemical poisoning. ‘</p>	

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		<p>Harmful chemicals are also found in the flowback fluid after well stimulation events. Flowback fluid is a key component of oil-industry wastewater from stimulated wells. A survey of chemical analyses of flowback fluid dating back to April 2014 in California revealed that concentrations of benzene, a known carcinogen, were detected at levels over 1,500 times the federal limits for drinking water. Of the 329 available tests that measured for benzene, the chemical was detected at levels in excess of federal limits in 320 tests (97 percent). On average, benzene levels were around 700 times the federal limit for drinking water. Among other carcinogenic or otherwise dangerous chemicals found in flowback fluid from fracked wells are toluene and chromium-6. These hazardous substances were detected in excess of federal limits for drinking water in over one hundred tests. This dangerous fluid is commonly disposed of in injection wells, which often feed into aquifers, including some that could be used for drinking water and irrigation.</p> <p>Acidizing presents similarly alarming risks to public health and safety. In acidizing operations, large volumes of hydrochloric and hydrofluoric acid are transported to the site and injected underground. These chemicals are highly dangerous due to their corrosive properties and ability to trigger tissue corrosion and damage to sensory organs through contact.</p> <p>While many risks are known, much more is unknown about the hundreds of chemicals used in fracking. The identity and effects of many of these additives is unknown, due to operators' claims of confidential business information. But, as the EPA recognizes, chemical identities are "necessary to understand their chemical, physical, and toxicological properties, which determine how they might move through the environment to drinking water resources and any resulting effects." Compounds in mixtures can have synergistic or antagonistic effects, but</p>	

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		<p>again, it is impossible to know these effects without full disclosure. The lack of this information also precludes effective remediation: “Knowing their identities would also help inform what chemicals to test for in the event of suspected drinking water impacts and, in the case of wastewater, may help predict whether current treatment systems are effective at removing them.”</p> <p>Even where chemical identities are known, chemical safety data may be limited. In EPA’s study of the hazards of fracking chemicals to drinking water, EPA found that “[o]ral reference values and oral slope factors meeting the criteria used in this assessment were not available for the majority of chemicals used in hydraulic fracturing fluids [87%], representing a significant data gap for hazard identification.” Without this data, EPA could not adequately assess potential impacts on drinking water resources and human health. Further, of 1,076 hydraulic fracturing fluid chemicals identified by the EPA, 623 did not have estimated physiochemical properties reported in EPA’s toxics database, although this information is “essential to predicting how and where it will travel in the environment.” The data gaps are actually much larger, because EPA excluded 35% of fracking chemicals reported to FracFocus from its analysis because it could not assign them standardized chemical names.</p> <p>The EIS should incorporate a literature review of the harmful effects of each of the chemicals known to be used in fracking and other unconventional oil and gas extraction methods. Without knowing the effects of each chemical, the EIS cannot accurately project the true impact of unconventional oil and gas extraction.</p> <p>The EIS should also study the human health and safety impacts of noise pollution, light pollution, and traffic accidents resulting from oil and gas</p>	

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		<p>development. A recent study found that automobile and truck accident rates in counties in Pennsylvania with heavy unconventional oil and gas extraction activity were between 15 and 65 percent higher than accident rates in counties without unconventional oil and gas extraction activities. Rates of traffic fatalities and major injuries may be higher in areas with heavy drilling activity than areas without.</p>	
37	CBD	<p>F. BLM has Failed to Adequately Disclose or Analyze the Seismic Risks Posed by Unconventional Extraction Techniques and Underground Wastewater Disposal</p> <p>BLM failed to include any analysis of the seismic risks posed by the lease sale. Earthquakes induced by fluid injection, or fracking, in the U.S. are a well-known threat to human health and safety and infrastructure. The PEA does not even mention this, which is a gross a violation of NEPA.</p> <p>If oil and gas development is allowed to proliferate in the planning area, increased unconventional oil and gas extraction and underground waste injection will increase the risk of induced seismicity. Induced seismic events could damage or destroy property and cause injuries or even death, especially in a state where earthquakes are rare and communities are typically not prepared for them. A no-fracking alternative would minimize these risks, while continued leasing and unconventional well development would increase them.</p> <p>Research has shown that in regions of the central and eastern United States where unconventional oil and gas development has proliferated in recent years, earthquake activity has increased dramatically. More than 300 earthquakes with magnitude (M) ≥ 3 occurred between 2010 through 2012, compared with an average of 21 per year between 1967 and 2000.</p>	<p>Beyond the scope of this document. The August 2016 Competitive Oil and Gas Lease Sale is not a regulatory action, but rather an administrative action. The act of leasing land for oil and gas development in itself does not cause seismic risks to occur.</p> <p>Since development cannot be reasonably determined at the leasing stage, any site specific impacts cannot realistically be analyzed at this time. Hydraulic fracturing, fluid injection, and horizontal drilling are specific development scenarios. Should the parcels be sold and development proposed, an analysis of drilling and completion methods would be completed and the impacts to resources affected would also be analyzed under that site specific NEPA document.</p>

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		<p>Moreover, although earthquakes with magnitude (M) ≥ 5.0 are very uncommon east of the Rocky Mountains, the number per year recorded in the midcontinent increased 11-fold between 2008 and 2011, compared to 1976 to 2007. Mid-continent states experiencing elevated levels of seismic activity include Arkansas, Colorado, New Mexico, Ohio, Oklahoma, Texas, and Virginia.</p> <p>Research has linked much of the increased earthquake activity and several of the largest earthquakes in the U.S. midcontinent in recent years to the disposal of wastewater into deep injection wells, which is well-established to pose a significant seismic risk. Much of the fracking wastewater is a byproduct of oil and gas production and is routinely disposed of by injection into wells specifically designed and approved for this purpose. The injected fluids push stable faults past their tipping points, and thereby induce earthquakes. In 2015, a study published in <i>Science</i> found that, the unprecedented increase in earthquakes in the U.S. mid- continent began in 2009 has been caused solely by the instability caused by fluid injection wells associated with fracking waste disposal. To put an exclamation point on this finding, a 4.7 magnitude earthquake struck northern Oklahoma that was felt in 7 additional states, leading the Oklahoma Geological Survey to reiterate the connection between disposal wells and earthquakes and to shut down the most high risk wells. Earthquakes at magnitudes (M) that are felt (M3 and M4) or destructive (M4 and M5) have been attributed to wastewater injection wells in at least five states - Arkansas, Colorado, Ohio, Oklahoma, and Texas. The largest of these was a M5.7 earthquake in Prague, Oklahoma, which was the biggest in the state's history, destroying 14 homes and injuring two people. Other large earthquakes attributed to wastewater injection include an M5.3 in Colorado, M4.9 in Texas, M4.7 in Arkansas, and M3.9 in Ohio.</p>	

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		<p>The proliferation of unconventional oil and gas development, including increases in extraction and injection, will increase earthquake risk in Wyoming. Accordingly, the EIS must fully assess the risk of induced seismicity cause by all unconventional oil and gas extraction and injection activities, including wastewater injection wells.</p> <p>The analysis should assess the following issues based on guidance from the scientific literature, the National Research Council, and the Department of Energy:</p> <ol style="list-style-type: none"> (1) whether existing oil and gas wells and wastewater injection wells in the area for lease have induced seismic activity, using earthquake catalogs (which provide an inventory of earthquakes of differing magnitudes) and fluid extraction and injection data collected by industry; (2) the region’s fault environment by identifying and characterizing all faults in these areas based on sources including but not limited to the USGS Quaternary Fault and Fold database. In its analysis, BLM should assess its ability to identify all faults in these areas, including strike-slip faults and deep faults that can be difficult to detect; (3) the background seismicity of oil- and gas-bearing lands including the history of earthquake size and frequency, fault structure (including orientation of faults), seismicity rates, failure mechanisms, and state of stress of faults; (4) the geology of oil- and gas-bearing lands including pore pressure, formation permeability, and hydrological connectivity to deeper faults; (5) the hazards to human communities and infrastructure from induced seismic activity; and (6) the current state of knowledge on important questions related to the risk and hazards of induced seismicity from oil and gas development activities, including: <ol style="list-style-type: none"> (a) how the distance from a well to a fault affects seismic risk (i.e., 	

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		<p>locating wells in close proximity to faults can increase the risk of inducing earthquakes);</p> <p>(b) how fluid injection and extraction volumes, rates, and pressures affect seismic risk;</p> <p>(c) how the density of wells affects seismic risk (i.e., a greater density of wells affects a greater volume of the subsurface and potentially contacts more areas of a single fault or a greater number of faults);</p> <p>(d) the time period following the initiation of injection or extraction activities over which earthquakes can be induced (i.e., studies indicate that induced seismicity often occurs within months of initiation of extraction or injection although there are cases demonstrating multi-year delays);</p> <p>(e) how stopping extraction or injection activities affects induced seismicity (i.e., can induced seismicity be turned off by stopping extraction and injection and over what period, since studies indicate that there are often delays—sometimes more than a year—between the termination of extraction and injection activities and the cessation of induced earthquake activity);</p> <p>(f) the largest earthquake that could be induced by unconventional oil and gas development activities in areas for lease, including earthquakes caused by wastewater injection; and</p> <p>(g) whether active and abandoned wells are safe from damage from earthquake activity over the short and long-term.</p>	
38	CBD	<p>G. BLM has Failed to Adequately Disclose or Analyze the Impacts to Land Use by Fossil Fuel Development</p> <p>Increased oil and gas extraction and production have the potential to dramatically and permanently change the landscape of WR/BB. Countless acres of land will likely be leveled to allow for the construction and operation of well pads and related facilities such as wastewater pits.</p>	<p>Beyond the scope of this document. The August 2016 Competitive Oil and Gas Lease Sale is not a regulatory action, but rather an administrative action. The act of leasing land for oil and gas development in itself does not cause development or degradation of the lands. All parcels for the August 2016</p>

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		<p>Roads may have to be constructed or expanded to accommodate trucks transporting chemicals and the large quantities of water needed for some recovery methods. Transmission lines and other utilities may also be required. The need for new distribution, refining, or waste treatment facilities will expand industrial land use. With new roads and other industrial infrastructure, certain areas could open up to new industrial or extractive activities, permanently changing the character and use of the land.</p> <p>Such changes would result in a significant cumulative losses of agricultural and conservation lands. Vegetation removal by oil and gas development across central North America between 2000 and 2012 is estimated to be 4.5 tetragrams of carbon or 10 tetragrams of dry biomass. This is equivalent to more than half of annual available grazing on public lands managed by BLM or 6% of the wheat produced in 2013 within the region (120.2 million bushels of wheat). This loss of “net primary production” (amount of carbon fixed by plants and accumulated as biomass) is “likely long-lasting and potentially permanent, as recovery or reclamation of previously drilled land has not kept pace with accelerated drilling.” The total surface disturbance by oil and gas development within this time period is 3 million hectares, the equivalent of three Yellowstone National Parks. As noted above, the fragmented nature of this surface disturbance negatively impacts wildlife by severing migratory pathways, altering wildlife behavior and mortality, and increasing susceptibility to ecologically disruptive species.</p> <p>The conversion of substantial acreages from rural or natural landscapes to industrial sites will also mar scenic views throughout the planning area. Given BLM’s failure to ensure full reclamation of idle wells and the difficulty of restoring sites to their original condition, scenic resources</p>	<p>Competitive Oil and Gas Lease Sale are in compliance with the existing land use plans as required by 43 CFR 1610.5, and the August 2016 DOI-BLM-WY-R000-2016-0001-EA has adequately analyzed the issues raised by this comment. Site specific NEPA analysis will occur at the development stage that will analyze resource conflicts and identify mitigation for specific impacts.</p> <p>The Mineral Leasing Act of 1920, as amended [30 U.S.C. § 181 et seq.], and the Mineral Leasing Act for Acquired Lands of 1947, as amended, give the BLM responsibility for oil and gas leasing on about 564 million acres of BLM, national forest, and other federal lands, as well as State and private surface lands where mineral rights have been retained by the federal government. The BLM works to ensure that mineral resources are developed in an environmentally responsible manner.</p> <p>Consistent with IM 2004-110, Change 1 more extensive/ expansive/ restrictive mitigation, including adaptive management, could be developed during the site-specific NEPA analysis that would be required to address any specific post-lease exploration or development actions that are proposed.</p>

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		may be permanently impaired.	
39	CBD	<p>H. BLM Must Prepare an Environmental Impact Statement</p> <p>NEPA demands that a federal agency prepare an EIS before taking a “major [f]ederal action[] significantly affecting the quality’ of the environment.” <i>Kern v. U.S. Bureau of Land Mgmt.</i>, 284 F.3d 1062, 1067 (9th Cir. 2002). In order to determine whether a project’s impacts may be “significant,” an agency may first prepare an Environmental Assessment (“EA”). 40 C.F.R. §§ 1501.4, 1508.9. If the EA reveals that “the agency’s action may have a significant effect upon the . . . environment, an EIS must be prepared.” <i>Nat’l Parks & Conservation Ass’n v. Babbitt</i>, 241 F.3d 722, 730 (9th Cir. 2001) (internal quotations omitted). If the agency determines that no significant impacts are possible, it must still adequately explain its decision by supplying a “convincing statement of reasons” why the action’s effects are insignificant. <i>Blue Mountains Biodiversity Project v. Blackwood</i>, 161 F.3d 1208, 1212 (9th Cir. 1998). Further, an agency must prepare all environmental analyses required by NEPA at “the earliest possible time.” 40 C.F.R. § 1501.2. “NEPA is not designed to postpone analysis of an environmental consequence to the last possible moment,” but is “designed to require such analysis as soon as it can reasonably be done.” <i>Kern</i>, 284 F.3d at 1072.</p> <p>BLM is therefore required under NEPA to prepare an EIS to support this proposed project. This is especially true in light of the likelihood that fracking would occur on the leases. <i>CBD</i>, 937 F. Supp. 2d 1140.</p> <p>In considering whether the lease sale would have significant effects on the environment, NEPA’s regulations require BLM to evaluate ten factors regarding the “intensity” of the impacts. 40 C.F.R. § 1508.27(b). The</p>	<p>As stated in the introduction to DOI-BLM-WY-R000-2016-0001-EA, pursuant to 40 CFR § 1508.28 and § 1502.21, the EA tiers to and incorporates by reference the information and analysis contained in the Environmental Impact Statements (EIS), Records of Decisions (ROD) and Approved Resource Management Plans (RMP) for the Lander Field Office (LFO 2014), the Worland Field Office (WFO 2015), and the Cody Field Office (CyFO 2015); therefore, a new EIS for leasing is not necessary.</p> <p>If the analysis in an EA shows the action would not have a significant effect, a “Finding of No Significant Impact” (FONSI) documents that there is no need for an EIS (40 CFR 1508.13). The WR/BBD RMP EISs have already evaluated potentially significant impacts arising from the BLM’s land use planning decisions. See 43 CFR § 46.140(c), therefore, the BLM anticipates a “finding of no <u>new</u> significant impacts” (FONNSI).</p> <p>All parcels for the August 2016 Competitive Oil and Gas Lease Sale are in compliance with the existing land use plans as required by 43 CFR 1610.5. Site specific NEPA analysis will occur at the development stage that will analyze resource conflicts and identify mitigation for specific impacts.</p>

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		<p>Ninth Circuit has held that the existence of any “one of these factors may be sufficient to require preparation of an EIS.” <i>Ocean Advocates</i>, 402 F.3d at 865; <i>Nat’l Parks & Conservation Ass’n</i>, 241 F.3d at 731. Several of these “significance factors” are implicated in the lease sale and clearly warrant the preparation of an EIS:</p> <p>The degree to which the effects on the quality of the human environment are likely to be highly controversial.</p> <p>The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.</p> <p>The degree to which the proposed action affects public health or safety.</p> <p>The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.</p> <p>40 C.F.R. § 1508.27(b)(4), (5), (2) & (9). <i>See CBD</i>, 937 F. Supp. 2d 1140 (holding that BLM failed to properly address the significance factors regarding controversy and uncertainty that may have been resolved by further data collection (citing <i>Native Ecosystems Council v. U.S. Forest Serv.</i>, 428 F.3d 1233, 1240 (9th Cir. 2005)). Here, individually and considered as a whole, there is no doubt that significant effects may result from the lease sale; thus, NEPA requires that BLM should have prepared an EIS for the action.</p> <p><i>1. The effects on the human environment will be highly controversial</i></p> <p>A proposal is highly controversial when “substantial questions are raised as to whether a project . . . may cause significant degradation” of a resource, <i>Nw. Env’tl. Def. Ctr. v. Bonneville Power Admin.</i>, 117 F.3d 1520, 1536 (9th Cir. 1997), or when there is a “substantial dispute [about] the size, nature, or effect of the” action. <i>Blue Mtns. Biodiversity</i>, 161 F.3d</p>	

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		<p>at 1212. A “substantial dispute exists when evidence, raised prior to the preparation of [a] . . . FONSI, casts serious doubt upon the reasonableness of an agency’s conclusions.” <i>Nat’l Parks & Conserv. Ass’n</i>, 241 F.3d at 736. When such a doubt is raised, “NEPA then places the burden on the agency to come forward with a ‘well-reasoned explanation’ demonstrating why those responses disputing the EA’s conclusions ‘do not . . . create a public controversy.’” <i>Id.</i> See also <i>CBD</i>, 937 F. Supp. 2d 1140.</p> <p>Here, the controversy regarding the lease sale is fully evident. This comment letter provides abundant evidence that oil and gas operations can cause significant impacts to human health, water resources, air quality, imperiled species, and seismicity. The potential for these significant impacts to occur is particularly clear in light of the potential for fracking to result from the lease sale.</p> <p>Fracking is among the top, if not the most controversial energy issue facing America today. The controversy spans the public arena, scientific discourse, local governments, and the halls of Congress. At the request of Congress, EPA is conducting a study into the effects of fracking on drinking and ground water. Similarly, the New York Draft DEC concluded that the health and environmental risks from fracking supports its ban in New York State. However, in addition to the presence of controversy, it is already evident, as discussed above, that fracking is harmful. Clearly, the level of controversy associated with fracking and its expansion in association with the lease sale is sufficient to trigger the need for an EIS. 40 C.F.R. § 1508.27(b)(4).</p> <p>2. <i>The lease sale presents highly uncertain or unknown risks</i></p>	

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		<p>An EIS must also be prepared when an action’s effects are “highly uncertain or involve unique or unknown risks.” 40 C.F.R. § 1508.27(b)(5). As the Ninth Circuit has held, “[p]reparation of an EIS is mandated where uncertainty may be resolved by further collection of data, or where the collection of such data may prevent speculation on potential . . . effects.” <i>Native Ecosystems Council v. U.S. Forest Serv.</i>, 428 F.3d 1233, 1240 (9th Cir. 2005) (internal citations omitted); <i>Blue Mtns. Biodiversity</i>, 161 F.3d at 1213-1214 (finding “EA’s cursory and inconsistent treatment of sedimentation issues . . . raises substantial questions about . . . the unknown risks to” fish populations). As one court recently explained regarding oil and gas leasing that may facilitate fracking, “BLM erroneously discounted the uncertainty from fracking that may be resolved by further data collection. ‘Preparation [of an EIS] is mandated where uncertainty may be resolved by further collection of data, or where collection of such data may prevent speculation on potential effects.’” <i>CBD</i>, 937 F. Supp. 2d 1140 quoting <i>Native Ecosystems Council v. U.S. Forest Serv.</i>, 428 F.3d 1233, 1240 (9th Cir. 2005)).</p> <p>While it is clear that oil and gas activities can cause great harm, there remains much to be learned about the specific pathways through which harm may occur and the potential degree of harm that may result. Additional information is needed, for example, about possible rates of natural gas leakage, the potential for fluids to migrate through the ground in and around the parcels, and the potential for drilling to affect local faults. NEPA clearly dictates that the way to address such uncertainties is through the preparation of an EIS.</p> <p><i>3. The lease sale poses threats to public health and safety</i></p> <p>As discussed in great detail above, the oil and gas activities that may</p>	

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		<p>occur as a result of the lease sale could cause significant impacts to public health and safety. 40 C.F.R. § 1508.27(b)(2). Fracking would pose a grave threat to the region’s water resources, harm air quality, pose seismic risks, negatively affect wildlife, and fuel climate change. As a congressional report noted, oil and gas companies have used fracking products containing at least 29 products that are known as possible carcinogens, regulated for their human health risk, or listed as hazardous air pollutants. The public’s exposure to these harmful pollutants alone would plainly constitute a significant impact. So do the many other public health risks associated with unconventional drilling as described above in section “III” subsection “3(E).” Furthermore and as previously discussed, information continues to emerge on the risk of earthquakes induced by wastewater injected into areas near faults. It is undeniable that these earthquakes pose risks to the residents of the area and points beyond The use of fracking fluid, which is likely to occur as a result of the lease sale, and other risks associated with unconventional drilling, pose a major threat to public health and safety and therefore constitutes a significant impact. BLM therefore must evaluate such impacts in an EIS.</p> <p><i>4. The Lease Sale Action Will Adversely Affect Candidate and Agency Sensitive Species and Their Habitat</i></p> <p>An EIS may also be required when an action “may adversely affect an endangered or threatened species or its habitat.” 40 C.F.R. § 1508.27(b)(9). Although a finding that a project has “some negative effects does not mandate a finding of significant impact,” an agency must nonetheless fully and closely evaluate the effects on listed species and issue an EIS if those impacts are significant. <i>Klamath-Siskiyou Wildlands Ctr. v. U.S. Forest Serv.</i>, 373 F. Supp. 2d 1069, 1081 (E.D. Cal. 2004)</p>	

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		<p>(finding agency’s conclusion that action “may affect, is likely to adversely affect” species due to “disturbance and disruption of breeding” and “degradation” of habitat is “[a]t a minimum, . . . an important factor supporting the need for an EIS”).</p> <p>Moreover, BLM must undertake consultation with the USFWS regarding the effects of this action on endangered and threatened species and their designated critical habitat. The ESA provides “a program for the conservation [of] endangered species and threatened species” and “a means whereby the ecosystems upon which [such] species depend may be conserved.” 16 U.S.C. § 1531(b). “The plain intent of Congress in enacting [the ESA] was to halt and reverse the trend toward species extinction, whatever the cost.” <i>TVA v. Hill</i>, 437 U.S. 153, 184 (1978). To implement the ESA, USFWS lists species that are “endangered” or “threatened” solely on the basis of biological criteria and the best available scientific and commercial data. 16 U.S.C. §§ 1533(b), 1533(c). USFWS must also designate “critical habitat” of listed species. <i>Id.</i> § 1533(a)(3). Critical habitat includes both occupied and unoccupied areas that contain habitat features that are “essential to the conservation of the species[.]” <i>Id.</i> § 1532(5)(A).</p> <p>Section 7(a)(2) of the ESA prohibits federal agencies from undertaking actions that (1) are “likely to jeopardize the continued existence” of any listed species or (2) “result in the destruction or adverse modification of” critical habitat. 16 U.S.C. § 1536(a)(2). “Jeopardy” results when it is reasonable to expect that the action would “reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species.” 50 C.F.R. § 402.02. “Adverse modification” is defined as “a direct or indirect alteration that appreciably diminishes the value of critical habitat for ...</p>	

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		<p>the survival [or] recovery of a listed species.” <i>Id.</i> An interagency consultation process must occur when a federal agency, like BLM, proposes an “agency action” that “may affect” a listed species or its designated critical habitat. 16 U.S.C. § 1536(a)(2); 50 C.F.R. § 402.14(a); <i>Rio Grande Silvery Minnow v. Bureau of Reclamation</i>, 601 F.3d 1096, 1105 (10th Cir. 2010). During the ESA consultation process, both FWS and BLM must use the best scientific and commercial data available. 16 U.S.C. § 1536(a)(2).</p> <p>In this consultation process, BLM and FWS must analyze the (1) action area, (2) the environmental baseline, and (3) the effects of the action. See 50 C.F.R. §§ 402.02; 402.14(h)(2). The “action area” includes “all areas to be affected directly or indirectly by the Federal action, and not merely the immediate area involved in the action.” 50 C.F.R. § 402.02. The “environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area.” <i>Id.</i> The “effects of the action” include the direct, indirect, and cumulative effects to a species from the proposed agency action. <i>Id.</i></p> <p>Impacts to BLM sensitive and other rare species threatened by the proposed lease have been highlighted in section “III” subsection “3(D)” of these comments. BLM asserts that “There are no direct impacts to wildlife, fish, or wild horse habitat resources through the administrative action of leasing. The BLM manages a variety of habitats that possess the biological and physical attributes important in the life-cycles of many wildlife species. The diversity of habitats and landscapes provide important areas for breeding, birthing, foraging, wintering, and migration. Indirect effects from leasing may occur to the habitat if development were to occur.” The PEA makes no mention of BLM’s Section 7 obligations under which independent consultation is required. The contention that</p>	

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		<p>leasing will not affect listed species or habitat contravenes the language of ESA § 7 and its implementing regulations, and has been rejected for nearly thirty years by well-established case law. <i>See Conner</i>, 848 F.2d at 1456-57 (rejecting “incremental- step” approach to ESA consultation for oil and gas leases).</p> <p>ESA regulations define direct impacts as impacts that are caused by the action and occur at the same time and place, 50 C.F.R. § 402.02 (found in definition of “effects of the action”), indirect impacts as those that are caused by the proposed action, but are later in time and reasonably certain to occur. <i>Id.</i> Development of oil and gas leases is a core example of “indirect impacts” that must be subject to consultation at the time of action. FWS has explained that under the “may affect” standard, “[a]ny possible effect, whether beneficial, benign, adverse, or of an undetermined character, triggers formal consultation.” 51 Fed. Reg. 19,926, 19,949 (June 3, 1986). FWS’s Consultation Handbook similarly provides the ‘may affect’ standard is satisfied “when a proposed action may pose <i>any</i> effects on listed species or designated critical habitat.” ESA Consultation Handbook at xvi (emphasis added). In 1988, the Ninth Circuit decisively rejected BLM’s proposed “incremental-step approach” to ESA Section 7 on Mineral Leasing Act leasing actions: “We conclude that the ESA does not permit the incremental-step approach under the MLA advocated by appellants. The biological opinions must be coextensive with the agency action and T & E stipulations cannot be substituted for comprehensive biological opinions. The PEA’s contention that “the act of issuing leases . . . will not affect that respective species” is contrary to the established holding of <i>Conner v. Burford</i>, and appears to represent an attempt to rely on a framework for lease sale consultation that has been recognized as illegal for nearly thirty years.</p>	

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40	CBD	<p>I. BLM Must Ensure That the Federal Land Policy and Management Act and the Mineral Leasing Act Are Not Violated</p> <p>The Mineral Leasing Act (“MLA”) requires BLM to demand lessees take all reasonable measures to prevent the waste of natural gas. The MLA states: All leases of lands containing oil or gas, made or issued under the provisions of this chapter, shall be subject to the condition that the lessee will, in conducting his explorations and mining operations, use all reasonable precautions to prevent waste of oil or gas developed in the land, or the entrance of water through wells drilled by him to the oil sands or oil-bearing strata, to the destruction or injury of the oil deposits.</p> <p>30 U.S.C. § 225; <i>see also id.</i> § 187 (stating that for the assignment or subletting of leases that “[e]ach lease shall contain . . . a provision . . . for the prevention of undue waste”). This statutory mandate is unambiguous and must be enforced. <i>Tenn. Valley Auth. v. Hill</i>, 437 U.S. 153, 184 n.29 (1978) (stating that “[w]hen confronted with a statute which is plain and unambiguous on its face,” “it is not necessary to look beyond the words of the statute.”). As already discussed in previous sections, oil and gas operations emit significant amounts of natural gases, including methane and carbon dioxide, which can be easily prevented.</p> <p>Pursuant to the Federal Land Policy and Management Act (“FLPMA”), BLM must “take any action necessary to prevent unnecessary or undue degradation of the [public] lands.” 43 U.S.C. § 1732(b). Written in the disjunctive, BLM must prevent degradation that is “unnecessary” and degradation that is “undue.” <i>Mineral Policy Ctr. v. Norton</i>, 292 F.Supp.2d 30, 41-43 (D. D.C. 2003). The protective mandate applies to BLM’s planning and management decisions. <i>See Utah Shared Access Alliance v.</i></p>	<p>All parcels for the August 2016 Competitive Oil and Gas Lease Sale are in compliance with the existing land use plans as required by 43 CFR 1610.5, and are in compliance with FLPMA and MLA. Site specific NEPA analysis will occur at the development stage that will analyze resource conflicts and identify mitigation for specific impacts.</p> <p>Beyond the scope of this document. The August 2016 Competitive Oil and Gas Lease Sale is not a regulatory action, but rather an administrative action. The act of leasing land for oil and gas development in itself does not cause development or degradation of the lands.</p> <p>Note the full MLA citation: Sec.16. That all permits and leases of lands containing oil or gas, made or issued under the provisions of this Act, shall be subject to the condition that no wells shall be drilled within two hundred feet of any of the outer boundaries of the lands so permitted or leased, unless the adjoining lands have been patented or the title thereto otherwise vested in private owners, and to the further condition that the permittee or lessee will, in conducting his explorations and mining operations, use all reasonable precautions to prevent waste of oil or gas developed in the land, or the entrance of water through wells drilled by him to the oil sands or oil-</p>

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		<p><i>Carpenter</i>, 463 F.3d 1125, 1136 (10th Cir. 2006) (finding that BLM’s authority to prevent degradation is not limited to the RMP planning process). Greenhouse gas pollution for example causes “undue” degradation. Even if the activity causing the degradation may be “necessary,” where greenhouse gas pollution is avoidable, it is still “unnecessary” degradation. 43 U.S.C. § 1732(b).</p> <p>In addition to being harmful to human health and the environment, the emissions from oil and gas operations are also an undue and unnecessary waste and degradation of public lands. Consequently, BLM’s proposed gas and oil lease sale violates FLPMA. <i>See</i> 43 U.S.C. § 1732(b).</p>	<p>bearing strata; to the destruction or injury of the oil deposits. Violations of the provisions of this section shall constitute grounds for the forfeiture of the permit or lease, to be enforced through appropriate proceeding in courts of competent jurisdiction.</p> <p>FLPMA Sec. 302. [43 U.S.C. 1732] (b), in part: Except as provided in section 314, section 603, and subsection (f) of section 601 of this Act and in the last sentence of this paragraph, no provision of this section or any other section of this Act shall in any way amend the Mining Law of 1872 or impair the rights of any locators or claims under that Act, including, but not limited to, rights of ingress and egress. In managing the public lands the Secretary shall, by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the lands.</p> <p>“Undue and unnecessary degradation” terminology is not found in the leasing regulations in 43 CFR §3100, but rather is found in and is specific to 43 CFR § 3800—Mining Claims Under The General Mining Laws: § 3802.0-5 Definitions. (l) Undue and unnecessary degradation means impacts greater than those that would normally be expected from an activity being accomplished in compliance with current standards and regulations and based on sound practices, including use of the best reasonably</p>

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			available technology.
41	CBD	<p>IV. Conclusion</p> <p>Unconventional oil and gas development not only fuel the climate crisis but entail significant public health risks and harms to the environment. Accordingly, the EIS should thoroughly analyze the alternative of no new fossil fuel leasing and no fracking or other unconventional well stimulation methods within the WR/BB planning area. Thank you for your consideration of these comments. The Center trusts that you will take our requests for deferrals to protect species and wetlands seriously and in addition will issue a legally adequate EIS for this proposed oil and gas leasing action.</p> <p>My-Linh Le, Legal Fellow, Center for Biological Diversity Michael Saul, Senior Attorney – Public Lands, Center for Biological Diversity</p>	Thank you for your interest.
42	WildEarth Guardians (WEG)	<p>Letter Received February 23, 2016 <i>Via email to blm_wy_wrbbd_lease@blm.gov</i></p>	<p>Thank you for your interest. Your letter was received after the comment closing date of February 18, 2016, and will not be responded to, but will be kept in the administrative record. Information about all lease sales and comment periods is available to the public through the BLM website: http://www.blm.gov/wy/st/en/programs/energy/Oil_and_Gas/Leasing.html</p> <p>The 30-day public comment period for Version 1 of</p>

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			<p>the Wind River / Bighorn Basin District EA for the August 2016 Competitive Oil and Gas Lease Sale (DOI-BLM-WY-R000-2016-0001-EA) began January 19, 2016, and closed February 18, 2016. The 30-day public comment period is established in Washington Office IM 2010-117 <i>Oil and Gas Leasing Reform – Land Use Planning and Lease Parcel Reviews</i>. Comments received after the close of the public comment period will be handled in accordance with BLM’s NEPA Handbook (H-1790-1), which states that the Authorized Officer: ”is not required to respond to comments that are not substantive or comments that are received after the close of the comment period, but you may choose to reply.”</p>
43			<p>No other comments were received after the closing date.</p>