THE WILDERNESS SOCIETY
COALITION TO PROTECT AMERICA'S NATIONAL PARKS * NATIONAL PARKS CONSERVATION ASSOCIATION * NATURAL RESOURCES DEFENSE COUNCIL * ROCKY MOUNTAIN WILD

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Re: Comments on the Draft Environmental Assessments and Findings of No Significant Impact for the Bureau of Land Management New Mexico 2025 Fourth Quarter Competitive Oil & Gas Lease Sale (DOI-BLM-NM-F010-2025-0011-EA & DOI-BLM-NM-P000-2025-0001-EA)

To Whom It May Concern:

Thank you for the opportunity to submit these comments on the Draft Environmental Assessments (Draft EAs)[1] and Draft Findings of No Significant Impact (Draft FONSIs)[2] analyzing the 10 parcels covering 4,798.50 acres out of the Pecos District Office and 7 parcels covering 3,838.66 acres in the Farmington and Rio Puerco Field Offices under consideration for

[1] BUREAU OF LAND MGMT., PECOS DISTRICT OFFICE OIL AND GAS LEASE SALE ENVIRONMENTAL ASSESSMENT, EDDY AND ROOSEVELT COUNTIES, NEW MEXICO, QUARTER 4 2025, DOI-BLM-NM-P000-2025-0001-EA [hereinafter PECOS DRAFT EA]; FARMINGTON AND RIO PUERCO FIELD OFFICES COMPETITIVE OIL AND GAS LEASE SALE ENVIRONMENTAL ASSESSMENT MCKINLEY, RIO ARRIBA, AND SANDOVAL COUNTIES, NEW MEXICO QUARTER 4 2025 DOI-BLM-NM-F010-2025-0011-EA [hereinafter FARMINGTON AND RIO PUERCO DRAFT EA].

[2] BUREAU OF LAND MGMT., QUARTER 4 2025 COMPETITIVE OIL AND GAS LEASE SALE ENVIRONMENTAL ASSESSMENT, DOI-BLM-NM-P000-2025-0001-EA, FINDING OF NO SIGNIFICANT IMPACT [hereinafter PECOS DRAFT FONSI]; QUARTER 4 2025 COMPETITIVE OIL AND GAS LEASE SALE ENVIRONMENTAL ASSESSMENT, DOI-BLM-NM-F010-2025-0011-EA, FINDING OF NO SIGNIFICANT IMPACT [hereinafter FARMINGTON AND RIO PUERCO DRAFT FONSI].

potential oil and gas exploration and development for the Bureau of Land Management's (BLM's) New Mexico 2025 Fourth Quarter Oil and Gas Lease Sale. Our organizations and members are deeply invested in sound stewardship of public lands and committed to ensuring that public land management prioritizes the health and resilience of ecosystems, benefits the public and local communities, protects biodiversity, and mitigates the impacts of climate change.

As the BLM prepares for this lease sale and evaluates which parcels to offer for lease, the agency must continue to abide by its obligations under the law and existing policy, including the Fluid Mineral Leases and Leasing Process Rule (Leasing Rule), which implements program reforms and provisions in the Inflation Reduction Act. In carrying out this lease sale, the BLM must comply with all applicable federal, state, and local laws and regulations.

I. The BLM has ample authority to defer—and should defer—lease parcels proposed for this sale.

The BLM is not mandated to lease any particular parcel for oil and gas development and production. Under the Mineral Leasing Act (MLA), lands "known or believed to contain oil or gas deposits *may* be leased" by the Interior Department. 30 U.S.C. § 226(a) (emphasis added). If DOI chooses to lease lands, sales are held only "where *eligible* lands are *available*." *Id.* § 226(b)(1)(A) (emphases added). For nearly a century, the U.S. Supreme Court and federal circuit courts have consistently recognized this "broad" and "considerable" discretion over the federal onshore leasing program.[3]

Where conflicts with other uses exist, the BLM must analyze the deferral of lease parcels. The MLA does not contravene the Federal Land Policy and Management Act's (FLPMA's) resource conservation requirements. Lands merely being designated as "open" for leasing under a particular Resource Management Plan (RMP) does not mean the BLM is required to lease them. Under FLPMA, the BLM must manage public lands according to "multiple use" and "sustained yield" and "in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resources, and archeological values." 43

[3] *See Udall v. Tallman*, 380 U.S. 1, 4 (1965) ("The Mineral Leasing Act [MLA] of 1920 . . . left the Secretary discretion to refuse to issue any lease at all on a given tract."); *United States ex rel. McLennan v. Wilbur*, 283 U.S. 414, 419 (1931) (ruling that the Interior Secretary possesses "general powers over the public lands as guardian of the people," which include the authority to deny oil and gas lease applications); *Mont. Wildlife Fed'n v. Haaland*, 127 F.4th 1, 44–45 (9th Cir. 2025) ("We note that there is no doubt that the government has the authority affirmatively to determine which parcels shall be offered for oil and gas leasing, as opposed to passively responding to expressions of interest."); *W. Energy Alliance v. Salazar*, 709 F.3d 1040, 1044 (10th Cir. 2013) ("The MLA, as amended by the Reform Act of 1987, continues to vest the Secretary with considerable discretion to determine which lands will be leased."); *Bob Marshall Alliance v. Hodel*, 852 F.2d 1223, 1230 (9th Cir. 1988) ("[T]he Mineral Leasing Act gives the Interior Secretary discretion to determine which lands are to be leased under the statute. . . . Thus refusing to issue the . . . leases . . . would constitute a legitimate exercise of the discretion granted to the Interior Secretary under that statute."); *McDonald v. Clark*, 771 F.2d 460, 463 (10th Cir. 1985) ("It is clear that the Secretary has broad discretion in this area. While the statute gives the Secretary the authority to lease government lands under oil and gas leases, this power is discretionary rather than mandatory."); *Burglin v. Morton*, 527 F.2d 486, 488 (9th Cir. 1975) ("The permissive word 'may' in Section 226(a) allows the Secretary to lease such lands, but does not require him to do so. Although Section 226(c) requires the Secretary to issue the lease to the first qualified applicant if the land is leased, the Secretary has discretion to refuse to issue any lease at all on a given tract.").

U.S.C. §§ 1701(a)(7) & (8), 1712(c)(1), 1732(a). Multiple use obligates the agency to make the "most judicious use" of public lands and their resources to "best meet the present and future needs of the American people." *Id.* § 1702(c). This requires taking "into account the long-term needs of future generations," ensuring "harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment." *Id.* Sustained yield mandates "achiev[ing] and maint[aining] in perpetuity . . . a high-level annual or regular periodic output of the various *renewable* resources of the public lands consistent with multiple use." *Id.* § 1702(h) (emphasis added). The BLM must "take any action necessary to prevent unnecessary and undue degradation of the lands." *Id.* § 1732(b). "It is past doubt that the principle of multiple use does not require BLM to prioritize development over other uses. . . . Development is a possible use, which BLM *must* weigh against other possible uses including conservation to protect environmental values. . . ." *New Mexico ex rel. Richardson v. BLM*, 565 F.3d 683, 710 (10th Cir. 2009) (emphasis added).

The BLM is therefore not obligated to lease any specific parcel of public land for oil and gas development. The agency retains the authority to defer any or all lease sale parcels, even after bidding has concluded.[4] Moreover, where conflicts with other uses exist, the agency must affirmatively evaluate deferral of parcels in its alternatives analysis under the National Environmental Policy Act (NEPA).

II. The BLM has not ensured that leasing is compliant with FLPMA.

FLPMA creates a framework governing the BLM's management of public lands. *See* 43 U.S.C. §§ 1701–1772. It provides for management of public lands under principles of multiple use and sustained yield. *See id.* § 1732(a).

Land use plans or RMPs project both the present and future use of the land. The BLM uses RMPs to identify which areas will be open to oil and gas leasing and development. *See* 43 C.F.R. § 1601.0-5(n). RMPs establish, among other things, "[l]and areas for limited, restricted or exclusive use," "[a]llowable resource uses . . . and related levels of production or use to be maintained," "[r]esource condition goals and objectives to be attained," and "[p]rogram constraints and general management practices." *Id*.; *see* 43 U.S.C. § 1712(a). FLPMA prohibits the BLM from taking actions inconsistent with the provisions of RMPs. *See* 43 U.S.C. § 1732(a);

[4] *See McDonald v. Clark*, 771 F.2d 460, 463 (10th Cir. 1985) (holding that the "fact that land has been offered for lease does not bind the Secretary to actually lease the land, nor is the Secretary bound to lease the land when a qualified applicant has been selected"); *see also Justheim Petroleum v. Dep't of Interior*, 769 F.2d 668, 671 (10th Cir. 1985) (language in 30 U.S.C. § 226 mandating that "lands to be leased ... shall be leased to the highest responsible qualified bidder" did not require issuing a lease, but only required awarding lease to that bidder "if [the Secretary] is going to lease at all"); *Wyoming v. U.S. Dep't of the Interior*, No. 22-CV-247-SWS, 2024 U.S. Dist. LEXIS 235015, at *43 (D. Wyo. Dec. 31, 2024) ("When considering statutory language, the use of the word 'may' creates a presumption of discretion under normal rules of statutory interpretation, in contrast with the mandatory 'shall.'" (cleaned up)); *W. Energy All. v. Salazar*, No. 10-cv-0226, 2011 U.S. Dist. LEXIS 98380, at *9–23 (D. Wyo. June 29, 2011) (holding that BLM is not required to issue leases after offering them at auction; it only needs to make a decision within 60 days on *whether* to issue the leases); 89 Fed. Reg. at 30,945 ("[T]he Secretary retains the discretion to decide, even after lands have been determined to be eligible and available, what lands will ultimately be offered for lease.").

43 C.F.R. § 1610.5-3(a) ("All future resource management authorizations and actions . . . shall conform to the approved plan.").

RMPs may grant the BLM authority to lease in certain areas. *See* 30 U.S.C. § 226(b)(1)(A); 43 C.F.R. § 3120.1-2(a). Before issuing leases, however, the agency must confirm that the applicable RMP is up to date and that the underlying environmental analysis will support a contemporary leasing decision. If an RMP is more than five years old, the BLM must reevaluate and confirm that the analysis and any underlying assumptions remain valid. *See* 42 U.S.C. § 4336b. An RMP would no longer support a new leasing decision if important new data, policies, or changed circumstances exist that were not considered when it was approved. *See* H-1601-1 — LAND USE PLANNING HANDBOOK, SECTION VII.C, DETERMINING WHEN IT IS NECESSARY TO REVISE AN RMP; 43 C.F.R. § 1610.5-6. If an RMP is too old or stale to support a new leasing decision, the BLM must revise the RMP or undertake a new, thorough environmental analysis to support new leasing, such as an EIS.

Plans governing lands subject to this lease sale are old or inadequately analyze impacts. The current RMP for the Carlsbad Field Office (CFO) is over 30 years old, having been adopted in 1988 and amended in 1997 and 2008. In 2010, the CFO initiated a revision to its RMP, which governs management within the 6.2 million acre planning area, including 2.1 million surface acres and 2.7 million subsurface acres of BLM-administered land. The Carlsbad Field Office issued a draft RMP and draft Environmental Impact Statement (EIS) in 2018, but the project is currently on hold. It is unclear when the final RMP will be issued.

BLM should exercise its discretion to defer further leasing in the CFO planning area until the RMP revision is complete. As the BLM has recognized, the revised RMP is needed to address management concerns around "renewable energy, recreation, special status species, visual resources, cultural resources, and wildlife habitat."[5]

Most of the RMPs covering the parcels under consideration for this lease sale inadequately account for or addresses the environmental impacts on resources and land uses due to climate change:

- BLM Roswell Field Office, Approved RMP (Oct. 1997): never discusses climate change or greenhouse gas emissions.[6]
- BLM Carlsbad Field Office, Approved RMP (Sept. 1988): no discussion of climate change or GHG emissions; nor does the 1997 Amendment do so.[7]

[5] BLM Carlsbad Field Office, Draft Resource Management Plan/Environmental Impact Statement, Vol. 1 at ES-1 (Aug. 2018), https://eplanning.blm.gov/public_projects/lup/64444/153042/187358/BLM_CFO_Draft_RMP_-_Volume_I_-_EIS_-_August_2018_(1).pdf [hereinafter Draft RMP/EIS].

[6] BLM ROSWELL FIELD OFFICE, APPROVED RESOURCE MANAGEMENT PLAN (Oct. 1997).

[7] BLM CARLSBAD FIELD OFFICE, APPROVED RESOURCE MANAGEMENT PLAN (SEPT. 1988); BLM CARLSBAD FIELD OFFICE, APPROVED RESOURCE MANAGEMENT PLAN (Oct. 1997).

- BLM Farmington Field Office, Approved RMP (Dec. 2003): never discusses climate change or greenhouse gas emissions.[8]

Consequently, the BLM should defer leasing in these areas until the agency can consider new inventories and analyze how best to protect the resources. At the very least, the agency must undertake a thorough analysis that analyzes the potential impacts that new leasing and development might cause.

Even where implicated RMPs were finalized within the last five years, the BLM must take a hard look at new resource inventories and stipulations to ensure that new leases comply with existing plans, reflect updated inventory data, and adequately protect sensitive resources. Failure to consider, analyze, and disclose these issues violates NEPA and FLPMA.

III. The Draft EAs and Draft FONSIs do not adequately analyze the environmental effects of leasing.

The BLM must evaluate the environmental impacts of this proposed lease sale under NEPA. *See, e.g.*, 42 U.S.C. §§ 4331–4347. NEPA fosters informed decision making by federal agencies and promotes informed public participation in government decisions. *See Balt. Gas & Elec. Co. v. NRDC*, 462 U.S. 87, 97 (1983). To meet those goals, NEPA requires that the BLM "consider every significant aspect of the environmental impact of a proposed action" and inform the public of those impacts. *Id.* (internal citation omitted); *accord Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council, Inc.*, 435 U.S. 519, 553 (1978).[9] The BLM must take a "hard look" at the environmental effects before making any leasing decisions, ensuring "that the agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts." *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349–50 (1989). Environmental "[e]ffects are reasonably foreseeable if they are sufficiently likely to occur that a person of ordinary prudence would take [them] into account in reaching a decision." *Sierra Club v. Fed. Energy Regulatory Comm'n*, 867 F.3d 1357, 1371 (D.C. Cir. 2017) (internal quotation omitted).

In considering environmental effects, the BLM must address whether to defer lease parcels based on conservation or other use conflicts, including by applying the leasing preference criteria to scoping parcels. *See* 43 C.F.R. § 3120.32. As explained in the Leasing Rule's preamble: "The preference criteria . . . were proposed consistent with the MLA to direct the BLM's administrative resources to leasing tracts most likely to be developed, to reduce conflicts

[8] BLM FARMINGTON FIELD OFFICE, APPROVED RESOURCE MANAGEMENT PLAN (Dec. 2003).

[9] *See Kleppe v. Sierra Club*, 427 U.S. 390, 410, 413 (1976); *City of Rochester v. U.S. Postal Serv.*, 541 F.2d 967, 973–74 (2d Cir. 1976); *Concerned About Trident v. Rumsfeld*, 555 F.2d 817, 825 (D.C. Cir 1976); *City of Davis v. Coleman*, 521 F.2d 661, 666-677 (9th Cir. 1975); *Brooks v. Coleman*, 518 F.2d 17, 18 (9th Cir. 1975); *Natural Resources Defense Council v. Callaway*, 524 F.2d 79, 89 (2d Cir. 1975); *Envtl. Def. Fund, Inc. v. Corps of Eng'rs of U.S. Army*, 492 F.2d 1123, 1135 (5th Cir. 1974); *Swain v. Brinegar,* 517 F.2d 766 (7th Cir. 1975); *Minnesota Public Interest Research Group v. Butz*, 498 F.2d 1314, 1322 (8th Cir. 1974); *Natural Resources Defense Council v. Morton*, 458 F.2d 827, 834–36 (D.C. Cir. 1972); *Hanly v. Kleindienst*, 471 F.2d 823, 830-31 (2d Cir. 1972); *Calvert Cliffs' Coordinating Comm., Inc. v. U.S. Atomic Energy Comm'n*, 449 F.2d 1109, 1114 (D.C. Cir. 1971).

between oil and gas development and other public land uses that were not resolved in the resource management plans, and to 'take[ ] into account the long-term needs of future generations for renewable and nonrenewable resources." 89 Fed. Reg. 30,916, 30,919 (Apr. 23, 2024) (quoting 43 U.S.C. §1702). Moreover, the agency explained that it "will apply the criteria . . . consistent with the BLM's existing policy and implementation of IM 2023–007, *Evaluating Competitive Oil and Gas Lease Sale Parcels for Future Lease Sales.*" Although that IM has been rescinded, the Leasing Rule's requirement that BLM will apply the preference criteria consistent with the principles in the IM remains. Those principles demand deferral of parcels with identified conflicts with the criteria.

a. The Draft EAs fail to properly analyze leasing parcels in big game habitat.

The Draft EAs recognize that **all** parcels overlap sensitive wildlife habitat and designate **all** parcels as having a low preference for leasing. *See* PECOS DRAFT EA at 140, Table C.1; FARMINGTON AND RIO PUERCO DRAFT EA at 134, Table C.1. Pursuant to its regulations, the agency must preference "lands that would not impair the proper functioning of [fish and wildlife] habitats or corridors." 43 C.F.R. § 3120.32(b). Nonetheless, the BLM is moving forward all parcels for leasing. This decision is arbitrary and capricious.

FLPMA requires the BLM to manage public lands "in a manner that will provide food and habitat" for all wildlife. 43 U.S.C. § 1701(a)(8). Research makes clear that big game suffer considerable losses from leasing and development on their critical winter range. *See, e.g.*, Adele K. Reinking et al., *Across Scales, Pronghorn Select Sagebrush, Avoid fences, and Show Negative Responses to Anthropogenic Features in Winter*, 10(5) ECOSPHERE 1, 1–14 (May 2019) [Ex. 1], https://esajournals.onlinelibrary.wiley.com/doi/epdf/10.1002/ecs2.2722. Peer-reviewed research has demonstrated that mule deer respond unfavorably to oil and gas development in migratory habitats, often missing out on high-quality forage during the spring migration. *See* Ellen O. Aikens et al., *Industrial energy development decouples ungulate migration from the green wave*, 6 NATURE ECOLOGY. & EVOLUTION 1733, 1733–1741 (Oct. 2022) [Ex. 2], https://doi.org/10.1038/s41559-022-01887-9. Extensive leasing in sensitive habitat or migration corridors have significant adverse impacts on New Mexico's big game herds, including pronghorn, mule deer, and elk, implicated in this lease sale.

Anthropogenic impacts have cumulatively resulted in significant direct loss of habitat available to big game in New Mexico. This direct loss of wildlife habitat is often amplified with the indirect losses that occur due to noise pollution, disturbance, and the overall fragmentation of remaining habitat. Habitat fragmentation and reduced connectivity is of increasing concern as big game species attempt to navigate through their annual life cycles between seasonal ranges. Ultimately, these impacts and ongoing habitat loss reduce New Mexico's carrying capacity for the renowned big game populations the state has historically supported. Federal lands in New Mexico are especially important in providing high priority habitat for big game, specifically winter ranges and migration habitats on BLM lands, which tend to be lower-lying areas with less severe winter conditions compared to higher-elevation summer ranges.

The Draft EAs do not disclose the extent to which sensitive habitat will be affected when avoidance and displacement are taken into consideration. The BLM needs to take a hard look at

the full scope of these impacts and explain whether they are consistent with a claim that impacts to big game will indeed not be significant. The approach the BLM has taken here for analyzing big game has been found to violate NEPA because it relied on analysis prepared for the agency's RMPs and lacked "anything resembling an estimate of how the lease sale [at issue] will impact these species." *Wilderness Soc'y*, No. 22-cv-1871 (CRC), 2024 U.S. Dist. LEXIS 51011, at *67. This approach is especially inadequate here because many of the BLM's New Mexico RMPs are decades old, and new research has shown that big game are suffering substantial population losses in areas of intensive oil and gas development. *See id.* at *63. The BLM "must use available evidence to reasonably forecast how these lease sales will affect . . . big game" on the specific lands being proposed for leasing, *id*. at *68, which it has failed to do for this lease sale.

b. The BLM should defer parcels in areas with high karst or cave potential and that are a critical karst or cave resource area.

The following parcels are in areas with high karst and cave impact designations: 0535; 6871; 6870; 0576; 6866; 0574; 0578; 0580; and 0579. *See* PECOS DRAFT EA at 48–49, Table 3.9. The BLM should but has failed to defer these parcels.

The Draft EA designates these parcels as having low preference for leasing under 43 C.F.R. § 3120.32(d), "presence of . . . important . . . resources." PECOS DRAFT EA at 140, Table C.1 n.§. In fact, the BLM admits that these "[l]ow determinations" mean that the parcels are "incompatible with oil and gas development." *Id.* Despite this admission, the BLM proposed moving forward with leasing these parcels because of stipulations and conditions of approval. *See id.* Such measures are inadequate to protect these areas. The BLM should therefore follow its own policy and low preference for leasing designation of these parcels and defer them from this sale.

These parcels are located within an area in known soluble rock types with high or medium densities of significant cave systems or bedrock fractures that lead to the rapid recharge of karst groundwater aquifers from surface runoff. These areas provide critical drinking water supplies for major communities, ranching operations, and springs that support rivers and vital riparian habitat. Further, those cave and karst areas are close to the protected cave systems at Carlsbad Caverns National Park and could very well be connected through underground passages or fractures that have not yet been mapped.

The entire area which makes up the Carlsbad Field Office should be studied thoroughly to assess the vulnerabilities to aquifer resources and fragile karst resources, which can also be home to unique wildlife and habitat, as the cave and karst system throughout the region is deeply interconnected. Carlsbad Caverns is a designated World Heritage Area and indeed attracts visitors from around the world. A single leak from hydraulic fracturing or reinjection of "produced water," or seismic activity that has been linked to hydraulic fracturing and produced water, could have a devastating and irreversible impact on the National Park and on public health and safety. In recent years exploratory wells have run into empty space at about the same depth as Carlsbad's caverns. According to a 2007 NPS Geologic Resource Evaluation Report: Hundreds of producing oil and gas wells have been drilled north, east, and south of Carlsbad Caverns National Park. Exploratory wells have been drilled within a few thousand feet of the

north and east boundaries of Carlsbad Caverns, and some of these have encountered voids at the same depth as major passages in Lechuguilla Cave (NPS 1996). At least 61 wells drilled near the park have encountered lost circulation zones in the Capitan and Goat Seep Formations, suggesting that unexplored cave passages were intersected during drilling (NPS 1993, 1996). Substantial hydrocarbon reserves and known cave resources exist immediately north of the park boundary. It is probable that exploratory drilling will intersect openings that connect with caves in the park. Resources inside the park could be at risk of contamination from toxic and flammable gases and other substances associated with the exploration and production of oil and gas. NAT'L PARK SERV., CARLSBAD CAVERNS NATIONAL PARK: GEOLOGIC RESOURCE EVALUATION REPORT 10 (2007) [Ex. 3], http://npshistory.com/publications/cave/nrr-2007-003.pdf.

A Stanford University study released in April 2018 documents seismic threats in the Permian Basin resulting from injection wells. STANFORD UNIVERSITY, SEISMIC STRESS MAP DEVELOPED BY STANFORD RESEARCHERS PROFILES INDUCED EARTHQUAKE RISK FOR WEST TEXAS, NEW MEXICO (Feb. 8, 2018) [Ex. 4], https://news.stanford.edu/2018/02/08/seismic-stress-map-profiles-induced-earthquake-risk-west-texas-new-mexico/. In addition, a Durham University Study released in February 2018 noted, "The risk of human-made earthquakes due to fracking is greatly reduced if high-pressure fluid injection used to crack underground rocks is 895m away from faults in the Earth's crust." Durham University, *Human-made earthquake risk reduced if fracking is 895m from faults*, ScienceDaily (Feb. 27, 2018) [Ex. 5], https://www.sciencedaily.com/releases/2018/02/180227233301.htm. Hydraulic fracking in the Permian basin was not remotely close to current levels 15 years ago. Not only does this underscore the issue of the BLM not adequately responding to comments, it also indicates the BLM is not using the best available science. NEPA requires the BLM to "ensure[] that the agency, in reaching its decision, will have available and will carefully consider detailed information concerning significant environmental impacts." *Robertson*, 490 U.S. at 349.

In addition to the potential impacts to cave systems, poorly planned leasing and oil and gas development can have a negative impact on a sustainable local tourism economy. Carlsbad Caverns and Guadalupe Mountains National Parks combined generated over $53 million in local economic output and supported 655 jobs in 2017. According to a National Parks Conservation Association report, however:

> The breadth and density of oil and gas development around Carlsbad Caverns is one of the factors that has already taken a toll on the park's popularity. In the 1980s, Carlsbad received more than 700,000 visitors every year, but from 1993 to 2016 visitation decreased from 690,000 to 470,000, more than 30%.

N. LUND, OUT OF BALANCE: NATIONAL PARKS AND THE THREAT OF OIL AND GAS DEVELOPMENT, NATIONAL PARKS CONSERVATION ASSOCIATION (2017) [Ex. 6], https://npca.s3.amazonaws.com/documents/3435/a76aca1e-52cf-4e53-841d-3c658a0b9082.pdf?1496846464.

The development that might be driving visitors away includes blighting of the viewshed with drill rigs, pump jacks, and other industrialization, and the loss of dark night skies from

excessive lighting and flaring in the area—all of which argues for the importance of taking care in managing leasing and land use activities near Carlsbad Caverns, Guadalupe Mountains, and other publicly accessible caves, recreational areas, groundwater resources, and agricultural activities in the area. As such, the BLM should defer the aforementioned parcels.

c. The Draft EAs do not adequately analyze greenhouse gas (GHG) emissions and climate effects or factor GHG emissions and climate effects into the leasing decisions.

The BLM must not only properly analyze and quantify the direct, indirect, and cumulative GHG emissions and climate impacts that may result from leasing, but it must also factor GHG emissions into its leasing decisions. *See Wilderness Soc'y*, No. 22-cv-1871 (CRC), 2024 U.S. Dist. LEXIS 51011, at *91. The agency must consider GHG analysis when making its decision on a lease sale. As one court has explained: "Any claim that the analysis of GHG emissions was informational only and did not inform BLM's decision-making is hard to square with [NEPA's] purpose." *Id.* at *87. The agency must also consider unquantified effects, recognize the worldwide and long-range character of climate change impacts, and incorporate this analysis of ecological information into its environmental analysis. *See* 42 U.S.C. §§ 4332(2)(A), (B), (D), (I) & (K). The BLM has the tools to undertake this analysis, but the Draft EAs fail to do so.

The MLA requires the Secretary of the Interior to lease lands for oil and gas development only in the public interest. *See* 30 U.S.C. § 192. In its NEPA analysis, the BLM can and must consider adverse effects to health and the environment—part of the public interest—when determining whether to lease. *See* 43 U.S.C. § 1732(b) (requiring the BLM to prevent unnecessary and undue degradation); *cf. Sierra Club v. Fed. Energy Regulatory Comm'n*, 867 F.3d at 1373–74 (explaining that whether an agency must analyze certain environmental effects under NEPA turns on the question, "What factors can [the agency] consider when regulating in its proper sphere," and holding that the agency consider direct and indirect environmental effects because the statute at issue indeed vested the agency with authority to deny the project based on harm to the environment (internal quotation marks omitted)). Such adverse environmental effects include those caused by GHG emissions and impacts on the climate.

Court decisions clearly establish that NEPA mandates consideration and analysis of the indirect and cumulative climate impacts of BLM fossil fuel production decisions, including at the leasing stage.[10] The BLM must ensure it fully considers not only the GHG emissions from

[10] *See, e.g.*, *350 Mont. v. Haaland*, 50 F.4th 1254, 1266–70 (9th Cir. 2022); *Vecinos para el Bienestar de la Comunidad Costera v. FERC*, 6 F.4th 1321, 1329–30 (D.C. Cir. 2021); *Sierra Club v. Fed. Energy Regulatory Comm'n*, 867 F.3d at 1371–75 (requiring quantification of indirect greenhouse gas emissions); *Ctr. for Biological Diversity v. Nat'l Highway Transp. Safety Admin.,* 538 F.3d 1172, 1215–16 (9th Cir 2008) (requiring assessment of the cumulative impacts of climate change); *WildEarth Guardians v. U.S. Bureau of Land Mgmt*., 870 F.3d 1222, 1236–38 (10th Cir. 2017); *Mid States Coal. for Progress v. Surface Transp. Bd*., 345 F.3d 520, 550 (8th Cir. 2003); *Wilderness Soc'y*, No. 22-cv-1871 (CRC), 2024 U.S. Dist. LEXIS 51011, at *83–92 (explaining that the BLM cannot "overlook[] what is widely regarded as the most pressing environmental threat facing the world today"); *WildEarth Guardians v. Zinke*, 368 F. Supp. 3d 41, 63, 67–77 (D.D.C. 2019) (invalidating nine BLM NEPA analyses in support of oil and gas lease sales because "BLM did not take a hard look at drilling-related and

prospective wells drilled on the leases sold at this lease sale—and the climate change impacts of those GHG emissions—but also the impacts of other federal lease sales in the state, region, and nation, as well as impacts from GHG emissions from non-Federal sources. The BLM must consider GHG emissions in the aggregate along with other foreseeable emissions. Such analysis is necessary to meet the cumulative impacts demands of NEPA.

The indirect and cumulative impacts must be given meaningful context, including within carbon budgets, rather than simply dismissed as insignificant compared to national or global total GHG emissions. *See, e.g.*, *WildEarth Guardians*, 368 F. Supp. 3d at 77. "Without establishing the baseline conditions . . . there is simply no way to determine what effect the proposed [action] will have on the environment and, consequently, no way to comply with NEPA." *Half Moon Bay Fisherman's Marketing Ass'n v. Carlucci*, 857 F.2d 505, 510 (9th Cir. 1988). Excluding climate change effects from the environmental baseline ignores the reality that the impacts of proposed actions must be evaluated based on the already deteriorating, climate-impacted state of the resources, ecosystems, human communities, and structures that will be affected. The BLM's climate effects analysis "must give a realistic evaluation of the total impacts and cannot isolate a proposed project, viewing it in a vacuum." *Grand Canyon Trust v. Fed. Aviation Admin.*, 290 F.3d 339, 342 (D.C. Cir. 2002).[11]

In analyzing these impacts, the BLM must consider the full lifecycle of development activities and GHG emissions that are reasonably foreseeable under a BLM oil and gas lease. The social cost of greenhouse gases (SC-GHG) is a useful tool to aid in this analysis. Courts have rejected agency refusals to properly quantify the impact of GHG emissions.[12]

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downstream [greenhouse gas] emissions from the leased parcels and, it failed to sufficiently compare those emissions to regional and national emissions").

[11] *See also Great Basin Mine Watch v. Hankins*, 456 F.3d 955, 973–74 (9th Cir. 2006) (holding agency's cumulative impacts analysis insufficient based on failure to discuss other mining projects in the region); *Kern v. BLM*, 284 F.3d 1062, 1078 (9th Cir. 2002) (holding that BLM arbitrarily failed to include cumulative impacts analysis of reasonably foreseeable future timber sales in the same district as the current sale); *Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1214-16 (9th Cir. 1998) (overturning Forest Service EA that analyzed impacts of only one of five concurrent logging projects in the same region); *San Juan Citizens All. v. United States BLM*, 326 F. Supp. 3d 1227, 1248 (D.N.M. 2018) (holding that BLM failed to take an hard look at the cumulative impact of GHG emissions (citing *Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1217 (9th Cir. 2008) (concluding that an agency "must provide the necessary contextual information about the cumulative and incremental environmental impacts" because even though the impact might be "individually minor," its impact together with the impacts of other actions would be "collectively significant"))).

[12] *See, e.g., Montana Env't Info. Ctr. v. U.S. Office of Surface Mining*, 274 F. Supp. 3d 1074, 1094–99 (D. Mont. 2017) (rejecting agency's failure to incorporate the federal SCC estimates into its cost-benefit analysis of a proposed mine expansion); *see also Zero Zone, Inc. v. U.S. Dep't of Energy*, 832 F.3d 654, 679 (7th Cir. 2016) (holding estimates of the social cost of carbon (SCC) used to date by agencies were reasonable); *High Country Conservation Advocs. V. U.S. Forest Serv.*, 52 F. Supp. 3d 1174, 1190–93 (D. Colo. 2014) (holding the SCC was an available tool to quantify the significance of GHG impacts, and it was "arbitrary and capricious to quantify the *benefits* of the lease modifications and then explain that a similar analysis of the costs was impossible") (emphasis in original). An agency may not assert that the social cost of fossil fuel development is zero: "by deciding not to quantify the costs at all, the agencies effectively zeroed out the costs in its quantitative analysis." *High Country Conservation Advocates*, 52 F. Supp. 3d at 1192; *see Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1200 (9th Cir. 2008) (holding that while there is a range potential social cost figures, "the value of carbon emissions reduction is certainly not zero").

The Interior Department had "adopt[ed] . . . [the EPA's] new estimates of the social cost as the best available science." 90 Fed. Reg. 4779, 4779 (Jan. 16, 2025); *see* U.S. Dep't of the Interior, Informational Memorandum on DOI comparison of available estimates of social cost of greenhouse gases (SC-GHG), at 1, 8 (Oct. 16, 2024) [Ex. 7], https://eplanning.blm.gov/public_projects/2036015/200638053/20126874/251026854/20241016.DOI%20SC_GHG%20Info%20Memo.pdf (directing the BLM to "adopt the EPA's 2023 estimates of the Social Cost of Greenhouse Gases (SC-GHG) as the best available science (as of September 30, 2024)"). In a final Environmental Assessment for the Quarter 1 2025 New Mexico Oil and Gas Lease Sale, the BLM explicitly stated that it was rescinding its October 16, 2024, memorandum. *See* BLM, CARLSBAD FIELD OFFICE OIL AND GAS LEASE SALE ENVIRONMENTAL ASSESSMENT at 88, QUARTER 1 (2025) [hereinafter NM EA]. But the BLM failed to provide proper justification for changing its position. *See FCC v. Fox TV Stations, Inc.*, 556 U.S. 502, 515 (2009) (holding that an agency must provide "good reasons" for a change in position and must provide "a more detailed justification" when a "new policy rests upon factual findings that contradict those which underlay [an agency's] prior policy; or when its prior policy has engendered serious reliance interests that must be taken into account").

The Draft EAs eliminate **any** reference to social cost estimates. For years and over multiple projects, the BLM has quantified climate impacts, primarily relying on the well-supported SC-GHG estimates. *See, e.g.*, BLM, ENVIRONMENTAL ASSESSMENT: WYOMING 2023 SECOND QUARTER COMPETITIVE LEASE SALE at 54–55 (2023). The BLM must provide such analysis for this lease sale.

The Draft EAs *do* quantify the *benefits* of leasing. The BLM discusses various economic and other financial benefits of leasing, including increased employment opportunities. *See* PECOS DRAFT EA at 60–61; FARMINGTON AND RIO PUERCO DRAFT EA at 59–60. Yet, the BLM fails to adequately quantify or consider the monetary costs of moving forward with leasing, despite having, for example, quantified the social costs for years in its leasing EAs using the widely accepted SC-GHG tool. The BLM must consider the full lifecycle of development activities and GHG emissions that are reasonably foreseeable under a BLM oil and gas lease. SC-GHG is a useful tool to aid in this analysis.

While NEPA does not require a cost-benefit analysis, it is "nonetheless arbitrary and capricious to quantify the *benefits* of the lease modifications and then explain that a similar analysis of the *costs* was impossible when such an analysis was in fact possible." *High Country Conservation Advocates v. United States Forest Serv.*, 52 F. Supp. 3d 1174, 1191 (D. Colo. 2014) (emphases in original). Agencies must assess beneficial and adverse effects in a balanced and reasonable manner.[13] Some courts have warned, for example, that an agency cannot

[13] *Sierra Club v. Sigler*, 695 F.2d 957, 978–79 (5th Cir. 1983) (holding that NEPA "mandates at least a broad, informal cost-benefit analysis," and so agencies must "fully and accurately" and "objectively" assess environmental, economic, and technical costs); *Chelsea Neighborhood Ass'ns v. U.S. Postal Serv.*, 516 F.2d 378, 387 (2d Cir. 1975) ("NEPA, in effect, requires a broadly defined cost-benefit analysis of major federal activities."); *Calvert Cliffs' Coordinating Comm. v. U.S. Atomic Energy Comm'n*, 449 F.2d 1109, 1113 (D.C. Cir. 1971) ("NEPA mandates a rather finely tuned and 'systematic' balancing analysis" of "environmental costs" against "economic and technical benefits").

selectively monetize benefits in support of its decision while refusing to monetize the costs of its action.[14]

In one case, for instance, the U.S. District Court for the District of Colorado found that it was "arbitrary and capricious to quantify the *benefits* of the lease modifications and then explain that a similar analysis of the *costs* was impossible when such an analysis was in fact possible." *High Country Conservation Advocates*, 52 F. Supp. 3d at 1191. The court explained that, to support a decision on coal mining activity, the agencies had "weighed several specific economic benefits—coal recovered, payroll, associated purchases of supplies and services, and royalties"—but arbitrarily failed to monetize climate costs using the SC-GHG. *Id.* Similarly, in another case, the U.S. District Court for the District of Montana held an environmental assessment to be arbitrary and capricious because it quantified the benefits of action (such as employment payroll, tax revenue, and royalties) while failing to use the SC-GHG to quantify the climate costs. *Montana Environmental Information Center*, 274 F. Supp. 3d at 1094–99 (also holding that it was arbitrary to imply that there would be zero effects from greenhouse gas emissions).[15]

These two decisions follow a broader line of case law in which courts find it arbitrary and capricious to apply inconsistent protocols for analyzing some effects compared to others, especially when the inconsistency obscures some of the most significant effects. For example, in *Center for Biological Diversity v. National Highway Traffic Safety Administration*, the U.S. Court of Appeals for the Ninth Circuit ruled that, because the agency had monetized other uncertain costs and benefits of its vehicle fuel efficiency standard—like traffic congestion and noise costs—its "decision not to monetize the benefit of carbon emissions reduction was arbitrary and capricious." 538 F.3d 1172, 1203 (9th Cir. 2008). More generally, when an agency bases a decision on cost-benefit analysis, it is arbitrary to "put a thumb on the scale" of the analysis. *Id.* at 1198. Similarly, the U.S. Court of Appeals for the D.C. Circuit has criticized agencies for "inconsistently and opportunistically fram[ing] the costs and benefits of the rule [and] fail[ing] adequately to quantify the certain costs or to explain why those costs could not be quantified." *Bus. Roundtable v. SEC*, 647 F.3d 1144, 1148–49 (D.C. Cir. 2011); *see also Johnston v. Davis*, 698 F.2d 1088, 1094–95 (10th Cir. 1983) (remanding an environmental impact statement because "unrealistic" assumptions "misleading[ly]" skewed comparison of the project's positive and negative effects). The SC-GHG presents a readily available tool to monetize the effects of greenhouse gas emissions based on peer-reviewed inputs and widely accepted assumptions. Agencies are every bit as capable of monetizing climate damages as they are of monetizing socioeconomic impacts. It is arbitrary to justify this sale based on economic impacts without even considering the societal costs from the GHG emissions and their adverse impacts on climate change and whether those costs outweigh the project's purported monetary benefits. *See, e.g.*, *High Country Conservation Advocates*, 52 F. Supp. 3d at 1191.

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[14] *High Country Conservation Advocates*, 52 F. Supp. 3d at 1191; *accord MEIC v. Office of Surface Mining*, 274 F. Supp. 3d at 1094–99 (holding it was arbitrary for the agency to quantify benefits in an EIS while failing to use the social cost of carbon to quantify costs).

[15] In a recent case from the Northern District of California, moreover, the court found that it violated NEPA for an agency to monetize economic benefits while only accounting for a slim fraction of global climate damages. *California v. Bernhardt*, 472 F. Supp. 3d 573, 623 (N.D. Cal. 2020) ("It is arbitrary for an agency to quantify an action's benefits while ignoring its costs where tools exist to calculate those costs.").

NEPA also requires agencies to "identify and develop methods and procedures . . . which will ensure that presently unquantified environmental amenities and values may be given appropriate consideration in decisionmaking along with economic and technical considerations." 42 U.S.C. § 4332(2)(B). A livable climate is a "presently unquantified environmental amenit[y]." Neglecting to use SC-GHG or replace it with a comparable tool to quantify climate impacts fails to "identify and develop methods and procedures" to ensure that this "presently unquantified environmental . . . value" is "given appropriate consideration in decisionmaking."

The BLM must not only analyze GHG emissions. It must also address how GHG emissions inform its leasing decisions. "[T]he complexity of the task does not give the [BLM] a free pass to avoid making these tough decisions by asserting that GHG emissions did not factor into its decision-making." *Wilderness Soc'y*, No. 22-cv-1871 (CRC), 2024 U.S. Dist. LEXIS 51011, at *91. The BLM "must . . . explain how its GHG analysis inform[s] the decision to select" its preferred alternative. *Id.* at *91–92. If the BLM does "not consider GHG emissions when rendering its decision . . . it would . . . overlook[] what is widely regarded as the most pressing environmental threat facing the world today." *Id.*, No. 22-cv-1871 (CRC), 2024 U.S. Dist. LEXIS 51011, at *87–88. The BLM must quantify the projected monetary costs of moving forward with leasing in the state so that the BLM and the public can determine whether the asserted benefits of leasing outweigh the costs.

d. The Draft EAs fail to properly analyze methane emissions that would result from this lease sale.

The Draft EAs touch only briefly on methane emissions. The BLM must take the requisite hard look at the impacts of methane emissions that will result from development of and production on these lease parcels, including the economic, public health, and public welfare impacts of venting and flaring. *See, e.g.*, ENVIRONMENTAL DEFENSE FUND, FLARING AERIAL SURVEY RESULTS (2021) [Ex. 8], https://www.permianmap.org/flaring-emissions/. In 2019 alone, venting or flaring accounted for roughly 150 billion cubic feet of methane, resulting in the loss of over $50 million in federal royalty revenue. This waste also means lost royalty revenues for taxpayers and Tribes. An analysis conducted by Synapse Energy Economics determined the value of lost gas in the form of: (1) lost royalties; (2) lost state revenue from taxes; and (3) lost revenue from wasted natural gas that could be used for other purposes. The study found that $63.3 million in royalties, $18.8 million in state revenue from taxes (from the top six states), and $509 million in gas value was lost due to venting, flaring, and leaks on federal and Tribal lands. OLIVIA GRIOT ET AL., ONSHORE NATURAL GAS OPERATIONS ON FEDERAL AND TRIBAL LANDS IN THE UNITED STATES: ANALYSIS OF EMISSIONS AND LOST REVENUE, SYNAPSE ENERGY ECONOMICS INC. at 3 (Jan. 20, 2023) [hereinafter GRIOT ET AL.] [EX. 9], https://blogs.edf.org/energyexchange/files/2023/01/EMBARGOED_EDF-TCS_Public_Lands_Analysis.pdf. The report found that, in 2019, leaks accounted for 46% and flaring for 54% of lost gas. *See id.* at 23.

Venting and flaring on Tribal and federal public lands has significant health impacts on frontline and fence line communities. *See e.g.*, Jeremy Proville et al., *The demographic characteristics of populations living near oil and gas wells in the USA*, 44 POPULATION AND

ENV'T 1 (2022) [Ex. 10], https://doi.org/10.1007/s11111-022-00403-2. Proximity to oil and gas infrastructure creates disproportionate adverse health risks and impacts on Indigenous communities in particular. *See, e.g.*, *id.* at 2–5. According to an Environmental Defense Fund (EDF) analysis, roughly 1,100 adults with asthma, 800 adults with chronic obstructive pulmonary disease, 700 adults with coronary heart disease, and 400 adults who have experienced a stroke live within a half mile of a flaring well. *See* GRIOT ET AL. Another study links flaring to shorter gestation and reduced fetal growth. *See* Lara J. Cushing et al., *Flaring from Unconventional Oil and Gas Development and Birth Outcomes in the Eagle Ford Shale in South Texas*, 128 Envtl. Health Perspectives 077003-1, 077003-1 to 077003-8 (2020) [Ex. 11]. Reducing waste from flaring on federal and Tribal lands would lessen these harms. Therefore, the BLM should not issue additional oil and gas leases until the agency addresses waste on Tribal and federal public lands.

e. The Draft EAs fail to take a hard look at impacts to groundwater from well construction practices and hydraulic fracturing.

The Draft EAs fail to adequately address groundwater impacts. To isolate and protect usable water, those groundwater zones should be isolated with both casing and cementing. Rebecca Tisherman, et al., *Examination of Groundwater Resources in Areas of Wyoming Proposed for the June 2022 BLM Lease Sale* (May 12, 2022) [hereinafter Tisherman Report] [Ex. 12], https://eplanning.blm.gov/public_projects/2015538/200495187/20062621/250068803/Exhibit%20119-%20PSE%20WY%20Report%20May%202022%20Final.pdf; Dominic DiGiulio, *Dominic DiGiulio, Examination of Groundwater Resources in Areas of Montana Proposed for the March 2018 BLM Lease Sale* (Dec. 22, 2017) [hereinafter DiGiulio Report] [Ex.13], https://eplanning.blm.gov/public_projects/nepa/87551/136880/167234/Earthjustice_Protest_1-12-2018.pdf (Exhibit D to David Katz and Jack and Bonnie Martinell's protest of the March 13, 2018, BLM Montana-Dakotas oil and gas lease sales).

The Draft EAs ignore reasons the D.C. District Court in *Wilderness Society* found the BLM's groundwater analysis lacking: statements by industry trade associations explaining that only "economically viable" groundwater is considered usable, and (relatedly) that companies construct wells to protect groundwater only to a depth where there are already existing water wells nearby. *Wilderness Soc'y*, No. 22-cv-1871 (CRC), at *30–32.

The Draft EAs offer no reason to expect that the problems identified by the Tisherman report will not be repeated here in New Mexico. The BLM has offered no evidence showing that it made a reasoned decision when approving the wells in the Tisherman report that their casing and cementing comply with the agency's usable water regulations and protect **all** usable water zones.

For shallow fracturing, the Draft EAs also fall short. The BLM regulations require protecting usable waters regardless of whether they already have been tapped with a water well. The BLM fails to provide an explanation of the impacts to usable water zones where fracking is already occurring (even if those zones are not currently being used as a drinking water source) and how that fracking may degrade the quality of groundwater.

Regardless of the evidence of improper well cementing, the BLM is not analyzing impacts and potential risks to groundwater. The agency cannot simply defer that analysis to the APD stage. Ample information is available now to consider those risks. For example, satellite imagery shows which parcels contain ephemeral streams, intermittent streams, ponds, or reservoirs, and satellite imagery shows riparian habitat. Yet, the BLM includes no site-specific information on these waterbodies in the Draft EAs. The BLM again claims it can defer analysis to the APD stage. *See* PECOS DRAFT EA at 101; FARMINGTON AND RIO PUERCO DRAFT EA at 102. As noted above, failing to analyze these groundwater issues at the leasing stage is arbitrary and capricious. *See Wilderness Soc'y*, No. 22-cv-1871 (CRC), 2024 U.S. Dist. LEXIS 51011, at *61 (quotation marks omitted).

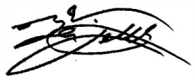
f. The Draft EAs fail to analyze the impacts of oil and gas leasing on environmental justice.

The BLM must take a hard look at environmental justice, and not only in relation to health. However, the Draft EAs do not analyze "environmental justice." Courts have repeatedly held that agencies must take a hard look at environmental justice pursuant to NEPA.[16] The BLM fails to explain this change in position from previous lease sale analyses that discussed the adverse effects of oil and gas activity on environmental justice communities. The agency's failure to undertake this analysis is arbitrary and capricious.

IV. Conclusion.

We appreciate your consideration of these comments. Should you have any questions, please do not hesitate to contact us.

Respectfully submitted,



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[16] *See, e.g.*, *Friends of Buckingham v. State Air Pollution Control Bd.*, 947 F.3d 68, 87 (4th Cir. 2020); *Latin Ams. for Social & Econ. Dev. v. Fed. Highway Admin.*, 756 F.3d 447, 465 (6th Cir. 2014); *Coliseum Square Ass'n, Inc. v. Jackson*, 465 F.3d 215, 232 (5th Cir. 2006); *Cmtys. Against Runway Expansion, Inc. v. FAA*, 355 F.3d 678, 689 (D.C. Cir. 2004).

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Exhibit Index to TWS et al. Comments on the Draft Environmental Assessments and Findings of No Significant Impact for the Bureau of Land Management New Mexico 2025 Fourth Quarter Competitive Oil & Gas Lease Sale (DOI-BLM-NM-F010-2025-0011-EA & DOI-BLM-NM-P000-2025-0001-EA)

Exhibit No.	Title/Description
1	Adele K. Reinking et al., *Across Scales, Pronghorn Select Sagebrush, Avoid fences, and Show Negative Responses to Anthropogenic Features in Winter*, 10(5) ECOSPHERE 1 (May 2019)
2	Ellen O. Aikens et al., *Industrial energy development decouples ungulate migration from the green wave*, 6 NATURE ECOLOGY. & EVOLUTION 1733 (Oct. 2022)
3	NAT'L PARK SERV., CARLSBAD CAVERNS NATIONAL PARK: GEOLOGIC RESOURCE EVALUATION REPORT (2007)
4	STANFORD UNIVERSITY, SEISMIC STRESS MAP DEVELOPED BY STANFORD RESEARCHERS PROFILES INDUCED EARTHQUAKE RISK FOR WEST TEXAS, NEW MEXICO (Feb. 8, 2018)
5	Durham University, *Human-made earthquake risk reduced if fracking is 895m from faults*, ScienceDaily (Feb. 27, 2018)
6	N. LUND, OUT OF BALANCE: NATIONAL PARKS AND THE THREAT OF OIL AND GAS DEVELOPMENT, NATIONAL PARKS CONSERVATION ASSOCIATION (2017)
7	U.S. Dep't of the Interior, Informational Memorandum on DOI comparison of available estimates of social cost of greenhouse gases (SC-GHG) (Oct. 16, 2024)
8	ENVIRONMENTAL DEFENSE FUND, FLARING AERIAL SURVEY RESULTS (2021)
9	OLIVIA GRIOT ET AL., ONSHORE NATURAL GAS OPERATIONS ON FEDERAL AND TRIBAL LANDS IN THE UNITED STATES: ANALYSIS OF EMISSIONS AND LOST REVENUE, SYNAPSE ENERGY ECONOMICS INC. (Jan. 20, 2023)
10	Jeremy Proville et al., *The demographic characteristics of populations living near oil and gas wells in the USA*, 44 POPULATION AND ENV'T 1 (2022)
11	Lara J. Cushing et al., *Flaring from Unconventional Oil and Gas Development and Birth Outcomes in the Eagle Ford Shale in South Texas*, 128 ENVTL. HEALTH PERSPECTIVES 077003-1 (2020)
12	Rebecca Tisherman, et al., *Examination of Groundwater Resources in Areas of Wyoming Proposed for the June 2022 BLM Lease Sale* (May 12, 2022)
13	Dominic DiGiulio, *Examination of Groundwater Resources in Areas of Montana Proposed for the March 2018 BLM Lease Sale* (Dec. 22, 2017)