



CENTER *for* BIOLOGICAL DIVERSITY

FAX COVER SHEET

Date: August 6, 2018
To: BLM—Nevada
Fax #: (775) 861-6745
of Pages: 96 (including cover)

Part 1 of 3 Faxes

Please find attached our **Protest** of BLM Nevada September 2018 Competitive Oil and Gas Lease Sale, DOI-BLM-NV-E000-2018-0007-DNA, DOI-BLM-NV-L000-2018-0001-DNA and Finding of No Significant Impact.

Part 1 is our protest, **Part 2** is Attachment A, State of NV Semi-Annual Report, and **Part 3** is Attachment B, USGS Hierarchical Population Monitoring of Greater Sage-Grouse.

Thank you,

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August 6, 2018

Bureau of Land Management
Nevada State Office
1340 Financial Boulevard
Reno, Nevada 89502-7147

Re: Protest of BLM Nevada September 2018 Competitive Oil and Gas Lease Sale, DOI-BLM-NV-E000-2018-0007-DNA, DOI-BLM-NV-L000-2018-0001-DNA and Finding of No Significant Impact

Dear Responsible Official(s):

The Center for Biological Diversity (“Center”), Western Watersheds Project, and WildEarth Guardians hereby files this Protest of the Bureau of Land Management’s (“BLM”) proposed 11 September 2018 Competitive Oil and Gas Lease Sale, DOI-BLM-NV-E000-2018-0007-DNA, DOI-BLM-NV-L000-2018-0001-DNA, and DOI-BLM-NV-L000-2018-0001-FONSI for the following 144 parcels containing 295,174.30 acres of federal public lands and split estate mineral rights administered by BLM in Nevada:

NV-18-09-001 2202.850 Acres	NV-18-09-033 1920.000 Acres	NV-18-09-065 2534.800 Acres
NV-18-09-002 2200.000 Acres	NV-18-09-034 1918.870 Acres	NV-18-09-066 2402.230 Acres
NV-18-09-003 2200.000 Acres	NV-18-09-035 2025.930 Acres	NV-18-09-067 2192.840 Acres
NV-18-09-004 1899.380 Acres	NV-18-09-036 1971.910 Acres	NV-18-09-068 2560.000 Acres
NV-18-09-005 1920.000 Acres	NV-18-09-037 1943.060 Acres	NV-18-09-069 1920.000 Acres
NV-18-09-006 1904.480 Acres	NV-18-09-038 1920.000 Acres	NV-18-09-070 1874.160 Acres
NV-18-09-007 1923.580 Acres	NV-18-09-039 1950.030 Acres	NV-18-09-071 2200.000 Acres
NV-18-09-008 1282.880 Acres	NV-18-09-040 1640.640 Acres	NV-18-09-072 2560.000 Acres
NV-18-09-009 2560.000 Acres	NV-18-09-041 1985.420 Acres	NV-18-09-073 2518.600 Acres
NV-18-09-010 2560.000 Acres	NV-18-09-042 2208.560 Acres	NV-18-09-074 1244.680 Acres
NV-18-09-011 2558.000 Acres	NV-18-09-043 2510.970 Acres	NV-18-09-075 1280.440 Acres
NV-18-09-012 2560.000 Acres	NV-18-09-044 2064.040 Acres	NV-18-09-076 1232.420 Acres
NV-18-09-013 1925.010 Acres	NV-18-09-045 2161.220 Acres	NV-18-09-077 1595.240 Acres
NV-18-09-014 2237.600 Acres	NV-18-09-046 2283.920 Acres	NV-18-09-078 1920.000 Acres
NV-18-09-015 1592.800 Acres	NV-18-09-047 2274.490 Acres	NV-18-09-079 2553.520 Acres
NV-18-09-016 2015.040 Acres	NV-18-09-048 2254.660 Acres	NV-18-09-080 1925.680 Acres
NV-18-09-017 1890.120 Acres	NV-18-09-049 2344.380 Acres	NV-18-09-081 1910.780 Acres
NV-18-09-018 1183.940 Acres	NV-18-09-050 1862.000 Acres	NV-18-09-082 1905.890 Acres
NV-18-09-019 1920.000 Acres	NV-18-09-051 1926.680 Acres	NV-18-09-083 1920.000 Acres
NV-18-09-020 1273.480 Acres	NV-18-09-052 1920.000 Acres	NV-18-09-084 1920.000 Acres
NV-18-09-021 1638.440 Acres	NV-18-09-053 1968.500 Acres	NV-18-09-085 1906.610 Acres
NV-18-09-022 2002.220 Acres	NV-18-09-054 480.000 Acres	NV-18-09-086 1906.880 Acres
NV-18-09-023 1923.360 Acres	NV-18-09-055 2557.400 Acres	NV-18-09-087 1920.000 Acres
NV-18-09-024 1924.480 Acres	NV-18-09-056 1271.180 Acres	NV-18-09-088 1920.000 Acres
NV-18-09-025 1920.000 Acres	NV-18-09-057 2558.480 Acres	NV-18-09-089 1907.680 Acres
NV-18-09-026 2160.000 Acres	NV-18-09-058 2557.200 Acres	NV-18-09-090 1905.200 Acres
NV-18-09-027 2549.870 Acres	NV-18-09-059 2519.970 Acres	NV-18-09-091 1920.000 Acres
NV-18-09-028 1920.000 Acres	NV-18-09-060 2560.000 Acres	NV-18-09-092 1863.400 Acres
NV-18-09-029 2555.960 Acres	NV-18-09-061 2560.000 Acres	NV-18-09-093 1262.230 Acres
NV-18-09-030 2560.000 Acres	NV-18-09-062 2529.920 Acres	NV-18-09-094 1280.000 Acres
NV-18-09-031 1116.020 Acres	NV-18-09-063 2560.000 Acres	NV-18-09-095 2545.810 Acres
NV-18-09-032 1920.000 Acres	NV-18-09-064 2560.000 Acres	NV-18-09-096 1916.270 Acres

NV-18-09-097 1037.900 Acres
 NV-18-09-098 644.920 Acres
 NV-18-09-099 640.000 Acres
 NV-18-09-100 1126.680 Acres
 NV-18-09-101 439.840 Acres
 NV-18-09-102 2555.720 Acres
 NV-18-09-103 1280.000 Acres
 NV-18-09-104 1920.000 Acres
 NV-18-09-105 1920.000 Acres
 NV-18-09-106 2560.000 Acres
 NV-18-09-107 2560.000 Acres
 NV-18-09-108 2560.000 Acres
 NV-18-09-109 640.000 Acres
 NV-18-09-110 1676.230 Acres
 NV-18-09-111 1907.650 Acres
 NV-18-09-112 2200.000 Acres

NV-18-09-113 2480.000 Acres
 NV-18-09-114 1075.920 Acres
 NV-18-09-115 2512.640 Acres
 NV-18-09-116 2318.580 Acres
 NV-18-09-117 1104.790 Acres
 NV-18-09-118 2101.350 Acres
 NV-18-09-119 1286.360 Acres
 NV-18-09-120 2000.120 Acres
 NV-18-09-121 2334.020 Acres
 NV-18-09-122 2560.000 Acres
 NV-18-09-123 2532.960 Acres
 NV-18-09-124 2560.000 Acres
 NV-18-09-125 2560.000 Acres
 NV-18-09-126 2537.960 Acres
 NV-18-09-127 2560.000 Acres
 NV-18-09-128 1925.000 Acres

NV-18-09-129 2528.000 Acres
 NV-18-09-130 2560.000 Acres
 NV-18-09-131 2555.000 Acres
 NV-18-09-132 2529.000 Acres
 NV-18-09-133 2554.000 Acres
 NV-18-09-134 2527.000 Acres
 NV-18-09-135 1926.000 Acres
 NV-18-09-136 2536.000 Acres
 NV-18-09-137 2560.000 Acres
 NV-18-09-138 2560.000 Acres
 NV-18-09-139 2537.000 Acres
 NV-18-09-140 2560.000 Acres
 NV-18-09-141 2560.000 Acres
 NV-18-09-142 2540.000 Acres
 NV-18-09-143 1920.000 Acres
 NV-18-09-144 1280.000 Acres

I. Protesting Parties: Contact Information and Statement of Interests

This Protest is filed on behalf of the protesting parties by their authorized representative:

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The Center for Biological Diversity is a national, nonprofit conservation organization with over 1.6 million members and online activists dedicated to the protection of endangered species and wild places. The Center has members and employees living in Nevada who have visited the parcels and adjacent public lands for recreational, scientific, educational, and other pursuits; they will continue to do so in the future. The Center, its members, directors, and staff have worked and advocated to conserve and protect public lands and wildlife in Nevada, including greater sage-grouse and the Railroad Valley springfish.

Western Watersheds Project is a non-profit organization with more than 5,000 members and supporters. WWP's mission is to protect and restore western watersheds and wildlife through education, public policy initiatives and legal advocacy. Western Watersheds Project has staff and members in Nevada who use and enjoy public lands and their wildlife, cultural and natural resources for health, recreational, scientific, spiritual, educational, aesthetic and other purposes. WWP also has a direct interest in mineral development that occurs in areas with sensitive wildlife populations and important wildlife habitat, as well as long-standing interests in preserving and conserving Nevada wildlife and watersheds.

WildEarth Guardians is a nonprofit environmental advocacy organization dedicated to protecting the wildlife, wild places, wild rivers, and health of the American West. On behalf of our members, Guardians has an interest in ensuring the BLM fully protects public lands and resources as it conveys the right for the oil and gas industry to develop publicly-owned minerals. More specifically, Guardians has an interest in ensuring the BLM meaningfully and genuinely

takes into account the all of the implications of its oil and gas leasing decisions, including impacts to public health, air quality, water quality and quantity, and our climate from the release of more greenhouse gas emissions known to contribute to global warming.

The mailing addresses for individual protestors are as follows:

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II. Statement of Reasons Why the Proposed Lease Sale Is Unlawful

BLM's Determinations of NEPA Adequacy ("DNAs") and proposed decisions to lease the parcels listed above are substantively and procedurally flawed for the following reasons, as discussed in detail below:

- A. BLM's use of Determinations of NEPA Adequacy to authorize leasing, and its failure to prepare an Environmental Impact Statement or Environmental Assessment, violates the National Environmental Policy Act.
- B. IM 2018-034 violates the National Environmental Policy Act, Federal Land Policy and Management Act, and Administrative Procedure Act by requiring BLM's unlawful use of determinations of NEPA adequacy and unlawfully limiting public participation.
- C. BLM violated NEPA by failing to consider reasonably foreseeable impacts not analyzed in the Elko or Ely RMP FEISs, including but not limited to new information relating to modern oil, gas, and hydraulic fracturing technology, climate change, and threatened and endangered species.
- D. BLM's Treatment of Impacts to Greater Sage-Grouse Violates FLPMA, NEPA, and does not conform to the Great Basin Greater Sage-Grouse ARMPA.
- E. BLM violated Section 7 of the Endangered Species Act by failing to ensure that agency actions will not jeopardize the continued existence of species listed under the Endangered Species Act, including the Railroad Valley springfish.

A. **BLM's use of Determinations of NEPA Adequacy to authorize oil and gas leasing, and its failure to prepare an Environmental Impact Statement or Environmental Assessment, violates the National Environmental Policy Act.**

NEPA requires agencies to undertake thorough, site-specific environmental analysis at the earliest possible time and prior to any "irretrievable commitment of resources" so that the action can be shaped to account for environmental values. Pennaco Energy, Inc. v. United States DOI, 377 F.3d 1147, 1160 (10th Cir. 2004). Oil and gas leasing is an irretrievable commitment of resources. S. Utah Wilderness All. v. Norton, 457 F. Supp. 2d 1253, 1256 (D. Utah 2006). Thus, NEPA establishes "action-forcing" procedures that require agencies to take a "hard look," at "all foreseeable impacts of leasing" before leasing can proceed. Center for Biological Diversity v. United States DOI, 623 F.3d 633, 642 (9th Cir. 2010); N.M. ex rel. Richardson v. BLM, 565 F.3d 683, 717 (10th Cir. 2009). Chief among these procedures is the preparation of an environmental impact statement ("EIS"). Id. BLM, however, did not prepare an EIS, or even an Environmental Assessment to determine whether preparation of an EIS is required.

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." Nat'l Parks & Conservation Ass'n v. Babbitt, 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. Blue Mountains Biodiversity Project v. Blackwood, 161 F.3d 1208, 1212 (9th Cir. 1998) (emphasis added). Here, however, BLM’s DNAs lack any analyses of site-specific impacts.

In issuing its DNAs, BLM failed both of NEPA’s “twin aims”: not only did BLM fail to ensure that the agency takes a “hard look” at the environmental consequences of its proposed action, it also failed to make information on the environmental consequences available to the public, which may then offer its insight to assist the agency’s decision-making through the comment process. See, e.g., Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 349 (1989). NEPA’s procedural requirement is not merely a formality, but is there to allow the agencies and the public to understand the consequences of the proposed lease auction.

BLM’s deferral of site-specific analysis until the APD stage is unlawful under NEPA, its implementing regulations, and legal precedents. Courts have repeatedly rejected BLM’s claim that it is not required to conduct any site-specific environmental review until after the parcels are leased and a proposal is submitted by industry. See, e.g., Center for Biological Diversity & Sierra Club v. BLM, 937 F. Supp. 2d 1140, 1158 (N.D. Cal. 2013) (“... BLM asserts the now-familiar argument that there is no controversy because any degradation of the local environment from fracking should be discussed, if ever, when there is a site-specific proposal. But the Ninth Circuit has specifically disapproved of this as a reason for holding off on preparing an EIS.”); and Conner v. Burford, 848 F.2d 1441, 1450 (9th Cir. 1988) (“The government’s inability to fully ascertain the precise extent of the effects of mineral leasing ... is not, however, a justification for failing to estimate what those effects might be before irrevocably committing to the activity.”).

BLM is required under NEPA to perform and disclose an analysis of environmental impacts of the parcels offered for lease *before* there are any “irreversible and irretrievable commitments of resources.” Center for Biological Diversity, 937 F. Supp. 2d at 1152 (citing Conner v. Burford, 848 F.2d 1441, 1446 (9th Cir. 1988) (“Our circuit has held that an EIS must be prepared *before* any irreversible and irretrievable commitment of resources.”) (emphasis added). “[N]on-NSO leases, even if subject to substantial government regulation, do constitute an ‘irretrievable commitment of resources.’ As a result, unless the lease reserves to the agencies an ‘*absolute right to deny exploitation of those resources,*’ the sale of [] non-NSO leases ... constitutes the go or no-go point where NEPA analysis becomes necessary.” *Id.* at 1152. In other words, the specific environmental effects of oil and gas leasing in the project area must be analyzed and disclosed now, at the leasing stage.

Rather than perform the environmental review as required, BLM asserts that all significant impacts of the proposed action are covered by the 2008 Ely Resource Management Plan FEIS and ROD and 2013, 2014, and 2017 environmental assessments for oil and gas lease sales, which it calls “Reference EAs.”¹ For Elko parcels, BLM similarly relies on environmental assessments for 2017 and 2018 competitive oil and gas lease sales, the 1985 Draft and 1986 Final Elko RMP Environmental Impact Statement, and the December 2005 Oil and Gas Lease Sale Programmatic EA.² However, none of the parcels proposed for leasing in the September 2018 oil and gas lease sales were analyzed under the Reference EAs or any other previous NEPA documents cited by BLM in its DNAs. This is unlawful. BLM is required to analyze all foreseeable human health

¹ DOI-BLM-NV-L000-2018-0001-FONSI at 1.

² DOI-BLM-NV-E000-2018-0007-DNA at 3.

and safety risks, and seismic risks, posed by unconventional extraction techniques before leasing. In fact, BLM's earlier analysis for the 1986 Final Elko RMP Environmental Impact Statement, and the December 2005 Oil and Gas Lease Sale Programmatic EA predated, and therefore did not and could not analyze impacts of modern high-volume hydraulic fracturing and oil and gas development technologies.

In Center for Biological Diversity & Sierra Club v. BLM, 937 F. Supp. 2d 1140, 1152 (N.D. Cal. 2013), BLM also attempted to defer NEPA analysis of hydraulic fracturing (hereinafter referred to as "fracking") on the parcels at issue until it received a site-specific proposal, because the exact scope and extent of drilling that would involve fracking was unknown. The district court held BLM's "unreasonable lack of consideration of how fracking could impact development of the disputed parcels went on to unreasonably distort BLM's assessment," and explained:

"[T]he basic thrust" of NEPA is to require that agencies consider the range of possible environmental effects before resources are committed and the effects are fully known. "Reasonable forecasting and speculation is thus implicit in NEPA, and we must reject any attempt by agencies to shirk their responsibilities under NEPA by labeling any and all discussion of future environmental effects as 'crystal ball inquiry.'"

Center for Biological Diversity, 937 F. Supp. 2d at 1157 (citing City of Davis v. Coleman, 521 F.2d 661, 676 (9th Cir. 1975)).

As the courts have made clear time and again, NEPA requires that "assessment of all 'reasonably foreseeable' impacts must occur at the earliest practicable point, and must take place before an 'irretrievable commitment of resources' is made." N.M. ex rel. Richardson v. BLM, 565 F.3d 683, 717-18 (10th Cir. 2009) (citing 42 U.S.C. § 4332(2)(C)(v)); compare with Center for Biological Diversity, 937 F. Supp. 2d at 1152 (N.D. Cal. 2013) ("Agencies are required to conduct this review at the 'earliest possible time' to allow for proper consideration of environmental values. . . A review should be prepared at a time when the decisionmakers 'retain a maximum range of options.'"). In Richardson, BLM argued there also that it was not required to conduct any site-specific environmental reviews until the issuance of an APD. The court looked to the Ninth and D.C. Circuits in concluding that "NEPA requires BLM to conduct site-specific analysis before the leasing stage." Richardson, 565 F.3d at 688. Richardson then offered a two-part test to determine whether NEPA has been satisfied: First we must ask whether the lease constitutes an "irretrievable commitment of resources." The Tenth Circuit, again citing to the Ninth and D.C. Circuits, concluded that issuing an oil and gas lease without an NSO stipulation constitutes such a commitment. Second, the agency must ask whether all "foreseeable impacts of leasing" have been taken into account before leasing can proceed. Id. Given the utter lack of any site-specific review of the present surface-occupancy-permitting parcels, for this lease sale, such impacts have not been taken into account.

B. IM 2018-034 violates the National Environmental Policy Act, Federal Land Policy and Management Act, and Administrative Procedure Act by requiring BLM's unlawful use of determinations of NEPA adequacy and unlawfully limiting public participation.

Over the past year, the Trump Administration has steadily disregarded the notion, enshrined in federal law, that public lands exist for the benefit of all American people. In the

name of “energy dominance,” the new Administration has made sweeping changes to its land management practices to prioritize oil and gas development above all else, eroding basic principles of government transparency, public participation, and balanced stewardship of our public lands. In doing so, the Administration has flouted the law.

IM 2018-034 is one such change. Rather than promulgating regulations to overhaul its oil and gas leasing procedures, BLM issued this “Instruction Memorandum” on January 31, 2018—without any public notice, comment, or environmental review—directing BLM offices to sharply limit public involvement in oil and gas leasing decisions. The IM lists public involvement as an “unnecessary impediment” to domestic energy production and imposes new barriers to public input in the leasing process. These include making comment periods optional at the discretion of BLM field staff and restricting the former 30-day protest period to just 10 days.

These changes unreasonably inhibit protestors—and all Americans—from weighing in on decisions affecting their public lands. They are also unlawful, for three reasons. First, BLM promulgated IM 2018-034 without notice-and-comment rulemaking required under the Federal Land Policy and Management Act (FLPMA), National Environmental Policy Act (NEPA), and Administrative Procedure Act (APA). Second, the revised procedures disregard BLM’s obligations, under both FLPMA and NEPA, to allow for public participation in land management decisions. Third, BLM failed to provide a reasoned explanation for its elimination of long-standing public comment and protest periods, violating its obligation to engage in well-reasoned, non-arbitrary decisionmaking under the APA.

FLPMA Section 309(e) requires that the public be allowed meaningful participation in public lands management decisions. *See* 43 U.S.C. § 1739(e). It provides:

In exercising his authorities under this Act, the Secretary, *by regulation*, shall establish procedures . . . to give the Federal, State, and local governments and the public adequate notice and an opportunity to comment upon the formulation of standards and criteria for, *and to participate in*, the preparation and execution of plans and programs for, and the management of, the public lands.

43 U.S.C. § 1739(e) (emphasis added). FLPMA Section 310 further directs BLM to follow traditional APA rulemaking procedures in promulgating rules and regulations under FLPMA, without regard to APA’s “public property” exemption which allowed BLM avoid rulemaking in the past. *See* 43 U.S.C. § 1740. Also, FLPMA Section 102 reiterates that “it is the policy of the United States that [the Secretary of Interior] be required to establish comprehensive rules and regulations *after considering the views of the general public*[.]” 43 U.S.C. § 1701(a).

FLPMA thus mandates that DOI and BLM involve the public in the “actual management of public lands.” *Donald K. Majors*, 123 IBLA 142, 147 (1992). “There are strong indications that Congress intended some form of public input for all decisions that may have significant impact on federal lands.” *Nat’l Wildlife Fed’n v. Burford*, 835 F.2d 305, 322 (1987) (citing H.R. Rep. No. 1163, 94th Cong., 2d Sess. 7 (1976), U.S. Code Cong. & Ad. News 1976, p. 6181), *rev’d on other grounds*, 497 U.S. 871 (1990). BLM violated these FLPMA mandates in adopting IM 2018-034 without undertaking notice-and-comment rulemaking, and in applying IM 2018-034 to exclude or sharply limit public participation in BLM oil and gas leasing decisions.

NEPA is designed to ensure that federal agencies “will have available, and will carefully consider, detailed information concerning significant environmental impacts” of their actions before they occur. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989); 40 C.F.R. § 1500.1(c). NEPA “also guarantees that the relevant information will be made available to the larger [public] audience that may also play a role in both the decision-making process and the implementation of that decision.” *Robertson*, 490 U.S. at 349; 40 C.F.R. § 1500.1(b).

Under the CEQ regulations, federal agencies may adopt their own agency-specific procedures for fulfilling their NEPA obligations. *See* 40 C.F.R. § 1507.3. Agencies must consult with CEQ while developing these procedures and publish the proposed regulations in the Federal Register for public review and comment. *Id.* § 1507.3(a). Agencies must also “continue to review their policies and procedures and in consultation with the [CEQ] to revise them as necessary to ensure full compliance with the purposes and provisions of the Act.” *Id.*; *see also* 40 C.F.R. § 1506.6 (“Agencies shall: . . . (a) Make diligent efforts to involve the public in preparing . . . their NEPA procedures”). In adopting IM 2018-034, BLM violated NEPA and the CEQ regulations by adopting IM 2018-034 without undertaking notice-and-comment rulemaking or conferring with CEQ, thereby excluding or sharply limiting public participation in BLM’s NEPA evaluations of proposed oil and gas leasing decisions.

By, under IM 2018-034, providing the public with only a 10-day protest period, on a Determination of NEPA Adequacy addressing proposed oil and gas leases involving substantial uncertainties and potential impacts, BLM is violating the APA, NEPA, and FLPMA.

IM 2018-034 is procedurally invalid under FLPMA, NEPA, and the APA. First, as noted above, FLPMA section 309(e) provides that:

In exercising his authorities under this Act, the Secretary, *by regulation*, shall establish procedures . . . to give the Federal, State, and local governments and the public adequate notice and an opportunity to comment upon the formulation of standards and criteria for, and to participate in, the preparation and execution of plans and programs for, and the management of, the public lands.

43 U.S.C. § 1739(e) (emphasis added). FLPMA Section 310 further directs BLM to follow APA rulemaking procedures. *See* 43 U.S.C. § 1740.

Where Congress has explicitly directed an agency to proceed “by regulation” on some subject, the agency has no discretion to use a less formal method. *See MST Express v. Dep’t of Transp.*, 108 F.3d 401 (D.C. Cir. 1997) (vacating guidance on vehicle safety rating procedures, because the agency “failed to carry out its statutory obligation” to establish these procedures “by regulation”); *Ethyl Corp. v. EPA*, 306 F.3d 1144 (D.C. Cir. 2002) (vacating an EPA guidance document because Congress explicitly directed EPA to proceed “by regulation” on that subject). Here, IM 2018-034 falls within the scope of FLPMA Section 309, because it establishes procedures for public participation in oil and gas leasing, a BLM management decision. Yet BLM adopted IM 2018-034 by fiat, without notice-and-comment rulemaking as required by FLPMA and the APA. Accordingly, BLM’s issuance of IM 2018-034 was procedurally invalid.

Second, BLM's issuance of IM 2018-034 also violated its obligation to proceed by notice-and-comment rulemaking when updating its NEPA procedures. As noted above, the CEQ regulations direct federal agencies to adopt and revise their own agency-specific NEPA procedures through consultation with CEQ, and by publishing the proposed regulations in the Federal Register for public review and comment. *See* 40 C.F.R. § 1507.3; *see also* 40 C.F.R. § 1506.6 ("Agencies shall: . . . (a) Make diligent efforts to involve the public in preparing . . . their NEPA procedures"). Here, BLM used IM 2018-034 to revise its NEPA procedures for oil and gas leasing, without publishing the proposed changes in the Federal Register for public comment, in violation of the CEQ regulations and NEPA. BLM's failure to follow proper procedures to adopt the changes to its oil and gas leasing process as required by the CEQ regulations compounds its FLPMA violations.

Third, BLM's elimination of critical opportunities for public participation in leasing decisions is arbitrary, capricious, and contrary to law. In FLPMA Section 102, Congress declared: "it is the policy of the United States that" the Secretary of Interior be required to "assure adequate third party participation." 43 U.S.C. § 1701(a). To achieve this objective, as quoted above, FLPMA Section 309(e) requires that the Secretary of Interior must "*give . . . the public adequate notice and an opportunity to comment* upon the formulation of standards and criteria for, and to participate in, the preparation and execution of plans and programs for, and the management of, the public lands." 43 U.S.C. § 1739(e) (emphasis added). FLPMA Section 103 further defines "public involvement" as "the opportunity for participation by affected citizens in rule making, decision making, and planning with respect to the public lands, including public meetings or hearings held at locations near the affected lands, or advisory mechanisms, or such other procedures as may be necessary to provide public comment in a particular instance." 43 U.S.C. § 1702(d). These provisions require public involvement in BLM management decisions, including for livestock grazing. *See Western Watersheds Project v. Kraayenbrink*, No. 4:05-cv-297, 2006 WL 2348080, at *7 (D. Id. 2006) (ECF No. 61) ("This statutory language values public input on long-range issues . . . as well as on day-to-day issues ('the management of' and 'execution of' those long-range plans)"); *see also Natl. Parks and Conservation Ass'n v. F.A.A.*, 998 F.2d 1523, 1531 (10th Cir. 1993) ("Congress, through FLPMA . . . , has determined that the public has a right to participate in actions affecting public lands"). Like grazing decisions, oil and gas leasing decisions fall into the "management" category of Section 309(e). Therefore, under FLPMA, public participation is required for such decisions, and IM 2018-034 violates this mandate.

First, by removing the term "will" and replacing it with a "may," *see* IM 2018-034 § III.C.5., BLM has granted itself impermissible discretion in determining whether to involve the public in oil and gas leasing decisions. *Second*, by declaring that public comment is not required in lease sales supported by a DNA and making no provision for public comment in lease sales supported by an EA, IM 2018-034 fails satisfy BLM's obligation to provide, at a bare minimum, an opportunity for public comment in leasing decisions. *Third*, by relegating public input to the adversarial protest and appeals process for many lease sales, BLM has deprived the public of meaningful involvement in the formulation of BLM leasing decisions.

Fourth and finally, the unreasonably short comment and protest deadlines inhibit the public's ability to meaningfully review and comment on BLM oil and gas leasing decisions. The public receives no notice when specific parcels are nominated for leasing. This means that

BLM's publication of a Draft EA or Sale Notice is often the public's first indication of which lands will be up for auction. In a matter of 10 or 15 calendar days—which amounts to just 6 to 11 working days—would-be commenters and protesters must scramble to prepare their submissions. The effective turnaround time is often shorter. Comments and protests are not considered filed until received, and BLM prohibits electronic submission, *see* 43 CFR 1822.11, so parties must mail them in advance to ensure timely receipt.

Preparing meaningful public comments is a time-consuming process. To have any chance of improving the agency's decisionmaking, parties must (1) survey the parcel maps to determine which public lands will be included in the sale; (2) review up to hundreds of pages of BLM plans, reports, environmental analysis and appendices; (3) assess potential impacts to the lease parcels and surrounding areas, encompassing tens or hundreds of thousands of acres, including to fish and wildlife populations or their habitats, air or water quality, archaeological sites or cultural resources, and recreation or other uses; (4) gather and review available data and scientific literature; (5) conduct site visits to "ground truth" BLM's assumptions and data; (6) engage outside experts; (7) track down and review the relevant land use plans, agency manuals, regulations, and statutes to evaluate potential violations of law or policy; (8) write comments to sufficiently raise key issues with the BLM; (9) circulate draft comments for feedback or sign-on by partner organizations; and (10) obtain organizational approval for submission of the final comments. Accomplishing these tasks in 30 days was difficult for even the most efficient and experienced professional staff. Doing so in as little as six working days is practically impossible.

C. BLM violated NEPA by failing to consider reasonably foreseeable impacts not analyzed in the Elko or Ely RMP FEISs, including but not limited to new information relating to modern oil, gas, and hydraulic fracturing technology, climate change, regional drought, groundwater conditions, BLM sensitive species, and threatened and endangered species.

BLM's Determinations of NEPA Adequacy conclude that no additional NEPA documentation is required for the lease sale because the impacts have already been addressed by the "Reference EAs" and the environmental assessments for 2013, 2014, 2017 and 2018 competitive oil and gas lease sales, the 1985 Draft and 1986 Final Elko RMP Environmental Impact Statement, the December 2005 Elko Oil and Gas Lease Sale Programmatic EA, and the 2008 Final Ely RMP Environmental Impact Statement. That conclusion is arbitrary and capricious because (1) none of the earlier NEPA analyses conducted site-specific environmental analysis for the specific parcels now proposed for leasing; (2) significant new developments and information plainly have taken place since approval of the 2008 Ely Resource Management Plan FEIS and ROD, and the 1986 Elko Final Elko RMP EIS and ROD, with regard to, *inter alia*, the nature of oil and gas extraction, the impacts of oil and gas extraction, and the vulnerability of wildlife to those impacts in light of other threats.

A Determination of NEPA Adequacy "DNA" is an administrative convenience created by BLM.³ BLM guidance states that a DNA may only be utilized when, among other conditions,

³ BUREAU OF LAND MGMT., NATIONAL ENVIRONMENTAL POLICY ACT HANDBOOK H-1790-1, at § 5.1.3 (2008) [hereinafter BLM NEPA HANDBOOK], available at

“the direct, indirect, and cumulative effects that would result from implementation of the new proposed action [are] similar (both quantitatively and qualitatively) to those analyzed in the existing NEPA document.” BLM NEPA HANDBOOK, § 5.1.2–3. A DNA cannot be used to address site-specific environmental effects not previously considered in a NEPA document. *See, e.g., S. Utah Wilderness All.*, 166 IBLA 270 (Aug. 16, 2005). Reliance on a DNA where the proposed action is of “greater intensity and scope” than the actions contemplated by the prior NEPA documents violates NEPA. *Friends of Animals v. U.S. Bureau of Land Mgmt.*, No. 3:15-CV-0057-LRH-WGC, 2015 WL 555980, at *4 (D. Nev. Feb. 11, 2015) (finding plaintiffs were likely to succeed on their claim).

DNAs cannot be used “to replace supplemental environmental assessments or impact statements and may only be used ‘for the purpose of determining whether new information or changed circumstances require the preparation of a supplemental EA or EIS.’” *Summit Lake Paiute Tribe of Nevada v. U.S. Bureau of Land Mgmt.*, 496 F. App’x 712, 715–16 (9th Cir. 2012) (quoting *Idaho Sporting Congress Inc. v. Alexander*, 222 F.3d 562, 566 (9th Cir.2000)). A DNA must be set aside as arbitrary and capricious, and not in compliance with NEPA, where the agency has failed to take a “hard look” in “determin[ing] that the new impacts will not be significant (or not significantly different from those already considered.” *North Idaho Community Action Network v. U.S. Dept. of Transp.*, 545 F.3d 1147, 1154–55 (9th Cir. 2008).

“[W]hether to prepare a supplemental EIS is similar to the decision whether to prepare an EIS in the first instance: If there remains ‘major Federal actio[n]’ to occur, and if the new information will ‘affec[t] the quality of the human environment’ in a significant manner or to a significant extent not already considered, a supplemental EIS must be prepared.” *Marsh v. Ore. Natural Res. Council*, 490 U.S. 360, 374 (1989). “Further, the BLM must re-examine its decision when the EIS ‘rests on stale scientific evidence ... and false assumptions.’” *Oregon Nat. Desert Ass’n v. Bureau of Land Mgmt.*, No. CIV. 08-1271-KI, 2011 WL 5830435, at *6 (D. Or. Nov. 15, 2011) (quoting *Seattle Audubon Soc’y v. Espy*, 998 F.2d 699, 704 (9th Cir.1993)). It must take a “hard look at the environmental effects of their planned action, even after a proposal has received initial approval.” *Marsh*, 490 U.S. at 373, 385. “Failure to issue a supplemental EIS when these criteria are met is arbitrary, capricious and not in accordance with NEPA.” *Oregon Nat. Desert Ass’n v. Bureau of Land Mgmt.*, 2011 WL 5830435, at *6 (D. Or. Nov. 15, 2011).

First, the DNAs at issue improperly rely on an FEIS to satisfy the NEPA obligations for an action outside the scope of actions contemplated by that FEIS. Second, the FEIS in question is entirely devoid of any analysis of the direct, indirect, or cumulative impacts of oil and gas leasing. Third, the DNAs fail to consider significant new information related to hydraulic fracturing, climate change, and imperiled wildlife. Finally, the DNAs improperly attempt to defer the analysis of all impacts not addressed in the FEIS to the APD stage, despite the reality that the sale of leases irretrievably commits the resources at the leasing stage unless stipulations are so expansive that development may be precluded entirely at the APD stage for the full range of reasons within BLM’s discretion at the time of leasing.

https://www.ntc.blm.gov/krc/uploads/366/NEPAHandbook_H-1790_508.pdf (stating a DNA is “not itself a NEPA document”).

1. The 1986 Elko RMP-EIS Contains No Evaluation of the Impacts of Oil & Gas Leasing

The 1986 Elko RMP-EIS contains almost no discussion, let alone any actual evaluation, of the environmental impacts of oil and gas leasing. To satisfy NEPA, the impacts of oil and gas leasing that must be analyzed *prior to leasing* include the impacts of greenhouse gas emissions and the impacts of the modern methods used to extract oil and gas from formations previously thought to be uneconomic to exploit, such as high volume hydraulic fracturing. See *San Juan Citizens All. v. U.S. Bureau of Land Mgmt.*, No. 16-CV-376-MCA-JHR, 2018 WL 2994406, at *10-11, *19, *21 (D.N.M. June 14, 2018) (setting aside leases due to NEPA violations where BLM failed to evaluate downstream emissions of greenhouse gases and the volume of water that would be used for hydraulic fracturing operations); *Ctr. for Biological Diversity v. Bureau of Land Mgmt.*, 937 F. Supp. 2d 1140, 1157 (N.D. Cal. 2013) (BLM could not rely on 2006 RMP/FEIS to demonstrate that impacts of decision to lease were adequately analyzed because the “emergence of fracking raises potential concerns that were not considered by the 2006 PRMP/FEIS...[which made] no explicit mention of fracking at all.”); cf. *W. Org. of Res. Councils v. U.S. Bureau of Land Mgmt.*, No. CV 16-21 GF-BMM, 2018 WL 1475470, *13 (D. Mont. March 26, 2018) (BLM violated NEPA by failing “to consider in the EIS the environmental consequences of the downstream combustion of the coal, oil and gas resources potentially open to development under these RMPs.”).⁴

The 1986 Elko RMP-EIS includes no discussion whatsoever of climate change, greenhouse gases, the emissions associated with oil and gas leasing in the RMP area, hydraulic fracturing, acidizing, or horizontal drilling. Nor does it include any discussion whatsoever of the impacts of oil and gas extraction on resources such as watersheds or wildlife.

In short, the RMP-EIS contains no actual analysis of the impacts of oil and gas leasing, and therefore no analysis applicable to the direct and indirect effects of the proposed leasing in question. Reliance on the FEIS to satisfy BLM’s NEPA obligations with regard to the decision to sell the leases in question is therefore plainly arbitrary and capricious.

2. Significant New Information Renders the 1986 Elko EIS and 2008 Ely EIS Stale

a. Foreseeable Development Impacts

Hydraulic fracturing and acidizing of wells are reasonably foreseeable impacts of the leases at issue, and have not been analyzed at all in the 1986 RMP EIS. Publicly available information post-dating the EIS demonstrates that leasing of the fluid mineral interests at issue here is likely to entail hydraulic fracturing, and that these activities are more than merely a remote possibility due to the availability of these new technologies. The two DNAs fail entirely to acknowledge BLM fails to take into account the recent sharp increase in leasing nominations and initial instances of fracking use in Nevada.

⁴ In response to the court’s conclusion that the RMPs in question violated NEPA by failing to evaluate downstream emissions, BLM’s Montana State Office deferred all new and pending oil and gas leasing on parcels within those areas for “additional environmental analysis” necessary to comply with the court’s decision. See Apr. 24, 2018 letter from Jon K. Raby, Acting State Director (reference # 3120 (MT922)).

As discussed in detail below, acidizing and hydraulic fracturing have significant impacts on human health and the environment, including impacts on air quality, water quality, and water quantity. Because the 1986 EIS is devoid of any mention of these modern extraction practices, which are reasonably likely to be employed in the Nevada, BLM must analyze these impacts prior to lease issuance in order to comply with NEPA. The 1986 EIS's assumptions regarding the low likelihood of oil and gas development in the Railroad Valley and other Nevada basin are clearly outdated. The report indicates that new technologies involving the combination of acidizing and hydraulic fracturing have been used in nearby areas to extract hydrocarbons and helium in commercial quantities, which was unforeseen at the time of the FEIS and RMP. The resulting increased interest in oil and gas development in this area was never contemplated by the FEIS or RMP, which made no attempt to evaluate the direct, indirect, or cumulative effects of such development.

b. Climate Change

i. BLM Must Consider the Contribution of Leasing to Climate Change

Since the 1986 and 2008 FEISs, considerable new information has come to light about the disastrous impacts of anthropogenic climate change induced by fossil fuel combustion. As detailed below, a large body of scientific research has established that the vast majority of global and U.S. fossil fuels must stay in the ground in order to avoid the most catastrophic effects of anthropogenic climate change. The 1986 FEIS does not mention climate change at all. Nor does it attempt to evaluate the impact of greenhouse gas emissions associated with potential oil and gas development in the area covered by the RMP. This new information is plainly relevant to the analysis of whether leasing will result in impacts that are significant when consider cumulatively with other emissions.

If we are to stem the impacts of climate change and manage for sustainable ecosystems, not only must the BLM take a hard look at greenhouse gas ("GHG") emissions stemming from the development it authorizes, but the BLM's decision must be reflective of the challenges we face.

The EPA has determined that human emissions of greenhouse gases are causing global warming that is harmful to human health and welfare. *See* 74 Fed. Reg. 66,496 (Dec. 15, 2009), *Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act*. The D.C. Circuit has upheld this decision as supported by the vast body of scientific evidence on the subject. *See Coal. for Responsible Regulation, Inc. v. E.P.A.*, 684 F.3d 102, 120-22 (D.C. Cir. 2012). Indeed, EPA could not have found otherwise, as virtually every climatologist in the world accepts the legitimacy of global warming and the fact that human activity has resulted in atmospheric warming and planetary climate change.⁵ The world's leading minds and most respected institutions—guided by increasingly clear science and statistical

⁵ *See, e.g.,* *See* INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *The Science of Climate Change* (1995); U.S. Climate Change Science Program, *Abrupt Climate Change* (Dec. 2008); James Hansen, et. al., *Global Surface Temperature Change*, *REVIEWS OF GEOPHYSICS*, 48, RG4004 (June 2010); *see also*, Richard A. Muller, *Conversion of a Climate Change Skeptic*, *NEW YORK TIMES*, July 28, 2012 (citing Richard A. Muller, et. al., *A New Estimate of the Average Earth Surface Temperature, Spanning 1753 to 2011*, ; Richard A. Muller, et. al., *Decadal Variations in the Global Atmospheric Land Temperatures*).

evidence—agree that dramatic action is necessary to avoid planetary disaster.⁶ GHG concentrations have been steadily increasing over the past century,⁷ and our insatiable consumption of fossil fuels is pushing the world to a tipping point where, once reached, catastrophic change will be unavoidable.⁸ In fact, the impacts from climate change are already being experienced, with drought and extreme weather events becoming increasingly common.⁹

Renowned NASA climatologist Dr. James Hansen provides the analogy of loaded dice—suggesting that there still exists some variability, but that climate change is making these extreme events ever more common.¹⁰ In turn, climatic change and GHG emissions are having dramatic impacts on plant and animal species and habitat, threatening both human and species resiliency and the ability to adapt to these changes.¹¹ According to experts at the Government Accountability Office (“GAO”), federal land and water resources are vulnerable to a wide range of effects from climate change, some of which are already occurring. These effects include, among others, “(1) physical effects, such as droughts, floods, glacial melting, and sea level rise; (2) biological effects, such as increases in insect and disease infestations, shifts in species

⁶ See, e.g. Rob Atkinson, et. al., *Climate Pragmatism: Innovation, Resilience, and No Regrets* (July 2011) ; Veerabhadran Ramanathan, et. al., *The Copenhagen Accord for Limiting Global Warming: Criteria, Constraints, and Available Avenues* (Feb. 2010) ; UNITED NATIONS, INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *Climate Change 2007: Synthesis Report* (2007) ; A.P. Sokolov, et. al., *Probabilistic Forecast for Twenty-First-Century Climate Based on Uncertainties in Emissions (without Policy) and Climate Parameters*, MASSACHUSETTS INSTITUTE OF TECHNOLOGY (MIT) (Oct. 2009) ; UNITED NATIONS, FRAMEWORK CONVENTION ON CLIMATE CHANGE, *Report of the Conference of the Parties* (Dec. 2011) ; Bill McKibben, *Global Warming's Terrifying New Math*, ROLLING STONE, July 19, 2012 ; Elizabeth Muller, *250 Years of Global Warming*, BERKLEY EARTH, July 29, 2012 ; Marika M. Holland, et. al., *Future abrupt reductions in summer Arctic sea ice*, Geophysical Research Letters, Vol. 33, L23503 (2006) .

⁷ See Randy Strait, et. al., *Final Colorado Greenhouse Gas Inventory and Reference Case Projections: 1990-2020*, CENTER FOR CLIMATE STRATEGIES (Oct. 2007) ; Robin Segall et. al., *Upstream Oil and Gas Emissions Measurement Project*, U.S. ENVIRONMENTAL PROTECTION AGENCY ; Lee Gribovicz, *Analysis of States' and EPA Oil & Gas Air Emissions Control Requirements for Selected Basins in the Western United States*, WESTERN REGIONAL AIR PARTNERSHIP (Nov. 2011)

⁸ See, e.g. James Hansen, *Tipping Point: Perspective of a Climatologist*, STATE OF THE WILD 2008-2009 ; GLOBAL CARBON PROJECT, *A framework for Internationally Co-ordinated Research on the Global Carbon Cycle*, ESSP Report No. 1 ; INTERNATIONAL ENERGY AGENCY, *CO₂ Emissions from Fuel Combustion, Highlights 2011* ; GLOBAL CARBON PROJECT, *10 Years of Advancing Knowledge on the Global Carbon Cycle and its Management* ; Malte Meinshausen, et. al., *Greenhouse-gas emission targets for limiting global warming to 2° C*, NATURE, Vol. 458, April 30, 2009 .

⁹ See, e.g. UNITED NATIONS, INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation* (2011) ; Aiguo Dai, *Increasing drought under global warming in observations and models*, NATURE: CLIMATE CHANGE (Aug. 2012) ; Stephen Saunders, et. al., *Hotter and Drier: The West's Changed Climate* (March 2008) .

¹⁰ See, James Hansen, et. al., *Climate Variability and Climate Change: The New Climate Dice* (Nov. 2011) ; James Hansen, et. al., *Perception of Climate Change* (March 2012) ; James Hansen, et. al., *Increasing Climate Extremes and the New Climate Dice* (Aug. 2012).

¹¹ See Fitzgerald Booker, et. al., *The Ozone Component of Climate Change: Potential Effects on Agriculture and Horticultural Plant Yield, Product Quality and Interactions with Invasive Species*, J. INTEGR. PLANT BIOL. 51(4), 337-351 (2009) ; Peter Reich, *Quantifying plant response to ozone: a unifying theory*, TREE PHYSIOLOGY 3, 63-91 (1987).

distribution, and changes in the timing of natural events; and (3) economic and social effects, such as adverse impacts on tourism, infrastructure, fishing, and other resource uses.”¹²

Despite the strength of these findings, federal agencies, and GMUG and UFO in particular, have historically failed to take serious action to address these impacts. This type of dismissive approach fails to satisfy the guidance outlined in Department of Interior Secretarial Order 3226, discussed below, or the requirements of NEPA. “Reasonable forecasting and speculation is ... implicit in NEPA, and we must reject any attempt by agencies to shirk their responsibilities under NEPA by labelling any and all discussion of future environmental effects as ‘crystal ball inquiry.’” *Save Our Ecosystems v. Clark*, 747 F.2d 1240, 1246 n.9 (9th Cir. 1984 (quoting *Scientists’ Inst. for Pub. Info., Inc. v. Atomic Energy Comm.*, 481 F.2d 1079, 1092 (D.C. Cir. 1973)).

As noted above, NEPA imposes “action forcing procedures ... requir[ing] that agencies take a *hard look* at environmental consequences.” *Methow Valley*, 490 U.S. at 350 (citations omitted) (emphasis added). These “environmental consequences” may be direct, indirect, or cumulative. 40 C.F.R. §§ 1502.16, 1508.7, 1508.8. BLM is required to take a hard look at those impacts as they relate to the agency action. “Energy-related activities contribute 70% of global GHG emissions; oil and gas together represent 60% of those energy-related emissions through their extraction, processing and subsequent combustion.”¹³ Even if science cannot isolate each additional oil or gas well’s contribution to these overall emissions, this does not obviate BLM’s responsibility to consider oil and gas development in the action area from the cumulative impacts of the oil and gas sector. In other words, the BLM cannot ignore the larger relationship that oil and gas management decisions have to the broader climate crisis that we face. Here, the agency’s analysis must include the full scope of GHG emissions. *See Neighbors of Cuddy Mountain v. U.S. Forest Service*, 137 F.3d 1372, 1379 (9th Cir. 1998) (“To ‘consider’ cumulative effects, some quantified or detailed information is required. Without such information, neither the courts nor the public, in reviewing the [agency’s] decisions, can be assured that the [agency] provided the hard look that it is required to provide.”). If we are to stem climate disaster—the impacts of which we are already experiencing—the agency’s decisionmaking must be reflective of this reality and plan accordingly.

BLM is responsible for the management of 700 million acres of federal onshore subsurface minerals.¹⁴ Indeed, “the ultimate downstream GHG emissions from fossil fuel extraction from federal lands and waters by private leaseholders could have accounted for approximately 23% of total U.S. GHG emissions and 27% of all energy-related GHG

¹² GAO Report, *Climate Change: Agencies Should Develop Guidance for Addressing the Effects on Federal Land and Water Resources* (2007); see also Committee on Environment and Natural Resources, National Science and Technology Council, *Scientific Assessment of the Effects of Global Climate Change on the United States* (2008); Melanie Lenart, et. al. *Global Warming in the Southwest: Projections, Observations, and Impacts* (2007) (describing impacts from temperature rise, drought, floods and impacts to water supply on the southwest).

¹³ International Investors Group on Climate Change, *Global Climate Disclosure Framework for Oil and Gas Companies*.

¹⁴ See DOI-BLM, *Mineral and Surface Acreage Managed By BLM*, available at: http://www.blm.gov/wo/st/en/info/About_BLM/subsurface.html.

emissions.”¹⁵ This suggests that “ultimate GHG emissions from fossil fuels extracted from federal lands and waters by private leaseholders in 2010 could be more than 20-times larger than the estimate reported in the CEQ inventory, [which estimates total federal emissions from agencies’ operations to be 66.4 million metric tons]. Overall, ultimate downstream GHG emissions resulting from fossil fuel extraction from federal lands and waters by private leaseholders in 2010 are estimated to total 1,551 [million metric tons of CO₂ equivalent (“MMTCo₂e”)].” *Id.* In 2010, the GAO estimated that BLM could eliminate up to 40% of methane emissions from federally authorized oil and natural gas development, the equivalent of eliminating 126 Bcf or 46.3 MMTCo₂e of GHG pollution annually and equivalent to roughly 13 coal-fired power plants.¹⁶ To suggest that the BLM does not, here, have to account for GHG pollution from oil and gas development, would be to suggest that the collective 700 million acres of subsurface mineral estate is not relevant to protecting against climate change. This sort of flawed, reductive thinking would be problematic, and contradicted by the agency’s very management framework that provides a place-based lens to account for specific pollution sources to ensure that the broader public interest is protected. In discussing the project’s climate change impacts, it is insufficient for the BLM to only frame the problem in global terms:

CEQ recognizes that many agency NEPA analyses to date have concluded that GHG emissions from an individual agency action will have small, if any, potential climate change effects. Government action occurs incrementally, program-by-program and step-by-step, and climate impacts are not attributable to any single action, but are exacerbated by a series of smaller decisions, including decisions made by the government. Therefore, the statement that emissions from a government action or approval represent only a small fraction of global emissions is more a statement about the nature of the climate change challenge, and is not an appropriate basis for deciding whether to consider climate impacts under NEPA. Moreover, these comparisons are not an appropriate method for characterizing the potential impacts associated with a proposed action and its alternatives and mitigations. This approach does not reveal anything beyond the nature of the climate challenge itself: the fact that diverse individual sources of emissions each make relatively small additions to global atmospheric GHG concentrations that collectively have huge impact.¹⁷

Therefore, even though greenhouse gas emissions from this project may look minor when viewed on the scale of the global climate crisis we face, when considered cumulatively with all of the other GHG emissions from BLM-managed land, they become significant and cannot be ignored.

ii. BLM Must Consider Recent Climate Science and Carbon Budgeting.

¹⁵ Stratus Consulting, prepared for: The Wilderness Society, *Greenhouse Gas Emissions from Fossil Energy Extracted from Federal Lands and Waters*, Feb. 1, 2012.

¹⁶ GAO, *Federal Oil & Gas Leases: Opportunities Exist to Capture Vented and Flared Natural Gas, Which Would Increase Royalty Payments and Reduce Greenhouse Gases*, GAO-11-34 at 12 (Table 1)(October 2010). This GHG equivalence assumes a CH₄ warming potential of 72 (20-year warming period) as per the Intergovernmental Panel on Climate Change’s Fourth Assessment Report and using EPA’s GHG equivalencies calculator.

¹⁷ Council on Environmental Quality, *Revised Draft Guidance for Greenhouse Gas Emissions and Climate Change Impacts* (December 18, 2014) at 9, available at: <http://www.whitehouse.gov/administration/eop/ceq/initiatives/nepa/ghg-guidance> (hereinafter “CEQ Draft Guidance”).

Since the dawn of the industrial revolution a century ago, the average global temperature has risen some 1.6 degrees Fahrenheit. Most climatologists agree that, while the warming to date is already causing environmental problems, another 0.4 degree Fahrenheit rise in temperature, representing a global average atmospheric concentration of carbon dioxide (“CO₂”) of 450 parts per million (“ppm”), could set in motion unprecedented changes in global climate and a significant increase in the severity of natural disasters—and could represent the point of no return.¹⁸ In February 2017, the atmospheric concentration of CO₂ was approximately 406.42 ppm, up from 404.04 ppm the same month a year earlier.¹⁹

Climate change has been intensively studied and acknowledged at the global, national, and regional scales. Climate change is being fueled by the human-caused release of greenhouse gas emissions, in particular carbon dioxide and methane. The Intergovernmental Panel on Climate Change (“IPCC”) is a Nobel Prize-winning scientific body within the United Nations that reviews and assesses the most recent scientific, technical, and socio-economic information relevant to our understanding of climate change. In its most recent report to policymakers in 2014, the IPCC provided a summary of our understanding of human-caused climate change. Among other things, the IPCC summarized:²⁰

- Human influence on the climate system is clear, and recent anthropogenic emissions of greenhouse gases are the highest in history. Recent climate changes have had widespread impacts on human and natural systems.
- 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, and sea level has risen.
- Anthropogenic greenhouse gas emissions have increased since the pre-industrial era, driven largely by economic and population growth, and are now higher than ever. This has led to atmospheric concentrations of carbon dioxide, methane, and nitrous oxide that are unprecedented in at least the last 800,000 years. Their effects, together with those of other anthropogenic drivers, have been detected throughout the climate system and are extremely likely to have been the dominant cause of the observed warming since the mid-20th century.
- In recent decades, changes in climate have caused impacts on natural and human systems on all continents and across the oceans. Impacts are due to observed climate change, irrespective of its cause, indicating the sensitivity of natural and human systems to changing climate.
- Continued emission of greenhouse gases will cause further warming and long-lasting changes in all components of the climate system, increasing the likelihood of severe, pervasive, and irreversible impacts for people and ecosystems. Limiting

¹⁸ See David Johnston, *Have We Passed the Point of No Return on Climate Change?*, *Scientific American* (April 2015), available at: <http://www.scientificamerican.com/article/have-we-passed-the-point-of-no-return-on-climate-change/>.

¹⁹ NOAA, Earth System Research Laboratory, *Trends in Atmospheric Carbon Dioxide*, available at: <http://www.esrl.noaa.gov/gmd/ccg/trends/>.

²⁰ IPCC AR5, *Summary for Policymakers* (March 2014) available at: http://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5_SYR_FINAL_SPM.pdf.

climate change would require substantial and sustained reductions in greenhouse gas emissions which, together with adaptation, can limit climate change risks.

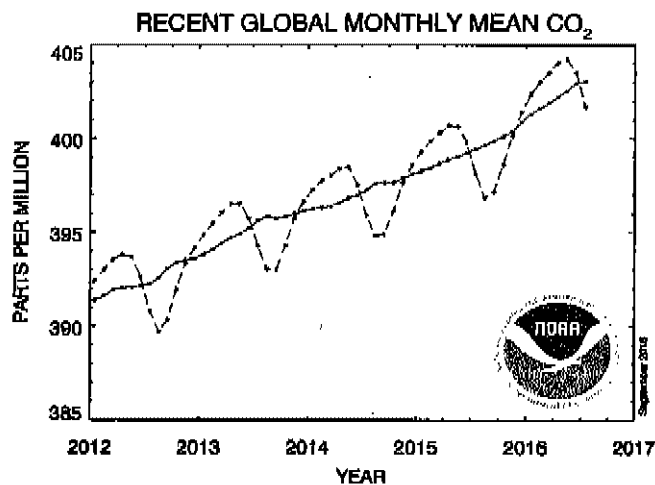
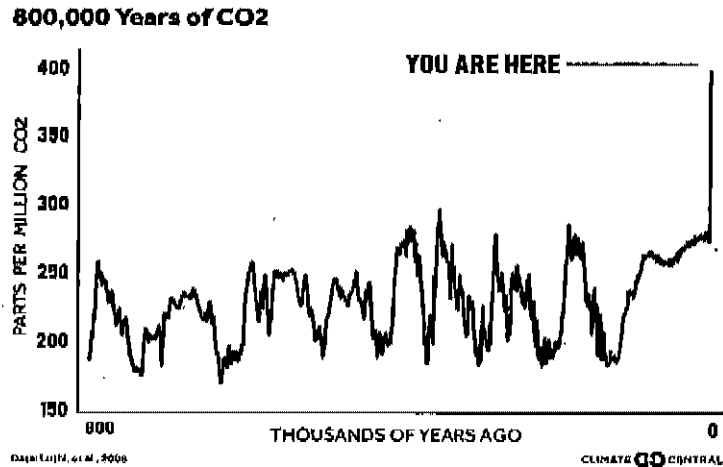
- Surface temperature is projected to rise over the 21st century under all assessed emission scenarios. It is very likely that heat waves will occur more often and last longer, and that extreme precipitation events will become more intense and frequent in many regions. The ocean will continue to warm and acidify, and global mean sea level will continue to rise.

Carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride are recognized as the key greenhouse gases contributing to climate change. In 2009, the EPA found that these “six greenhouse gases taken in combination endanger both the public health and the public welfare of current and future generations.”²¹ The D.C. Circuit has upheld this decision as supported by the vast body of scientific evidence on the subject. See *Coal. for Responsible Regulation, Inc. v. EPA.*, 684 F.3d 102, 120-22 (D.C. Cir. 2012).

According to the National Oceanic and Atmospheric Administration (“NOAA”), “[t]he combined average temperature over global land and ocean surfaces for August 2016 was the highest for August in the 137-year period of record, marking the 16th consecutive month of record warmth for the globe.”²² The global climate crisis is happening and it may well be accelerating quickly.

²¹ Environmental Protection Agency, *Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act* 74 Fed. Reg. 66,496 (Dec. 15, 2009).

²² NOAA, Global Analysis – August 2016, available at: <https://www.ncdc.noaa.gov/sotc/global/201608>.



The graphs show globally averaged historic and monthly mean carbon dioxide.

The IPCC in 2013 affirmed: “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” causing “widespread impacts on human and natural systems.”²³ This is consistent with the findings of the United States’ 2014 Third National Climate Assessment, stating: “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.”²⁴ With particular regard to the Southwest Region—which includes Colorado, New Mexico, Utah, Arizona, Nevada, and California—the National Climate Assessment included in the following overview:²⁵

²³ IPCC AR5 Synthesis Report at 2.

²⁴ Jerry M. Melillo, *et al.*, *Climate Change Impacts in the United States: The Third National Climate Assessment* (2014) at 61, available at: <http://nca2014.globalchange.gov>.

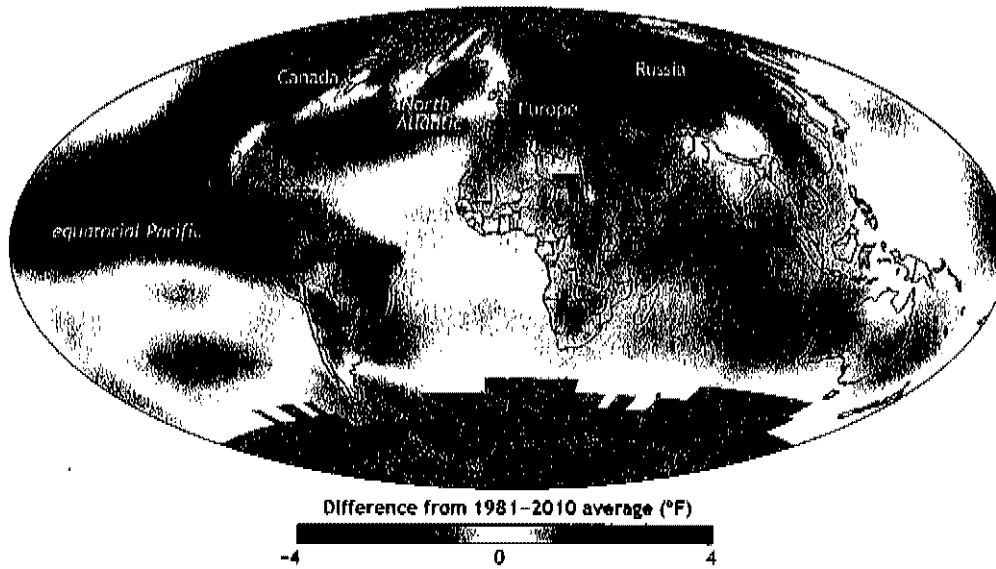
²⁵ *See id.* at 463-86.

- Snowpack and streamflow amounts are projected to decline in parts of the Southwest, decreasing surface water supply reliability for cities, agriculture, and ecosystems.
- The Southwest produces more than half of the nation's high-value specialty crops, which are irrigation-dependent and particularly vulnerable to extremes of moisture, cold, and heat. Reduced yields from increasing temperatures and increasing competition for scarce water supplies will displace jobs in some rural communities.
- Increased warming, drought, and insect outbreaks, all caused by or linked to climate change, have increased wildfires and impacts to people and ecosystems in the Southwest. Fire models project more wildfire and increased risks to communities across extensive areas.
- Flooding and erosion in coastal areas are already occurring even at existing sea levels and damaging some California coastal areas during storms and extreme high tides. Sea level rise is projected to increase as Earth continues to warm, resulting in major damage as wind-driven waves ride upon higher seas and reach farther inland.
- Projected regional temperature increases, combined with the way cities amplify heat, will pose increased threats and costs to public health in southwestern cities, which are home to more than 90% of the region's population. Disruptions to urban electricity and water supplies will exacerbate these health problems.

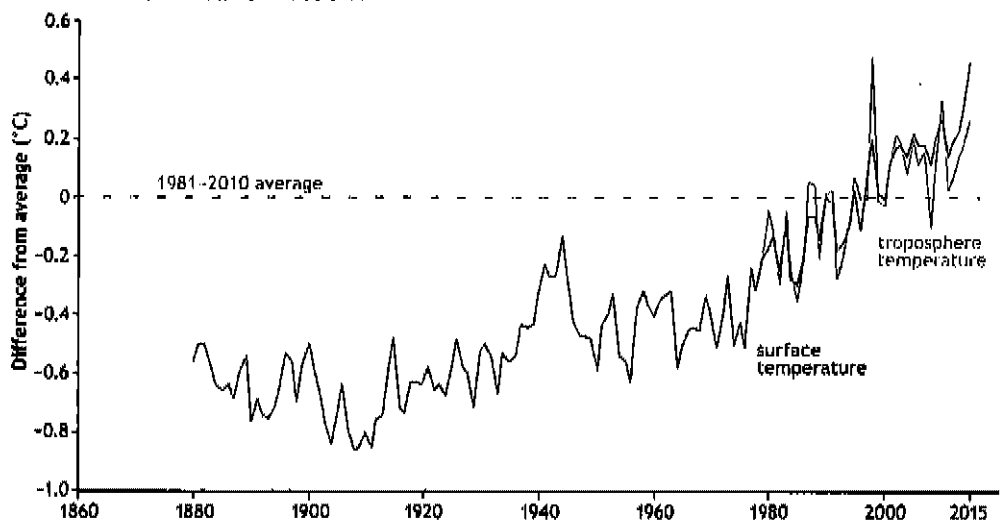
Immediate and substantial greenhouse gas reductions are required to avoid catastrophic impacts to people and communities. "Following the warmest year on record in 2014 according to most estimates, 2015 reached record warmth yet again, surpassing the previous record by more than 0.1°C."²⁶

²⁶ American Meteorological Society, *State of the Climate in 2015*, Vol.97, No.8 (Aug. 2016), at S7.

VERY FEW COOL SPOTS IN 2015



NEW HOTTEST YEAR ON RECORD



NOAA Climate.gov, adapted from State of the Climate 2015

As noted above, the Paris Agreement commits all signatories—including the United States—to a target holding long-term global average temperature “to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels.”²⁷ As articulated by a team of international climate scientists, including Dr. James Hansen, in a 2013 report: “The widely accepted target of limiting human-made global warming to 2 degrees Celsius (3.6 degrees Fahrenheit) above preindustrial level is too high and would subject young people, future generations and nature to irreparable harm.... Observational data reveal that some climate extremes are already increasing in response to warming of several

²⁷ Paris Agreement at Art. 2.

tenths of a degree in recent decades; these extremes would likely be much enhanced with warming of 2°C or more.”²⁸ “Runaway climate change—in which feedback loops drive ever-worsening climate change, regardless of human activities—are now seen as a risk even at 2°C of warming.”²⁹ Indeed, the impacts of 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.”³⁰

Although the Paris Agreement has underscored that immediate action is needed to avoid ‘extremely dangerous’ warming, meeting the voluntary commitments adopted in Paris alone will be insufficient to meet goal of limiting temperature change to between 1.5°C and 2.0°C above pre-industrial levels. As noted by a 2015 UNEP technical report:

The emissions gap between what the full implementation of the unconditional [intended nationally determined contributions (INDCs)] contribute and the least-cost emission level for a pathway to stay below 2°C, is estimated to be 14 GtCO₂e (range: 12-17) in 2030 and 7 GtCO₂e (range: 5-10) in 2025. When conditional INDCs are included as fully implemented, the emissions gap in 2030 is estimated to be 12 GtCO₂e (range: 10-15) and 5 GtCO₂e (range: 4-8) in 2025.³¹

In other words, far greater emissions reductions are necessary to stay below and 2.0°C, let alone aspire to 1.5°C of warming. If no further progress were made beyond the Paris Agreement, expected warming by 2100 would be 3.5°C.³² In the alternative, if no action is taken and the status quo is maintained estimated warming by 2100 is upwards of 4.5°C.³³

With specific regard to United States commitments under the Paris Agreement, the U.S. INDC set specific greenhouse gas emissions reduction target for 2025 of a 26% to 28% reduction below the 2005 emission levels, producing a range in 2005 net GHG emissions from 6,323 to

²⁸ James Hansen, et al., *Assessing “Dangerous Climate Change”: Required Reduction of Carbon Emissions to Protect Young People, Future Generations and Nature*, 8 PLoS ONE 8 e81648 (2013).

²⁹ Greg Muttitt, et al., *The Sky’s Limit: Why the Paris Climate Goals Require a Managed Decline of Fossil Fuel Production*, Oil Change International (Sept. 2016) at 6; see also David Spratt, *Climate Reality Check: After Paris, Counting the Cost* (March 2016) at 8 (“there is an unacceptable risk that before 2°C of warming, significant “long-term” feedbacks will be triggered, in which warming produces conditions that generate more warming, so that carbon sinks such as the oceans and forests become less efficient in storing carbon, and polar warming triggers the release of significant permafrost and clathrate carbon stores. Such an outcome could render ineffective human efforts to control the level of future warming to manageable proportions.”).

³⁰ Kevin Anderson and Alice Bows, *Beyond ‘Dangerous’ Climate Change: Emission Scenarios for a New World*, Phil. Trans. R. Soc. (2011).

³¹ United Nations Environment Programme (UNEP), *The Emissions Gap Report 2015: A UNEP Synthesis Report* (Nov. 2015) at xviii.

³² Spratt, *Climate Reality Check* at 2.

³³ See Climate Interactive, *Climate Scorecard*, available at: <https://www.climateinteractive.org/programs/scoreboard/>; see also, Andrew P. Schurer, et al., *Separating Forced from Chaotic Climate Variability over the Past Millennium*, *Journal of Climate*, Vol. 26 (March 2013).

7,403 MTCO₂e.³⁴ The difference between this target and the estimated 2025 emissions without INDC policies results in an ‘emissions gap’ ranging from 896 to 2,121 MTCO₂e.³⁵

Both the IPCC and National Climate Assessment recognize the dominant role of fossil fuels in driving climate change:

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.³⁶

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 (*high confidence*).³⁷

As summarized in a recent report:

The Paris Agreement aims to help the world avoid the worst effects of climate change and respond to its already substantial impacts. The basic climate science involved is simple: cumulative carbon dioxide (CO₂) emissions over time are the key determinant of how much global warming occurs. This gives us a finite *carbon budget* of how much may be emitted in total without surpassing dangerous temperature limits.³⁸

According to the IPCC, as of 2011, the remaining carbon budget of cumulative CO₂ emissions from all anthropogenic sources must remain below 1,000 GtCO₂ to provide a 66% probability of limiting warming to 2°C above pre-industrial levels.³⁹ For years 2012-2014, approximately 107 GtCO₂ was emitted, averaging approximately 36 GtCO₂ per year, which left us at the start of 2016 with a carbon budget of only 850 GtCO₂.⁴⁰ These emissions were the highest in human history and 60% higher than in 1990 (the Kyoto Protocol reference year). Of course, the Paris Agreement aim of limiting global warming to 1.5°C requires adherence to a more stringent carbon budget of only 400 GtCO₂ from 2011 onward, of which about 250 GtCO₂ remained at the start of 2016.⁴¹ “With global annual emissions amounting to 36 GtCO₂ in 2015,

³⁴ Jeffery Greenblatt & Max Wei, *Assessment of the climate commitments and additional mitigation policies of the United States*, Nature Climate Change (Sept. 2016), available at:

<http://www.nature.com/nclimate/journal/vaop/ncurrent/full/nclimate3125.html>

³⁵ *Id.* at 2; see also UNEP, Emissions Gap Report.

³⁶ Third National Climate Assessment at 2.

³⁷ IPCC AR5 Synthesis Report at 46.

³⁸ *The Sky's Limit* at 6.

³⁹ IPCC AR5 Synthesis Report at 63-64 & Table 2.2 (attached as Exhibit 5-1). For an 80% probability of staying below 2°C, the budget from 2000 is 890 GtCO₂, with less than 430 GtCO₂ remaining. Malte Meinshausen *et al.*, *Greenhouse-gas emission targets for limiting global warming to 2°C*, Nature (2009) at 1159.

⁴⁰ See Annual Global Carbon Emissions, available at: <https://www.co2.earth/global-co2-emissions>; see also C. Le Quéré, *et al.*, *Global Carbon Budget 2015*, Earth Syst. Sci. Data (Dec. 2015).

⁴¹ Dustin Mulvaney, *et al.*, *Over-Leased: How Production Horizons of Already Leased Federal Fossil Fuels Outlast Global Carbon Budgets*, EcoShift Consulting (July 2016) at 2 (citing Joeri Rogelj, *et al.*, *Difference between carbon budget estimates unraveled*, Nature Climate Change (2016).

scientists predict that at current rates global emissions will exceed the carbon budgets necessary to stay under the 1.5°C target by 2021 and the 2°C target by 2036.⁴²

The potential carbon emissions from *existing* fossil fuel reserves—the known belowground stock of extractable fossil fuels—considerably exceed both 2°C and 1.5°C of warming. “Estimated total fossil carbon reserves exceed this remaining [carbon budget] by a factor of 4 to 7.”⁴³ “For the 2°C or 1.5°C limits, respectively 68% or 85% of reserves must remain in the ground.”⁴⁴ The reserves in currently operating oil and gas field alone, even with no coal, would take the world beyond 1.5°C.⁴⁵

In order for the world to stay within a carbon budget consistent with Paris Agreement goals—“holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C”⁴⁶—significant fossil fuel resources must remain in the ground. More specifically, to meet the target of 2°C, globally “a third of oil reserves, half of gas reserves and over 80 percent of current coal reserves should remain unused from 2010-2050.”⁴⁷ Studies estimate that global coal, oil and gas resources considered currently economically recoverable contain potential greenhouse gas emissions of 4,196 GtCO₂,⁴⁸ with other estimates as high as 7,120 GtCO₂.⁴⁹

Critically, the United States carbon quota—equivalent to 11% of the global carbon budget needed for a 50% chance of limiting warming to 2°C—allocates approximately 158 GtCO₂ to the United States as of 2011.⁵⁰ By way of comparison, federal and non-federal fossil fuel emissions together would produce between 697 and 1,070 GtCO₂.⁵¹ Regarding just federal fossil fuel resources, the United States contains enough recoverable coal, oil and gas that, if extracted and burned, would result in as much as 492 GtCO₂, far surpassing the entire global carbon budget for a 1.5°C target and nearly eclipsing the 2°C target—to say nothing of the United States ‘share’ of global emissions.⁵² Unleased federal fossil fuels comprise 91% of these

⁴² Mulvaney at 2 (citing Oak Ridge National Laboratories, Carbon Dioxide Information Analysis Center (2015), available at: <http://cdiac.ornl.gov/GCP/>).

⁴³ IPCC AR5 Synthesis Report at 63.

⁴⁴ *The Sky's Limit* at 6 (attached as Exhibit 9-1); see also Kevin Anderson and Alice Bows, *Reframing the climate change challenge in light of post-2000 emission trends*, Phil. Trans. R. Soc. (2008) (attached as Exhibit 19-1) (“to provide a 93% mid-value probability of not exceeding 2°C, the concentration (of atmospheric greenhouse gases) would need to be stabilized at or below 350 parts per million carbon dioxide equivalent (ppm CO₂e)” compared to the current level of ~485 ppm CO₂e.).

⁴⁵ *The Sky's Limit* at 5, 17.

⁴⁶ Paris Agreement at Art. 2.

⁴⁷ Christophe McGlade & Paul Ekins, *The geographical distribution of fossil fuels unused when limiting global warming to 2°C*, Nature (Jan 2015).

⁴⁸ Michael Raupach, *et al.*, *Sharing a quota on cumulative carbon emissions*, Nature Climate Change (Sept. 2014).

⁴⁹ IPCC AR5, *Mitigation of Climate Change*, Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (2014) at Table 7.2.

⁵⁰ Raupach at 875.

⁵¹ Dustin Mulvaney, *et al.*, *The Potential Greenhouse Gas Emissions from U.S. Federal Fossil Fuels*, EcoShift Consulting (Aug. 2015) at 16.

⁵² *Id.*

potential emissions, with already leased federal fossil fuels accounting for as much as 43 GtCO₂.⁵³

In 2012, “the GHG emissions resulting from the extraction of fossil fuels from federal lands by private leaseholders totaled approximately 1,344 MMTCO₂e.”⁵⁴ Between 2003 and 2014, approximately 25% of all United States and 3-4% of global fossil fuel greenhouse gas emissions are attributable to federal minerals leased and developed by the Department of the Interior.⁵⁵ Continued leasing and development of federal fossil fuel resources commits the world to ‘extremely dangerous’ warming well beyond the 2°C threshold. As one study put it, “the disparity between what resources and reserves exist and what can be emitted while avoiding a temperature rise greater than the agreed 2°C limit is therefore stark.”⁵⁶ In short, *any* new leasing of federal fossil fuel resources is inconsistent with a carbon budget that would seek to avoid catastrophic climate change.

The production horizons for already leased federal fossil fuel resources underscore how unwarranted any additional leasing is. Comparing these production horizons to dates at which carbon budgets would be exceeded if current emission levels continue:

- Federal crude oil already leased will continue producing for 34 years beyond the 1.5°C threshold and 19 years beyond the 2°C threshold;
- Federal natural gas already leased will continue producing 23 years beyond the 1.5°C threshold and 8 years beyond the 2°C threshold;
- Federal coal already leased will continue producing 20 years beyond the 1.5°C threshold and 5 years beyond the 2°C threshold.⁵⁷

Opportunities to reduce GHG emissions through the cessation of new leasing and non-renewal of non-producing leases further underscores how unwarranted continued leasing is.

If new leasing and renewal of existing non-producing leases continues, by 2040 it will contribute about two-thirds of expected federal fossil fuel production (forecast based on EIA and other sources).⁵⁸ On the other hand, if new leasing ceases and existing non-producing leases are not renewed, 40% of forecast coal production could be avoided in 2025 and 74% of coal production could be avoided in 2040. As for oil and gas, 12% of oil production could be avoided in 2025 and 65% could be avoided by 2040 while 6% of natural gas production could be avoided in 2025 and 59% could be avoided by 2040.⁵⁹

⁵³ *Id.*

⁵⁴ Stratus Consulting, *Greenhouse Gas Emissions from Fossil Energy Extracted from Federal Lands and Waters: An Update* (Dec. 2014) at 9.

⁵⁵ See Energy Information Administration, *Sales of Fossil Fuels Produced from Federal and Indian Lands, FY 2003 through FY 2014* (July 2015); see also Stratus Consulting.

⁵⁶ McGlade at 188.

⁵⁷ Mulvaney (2016) at 5.

⁵⁸ Peter Erickson and Michael Lazarus, *How Would Phasing Out U.S. Federal Leases for Fossil Fuel Extraction Affect CO₂ Emissions and 2°C Goals?*, Stockholm Environmental Institute (2016) at 12.

⁵⁹ Erickson and Lazarus at 16.

This avoided production would significantly reduce future U.S. emissions. Cessation of new and renewed leases for federal fossil fuel extraction could reduce CO₂ emissions by about 100 Mt per year by 2030. Annual emission reductions could become greater than that over time as production declines on existing leases and maintaining or increasing production becomes dependent on yet-to-be issued leases.⁶⁰

A comparison with other measures shows that “no leasing” could be a very significant part of U.S. efforts to address climate change. The 100 Mt CO₂ emissions savings that could result from no leasing in 2030 compares favorably with EPA standards for light- and medium-vehicles that are expected to yield 200 Mt in CO₂ savings in 2030, and with standards for heavy-duty vehicles that are expected to yield 70 Mt in CO₂ savings in the same year. The 100 Mt CO₂ emissions reduction from leasing restrictions would be greater than either the emission reductions that the EPA expects to achieve through its existing regulation of oil and gas industry emissions or reductions the BLM expects to achieve from its proposed methane waste standards on oil and gas operations on federal land. Clearly, cessation of new and renewed leases could make an important contribution to U.S. climate change mitigation efforts.⁶¹

Also, importantly, avoided production through no new leasing and non-renewal of existing non-producing leases could help avoid further carbon lock-in in terms of investment in both fossil fuel-producing and fossil fuel-using infrastructure.⁶²

Simply put, the timeframe to avoid catastrophic climate change is short, and the management of our federal minerals is dangerously out of step with this reality.

c. Imperiled Wildlife

BLM has also violated NEPA by failing to consider significant new information about ESA-listed and sensitive species post-dating the nearly thirty-year old FEIS. Based on analysis of BLM data, parcels 97, 98, 99, 100, 101 are in close proximity to occupied habitat for the federally-threatened railroad valley springfish. That fish occurs in just a few springs (all of which the U.S. Fish and Wildlife Service has designated as critical habitat) in two Railroad Valley localities. Groundwater pumping or surface or groundwater contamination near the Railroad Valley springfish would pose a dire threat to its survival.

D. BLM’s Treatment of Impacts to Greater Sage-Grouse Violates FLPMA, NEPA, and the Greater Sage-Grouse ARMPAs.

The greater sage-grouse, a BLM sensitive species, is deeply imperiled because of the loss, fragmentation, and degradation of its native sagebrush habitats across the Interior West. Multiple peer-reviewed studies have found that infrastructure and human activity associated with oil and gas development adversely affect greater sage-grouse and their habitat through direct mortality,

⁶⁰ *Id.* at 26.

⁶¹ *Id.* at 27.

⁶² *Id.* at 30.

habitat loss, displacement and behavioral effects, noise, spread of invasive plants, disease transmission, and other means. BLM directly manages approximately 45% of all remaining occupied greater sage-grouse habitat, as well as managing mineral leasing for substantial additional areas of occupied habitat on Forest Service and split estate (private surface and federal minerals) lands.

In September 2015, all BLM resource management plans for Nevada and Northeastern California, including Elko and Ely, were amended as part of an effort to secure adequate regulatory mechanisms to prevent the listing of the greater sage-grouse under the Endangered Species Act.⁶³ Because oil and gas development and associated infrastructure has numerous well-documented adverse effects on GRSG survival, breeding, and behavior, these plan amendments prescribe management measures for BLM-permitted activities, including oil and gas leasing, within various categories (Sagebrush Focal Areas ("SFAs"), Priority Habitat Management Areas ("PHMAs"), General Habitat Management Areas ("GHMAs") and Other Habitat Management Areas ("OHMAs")) of sage-grouse habitat,⁶⁴ and prescribed stipulations for all new fluid mineral leases within those designated habitats.⁶⁵

Of the 144 parcels proposed for this lease sale, 51% have lease stipulations related to greater sage-grouse (74 parcels). A Key Management Response in the 2015 Approved Resource Management Plan Amendments for the Great Basin Region (Great Basin ARMPA) is "Prioritize the leasing and development of fluid mineral resources outside GRSG habitat."⁶⁶ That more than half of the proposed parcels have greater sage-grouse leasing stipulations shows that BLM did not actually prioritize leasing outside of sage-grouse habitat. As a result, this lease sale does not conform to the Great Basin ARMPA.

These proposed lease parcels are located in habitat used by the central Nevada and southeastern Nevada greater sage-grouse populations. The 2015 Final Environmental Impact Statement for the Nevada and Northeastern California Greater Sage-Grouse Proposed Land Use Plan Amendments (NV/CA ARMPA FEIS) states that both of these populations are experiencing long-range population declines and are "at risk."⁶⁷ The most recent Nevada Department of Wildlife data also are not encouraging. Average male attendance at trend leks statewide

⁶³ See U.S. BLM, Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan Amendment (Sept. 2015) ("NV/CA ARMPA").

⁶⁴ NV/NE CA RMPA at 2-29 to 2-30.

⁶⁵ NV/NE CA RMPA Appendix G.

⁶⁶ See page 1-17 at Record of Decision and Approved Resource Management Plan Amendments for the Great Basin Region, Including the Greater Sage-Grouse Sub-Regions of Idaho and Southwestern Montana Nevada and Northeastern California Oregon Utah. 2015. Available at https://eplanning.blm.gov/epl-front-office/projects/lup/21152/63385/68727/Great_Basin_ROD_9.21.15_508.pdf.

⁶⁷ See pages 3-29 and 3-30 at Nevada and Northeastern California Greater Sage-Grouse Proposed Land Use Plan Amendment and Final Environmental Impact Statement. 2015. Available at https://eplanning.blm.gov/epl-front-office/projects/lup/21152/58709/63772/8_Volume_2_Chapter_3_NVCA_GRSG.pdf.

decreased 23.2% from 2010 to 2018 and 19.2% from 2017 to 2018.⁶⁸ In addition, Coates et. al (2017) has found that Nevada greater sage-grouse populations have decreased by an average of 3.86 percent annually over the last 17 years. Moreover, this decline corresponds with the findings of other Great Basin sage-grouse studies.⁶⁹

The 2017 Coates study found early warning signs of sage-grouse population decline in leks in the Ely region that need to be investigated further and should have been included in an EA or EIS prepared for this lease sale:

Overall, our results indicate that the Ely climate cluster had the largest number of leks in decline based on our soft signal criteria. Additionally, the largest number of neighborhood leks meeting the criteria for a soft signal were located in the Ely climate cluster. However, the Ely climate cluster did not signal, which suggests that lek and neighborhood cluster declines were driven by local factors and not larger scale climatic variation. In contrast, hard signals were constrained to leks only, and post hoc analyses are necessary to begin identification of local perturbations that may be linked to these rapidly declining populations.^{70, 71}

These Ely region lek population declines raise the question of whether any soft or hard triggers under the 2015 Great Basin ARMPA have been reached for the greater sage-grouse populations that use the lease parcel areas. BLM no longer issues press releases when these triggers are reached, so this information is not readily available to the public. However, the Coates et al 2017 study indicates that soft and hard signals (warnings that are similar to triggers) have occurred in the Ely lek region, which should have been disclosed and analyzed in an EA or EIS prepared for this lease sale. Under the 2015 Great Basin ARMPA, reaching hard and soft triggers result in adaptive management actions. Furthermore, BLM IM 2018-022 states, “The offices should consider whether approval of pending authorizations within the affected adaptive

⁶⁸ See page 5 at State of Nevada Sagebrush Ecosystem Program Semi-Annual Report (June 2018). Available at http://sagebrusheco.nv.gov/uploadedFiles/sagebrushconvgov/content/Meetings/2018/2018%20June%20Semi-Annual%20Report_Final.pdf.

⁶⁹ See page 42 in Coates, P.S., Prochazka, B.G., Ricca, M.A., Wann, G.T., Aldridge, C.L., Hanser, S.E., Doherty, K.E., O'Donnell, M.S., Edmunds, D.R., and Espinosa, S.P., 2017, Hierarchical population monitoring of greater sage-grouse (*Centrocercus urophasianus*) in Nevada and California—Identifying populations for management at the appropriate spatial scale: U.S. Geological Survey Open-File Report 2017-1089, 49 p., <https://doi.org/10.3133/ofr20171089>. Available at <https://pubs.usgs.gov/of/2017/1089/ofr20171089.pdf>. See also page 6 at State of Nevada Sagebrush Ecosystem Program Semi-Annual Report (June 2018). Available at http://sagebrusheco.nv.gov/uploadedFiles/sagebrushconvgov/content/Meetings/2018/2018%20June%20Semi-Annual%20Report_Final.pdf.

⁷⁰ See page 42 in Coates, P.S., Prochazka, B.G., Ricca, M.A., Wann, G.T., Aldridge, C.L., Hanser, S.E., Doherty, K.E., O'Donnell, M.S., Edmunds, D.R., and Espinosa, S.P., 2017, Hierarchical population monitoring of greater sage-grouse (*Centrocercus urophasianus*) in Nevada and California—Identifying populations for management at the appropriate spatial scale: U.S. Geological Survey Open-File Report 2017-1089, 49 p., <https://doi.org/10.3133/ofr20171089>. Available at <https://pubs.usgs.gov/of/2017/1089/ofr20171089.pdf>.

⁷¹ For definitions of the study's terminology, see *Id.* at 8.

management response area would exacerbate the trigger or would otherwise be inconsistent with the trigger responses set forth in the applicable GRSG Plan.”

BLM’s reliance in this lease sale upon EAs created for past lease sales is inadequate not only because it is not the same areas being analyzed, but because the past lease sales’ EAs were themselves inadequate to meet the NEPA hard-look standard. Analysis missing from past lease sale EAs includes discussion of sage-grouse lek counts and lek count trends, identification of how many and which leks were in or near proposed lease sale parcels, whether hard or soft triggers under the 2015 ARMPA had been reached, recent wildfires affecting sage-grouse populations that use these lease sale parcels, what is known about sage-grouse use of seasonal habitat in the lease parcels, whether grazing allotments in the lease sale parcels currently meet Standards for Rangeland Health, and what is known about migration of sage-grouse populations that use the lease sale parcels. Without this detailed analysis, BLM is making decisions blindly that affect a BLM sensitive species which is declining 3.86% annually in Nevada.

BLM, however, fails to provide any disclosure or analysis whatsoever of the impacts of the proposed action on the greater sage-grouse in the two DNAs. Despite the presence of multiple active leks and habitat features, BLM has failed to (a) analyze impacts to sage-grouse habitats and populations under NEPA, (b) to apply appropriate stipulations to address concerns raised by NDOW and USFWS, and (c) to comply with management direction in the governing Resource Management Plan requiring BLM to prioritize leasing and development outside of greater sage-grouse habitat.

Given the significance of the potential impacts that oil and gas development could have on the species, proper investigation here is crucial. BLM is required under NEPA to collect data particular to the region affected by the leases.⁷² Despite the acknowledged presence of greater sage-grouse habitat within the areas proposed for leasing, the DNAs provide absolutely no discussion of the location, nature, or significance of impacts to sage-grouse populations within the project area. Simply providing habitat maps does not suffice as the disclosure and analysis of impacts. This approach clearly does not provide the "hard look" that NEPA requires.⁷³ The DNAs not only includes no site-specific analysis, they include no analysis whatsoever of what sage-grouse populations and habitats will be affected, to what degree, and how those impacts may or may not be mitigated.

The DNAs omit local or even regional sage-grouse population information and thus do not provide the public with the information necessary to assess the likely impacts of oil and gas leasing on GRSG in the lease area. This is disturbing because Garton et al. (2015) found that the estimated minimum number of GRSG males declined 33% from 2007 to 2013 in the Southern

⁷² See *Center for Biological Diversity*, 937 F. Supp. 2d at 1159 (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.").

⁷³ *Id.* (Held BLM did not provide the "hard look" that NEPA requires because it "never collected any data particular to the region affected by the leases, instead opting to summarize general data.").

Great Basin population of GRSG and that this estimated decline “exemplifies the observed declines over the last 2 decades.” Garton et al. at 15-16.⁷⁴ Even if the public acquires recent Nevada GRSG population data on its own, it is still not possible to match that data to the lease parcels because the BLM does not identify the parcels by Lek Names, Lek ID Numbers, or even GRSG Population Management Units. Because of these limitations on the public’s ability to assess current numbers and recent trends in the local GRSG population, it is all the more problematic that BLM did not conduct any site-specific analysis GRSG population and population trends in its EA.

Holloran (2005) found that sage grouse avoided habitats within 3.1 miles of active oil and gas drilling operations, and within 2 miles of roads or wellpads during the production phase of oil and gas extraction.⁷⁵ How many acres of habitat within 5.3 miles of a lek, the habitat where nesting occurs, occur on the leases in question? How many acres of identified sage-grouse winter range occurs on the leaseholds in question? The failure to consider the acreage of habitat lost due to abandonment of otherwise suitable habitats adjacent to roads and wellsites, and the failure to even quantify the amount of habitats critical to the life cycles of sage-grouse that occur on individual leases (much less evaluate the site-specific topography and how that might mitigate or exacerbate impacts of oil and gas development), constitute failures of NEPA’s hard look requirements.

As noted in one recent peer-reviewed study analyzing sage-grouse persistence under mitigation measures in Wyoming similar to those in the BLM sage-grouse plans:

Energy development has been shown to specifically impact male sage-grouse lek attendance, lek persistence, recruitment of yearling male and female grouse to leks, nest initiation and site selection, nest survival, chick survival, brood survival, summer survival of adult females, early brood-rearing habitat selection, adult female summer habitat selection, and adult female winter habitat selection⁷⁶.

Another recent study (Green et al. 2017), confirms that sage-grouse lek attendance remains stable only where no oil and gas development is present within 6,400m, a level of protection far greater than that provided by the BLM’s 2015 NV/CA Sage-Grouse Plan Amendments.⁷⁷

⁷⁴ Garton, Edward O., et al., Greater Sage-Grouse Population Dynamics and Probability of Persistence: Final Report to Pew Charitable Trusts (2015).

⁷⁵ Holloran, Matthew, Greater Sage-Grouse (*Centrocercus urophasianus*) Population Response to Natural Gas Field Development in Western Wyoming (2005).

⁷⁶ Gamo, R. Scott & Beck, Jeffrey L., Effectiveness of Wyoming’s Sage-Grouse Core Areas: Influences on Energy Development and Male Lek Attendance, *Environmental Management* (2017) 59:189–203 DOI 10.1007/s00267-016-0789-9.

⁷⁷ Green, Adam W., et al., Investigating Impacts of Oil and Gas Development on Greater Sage-Grouse, *The Journal of Wildlife Management* (2016); DOI: 10.1002/jwmg.21179.

BLM's cursory DNAs also fail to provide any quantitative analysis of the extent of greater sage-grouse habitat affected, or the corresponding populations affected.

1. The Proposed Lease Sale Does not Comply with the 2015 Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan Amendment (Sage-Grouse ARMPA)

BLM's proposed actions fail to comply with FLPMA's requirement that all implementing actions must conform to the terms of the governing Resource Management Plan.⁷⁸ The proposed action violates the 2015 ARMPA because (1) it fails to comply with Objective MR 1, requiring prioritization of leasing of fluid minerals outside Priority and General Habitats.

The Proposed Action does not comply with the 2015 Sage-Grouse ARMPA because BLM did not prioritize oil and gas development on sage-grouse non-habitat and habitat according to its own prior commitments. The currently governing Sage-Grouse ARMPA states, "Objective MR 1: Priority will be given to leasing and development of fluid mineral resources, including geothermal, outside of PHMAs and GHMAs. When analyzing leasing and authorizing development of fluid mineral resources, including geothermal, in PHMAs and GHMAs, that are subject to applicable stipulations for the conservation of GRSG, priority will be given to development in non-habitat areas first and then in the least suitable habitat for GRSG."⁷⁹

Furthermore, the Proposed Action's lack of prioritization does not comply with the commitment to prioritization that BLM made in the Record of Decision and Approved Resource Management Plan Amendments for the Great Basin Region, Including the Greater Sage-Grouse Sub-Regions of Idaho and Southwestern Montana Nevada and Northeastern California, Oregon, Utah (Great Basin ROD). The Great Basin ROD explained why prioritization is necessary:

In addition to allocations that limit disturbance in PHMAs and GHMAs, the ARMPAs prioritize oil and gas leasing and development outside of identified PHMAs and GHMAs to further limit future surface disturbance and to 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. It would do this by avoiding sensitive

⁷⁸ On March 31, 2017, the U.S. District Court for the District of Nevada ruled that the BLM and Forest Service were required, under NEPA, to conduct supplemental NEPA analysis on the Nevada RMP Amendments. The court, in weighing its remedy, expressly declined to vacate the ARMPAs, and found "that protection of the greater sage-grouse weighs against vacatur of the RODs." *Western Exploration LLC v. U.S. Dep't of the Interior*, No. 3:15-cv-491 (D. Nev. March 31, 2017). The Great Basin Record of Decision and Nevada and Northeastern California Greater Sage-Grouse Approved Resource Management Plan Amendment, therefore, remain in place until duly amended and govern BLM implementation actions under FLPMA. Although BLM released a Draft Environmental Impact Statement for amendments to the NV/CA ARMPA on May 2, 2018, those amendments have not been completed.

⁷⁹ NV/NE CA RMPA at 2-28.

areas, reducing the complexity of environmental review and analysis of potential impacts on sensitive species, and decreasing the need for compensatory mitigation.

Great Basin ROD.

The BLM is subject to clear direction in the Great Basin RMP amendments that its greater sage-grouse RMP plans and conservation strategy rely not only on stipulations within designated habitats (stipulations acknowledged as insufficient to result in a net conservation gain for general habitat, *see* 2015 Great Basin ARMPA ROD at 1-23, but also on a larger strategy of prioritizing development outside of all sage-grouse habitats.

An apparent BLM policy of leasing virtually all nominated parcels 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 U.S. Fish and Wildlife Service's determination that listing the greater sage-grouse under the Endangered Species Act was "not warranted." That assumption is that the measures adopted in the RMP Amendments will result in oil and gas development tending to occur outside of greater sage-grouse habitat. The BLM's Nevada field offices' ongoing pattern of offering leases encompassing Priority sage-grouse habitat 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 core area strategy for fluid minerals will continue the 2012-15 pattern of reduced drilling within "core" or priority habitat 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 Nevada ARMPA FEIS, that assume the effectiveness of that plan direction.

The BLM further fails entirely to analyze or acknowledge the cumulative effects of BLM's ongoing and proposed leasing, since the adoption of the ARMPAs, of tens of thousands of acres of sage-grouse general and priority habitat on BLM, and now also Forest Service, lands in Nevada. A proper cumulative impacts analysis must address not only BLM's recent, ongoing, and proposed leasing and development actions by BLM and other land management agencies.

The proposed actions further violate NEPA's requirement to consider all reasonable alternatives by failing to even consider any intermediate action between leasing all proposed parcels and no action. Given (a) the lack of current activity and speculative nature of oil and gas development in Nevada, (b) the large volume of unused and/or low-potential leases in the Elko and Ely Districts, (c) the ARMPA's requirement to prioritize leasing outside all sage-grouse habitat, and (d) the unexamined cumulative effects of large-scale leasing of GRS habitat in Nevada, BLM must at least consider an alternative that would exclude all GRS habitat from its proposed lease sale.

E. BLM violated Section 7 of the Endangered Species Act by failing to ensure that agency actions will not jeopardize the continued existence of species listed under the Endangered Species Act, including the Railroad Valley springfish

BLM's failure to consult with the Fish and Wildlife Service regarding impacts to listed species including the Railroad Valley springfish is unsupported and violates Section 7 of the Endangered Species Act. Specifically, the BLM's failure to conduct site-specific consultation with the Fish and Wildlife Service regarding proposed parcels 97, 98, 99, 100, 101 violates ESA § 7. BLM must not only evaluate the indirect and cumulative effects on special status species under NEPA, it must also (a) consult with the Fish and Wildlife Service under Section 7 regarding the effects of oil and gas development and water use on listed species and critical habitat, and (b) evaluate the effects on sensitive species under its own sensitive species policy.

While BLM did reinitiate consultation with FWS on the 2008 Ely RMP in 2017, the resulting Biological Opinion was, of necessity, a high-level document which was never intended to provide site-specific analysis or guidance on the potential impacts of oil and gas leasing and development on the Railroad Valley springfish. BLM is proposing to lease parcels in Railroad Valley in the September lease sale which lie within the same hydrographic basin as Duckwater and Lockes Ranch springs, both of which are designated critical habitat for the Railroad Valley springfish. The potential impacts of fracking to these springs, including impacts to groundwater quality, groundwater quantity, and resulting changes to surface waters, clearly warrant consultation with FWS about the specific lease parcels and how fracking at those parcels may affect the Railroad Valley springfish.

Congress enacted the Endangered Species Act (ESA) in 1973 to provide for the conservation of endangered and threatened fish, wildlife, plants and their natural habitats. 16 U.S.C § 1531, 1532. The ESA imposes substantive and procedural obligations on all federal agencies with regard to listed and proposed species and their critical habitats. *See id.* §§ 1536(a)(1), (a)(2) and (a)(4) and § 1538(a); 50 C.F.R. § 402. Under section 7 of the ESA, federal agencies must "insure that any action authorized, funded, or carried out by such agency ... is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined ... to be critical." 16 U.S.C. § 1536(a)(2).

The definition of agency "action" is broad and includes "all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies," including programmatic actions. 50 C.F.R. § 402.02. Likewise, 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." *Id.*

The duties in ESA section 7 are only fulfilled by an agency's satisfaction of the consultation requirements that are set forth in the implementing regulations for section 7 of the ESA, and only after the agency lawfully complies with these requirements may an action that "may affect" a protected species go forward. *Pac. Rivers Council v. Thomas*, 30 F.3d 1050, 1055-57 (9th Cir. 1994). The action agency must initially prepare a biological assessment (BA) to "evaluate the potential effects of the proposed action" on listed species. 50 C.F.R. § 402.12. If the action agency concludes that the proposed action is "not likely to adversely affect" a listed species that occurs in the action area, the Service must concur in writing with this determination. *Id.* §§ 402.13(a) and 402.14(b). If the Service concurs in this determination, then formal consultation is not required. *Id.* § 402.13(a). If the Service's concurrence in a "not likely to adversely affect" finding is inconsistent with the best available data, however, any such concurrence must be set aside. *See id.* § 402.14(g)(8); 5 U.S.C. § 706(2). If the action agency concludes that an action is "likely to adversely affect" listed species or critical habitat, it must enter into "formal consultation" with the Service. 50 C.F.R. §§ 402.12(k), 402.14(a). The threshold for triggering the formal consultation requirement is "very low"; indeed, "any possible effect ... triggers formal consultation requirements."⁸⁰

Formal consultation commences with the action agency's written request for consultation and concludes with the Service's issuance of a "biological opinion." 50 C.F.R. § 402.02. The biological opinion states the Service's opinion as to whether the effects of the action are "likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat." *Id.* § 402.14(g)(4).⁸¹ When conducting formal consultation, the Service and the action agency must evaluate the "effects of the action," including all direct and indirect effects of the proposed action, plus the effects of actions that are interrelated or interdependent, added to all existing environmental conditions – that is, the "environmental baseline." *Id.* §§ 402.14 and 402.02. The environmental baseline includes the past and present impacts of all Federal, state, and private actions and other human activities in the action area....*Id.* The effects of the action must be considered together with "cumulative effects," which are "those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." *Id.*

If the Service concludes in a biological opinion that jeopardy is likely to occur, it must prescribe "reasonable and prudent alternatives" to avoid jeopardy. *Id.* § 402.14(h)(3). If the Service concludes that a project is not likely to jeopardize listed species, it must nevertheless provide an incidental take statement (ITS) with the biological opinion, specifying the amount or extent of take that is incidental to the action (but which would otherwise be prohibited under

⁸⁰ *See* Interagency Cooperation Under the Endangered Species Act, 51 Fed. Reg. 19,926 (June 3 1996).

⁸¹ To "jeopardize the continued existence of" means "to engage in an action that reasonably would be expected, directly or indirectly, to 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." *Id.* § 402.02.

Section 9 of the ESA), “reasonable and prudent measures” (RPMs) necessary or appropriate to minimize such take, and the “terms and conditions” that must be complied with by the action agency to implement any reasonable and prudent measures. 16 U.S.C. § 1536(b)(4); 50 C.F.R. § 402.14(i).

The ESA requires federal agencies to use the best scientific and commercial data available when consulting about whether federal actions will jeopardize listed species. *See* 16 U.S.C. § 1536(a)(2). Accordingly, an action agency must “provide the Service with the best scientific and commercial data available or which can be obtained during the consultation for an adequate review of the effects that an action may have upon listed species of critical habitat.” 50 C.F.R. § 402.14(d). Likewise, “[i]n formulating its biological opinion...the Service will use the best scientific and commercial data available.” *Id.* § 402.14(g)(8). However, if the action agency failed “to discuss information that would undercut the opinion’s conclusions,” the biological opinion is legally flawed, and the ITS will not insulate the agency from ESA Section 9 liability. *See Ctr. for Biological Diversity v. BLM*, 698 F.3d 1101, 1127-28 (9th Cir. 2012).

Section 7(d) of the ESA provides that once a federal agency initiates consultation on an action under the ESA, the agency, as well as any applicant for a federal permit, “shall not make any irreversible or irretrievable commitment of resources with respect to the agency action which has the effect of foreclosing the formulation or implementation of any reasonable and prudent alternative measures which would not violate subsection (a)(2) of this section.” 16 U.S.C. § 1536(d). The purpose of section 7(d) is to maintain the environmental status quo pending the completion of consultation. Section 7(d) prohibitions remain in effect throughout the consultation period and until the federal agency has satisfied its obligations under section 7(a)(2) that the action will not result in jeopardy to listed species or adverse modification of critical habitat.

BLM must use the existing readily available data to identify which sensitive species that are of critical concern with regards to the lands included in, or in immediate proximity to, the proposed sale parcels.

In addition, BLM must consult with the Service regarding the impacts of the lease sale on affected listed species, in compliance with its section 7 obligations under the ESA. To the extent that BLM relies on its section 7 programmatic consultations for the several management plans governing the lease sale, that reliance is not proper for any of the listed species affected by BLM’s action. In any case, it must formally consult over the lease sale’s potential adverse effects on listed species and consider the full scope of fracking and other drilling activities that could affect these species.

The law is clear that, in the context of oil and gas leasing, "agency action" under the ESA includes not just the legal transaction of lease issuance, but also all resulting post-leasing activities from exploration, through production, to abandonment:

we hold that agency action in this case entails not only leasing but leasing and all post-leasing activities through production and abandonment. Thus, section 7 of the ESA on its face requires the FWS in this case to consider all phases of the agency action, which includes postleasing activities, in its biological opinion. Therefore the FWS was required to prepare, at the leasing stage, a comprehensive biological opinion assessing whether or not the agency action was likely to jeopardize the continued existence of protected species, based on "the best scientific and commercial data available." 16 U.S.C. § 1536(a)(2).⁸²

The Ninth Circuit's decision in *Conner v. Burford* is similarly clear that the consultation requirement is not obviated by uncertainty about the precise location and extent of future drilling: "Although we recognize that the precise location and extent of future oil and gas activities were unknown at the time, extensive information about the behavior and habitat of the species in the areas covered by the leases was available."⁸³ Similarly, the inclusion of a general Threatened and Endangered Species stipulation in the standard lease terms cannot substitute for the ESA Section 7 obligation to prepare a comprehensive biological opinion at the initial leasing stage:

Appellants ask us, in essence, to carve out a judicial exception to ESA's clear mandate that a comprehensive biological opinion -- in this case one addressing the effects of leasing and all post-leasing activities -- be completed before initiation of the agency action. They would have us read into the ESA language to the effect that a federal agency may be excused from this requirement if, in its judgment, there is insufficient information available to complete a comprehensive opinion and it take upon itself incremental step consultation such as that embodied in the T & E stipulations. We reject this invitation to amend the ESA. That it is the role of Congress, not the courts.⁸⁴

The BLM's refusal to consult at the lease stage, and proposal to defer consultation to the APD stage, is precisely the sort of incremental step consultation decisively rejected as inconsistent with the ESA in *Conner v. Burford*. The refusal to consult at the lease stage further precludes reliance on the earlier Ely RMP and any related plan-level consultation, because that plan-level consultation does not include site-specific evaluations for individual activities. Under *Conner*,

⁸² *Conner*, 848 F.2d at 1453.

⁸³ *Id.* at 1453.

⁸⁴ *Id.* at 1455.

the individual activity in question is clearly the issuance of a (non-NSO) lease, and consultation must occur prior to lease issuance if the resulting activities may affect listed species or critical habitat.

1. Fracking's impacts to groundwater threaten the Railroad Valley springfish

A deep carbonate aquifer that underlies the majority of the Great Basin flows underneath the proposed lease parcels, generally trending from northeast to southwest. This aquifer is largely comprised of "fossil water," which accumulated underground during the Pleistocene and continues to flow and discharge to this day. Above the carbonate aquifer are basin-fill or alluvial aquifers, which move precipitation from the region's numerous mountain ranges to the valley floors. As groundwater flow meets resistant layers of rock, both systems give rise to surface expressions of groundwater, generally in the form of springs and wetlands. These surface water expressions are the most vital resources in the desert, supporting the vast majority of Nevada's robust biodiversity, and frequently harboring species protected or proposed for protection under the Endangered Species Act.

In light of the critical importance of groundwater and surface water resources, it is incumbent upon the BLM to include a rigorous analysis of potential impacts to these resources, and the cascading effects such impacts would have on the region's wildlife and biodiversity. Instead, what BLM offers in the EA is a minimization of potential impacts, and a delay on any actual analysis until the APD phase. As described above and below, this is an unlawful circumvention of NEPA's hard look requirement. Impacts to the quality and quantity of groundwater, and thus to the surface expression of those waters, are reasonably foreseeable and must be analyzed.

a. Impacts to Groundwater Quantity

Nevada's most precious resource is its groundwater. Abundant relative to the aridity of the climate, Nevada's groundwater supports hundreds of thousands of Nevadans for domestic use, the majority of Nevada's agricultural output and almost the entirety of Nevada's biodiversity. As a result of the critical importance of this resource, any federal action which may cause impacts to groundwater quantity must include a rigorous analysis of the possibility of those impacts, and the potential effects should impacts to groundwater quantity occur. Instead, the EA literally makes no mention of the potential or mechanism for the consumption of water resources. There are numerous reasonably foreseeable impacts to water quantity from fracking, and BLM is legally obligated to analyze such impacts.

An EPA study found that the volumes of water needed to successfully fracture rock to open up oil and gas resources vary widely: statewide median quantities utilized fell between 76,818 gallons (0.23 acre-feet) per well in California to 5,259,965 gallons (15.9 acre-feet) per

well.⁸⁵ Without citations, the EA's own fracking "white paper" puts forward ranges of 50,000 to 300,000 gallons (0.15 to 0.91 acre-feet) for shallow vertical wells, and 800,000 to 10,000,000 gallons (2.4 to 30.3 acre-feet) for deep tight sand gas horizontal or directionally drilled wells.⁸⁶

In addition to information about the quantities of water, an important piece of information in determining the impacts to water quantity is the number of anticipated wells. In this, the EA falls woefully short. The Reasonably Foreseeable Development (RFD) scenario is based exclusively on past development in Nevada, which has been miniscule compared to other Western States. It does not account for current or anticipated market trends, including the volatile price of oil. The EA does not give a precise estimate for the number of wells that will result from the lease sale, instead using general numbers from the RMP which cover the entire Battle Mountain District. It is therefore impossible to rationally examine the impacts to quantity of groundwater, without even an estimate given of the number of wells expected. At any rate, the RFD assumes stable prices of oil, not accounting for the high levels of geopolitical instability around the world, which have significant effects on the price of oil. Should the price of oil spike, the number of wells resulting from this lease sale could dramatically increase, potentially numbering in the thousands of wells being developed across Nevada.

Given the variability in both estimates of water consumption per well and in the number of anticipated wells, there is great uncertainty in attempting to evaluate the impacts of the proposed lease sale on quantities of water. However, this does not relieve BLM from their legal obligation to evaluate such impacts. 40 CFR §1502.22 is known as the "uncertainty rule," and indicates that agencies must include information on uncertain impacts if such information "is essential to a reasoned choice among alternatives, and the overall costs of obtaining it are not exorbitant." And indeed, these requirements are important for "impacts which have catastrophic consequences, even if their probability of occurrence is low."

The potential impacts to water quantity clearly meet this threshold. If hundreds or thousands of wells were developed, something that is not outside the realm of possibility should oil prices go back above \$100 per barrel, and if those wells each required the high-end estimate of 10,000,000 gallons (30.3 acre-feet) to fracture, total water withdrawals for fractured wells from this lease sale could reach into the billions of gallons (tens of thousands of acre-feet).

Withdrawals on the level of tens of thousands of acre-feet have the potential to radically alter the hydrologic regime in the areas where such withdrawals are made. If the withdrawals are made from shallow alluvial aquifers, adjacent springs, wetlands, and other water features may dry up.⁸⁷ If the withdrawals are made from the deeper regional aquifer, effects may be far

⁸⁵ U.S. EPA, Hydraulic Fracturing for Oil and Gas: Impacts from the Hydraulic Fracturing Water Cycle on Drinking Water Resources in the United States (Final Report). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-16/236F (2016).

⁸⁶ EA Appendix E, p. at 2.

⁸⁷ Deacon, J.E. et al., Fueling population growth in Las Vegas: How large-scale groundwater withdrawal could burn regional biodiversity, 57 *Bioscience* (8): 688-698 (2007).

reaching and drying could occur tens of miles away. Additionally, due to connections between local and regional aquifers, intensive pumping of alluvial aquifers may eventually impact regional aquifers.⁸⁸

Further, this analysis is important because the BLM cannot rely on the state of Nevada to safeguard groundwater resources. First, the state's concept of "perennial yield" allows for the unmitigated destruction of all unallocated surface water resources. Perennial yield is notably not defined in statute, but a working definition is "...the maximum amount of groundwater that can be salvaged each year over the long term without depleting the groundwater reservoir. The perennial yield cannot be more than the natural recharge of the groundwater reservoir and is usually limited to the maximum amount of natural discharge."⁸⁹ What this functionally means is that the state of Nevada makes available for appropriation an amount of water equivalent to that which is discharged within a basin through surface discharge and evapotranspiration through phreatophytic vegetation. As such, if a basin is fully appropriated and all of those water rights are being exercised, the long-term effect will be to cease all surface discharge and eliminate all phreatophytes. As will be discussed below, this will have catastrophic and existential consequences to a variety of species.

Nevada state water law does nothing to protect wildlife and other natural values present on public land – indeed, the law is structured to encourage full development of water resources, so it can be argued that Nevada state water law is actively detrimental to public land water-dependent resources. As such, BLM cannot rely on Nevada's water law as an indicator of the potential for groundwater impacts and overappropriation. An independent analysis must be made by BLM of any groundwater withdrawals associated with development of these leases, to examine the impacts of such withdrawals and how they may affect the environment.

Even if one accepts the basic premise that perennial yield is a concept which results in sustainable water management, there are other avenues for impacts from pumping. Groundwater can behave in paradoxical ways, and localized drawdown of aquifers can occur even if a basin is not overallocated. Groundwater pumping forms a wide "cone of depression" surrounding the point of diversion, reducing aquifer levels across the "area of influence," meaning the areal extent of the cone.⁹⁰ Thus while a basin may not be overallocated, any given pumping project can cause localized impacts across the area of influence. Given the direct proximity of many of the lease parcels to surface water features, and the lack of any water resources stipulations, it is highly likely that localized drawdown secondary to pumping for fracking will cause impacts to surface water features.

As has been outlined here, there is the distinct possibility of impacts to quantity of groundwater, and therefore amount of surface discharge, due to pumping for fracking either via

⁸⁸ U.S. Geological Survey Circular 1139, Ground Water and Surface Water: A Single Resource (1998).

⁸⁹ Nevada Department of Conservation and Natural Resources, Nevada Water Law 101.

⁹⁰ Heath, Ralph C., Basic Ground-Water Hydrology, U.S. Geological Survey Water-Supply Paper 2220 (2004).

overappropriation or localized drawdown. Therefore, BLM has neglected its duty under NEPA to analyze the impacts of withdrawals for fracking on water resources and their dependent ecosystems. Further, an adequate “hard look” at such impacts would include a very broad area of analysis based on a detailed hydrologic characterization of the regional aquifers potentially affected. Thus there are significant ramifications from neglecting to analyze impacts to water quantity or offering any protections whatsoever to water features.

b. Impacts to Groundwater Quality

Studies have reported many instances around the country of groundwater contamination due to surface spills of oil and gas wastewater, including fracking flowback.⁹¹ 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.

Groundwater contamination can occur in a number of ways, and the contamination may persist for many years.⁹² 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,⁹³ as well as the injection of fracking waste underground, can all lead to leaks.⁹⁴ Older wells that may not have been designed to withstand the stresses of hydraulic fracturing but which are reused for this purpose are especially vulnerable.⁹⁵ 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,⁹⁶ Wyoming,⁹⁷ Pennsylvania,⁹⁸ Ohio,⁹⁹ West Virginia,¹⁰⁰ and Texas.¹⁰¹ These sorts of

⁹¹ Vengosh, Avner, et al., *A Critical Review of the Risks to Water Resources from Unconventional Shale Gas Development and Hydraulic Fracturing in the United States*, *Environ. Sci. Technol.* dx.doi.org/10.1021/es405118y (2014).

⁹² Myers, Tom, *Potential Contamination Pathways from Hydraulically Fractured Shale to Aquifers*, National Groundwater Association (2012).

⁹³ Natural Resources Defense Council, *Water Facts: Hydraulic Fracturing can potentially Contaminate Drinking Water Sources* (2012) at 2; Food & Water Watch, *The Case for a Ban on Gas Fracking* (2012) at 7.

⁹⁴ Kusnetz, Nicholas, *North Dakota's Oil Boom Brings Damage Along with Prosperity*, ProPublica, June 13, 2012; Lustgarten, Abraham, *Polluted Water Fuels a Battle for Answers*, ProPublica (2012); Lustgarten, Abraham, *Injection Wells: The Poison Beneath Us*, ProPublica (2012) at 2; Lustgarten, Abraham, *Whiff of Phenol Spells Trouble*, ProPublica (2012).

⁹⁵ U.S. EPA, *Hydraulic Fracturing for Oil and Gas: Impacts from the Hydraulic Fracturing Water Cycle on Drinking Water Resources in the United States at ES-30* (Dec. 2016) (“EPA 2016”).

⁹⁶ Gross, Sherilyn A. et al., *Abstract: Analysis of BTEX groundwater concentrations from surface spills associated with hydraulic fracturing operations*, 63 *J. Air and Waste Mgmt. Assoc.* 4, 424 doi: 10.1080/10962247.2012.759166 (2013).

⁹⁷ U.S. EPA, *Draft Investigation of Ground Water Contamination near Pavillion, Wyoming* (2011) (“EPA 2011”).

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.¹⁰² Also, the Draft EPA Investigation of Ground Water Contamination near Pavillion, Wyoming, found that chemicals found in samples of groundwater were from fracked wells.¹⁰³ These results have been confirmed with follow-up analyses.¹⁰⁴ 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.¹⁰⁵

Neither current federal nor state of Nevada 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.

Also, fluids and hydrocarbons may contaminate groundwater by migrating through newly created or natural fractures.¹⁰⁶ 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. "Migration pathways to drinking water resources could develop as a result of changes in the subsurface flow or pressure regime associated with hydraulic fracturing; via fractures that extend beyond the intended formation or that intersect existing natural faults or fractures; and via fractures that intersect offset wells or other artificial structures."¹⁰⁷ 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.

⁹⁸ Darrah, Thomas H. et al., Noble Gases Identify the Mechanisms of Fugitive Gas Contamination in Drinking-Water Wells Overlying the Marcellus and Barnett Shales, *Proc. Natl. Acad. Of Sciences Early Edition*, doi: 10.1073/pnas.1322107111 (2014) ("Darrah 2014").

⁹⁹ Begos, Kevin, Some States Confirm Water Pollution from Oil, Gas Drilling, *Seattle Times*, Jan. 6, 2014, (accessed July 29, 2015) ("Begos, Seattle Times, Jan 6, 2014"). *See also*, ODNR, Report on the Investigation of the Natural Gas Invasion of Aquifers in Bainbridge Township of Geauga County, Ohio (2008), *supra*.

¹⁰⁰ Begos, Seattle Times, Jan 6, 2014.

¹⁰¹ Darrah 2014.

¹⁰² Ingraffea, Anthony R., Some Scientific Failings within High Volume Hydraulic Fracturing Proposed Regulations 6 NYCRR Parts 550-556, 560, Comments and Recommendations Submitted to the NYS Dept. of Environmental Conservation (Jan 8, 2013).

¹⁰³ U.S. EPA 2011.

¹⁰⁴ Drajem, Mark, Wyoming Water Tests in Line with EPA Finding on Fracking, *Bloomberg*, Oct. 11, 2012; U.S. EPA, Investigation of Ground Water Contamination near Pavillion, Wyoming Phase V Sampling Event - Summary of Methods and Results (2012); Myers, Tom, Review of DRAFT: Investigation of Ground Water Contamination near Pavillion Wyoming Prepared by the Environmental Protection Agency, Ada OK (Apr. 30, 2012).

¹⁰⁵ Myers, Tom, Potential Contaminant Pathways from Hydraulically Fractured Shale to Aquifers (Feb. 2012).

¹⁰⁶ U.S. EPA 2011; Warner, Nathaniel R., et al., Geochemical Evidence for Possible Natural Migration of Marcellus Formation Brine to Shallow Aquifers in Pennsylvania, *PNAS Early Edition* (2012).

¹⁰⁷ EPA 2016 at 6-39.

According to the EPA, evidence of any fracturing-related fluid migration affecting a drinking water resources could take years to discover. EPA states:

While some of the types of impacts . . . can occur quickly (i.e., on the scale of days or weeks, as with mechanical integrity problems or well communication events), other impacts (e.g., in slow-moving, deep groundwater) may be detectable only on much longer timescales. Without comprehensive collection and review of information about how hydraulic fracturing operations perform, fluid movement could occur without early detection, which could, in turn, increase the severity of any resultant impacts to drinking water quality. For example, testing the mechanical integrity of wells, monitoring the extent of the fractures that form, and conducting pre- and post-hydraulic fracturing water quality monitoring can detect fluid movement (or the potential for fluid movement) and provide opportunities to mitigate or minimize the severity of impacts associated with unforeseen events.¹⁰⁸

BLM 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.

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.¹⁰⁹ At the surface, pits or tanks can leak fracking fluid or waste.¹¹⁰ 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.¹¹¹ 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.¹¹²

¹⁰⁸ EPA 2016 at 6-77.

¹⁰⁹ Natural Resources Defense Council, *Water Facts: Hydraulic Fracturing can potentially Contaminate Drinking Water Sources* at 2 (2012) ("NRDC, Water Facts"); Food & Water Watch, *The Case for a Ban on Gas Fracking* (2012) ("Food & Water Watch 2012") at 5.

¹¹⁰ See, E&E Staff Writer, *Fracking Fluid leaks from wellhead in Colo.*, E&E News, Feb 14, 2013. ("At least 84,000 gallons of water contaminated from hydraulic fracturing seeped from a broken wellhead and into a field . . ."); Michaels, Craig, et al., *Fractured Communities: Case Studies of the Environmental Impacts of Industrial Gas Drilling*, Riverkeeper (2010) at 12; NRDC Petition for Rulemaking at 20.

¹¹¹ See Sharp, Renee & Bill Allayaud, *No Fracking, Speak No Fracking*, Environmental Working Group (2012) at 6; See also Miller, Jeremy, *Oil and Water Don't Mix with California Agriculture*, High Country News (2012).

¹¹² New Mexico Oil and Conservation Division, *OGAP Analysis of data provided in New Mexico Energy, Minerals and Natural Resources Dep't, Oil and Conservation Div., Cases Where Pit Substances Contaminated New Mexico's Ground Water* (2008); See Natural Resources Defense Council, *Petition for Rulemaking Pursuant to Section 6974(a)*

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 systems are not designed to handle the kind of contaminants that result from unconventional oil and gas extraction.¹¹³ In some areas hydraulic fracturing may occur at shallower depths or within the same formation as drinking water resources, resulting in direct aquifer contamination.¹¹⁴ The EIS must disclose where the potential for such drilling exists.

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 clean water resources.¹¹⁵ 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.

c. Impacts to Surface Water Quality

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.¹¹⁶ 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.¹¹⁷ As much as 25 percent of fracking chemicals are carcinogens,¹¹⁸ and flowback can even be radioactive.¹¹⁹ As described below, contaminated surface water can result in many adverse effects to wildlife, agriculture, and human health and safety. It may make waters

of the Resource Conservation and Recovery Act Concerning the Regulation of Wastes Associated with the Exploration, Development, or Production of Crude Oil or Natural Gas or Geothermal Energy (2010); Kusnetz, N., A Fracking First in Pennsylvania: Cattle Quarantine, ProPublica, July 2, 2010.

¹¹³ Physicians Scientist & Engineers for Healthy Energy, Letter from Robert Howarth Ph.D. and 58 other scientists to Andrew M. Cuomo, Governor of New York State re: municipal drinking water filtration systems and hydraulic fracturing fluid (Sept 15, 2011) (accessed July 29, 2015).

¹¹⁴ U.S. EPA 2016 at 6-69.

¹¹⁵ University of Colorado--Boulder, New study identifies organic compounds of potential concern in fracking Fluids (July 1, 2015) (accessed July 29, 2015).

¹¹⁶ Vengosh 2014.

¹¹⁷ U.S. EPA, Plan to Study the Potential Impacts of Hydraulic Fracturing on Drinking Water Resources (2011) (“EPA Plan to Study Fracking Impacts”).

¹¹⁸ Colborn, Theo et al., Natural Gas Operations from a Public Health Perspective, 17 Human and Ecological Risk Assessment 1039 (2011).

¹¹⁹ U.S. EPA, Plan to Study Fracking Impacts; White, Ivan E., Consideration of radiation in hazardous waste produced from horizontal hydrofracking, National Council on Radiation Protection (2012).

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 EA.

Massive volumes of chemicals and wastewater used or produced in oil and gas operations have the potential to contaminate local watersheds. Over 1 million gallons of chemicals are injected on average per hydraulically fracked well depending on the number of chemicals injected.¹²⁰ Several billions of gallons of wastewater are produced by oil and gas production per year.¹²¹ Onshore oil and gas operations in the United States create about 56 million barrels of produced water *per day*.¹²² 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.¹²³ This waste can reach fresh water aquifers and drinking water.¹²⁴

Fluids must be transported to and/or from the well, which presents opportunities for spills.¹²⁵ 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 truckloads can be required just for the drilling and fracturing of a single well pad¹²⁶ 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).¹²⁷ 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.¹²⁸

Produced waters that fracking operations force to the surface from deep underground can

¹²⁰ U.S. EPA 2016 at ES-22.

¹²¹ California Division of Oil, Gas, and Geothermal Resources, 2014 Preliminary Report of California Oil and Gas Production Statistics at 3 (July 2015); California Department of Conservation Division of Oil, Gas, and Geothermal Resources, Producing Wells and Production of Oil, Gas, and Water by County - 2011, Excerpted from Final Report of 2011 California Oil and Gas Production Statistics (2012).

¹²² U.S. Government Accountability Office, Energy-Water Nexus: Information on the Quantity, Quality, and Management of Water Produced during Oil and Gas Production, Report to the Ranking Member, Committee on Science, Space and Technology, House of Representatives at 13 (2012).

¹²³ California Division of Oil, Gas, and Geothermal Resources, 2014 Preliminary Report of California Oil and Gas Production Statistics at 3 (July 2015); California Department of Conservation Division of Oil, Gas, and Geothermal Resources, Producing Wells and Production of Oil, Gas, and Water by County - 2011, Excerpted from Final Report of 2011 California Oil and Gas Production Statistics (2012).

¹²⁴ NRDC Petition for Rulemaking at 17.

¹²⁵ Warco, Kathy, Fracking truck runs off road; contents spill, Observer Reporter, Oct 21, 2010.

¹²⁶ U.S. Government Accountability Office, Oil and Gas: Information on Shale Resources, Development, and Environmental and Public Health Risks, GAO 12-732 (2012) at 33.

¹²⁷ New York Department of Environmental Conservation, Final Supplemental Generic Environmental Impact Statement on the Oil, Gas and Solution Mining Regulatory Program, Ch. 6 Potential Environmental Impacts (2015) at 6-306.

¹²⁸ Kusnetz North Dakota; E&E News, Ohio man pleads not guilty to brine dumping, Feb. 15, 2013.

contain high levels of total dissolved solids, salts, metals, and naturally occurring radioactive materials.¹²⁹ 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.¹³⁰ 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.¹³¹ 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.

BLM 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 EA 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.

On-site storage of chemicals is also an issue warranting analysis. Thousands of gallons of chemicals can be potentially stored on-site and used during hydraulic fracturing and other unconventional well stimulation activities.¹³² 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.

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 equipment failure (most commonly, blowout preventer failure, corrosion and failed valves) and failure of container integrity.¹³³ Spills can result from accidents, negligence, or intentional dumping.¹³⁴

Based on the forgoing information and the proximity of parcels 97, 98, 99, 100, and 101 to the critical habitat for the Railroad Valley springfish, there is substantial basis to conclude that leasing and post-leasing activities may affect the threatened Railroad Valley springfish. Therefore, under ESA § 7, BLM must have site-specific consultation with FWS prior to leasing.

¹²⁹ Brittingham, Margaret C. et al., *Ecological Risks of Shale Oil and Gas Development to Wildlife, Aquatic Resources and their Habitats*, 48 *Environ. Sci. Technol.* 11034-11047, p. 11039 (2014).

¹³⁰ King, Pamela, *Limited study supports findings on bigger brine spill risks*, *E&E News*, Nov. 4, 2015.

¹³¹ *Id.*

¹³² U.S. EPA 2016 at ES-22.

¹³³ U.S. EPA 2015 at 5-31 to 5-46.

¹³⁴ *See, e.g.*, Fontenot, Brian, et al., *An evaluation of water quality in private drinking water wells near natural gas extraction sites in the Barnett Shale Formation*, *Environ. Sci. Technol.* doi: 10.1021/es4011724 (2013); Jackson, Robert B., et al., *Increased stray gas abundance in a subset of drinking water wells near Marcellus shale gas extraction*, 110 *PNAS* 28 (2013).

III. Conclusion

The expansion of fossil fuel leasing into vast areas of previously-unleased Nevada public lands serves no legitimate public purpose, but threatens both the waters and native wildlife of the area and the climate at large. Unconventional oil and gas development not only fuels the climate crisis but entails significant public health risks and harms to the environment. BLM has violated NEPA and FLPMA by forgoing any substantive environmental analysis of the proposed lease sale by unlawfully utilizing DNAs. Accordingly, BLM should cancel the lease auction, or else prepare an EIS that thoroughly analyzes the effects of the proposed lease auction, as compared to the alternative of no new fossil fuel leasing and no fracking or other unconventional well stimulation methods within the Ely and Elko District planning areas.

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