LETTER 150

BIODIVERSITY CONSERVATION ALLIANCE * WYOMING OUTDOOR COUNCIL
THE WILDERNESS SOCIETY * CENTER FOR NATIVE ECOSYSTEMS
WYOMING WILDERNESS ASSOCIATION * DEFENDERS OF WILDLIFE
HIGH COUNTRY CITIZENS' ALLIANCE * THE FUND FOR ANIMALS
THE WILDLANDS PROJECT * SINAPU

July 1, 2003

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P.O. Box 2407
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VIA E-MAIL AND FIRST-CLASS MAIL
Comments on the Desolation Flats Natural Gas Project Draft EIS

Dear Mr. Spehar:

4-103

The following are the comments of Biodiversity Conservation Alliance, Wyoming Outdoor Council, The Wilderness Society, Center for Native Ecosystems, Wyoming Wilderness Association, Defenders of Wildlife, High Country Citizens' Alliance, The Fund for Animals, The Wildlands Project, and Sinapu on the Desolation Flats Natural Gas Field Development Project. The Draft Environmental Impact Statement for this project is fraught with legal deficiencies, omissions, and ecological problems. We, the undersigned groups representing hundreds of thousands of members nationwide, believe that this is a poorly conceived project and should not be allowed to move forward at least until after the Record of Decision is signed on the revision of the Great Divide Resource Management Plan. Please respond to these comments in detail in the Final EIS for this project, and send us all future correspondence related to this project.

In their *Inventory of Significant Geologic Areas in the Wyoming Basin Natural Region*, compiled under contract with the National Park Service in 1973, the authors noted that "The greatest natural value of this area is that it is still a 'howling wilderness.'" (at p. 187). The authors of this report gave the Washakie Basin the highest rating for priority in evaluation for National Natural Landmark designation. A later study tiled *Potential Natural Landmarks in the Wyoming Basin*, released in 1976, rated the area as having the highest rating for ecological and geological values, a rating that reflects "high degree of national significance, recommended without reservation." at pp. 216-218. In 1979, the National Park Service and the Heritage Conservation and Recreation Service identified the resources of the Washakie Basin as possessing nationally significant and threatened natural-ecological-geological features and listed the basin as a possibility for new study and potential inclusion as a national park, underscoring the outstanding natural attributes of the area. That this area should become a highly industrialized gas development field is repugnant in the extreme.

LEGAL DEFICIENCIES

The Draft Desolation Flats EIS (hereinafter 'DFEIS') contains a number of major violations of federal law which prevent the BLM from implementing the Proposed Action as written.

I. Proceeding with the Desolation Flats Project Violates Both NEPA and FLPMA

A. The Reasonable Foreseeable Development Scenario Has Been Exceeded

As part of RMP development and amendment, BLM must consider the cumulative impacts for the reasonable foreseeable development (RFD) scenario for the resource area in allowing oil and gas development. When an RFD scenario has been exceeded, all oil and gas operations must stop because: 1) their impacts have not been addressed in a resource area wide NEPA document, usually the EIS accompanying the RMP and, 2) they are inconsistent with the governing land use plan. 1

The Great Divide RMP was finalized in 1990 and has not been amended or revised since that time to allow for a higher RFD scenario. Since the Great Divide RMP was approved with a reasonably foreseeable development scenario of 1,440 wells over the life of the Plan, 1,628 wells have already been drilled (John Spehar, pers. comm.). The RFD scenario for the Plan has already been exceeded by almost 200 wells, and now this project would propose to add another 300-500 wells. 1a When combined with the 1,200 CBM wells forecasted for the Seminoe Road project, not to mention the nearly 4,000 CBM wells anticipated for the Atlantic Rim project, it is indisputable 1b that the RFD has been exceeded many times over. This is admitted by BLM at p. 1-12 of the DEIS by noting over 2,105 completed within the resource area and nearly 6,000 total since the RMP. Plugged and abandoned wells *do in fact* count toward the RFD totals as their impacts (weed infestation, surface disturbance) are felt years beyond abandonment. 1c BLM admits there are 2,310 active wells now within the resource area, and does some mathematical gymnastics (e.g., assuming all dry and abandoned wells are fully reclaimed) to assert the RFD has not been exceeded. Moreover, the true number of wells should properly include some or all of the 2,774 so-called plugged and abandoned wells – because, despite BLM's claim that they've been 1d reclaimed, the Wamsutter II analysis in 1998 noted many of the P&A wells since 1985 had *not* been reclaimed within 13 years. DEIS at 1-12.

BLM often contends in these situations that although a RFD has been exceeded, more wells can be drilled with their attendant impacts because the RMP/EIS purportedly "overestimated" surface disturbance, thus allowing for more wells. In its "Environmental Consequences" section, the Great Divide EIS lists as "anticipated developments" of 16,092 acres of oil & gas development 1e over the next 20 years. DEIS at 1-13. However, this current project adds 5,000 disturbed acres, in addition to the acreage affected by the Seminoe Road, Atlantic Rim, Mulligan Draw, Greater Wamsutter Area II, Continental Divide/Wamsutter II, Creston/Blue Gap, Uinta Basin Lateral Pipeline, Hay Reservoir Unit, South Baggs Area and Vermillion Basin projects.

Here, we ask two things of BLM in the FEIS: first, the total acreage affected or allowed by the 1f project authorizations to be affected for these oil and gas fields in relation to the cumulative acreage allowed in the RMP and in relation to the year by year anticipated disturbances. Second, 1g as a RFD scenario necessarily sets the cap on a cumulative impacts analysis, which includes all forms of development, we ask BLM for the entire Great Divide Resource area, to ensure that the

acreage totals requested above include all state, private and federal development from the 1990 RMP (1987 DEIS) to the present day. The sum total of these projects studied, authorized or led to over 5,000 wells, many of which are within the Great Divide resource area. Therefore, we suspect that the cumulative impacts analysis of the RMP, tied to its far-exceeded RFD, does not allow for this current proposal. In short, the Great Divide RMP needs to be revised first to allow for this project. We note that any argument that BLM can do the RMP revision and the current EIS simultaneously, violates a fundamental principal of NEPA that an agency, here BLM, not undertake *any* action that may jeopardize the full range of alternatives in the revised RMP, which may include very different conditions of approval and mitigation measures for wildlife and other resources than are proposed for this project. 1h 1i

B. Exceeding the RFD Violates NEPA.

New oil and gas projects approved after an RFD has been exceeded violate the National Environmental Policy Act (NEPA). NEPA sets forth a "national policy which will encourage productive and enjoyable harmony between man and his environment [and will] promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man." 42 U.S.C. § 4321. NEPA does not establish substantive environmental standards, or prescribe a regulatory program; rather, it is "action forcing, requiring an agency to take a 'hard look' at environmental consequences." Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 350 (1989).

NEPA's purpose is to maintain a national "look before you leap" policy in regard to all major federal actions. Congress' intent in establishing this objective was to avoid uninformed agency decisions that could have serious environmental consequences. Thus, NEPA's mandate is that all federal agencies analyze the likely effects of their actions, as well as address the potential alternatives. "Agencies are to perform this hard look *before* committing themselves irretrievably to a given course of action so that the action can be shaped to account for environmental values. NEPA § 102(2)(c) requires the agency to consider numerous factors [including] irreversible commitments of resources called for by the proposal." Sierra Club v. Hodel, 848 F.2d 1068 (10th Cir. 1988) (reversed on other grounds)(emphasis added). NEPA provides procedural protections for resources at risk by requiring analysis of impacts *before* substantial decisions are made that set development in motion. See Conservation Law Foundation v. Watt, 560 F. Supp. 561, 581 (D. Mass. 1983), aff'd by Massachusetts v. Watt, 716 F. 2d 946 (1st Cir. 1983). 1

The current EIS process for this specific project in no way cures the fundamental RFD/cumulative impact violations. Each oil and gas project tiers back to the Great Divide RMP which, as a planning document, is the only comprehensive look at oil and gas impacts in the resource area. The project level EAs and EISs focus on the site-specific impacts of the proposed projects – and not the entire planning area. The RFD in the Great Divide RMP was there for a purpose – analyzing the foreseeable wells that would be developed (drilled, spudded, completed or approved) and then basing the entire cumulative impacts analysis on that number. When that number has been reached, the impacts analyzed have also necessarily been reached, and the limitations of the planning document have thus been met. To then allow more wells and massive projects for more oil patches undermines not only the FLMPA planning process, but also, the direct and cumulative effects analysis under NEPA for oil and gas in the planning area. 1j

C. Exceeding the RFD Violates FLPMA

The second statute BLM is violating here is the Federal Land Policy Management Act of 1976 (FLPMA). FLPMA requires that decisions, permits and other authorizations conform to the approved RMP for the leased area. Specifically, FLPMA provides that "[t]he Secretary shall manage the public lands under principles of multiple use and sustained yield, in accordance with the land use plans developed by him under section 1712 of this title ..." 43 U.S.C. §1732. After BLM develops an RMP, all future resource management authorizations and actions, as well as subsequent planning efforts, shall conform to the approved plan. 43 C.F.R. § 1610.5-3(a). "Conformity" means, "that a resource management action *be specifically provided for in the [RMP]*, or if not specifically mentioned, shall be clearly consistent with the terms, conditions, and decisions of the approved plan or plan amendment." 43 C.F.R. § 1601.0-5(b) (emphasis added). 1

FLPMA calls for an immediate halt to further project approvals in the Great Divide resource area because BLM has exceeded the level of development authorized under the RMP. In fact, BLM has admitted that as many as 5,000 wells are foreseeable in the resource area based on approved and ongoing projects, yet its RMP considers the prospect of only 1,440 wells. At present, the number of wells on the ground, and certainly those under consideration, and the present-day RFD scenario far exceeds the limits set by the 1990 RMP. By exceeding these baselines to such a degree, BLM has clearly ignored the regulatory directive established by 43 C.F.R. § 1610.5-3(a), as these projects and well approvals are outside anticipated levels of the RFD and therefore an action that does not conform to the RMP. 1k 1l

BLM further violated its own planning regulations by failing to amend the RMP prior to this and other projects. BLM "shall" initiate and complete a plan amendment when "a proposed action that may result in a change in the scope of resource uses or a change in the terms, conditions and decisions of the approved plan." 43 C.F.R. § 1610.5-5. The point here is rather simple: the RMP allowed for a certain number of wells that it considered in its RFD cumulative impacts analysis. When that number had been surpassed, and will continue to be surpassed with additional project and APD approvals, the RMP must be amended to account for and thoroughly analyze this predicted future development. The current revision process of the Great Divide RMP does not help "cure" any NEPA or FLPMA deficiencies for projects already approved in the interim. 1m 1n

D. Interim Project Approvals During a RMP Revision Violates NEPA

Unfortunately for BLM, its legal problems with the Desolation Flats project do not end with the RFD problem. As a further admission that its RMP is outdated and did not predict or analyze the current level of oil and gas activity, BLM is now revising the RMP. Continuing to lease lands before the revised RMP is released violates NEPA. 2a

Amending the RMP is significant in that it involves an EIS, triggering 40 C.F.R. § 1506.1. That regulation provides: 2

> **Limitations on Actions During NEPA Process**
> (a) Until an agency issues a record of decision . . . no action concerning the proposal shall be taken which would:
>
> (1) Have an adverse environmental impact; or
> (2) Limit the choice of reasonable alternatives.

40 C.F.R. § 1506.1(a). See also 40 C.F.R. § 1502.2(f) (stating agencies "shall not commit resources prejudicing selection of alternatives before making a final decision."). This prohibition strictly applies when the interim project will prejudice the ultimate decision of a program. 40 C.F.R. § 1506.1(c)(3). Interim action prejudices the ultimate decision of a program when it tends to determine subsequent development or limit alternatives. 40 C.F.R. § 1506.1(c)(3). 2

One of the critical issues BLM addresses during RMP amendment/revision for existing leases is what types of post-leasing conditions of approval and mitigation measures should attach at the APD stage to proposed development. The point here is rather simple – information may be gained during the RMP revision process in terms of wildlife protective measures, new technologies that should be employed to reduce impacts and other impact-reducing measures. To proceed with a major EIS and natural gas field approval *now, before* those new measures are developed, studied and adopted, may authorize a project with different (and most likely, more lenient) mitigation measures than those developed in the new RMP. Accordingly, proceeding in this fashion jeopardizes the full range of alternatives for the RMP revision as the oil and gas issues for this project area of 225,000 acres will already have been decided. 2b

II. Illegal Deferral of Analysis to Subsequent Stages of Development

The BLM has deferred any hand in the management of oil and gas development in the DFPA to market forces, abdicating its responsibility to actively manage oil and gas development. According to the DFEIS, "The precise number of additional wells, locations of the wells, and timing of drilling associated with the proposed natural gas development project would be directed by the success of development drilling and production technology and economic considerations such as the cost of development of leases within the project area with marginal profitability." DFEIS at 2-1. The BLM later states, "Accurately predicting the total number of wells and the timing of drilling operations is difficult due to the limited amount of natural gas exploration and the geologic complexities in the DFPA." DFEIS at 2-3. We would humbly submit that the BLM could accurately predict the number and location of all future wells in the planning area with 100% accuracy if these variables were set in stone in the DFEIS as they should be according to law. But according to federal law, the number of additional wells, well locations, timing of drilling and construction should not be dictated by market forces, but by environmental and multiple use considerations. 3a

NEPA's mandate is that all federal agencies analyze the likely effects of their actions, as well as address the potential alternatives. "Agencies are to perform this hard look *before* committing themselves irretrievably to a given course of action so that the action can be shaped to account for environmental values." NEPA § 102(2)(c) requires the agency to consider numerous factors [including] irreversible commitments of resources called for by the proposal." Sierra Club v. Hodel, 848 F.2d 1068 (10th Cir. 1988) (reversed on other grounds). NEPA provides procedural protections for resources at risk by requiring analysis of impacts *before* substantial decisions are made that set development in motion. See Conservation Law Foundation v. Watt, 560 F. Supp. 561, 581 (D. Mass. 1983), aff'd by Massachusetts v. Watt, 716 F. 2d 946 (1st Cir. 1983). 3

The current EIS eloquently states that the "purpose" of the EIS process is to "provide the decision-makers with information needed to make a final decision that is *fully informed and based on factors relevant to the proposal*. It also documents analyses conducted on the proposal and alternatives in order to identify environmental impacts and mitigation measures necessary to address issue." DEIS at 1-9 (emphasis added). Further, BLM states, "This EIS analyzes the

effects of well pad locations, access roads, production facilities, pipelines, and other facilities associated with natural gas development on resources and land use within the project area." DEIS at 1-10.

If only *any* of this were true. BLM's stated purpose of the EIS, also the requirement of federal law, is crushed by page 2 of its Executive Summary: BLM can only say that 361 wells locations and 2 to 4 wells per section (and all of then attendant roads and other infrastructure) will be "where hydrocarbons are countered" and on a sporadic/non-uniform basis throughout the 225,000 acre planning area. Operators would not be required to submit locations of roads or impacts until the Application for Permit to Drill, Notice of Staking, and/or application for Right-of-Way stage, just prior to drilling; this fact would hold true regardless of whether an action alternative was implemented or denied. DFEIS at 2-6. In essence, then, this EIS will not look at the actual impacts of the proposed project, but instead masks a massive quarter-million acre oil and gas exploratory project in the name and guise of a thorough hard look at site-specific impacts in a project level document. 3b

Under the DFEIS, the BLM repeatedly defers analysis mandated by NEPA to a later point in time. Under the Proposed Action, seeding mixtures and stabilization requirements for disturbed areas are deferred to the APD/ROW stage. DFEIS at 2-37. Seed mixtures in crucial big game winter range designed to optimize wildlife habitat would also be outlined at the APD stage. DFEIS at 2-38. Site-specific surveys for Threatened and Endangered Species and BLM Sensitive Species would be deferred until just prior to surface-disturbing activities. DFEIS at 2-37. Invasive/noxious weeds planning and strategies would be deferred until "the preconstruction planning and design process." DFEIS at 2-37. All of these analyses and mitigation measures must be fully evaluated and presented in the Desolation Flats EIS, rather than deferring them to some later point in time. 3

BLM further admits that some of the proposed wells would be "exploration" because natural gas potential has not been totally defined due to geological complexities. More startling is the admission is that "the precise number of additional wells, *locations* of wells, and timing of drilling associated with the proposed natural gas development project would be directed by the success of the development drilling and production technology and economic considerations such as . . . marginal profitability." DEIS at 2-1 (emphasis added). Again, these and other statements within the EIS undermine its entire purpose – BLM is wholesale admitting it has absolutely no idea where wells will be located, or for that matter, whether there'll be a certain number due to profitability. It naturally follows then, that road, pipeline, compressor and other infrastructure locations are also big question marks looming over this proposal. 3c

The problem? In what conceivable world is BLM then going to be able to actually address site-specific impacts to soils, vegetation, wildlife, surface waters and cultural resources, with this scant information. In reality – and as documented throughout this DEIS – the agency cannot, and this creates yet another problem. Once the project is approved, BLM will then take on APDs and tier back to this EIS for the majority of impacts, and voila, one of BLM's favorite shell games is uncovered: push off important environmental analyses that could be done in the present if BLM bothered to go out and collect information and survey existing resources, to later stages of development – and at that time, "tier back" to the nonexistent analysis in these project level documents. 3d

In the end, the result is that very little gets analyzed, and that that does, is analyzed in a piecemeal

fashion, APD by APD instead of comprehensively at the project-level stage. Given that this EIS by BLM's own admissions cannot accomplish its core objectives, a better manner of proceeding in this situation where there is *no* information on likely producing reserves (and thus well pads, etc.), is to allow a few exploratory APDs to gather the necessary information for a proper EIS that could look at, plan for, analyze and mitigate impacts across a 225,000 acre swath of public land. As formulated and proposed, the current EIS can accomplish none of that, and beyond its future impermissible use in BLM's constant impact analysis shell game, it is a waste of the taxpayer's time and money. 3e

A related serious flaw that permeates the entire EIS concerns qualitative versus quantitative impact assessments. BLM has mastered the obvious in being able to state the *types* of impacts but has done very little in actually telling the public *what the actual impacts to various resources will be*. Examples include: roads will fragment wildlife habitat; compressor stations will cause noise; soil loss will affect vegetation communities; produced wastewater will increase sedimentation; hundreds of wells/miles of roads will cause soil loss, and on. However, the point of NEPA is to study and disclose what the actual impacts will be. In other words, we are asking here for more than a 4th grade level of impact analysis, e.g.: what will impacts be by species, location and distinct populations of wildlife due to roads; with displaced vegetation communities, what types of new species will invade and how long will it take to reach equilibrium; how will increased sedimentation affect aquatic life; and what are impacts to species, vegetation, ecological functions, etc., from thousands acres of soil loss? 3e 3

Simply stating the obvious that massive industrial development will cause qualitative impacts really misses the point of a NEPA analysis; in the new EIS BLM prepares it must look at what the actual degree of impacts will be. As with other areas, this deficiency by BLM will result in the federal courts sending BLM back the EIS to try again. See, e.g., Defenders of Wildlife, 130 F. Supp. 2d 121, 128 (D. D.C. 2001) (setting aside agency's EIS where it "states that noise would be increased and both the pronghorn and their habitat would be disturbed" but contained "no analysis of what the nature and extent of the[se] impacts will be"); National Parks & Conservation Association v. Babbitt, 241 F.3d 722, 743 (9th Cir. 2001) (NEPA document inadequate where it identified "an environmental impact" but "did not establish the intensity of that impact."); Neighbors of Cuddy Mountain v. U.S. Forest Service, 137 F.3d 1372, 1379-80 (9th Cir. 1998) ("General statements about 'possible' effects and 'some risk' do not constitute a 'hard look' absent a justification regarding why more definitive information could not be provided. . . . Nor is it appropriate to defer consideration of cumulative impacts to a future date. . ."). 3

Therefore, without an analysis of the on-the-ground effects that are likely to flow from the various "risks" identified in the EIS, there is no way for either the agency or the public to make a meaningful evaluation of competing alternatives – which, after all, is the core purpose of preparing a NEPA document in the first place. 3

III. Failure to Obtain Baseline Data 4

One of the most important aspects in an EIS is to adequately and accurately describe the affected environment such that impacts can be properly evaluated. In the present DEIS, BLM failed to live up to this standard, resulting in another NEPA violation. Some examples include no baseline data for: prairie dog population sizes, populations (and sometimes even occurrence data) for other BLM Sensitive Species, and locations of historic trails known to lie within or near the Desolation Flats Planning Area (DFPA). Site-specific surveys for Threatened and Endangered Species and 4a 4b 4c 4d

BLM Sensitive Species would be deferred until just prior to surface-disturbing activities; no surveys were conducted for these species prior to the publication of the Draft EIS for Desolation Flats. DFEIS at 2-37. BLM also admits that "specific air quality monitoring has not been conducted within the project area." (DFEIS at 3-18), a substantial failure to gather baseline air quality data. These are just a few of the categories – another glaring example is lack of cultural and historical surveys for 90% of the Basin – that render the subsequent impact analyses in the DEIS defective. 4 4d2

Importantly, 40 C.F.R. §1502.15 requires agencies to "describe the environment of the areas to be affected or created by the alternatives under consideration." Establishment of baseline conditions is a requirement of NEPA. In Half Moon Bay Fisherman's Marketing Ass'n v. Carlucci, 857 F.2d 505, 510 (9th Cir. 1988), the Ninth Circuit states that "without establishing . . . baseline conditions . . . there is simply no way to determine what effect [an action] will have on the environment, and consequently, no way to comply with NEPA." The court further held that, "The concept of a baseline against which to compare predictions of the effects of the proposed action and reasonable alternatives is critical to the NEPA process." Clearly, BLM has failed this basic duty in this DEIS and must provide this information in a second draft EIS so that environmental consequences can be satisfactorily assessed. 4e

IV. The BLM Fails to Analyze a True 'No Action' Alternative 5

Pursuant to NEPA, the "no action" alternative (40 C.F.R. § 1502.14(d)) is supposed to give a baseline comparison for which to compare the impacts of the different action alternatives. The only way to properly do that is a no action alternative that does not allow, at least theoretically, any action. BLM failed to do this – see, e.g., DEIS at 2-3, 2-5, and instead, provided for APDs to be approved on federal lands on a case-by-case basis. This approach is problematic on at least two levels. 5a

First, the alternative allows action, which is rather obviously at odds with a "no action" alternative. While BLM is accurate in saying that its post-leasing ability to preclude all drilling is limited (and therefore must allow some drilling, just not *each* APD), it confuses this legal requirement with the purpose of a no action alternative, which is to assume no action for purposes of establishing a proper baseline comparison. Second, the "no action" alternative, as it is set up, allows for no meaningful impacts analysis. How in the *world* is BLM supposed to analyze the impacts of APDs that may be granted, and more particularly, "on a case-by-case" basis, in as of yet unknown places? The description of the no action alternative – that it would allow ad hoc APD permitting in unknown places affecting unknown resources – is a far cry from a meaningful look at what the impacts would be of this project assuming that truly no action for oil and gas took place on federal lands. It is also an industry dream: wildcat-by-wildcat exploratory wells, one APD at a time, throughout a massive chunk of federal land with no comprehensive EIS. In short, the entire no action alternative needs to be reworked in another EIS. 5b 5c 5d

V. Range of Alternatives and Mitigation Measures 6

BLM has failed to take a hard look at the full range of reasonable alternatives, a fundamental underpinning – the "heart" – of an EIS. 40 C.F.R. § 1502.14. In the present case, there are only two action alternatives, one allowing 385 wells and the other at 592. No differing alternatives were offered that looked at first finding out the gas reservoir potential of the focus areas (to then build upon in an EIS if full field development was proposed), at different spacing patters, 6a

multiple completions per well pad in different numbers, multiple directional and horizontal wells from pads to reduce impacts and a resource protection alternative, to name a few.

BLM should note that this basic, fundamental requirement that is the touchstone of *every* EIS has not gone unnoticed on the federal judiciary in sending back EISs that fail to meet this requirement. See e.g., Calvert Cliffs, Coordinating Comm., Inc. v. United States Atomic Energy Comm'n, 449 F.2d 1109, 1114 (D.C. Cir. 1971) (detailed EIS required to ensure that each agency decision maker has before him and takes into account all possible approaches to a particular project . . . which would alter the environmental impact and the cost-benefit balance); Natural Resource Defense Council v. Callaway, 524 F.2d 79, 93 (2d Cir. 1975); ("The duty to consider reasonable alternatives is independent from and of wider scope than the duty to file an environmental statement."); Simmons v. United States Army Corps of Engineers, 120 F.3d 664, 660 (7th Cir. 1997) ("The highly restricted range of alternatives evaluated and considered violates the very purpose of NEPA's alternative analysis requirement: to foster informed decision making and full public involvement."); Alaska Wilderness Recreation & Tourism v. Morrison, 67 F.3d 723, 729 (9th Cir. 1995) ("The existence of a viable but unexamined alternative renders an environmental impact statement inadequate."); Dubois v. U.S. Dept. of Agric., 102 F.3d 1273, 1288 (1st Cir. 1996) (EIS invalid because agency did not consider alternative of using artificial water storage units instead of a natural pond as a source of snowmaking for a ski resort); Libby Rod & Gun Club v. Poteat, 457 F. Supp. 1177, 1187-88 (D. Mont. 1978), rev'd in part on other grounds, 594 F.2d 742 (9th Cir. 1979) (Army Corps violated NEPA in an EIS for a hydroelectric dam by only cursorily addressing the alternatives of meeting the Northwest's energy needs through other sources or conservation.); Northwest Envt'l Defense Center v. Bonneville Power Admin., 117 F.3d 1520, 1538 (9th Cir. 1997) ("An agency must look at every reasonable alternative, with the range dictated by the nature and scope of the proposed action.")

The present DEIS has only two action alternatives that are practically the same. This type of limited and narrow range of alternatives has met a similar fate in the courts. See State of California. v. Block, 690 F. 2d 753 (9th Cir. 1982) ("Consideration of alternatives which lead to similar results is not sufficient under NEPA . . ."); Citizens for Environmental Quality v. Lyng, 731 F. Supp. 970, 989 (D. Colo. 1989). (Forest plan alternatives inadequate because all involved high levels of unprofitable timber cuts.)

The failure to look at the full range of reasonable alternatives is related to BLM's duty in any EIS to develop, study, analyze and adopt mitigation measures to protect other resources. The ability to adopt post-leasing mitigation measures – see 43 C.F.R. § 3101.1-2 – is quite broad, as all reasonable measures not inconsistent with a given lease may be imposed by BLM. This is particularly true given that BLM, pursuant to FLPMA, must manage public lands in a manner that does not cause either "undue" or "unnecessary" degradation. 43 U.S.C. § 1732(b). Put simply, the failure of BLM to study and adopt these types of mitigation measures – especially when feasible and economic – means that the agency is proposing to allow this project to go forward with unnecessary impacts to public lands, in violation of FLPMA.

Some examples of a lack in range of mitigation measures include the BLM's proposal to mitigate for impacts to sage grouse leks with a No Surface Occupancy (NSO) buffer of only ¼ mile, rather than the 2-3 mile buffer that is supported in the scientific literature; the BLM's maximum of a ¼ - mile NSO buffer for the Cherokee Trail, without considering a much larger (3-5 mile) buffer that would protect the trail's viewshed and setting; and the BLM's maximum NSO buffer of only 1,250 feet for raptor nests, when studies indicate that a buffer of ¼ mile to 2 miles is warranted.

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BLM also adopted many standard conditions of approval and mitigation measures without taking a hard look at whether these measures are effective – numerous oil and gas projects in this region have adopted many of the same mitigation measures over the past twenty years and BLM failed to inventory these sites to measure their effectiveness. 40 C.F.R. § 1502.22 is triggered here. This provision requires "the disclosure and analysis of the costs of uncertainty [and] the costs of proceeding without more and better information." Southern Oregon Citizens Against Toxic Sprays, Inc. v. Clark, 720 F.2d 1475, 1478 (9th Cir. 1983). "On their face these regulations require an ordered process by an agency when it is proceeding in the fact of uncertainty." Save Our Ecosystems v. Clark, 747 F.2d 1240, 1244 (9th Cir. 1984).

This NEPA regulation imposes three mandatory obligations on the BLM in the face of scientific uncertainty: (1) a duty to disclose the scientific uncertainty; (2) a duty to complete independent research and gather information if no adequate information exists unless the costs are exorbitant or the means of obtaining the information are not known); and (3) a duty to evaluate the potential, reasonably foreseeable impacts in the absence of relevant information, using a four-step process. Unless the costs are exorbitant or the means of obtaining the information are not known, the BLM must gather the information in studies or research. 40 C.F.R. § 1502.22. Thus, the present EIS is deficient by not taking a hard look at the effectiveness of the chosen mitigation measures, and particularly so given the duty to look at, and availability of, readily accessible data from projects such that totaled 1,775 oil and gas wells drilled *before* 1987, or 16 years ago. DEIS at 1-12. That means there is a *lot* of readily available data out there that BLM has ignored in evaluating the effectiveness of the mitigation measures in this case. Simply listing and not analyzing the effectiveness of these measures also results violation of NEPA. See Northwest Indian Cemetery Protective Association v. Peterson, 764 F.2d 581, 588 (9th Cir. 1985), rev'd on other grounds 485 U.S. 439 (1988) (where the court determined that NEPA requires agencies to "analyze the mitigation measures in detail [and] explain how effective the measure would be. ... A mere listing of mitigation measures is insufficient to qualify as the reasoned discussion required by NEPA.").

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VI. The Desolation Flats DEIS Exemplifies the Wyoming BLM's Failure to Address the Cumulative Actions of Oil and Gas Development in the Greater Green River Basin.

NEPA regulations define the circumstances under which multiple related actions must be covered by a single EIS. 40 C.F.R. § 1502.4. To determine the proper scope of an EIS, agencies must consider three types of actions: 1) connected actions, "which means that they are closely related and therefore should be discussed in the same impact statement;" 2) cumulative actions, "which when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed in the same impact statement;" and 3) similar actions, "which when viewed with other reasonably foreseeable or proposed agency actions, have similarities that provide a basis for evaluating their environmental consequences together, such as common timing or geography." 40 C.F.R. § 1508.25. Furthermore, the regulations state that agencies such as the BLM should include such actions on once statement "when the best way to assess adequately the combined impacts of similar actions or reasonable alternatives to such actions is to treat them in a single impact statement." *Id.*[1]

The BLM's decision to analyze the Desolation Flats Natural Gas Field Development Project with in independent DEIS provides an example of BLM Wyoming's chronic failure to meet its NEPA obligations by addressing cumulative and similar actions together in one NEPA document. As will be discussed in detail below, there are numerous other proposed actions for oil and gas

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development in the Green River valley have cumulatively significant impacts and should therefore be discussed in the same impact statement. There are also numerous similar actions, either proposed or reasonable foreseeable, that provide a basis for evaluating their environmental consequences together.

In *Kleppe v. Sierra Club*, 427 U.S. 390, 409 (1976), the Supreme Court noted that NEPA may require a comprehensive impact statement in certain situations where several proposed actions are pending at the same time. Thus, when several proposals for actions that will have cumulative or synergistic environmental impact upon a region are pending concurrently before an agency, their environmental consequences must be considered together. *Id.* at 410. Therefore, where, as is the case in the Upper Green Valley where several oil and gas development projects will have a cumulative or synergistic environmental impact on a region are pending concurrently before an agency, those environmental consequences must be considered together. "[O]nly through comprehensive consideration of pending proposals can the agency evaluate different courses of action." *Id.*

The Council of Environmental Quality (CEQ) regulations address the need to prepare programmatic impact statements. The regulations define "major federal actions" to include "adoption of programs, such as a group of concerted actions to implement a specific policy or plan; systematic and connected agency decisions allocating agency resources to implement a specific statutory program or executive directive." 40 C.F.R §1508(b)(4).

The CEQ regulations also require broad federal actions to be evaluated (1) Geographically, including actions occurring in the same general location, such as a body of water, region, or metropolitan area and (2) Generically, including actions which have relevant similarities, such as common timing, impacts, alternatives, methods of implementation, media, or subject matter. 40 C.F.R. §1502.4(b). More important, environmental impact statements are to be prepared on these broad programs before they reach the stage of investment or commitment likely to "determine subsequent development or restrict later alternatives." §1502.4(c). *Environmental Defense Fund, Inc. v. Adams*, 434 F. Supp. 402 (D.D.C.1977) (holding that the scope of a program impact statement required similar "geographic, temporal, and subject matter."); *Natural Resources Defense Council, Inc. v. Hodel*, 435 F. Supp. 590 (D. Or. 1977), *aff'd on other grounds sub nom. NRDC v. Munro*, 626 F.2d 134 (9th Cir. 1980) (requiring a program impact statement for regional power planning in the Pacific Northwest). 7

An evaluation of the BLM's recent authorizations demonstrates a lack of compliance with NEPA. The BLM has authorized and is currently authorizing numerous projects in the Upper Green Valley, while simultaneously revising its Great Divide and Pinedale Resource Management plans, in a manner that avoids any meaningful, comprehensive environmental analysis of the impacts of oil and gas development in the Valley. This not only results in fragmented analysis but also forecloses any opportunity to look at reasonable alternatives and assess how development should occur. In addition to the two RMP revisions, the BLM is also proceeding with in the Green River Valley with numerous individual projects including (1) the South Piney Project, proposing up to 210 coalbed methane wells; the Jonah Infill project, authorizing up to 850 additional wells in the Jonah Field; the Jack Morrow Hills with 255 proposed wells; the Seminoe Road Project, allowing development of up to 1,240 coalbed methane wells and a host of smaller projects. These projects are all *in addition* to the new developments proposed in the Great Divide and Pinedale RMP revisions.

As the CEQ regulations and related case law make clear, the BLM's lack of any programmatic, comprehensive analysis of cumulative actions in the same geographic area violates NEPA by restricting later alternatives and fragmenting the true impacts of the oil and gas development. For this reason, we ask the BLM to take a step back and take a comprehensive approach to its land management. BLM should place all proposed development projects on hold pending revision of the Great Divide and Pinedale RMPs. This will ensure that the two RMPs can accurately and adequately address the ecological impacts of proposed oil and gas development on the region as a whole before proceeding with further action and will allow the agency preserve its ability to make important management decisions regarding the further oil and gas development in the Green River Valley. 7

FACTUAL AND SUBSTANTIVE DEFICIENCIES

There is No Purpose and Need for this Project

There is no purpose and need for the BLM to consider moving ahead with the Desolation Flats project. First of all, according to John Spehar of the BLM, Marathon Oil, the proponent of this project, is currently trying to sell off its leases in the area rather than moving forward with development (John Spehar, pers. comm., conversation of June 4, 2003). While we can certainly see that having a blanket approval for 385 wells already in place might increase the value of Marathon's leases on the selling block, it is not the BLM's job to spend taxpayer dollars on an EIS that serves only to enhance the financial standing of a leaseholder that is engaging in speculation on the oil and gas lease market. 8a

Secondly, the BLM's 'No Action' Alternative (which in fact continues drilling on valid existing leases, rather than implementing no action) would authorize the drilling of 23 additional wells in the Mulligan Draw area and 34 additional wells in the Dripping Rock Springs area, plus additional wells outside these project areas on a case-by-case basis. DFEIS at 2-5 and 2-6. Thus, gas development on existing lease will continue even if an 'Action' alternative is not selected, as if the Desolation Flats EIS had never existed. 8b

The DFEIS is not a programmatic, regional EIS; this role is filled by the Great Divide Resource Management plan, to which the DFEIS is tiered. The DFEIS is also not a project-level document, since no well, road, or pipeline locations are presented, and additional EAs will be needed for groups of wells even in an 'Action' alternative is approved for the Desolation Flats project. Furthermore, in the absence of detailed, site-specific analysis of where activities will occur and thus what the magnitude of the environmental impacts will be, the DFEIS fails to present a meaningful analysis of environmental impacts as mandated by NEPA. This document merely proposes blanket approval for 385 wells to be drilled in the absence of a credible environmental impacts analysis. Thus, this EIS serves no purpose, and is not needed for oil and gas development to continue in the area, the DFEIS has no legitimate Purpose and Need and should be abandoned before additional taxpayer dollars are wasted on this boondoggle. 8 8c

Visual Resources Do Not Receive Adequate Protection Under the Proposed Action

The BLM acknowledges, "Both short-term and long-term impacts to visual resources could be possible where patterns of area, line, form, color, and texture in the characteristic landscape could be contrasted by drilling equipment, production facilities, and/or construction related damage (e.g., roads, drill sites, pipelines) to vegetation, topography, or other visible site features." DFEIS at 4-94. We agree with this statement; for the sake of simplicity, we will categorize these areas as "sensitive visual resource areas." Where is the spatial presentation of the occurrence of spatial 9

visual areas? And how does the specific pattern of development (i.e., particular siting of roads, wells, pipelines) relate to these sensitive visual resources? How can the pattern of development be reconfigured to avoid impacts to sensitive visual resources? These questions deserve unequivocal answers in the FEIS. The BLM further notes,

> "Views of large, relatively undisturbed patches of the characteristic Wyoming Red Desert landscape are becoming less common. These conditions would increase the likelihood that all viewers, particularly back country [sic] recreationists, would be dissatisfied with the visual component of their experience. "

DFEIS at 5-25. Finally, the BLM should identify important viewsheds from the standpoint of public recreation and solitude, with special provisions that guarantee that the viewsheds in popular recreation areas like Powder Rim and Adobe Town/MVMA do not suffer from degradation as a result of the Desolation Flats project.

The only provisions to protect visual resources in the Preferred Alternative are to screen developments from roads using topographic features and to paint the structures a flat color that blends in with the surrounding landscape. DFEIS at 2-40. There are no provisions for avoiding locales of high visual importance, such as Powder/Cherokee Rims, Willow Creek Rim, Willow Creek badlands, Prehistoric Rim, the canyon of Sand Creek, Red Creek Rim, or the Flattop Mountain massif. These areas should be managed for No Surface Occupancy through Conditions of Approval (COAs) attached at the APD stage. The BLM should be prepared to compensate Operators for any "takings" which may accrue from the post-hoc attachment of the COAs, which should be mandated through the DFEIS.

Wilderness Resources are Inadequately Protected Under All Alternatives

The BLM chose not to consider protecting the proposed wilderness set for in the *Citizens' Wilderness Inventory of Adobe Town* and the *Western Heritage Alternative for the Great Divide RMP* within the DFEIS on the basis that it would be more appropriate to address within the BLM's land use plan review process. Further it was determined that it would not be appropriate to delay the EIS for this project while such land use review is undertaken. This sequence of events is such that when (or if) land use review is finally undertaken (assuming the Desolation Flats Project commences), potential wilderness characteristics will be destroyed in the interim and the Citizens' proposal will become moot. This is an unacceptable outcome. Therefore, protection of lands encompassed in the Citizen's Proposal must be considered as part of the DEIS for Desolation Flats. We incorporate the *Citizens' Wilderness Inventory of Adobe Town* and the *Western Heritage Alternative for the Great Divide RMP* into these comments by reference.

The Adobe Town proposed wilderness is the crown jewel of Wyoming's high desert wilderness, and about 50,000 acres outside the WSA but which possess wilderness qualities. The citizens' proposed for wilderness includes all of the Adobe Town Wilderness Study Area, plus additional lands of wilderness quality in The Haystacks, along Willow Creek and the Willow Creek Rim, and south of the WSA to the Powder Rim and just beyond it. All of these areas possess the full complement of required characteristics for wilderness in abundance: outstanding opportunities for both solitude *and* primitive and unconfined recreation, wilderness-quality naturalness, size (at over 180,000 acres, the citizens proposed Adobe Town wilderness is well above the 5,000-acre minimum), and in addition has outstanding supplemental values such as abundant wildlife, wild horse herds, unique geology, and abundant archaeological and paleontological resources. The Adobe Town area has long attracted attention for its mesmerizing landscapes of badlands and high rims. In 1869, General A.A. Humphreys led a Geological Exploration of the Fortieth Parallel. In his report, General Humphreys describes the Adobe Town area as follows:

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> "This escarpment is the most remarkable example of the so-called bad-land erosion within the limits of the Fortieth Parallel Exploration...Along the walls of these ravines the same picturesque architectural forms occur, so that a view of the whole front of the escarpment, with its salient and reentrant angles, reminds one of the ruins of a fortified city. Enormous masses project from the main wall, the stratification-lines of creamy, gray, and green sands and marls are traced across their nearly vertical fronts like courses of immense masonry, and every face is scored by innumerable narrow, sharp cuts, which are worn into the soft material from top to bottom of the cliff, offering narrow galleries which give access for a considerable distance into this labyrinth of natural fortresses. At a little distance, these sharp incisions seem like the spaces between series of pillars, and the whole aspect of the region is that of a line of Egyptian structures. Among the most interesting bodies are those of the detached outliers, points of spurs, or isolated hills, which are mere relics of the beds that formerly covered the whole valley. These blocks, often reaching 100 feet in height, rise out of the smooth surface of a level plain of clay, and are sculptured into the most remarkable forms, surmounted by domes and ornamented by many buttresses and jutting pinnacles. But perhaps the most astonishing single monument here is the isolated column shown in the frontispiece of this volume. It stands upon a plain of gray earth, which supports a scant growth of desert sage, and rises to a height of fully sixty feet. It could hardly be a more perfect specimen of an isolated monumental form if sculptured by the hand of man." Report of the Geological Exploration of the Fortieth Parallel, 1869, p.397-398.

The BLM recognized the unique and significant natural qualities present in the Adobe Town Area when it designated the area as an "Interim Critical Management Area" under the Management Framework Plans drafted prior to 1973. It has also been managed as the Adobe Town Wild Horse Management Area. In its URA Step III (Present Situation) document (hereinafter referred to as URA), BLM concluded: "Quality, we feel, is a function of the combination of interrlated (sic) values that the area exhibits and the uniqueness of that combination. In that sense the area is very high quality." URA at p.15.

The outstanding natural qualities of this area echo through BLM's own documents from its Wilderness Intensive Inventory of the area. In the early 1970s, BLM recognized that "[t]hese highly significant wildlife values, coupled with open space and a sparse human population, figure prominently in the way of life enjoyed by the residents" (Wyoming Land Use Decisions, Overland Area, at p.4). BLM officials played up the unique and outstanding natural values of the area as follows. "Many of the spires take on strange life-like forms - stone sentinals (sic) frozen in time standing guard over their silent desert domain. Walking amidst groups of these strange spires gives one the eerie feeling of being watched - by beings who have witnessed the evolution of Adobe Town for millennia." (URA at p.4). The document went on to state, "Contrast between colors, sunlight and shadows, and landforms is increased creating enormous vistas..." (URA at p.5). "Although similar landforms are found elsewhere in southern Wyoming, these are perhaps the most outstanding example, a factor which contributes to the uniqueness of the area." (URA at p.9). Adobe Town has also received recent accolades in the popular literature. In the recently released book *Wild Wyoming*, the author describes Adobe Town as "a fantastic landscape of spires, balanced rocks, keyoles, and cliffs" (at p. 321) and "a landscape worthy of National Park status" (at p.323). This book goes on to assert that "[w]hen the BLM developed its wilderness recommendations, natural gas potential was given priority over public recreation and

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environmental quality" (at p. 325). BLM has the responsibility to rectify the tainted nature of its original Wilderness Intensive Inventory by setting aside ***all*** lands in the Adobe Town area that possess wilderness characteristics until the U.S. Congress can act on them.

Proposed Expansions

The citizens' intensive inventory of routes and impacts within the greater Adobe Town area reveals that many of the vehicle routes that form the boundaries of Adobe Town (and hence the basis for excluding adjacent roadless lands) either were never "roads" that significantly impact the naturalness of the landscape or have become so reclaimed through the passage of time and the processes of natural degradation that they no longer qualify as roads or significant impacts. In these cases, we inventoried surrounding undeveloped lands for vehicle routes and human impacts to determine which (if any) areas met the wilderness criteria and warranted inclusion in an expanded Adobe Town WSA. We found a number of large areas which meet every criteria for wilderness designation and yet were excluded from Adobe Town WSA. As it now stands, many of the scenic overlooks within Adobe Town WSA have within their viewshed lands which are unprotected from industrial development. An expansion of the WSA to include undeveloped lands that possess wilderness quality would thus enhance and protect the wilderness quality of lands within the current WSA while addressing the problem of the exclusion of wilderness-quality lands nearby from interim protection. Conservation groups, including many of the undersined organiziations, have formally requested that BLM reinventory these areas, and extend WSA protection to those areas that qualify for wilderness as outlined in the BLM Wilderness Inventory Study Procedures. In the BLM's re-inventory, the agency agreed with the citizens' proposal on the presence of potential wilderness on about 40,000 acres of the citizens' proposal.

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The Haystacks

The Haystacks are a broad arc of deeply dissected badlands that extend northeast from the Adobe Town Rim. According to local tradition, it was in the Haystacks that Butch Cassidy and his gang hid their fresh horses, which helped them elude their pursuers following the Tipton train robbery. This lofty chain of ridges and badlands is home to a juniper woodland whose isolated nature within the surrounding sea of sagebrush lends it great ecological importance. In the Park Service's Inventory of Significant Geological Areas in the Wyoming Basin Natural Region (published in 1973), the authors describe The Haystacks as follows: "A dominant feature of the landscape in the northern part of the area is Haystack Mountain. It is arctuate in shape and 10 miles long. On the north end, badland slopes of variegated sediments rise precipitously 500 feet above the adjacent plains." at p.187-188. Today, visitors to the Haystacks can enjoy the same wild, remote, and pristine character that Cassidy found here in the 1800s. The unit is separated from Adobe Town WSA by the Manuel Gap "Road," a rugged jeep trail. During the Wilderness Intensive Inventory, BLM officials came to the rather amazing conclusion that it was constructed, maintained, and regularly used, qualifying as a "road" and fit for exclusion from wilderness. Our inventory provides voluminous evidence that much of the route was never constructed, those parts which received blading have since deteriorated, use is very light and sporadic (not regular), and maintenance has not been performed for such a long time that substantial portions of the route are no longer passable to vehicles of any kind. Hence, this route meets none of the characteristics of a "road" and must be considered a "way," and as such it does not present an intrusion of significant magnitude to warrant its exclusion from wilderness.

Of the 50,000 acres of wilderness-quality land in this area, BLM in its original Wilderness Intensive Inventory considered only 8,090 acres of this unit, the portion outside the

"Checkerboard" of public and private land ownership. In its analysis, BLM officials noted that the limited area inventoried "..contains enough acres to meet the size criterion but field investigations indicate that this portion of the unit fails to satisfy other basic wilderness criteria. Opportunities to experience solitude are not outstanding and the opportunity for a primitive and unconfined type of recreation is limited." Staff Specialist Synopsis, Unit No. WY-030-401, WY-040-408, 1/16/80, p.7. But when the entire unit is considered as a whole, ***both*** the opportunity for solitude ***and*** outstanding opportunities for primitive and unconfined recreation are available throughout this unit, particularly within the northeastern extension of the Adobe Town Rim and within the Haystacks themselves. BLM conceded that the subunit that it considered possessed the full measure of naturalness required for wilderness, noting, "[t]his portion is bisected by a way [Route AT-89B]..Its presence alone is insufficient to compromise apparent naturalness" (Ibid. at p.7). But the report recommends dropping the area from wilderness consideration because it "contained intrusions and otherwise did not meet wilderness criteria" (Id. at p.4).

The BLM's 2002 inventory agreed that the 8,090 acres outside the checkerboard, but did not consider portions of the Haystacks which fall within the "checkerboard" ownership pattern due to the difficulty of managing checkerboard lands, with their private inholdings, as wilderness. And yet these lands possess wilderness qualities equal to those in the existing WSA, the difference being in land ownership pattern, which is invisible on the ground. Thus, the wilderness qualities of this area, regardless of the practicality of their being managed as wilderness in the absence of a land swap, are a multiple-use resource for which the BLM should be managing and which are valuable to the public regardless of land ownership pattern. We request that BLM grant all public lands within The Haystacks portion of the citizens' wilderness inventory be granted WSA status and be withdrawn from all drilling, road, or pipeline construction as a Condition of Approval for APDs under the Desolation Flats project until such time as Congress can reach a final decision to either grant it wilderness status or release it from wilderness consideration. In the interim, BLM should actively pursue a program of land swaps in order to free up the potential wilderness from private inholdings.

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Willow Creek Rim

This unit encompasses a sloping table land between the WSA and the Willow Creek Rim, an area of 20,000 acres that BLM inventoried and then excluded from WSA protection in 1980. It also includes wilderness-quality lands in the badlands of Willow Creek itself, which lie immediately to the east of the rim. The Willow Creek Rim is a tall, vertical scarp that bisects the area from north to south, affording spectacular views of the surrounding country. At its foot lies a maze of badlands that invite exploration on foot or horseback. The spectacular scenery alone is sufficient to lend the area outstanding opportunities for primitive and unconfined recreation. In its inventory of the area, BLM excluded the tract including Willow Creek Rim, citing a lack of vegetative or topographic screening and land features that were "commonplace" (Staff Specialist Synopsis at p.8). The report noted that "[s]everal ways are also found in this portion of the unit...they receive no maintenance and most are deteriorated" (Ibid. at p.8). This report further noted a pipeline right-of-way that had been approved but not yet constructed and a bladed road along the Willow Creek Rim that received substantial use. The BLM concluded that the Willow Creek Rim unit "contained intrusions and otherwise did not meet wilderness criteria" (Id. at p.4) and excluded it from further wilderness consideration.

Today, there is no visible evidence that the pipeline was ever laid, and the bladed "road" has been **mechanically obliterated** and reseeded in the intervening years. A light amount of use still

occurs on a two-track way that follows the revegetation strip of the old road, but this route was *created and maintained solely by the passage of vehicles* and thus must be considered a "way." The BLM's 2002 reinventory of this area classified this route as a "road," which begs the question: Once an oil and gas road is reclaimed to the BLM's satisfaction following a project like Desolation Flats, how can it still be considered a 'road?' An improved gravel road has also been built atop one of the primitive "ways" to access a drilling site east of Willow Creek Rim. Like the roads found within Adobe Town WSA, this road is a "temporary intrusion" that will need to be fully reclaimed when the well site is abandoned. For the purposes of this report, this road has been excluded from the proposed wilderness via a "cherry-stem;" we expect that the road be obliterated upon abandonment of the well site, at which time the route will be suitable for inclusion within wilderness. The roads and wells of the Desolation Flats projects should be kept out of this portion of the proposed wilderness as well.

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Powder Rim

The Powder Rim is a broad swell of high country that rises at the south end of the Washakie Basin. It is robed in a mix of juniper woodland and sagebrush meadows, and provides nesting habitat for sage grouse. The northern side of the rim slopes down into the Skull Creek basin, where it is dissected into clay badlands. This area apparently escaped the Wilderness Intensive Inventory entirely, even though it possesses all of the required attributes. This area provides perhaps the finest opportunities for primitive and unconfined recreation in a juniper woodland setting available in Wyoming. It is separated from the Adobe Town WSA by an old jeep trail that received so little use that it has been completely obliterated by the forces of natural degradation over most of its length. Several jeep trails within this area have been improved by bulldozer blading, an impact that will heal over the course of time once these routes are abandoned. There is one reservoir within the area, which is breached and no longer functional. The BLM agreed that this area indeed possesses the characteristics of wilderness, and thus Conditions of Approval should be attached to all APDs under the Desolation Flats project protecting this area from surface disturbance.

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Flaws in the DFEIS

The BLM claims that for Wilderness, there is "None present" in the DFPA, and therefore this issue is not addressed in the text of the EIS. See Table 3-1, DFEIS at 3-1. This would be true if the BLM were to mean that Congressionally designated wilderness is absent from the planning area, and yet public lands that the BLM itself has deemed to be of wilderness quality lie within the DFPA. FLPMA requires that the BLM manage its resources, including wilderness-quality lands (both Congressionally-designated and otherwise); the Desolation Flats Draft EIS attempts to duck this requirement, which leaves the document legally deficient.

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The DFEIS provides, "If proposed development activities were found to impair wilderness values, the application would be denied until completion of the Great Divide RMP revision." DFEIS at 2-43. We appreciate the fact that BLM will defer approval of any project within the portion of the citizens' proposal which the BLM has found to contain wilderness qualities. In addition, the BLM should extend the same interim protections to other portions of the citizens' proposal in order to maintain a full range of alternatives in the Great Divide RMP revision. Furthermore, the DFEIS seems to imply that applications would be approved following the ROD issuance on the revised Great Divide RMP regardless of outcome. The wording should be altered to indicate that applications may be denied indefinitely or altered to conform to the new Great Divide RMP.

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The BLM itself recognizes the unique and irreplaceable wilderness resources found in Adobe Town: "There are no areas in the region with the isolation and solitude characteristics of Adobe Town/Monument Valley..." DFEIS at 4-91. The BLM should draw up and mandate an alternative that protects these irreplaceable qualities over the long term.

The DFEIS falls short of the NEPA mandate to evaluate a range of reasonable alternatives, because not a single alternative put forward by the BLM would protect the wilderness qualities and solitude found in Adobe Town from significant impacts. All alternatives entail "Potential Significant Impacts" to recreation and wilderness resources. DFEIS at 2-47. Why is there no alternative that would not entail significant impacts to wilderness and recreation analyzed in the DFEIS? This marks a failure by the BLM to analyze an adequate range of reasonable alternatives, because complete protection for wilderness resources is certainly a reasonable alternative.

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In the Proposed Action, the BLM makes the following analysis regarding Adobe Town Wilderness Study area, the crown jewel of Wyoming's high desert wilderness: "Noise, fugitive dust , and the industrial character of drilling and production would adversely impact the pristine WSA landscape diminishing the area's attributes of solitude and isolation sought by WSA recreationists. These activities would likely produce both short term and long term impacts to recreation resources in the adjacent WSA. Mitigation of noise, dust, and visual impacts via site selection or screening would be difficult given the character of the landscape along the interface between the WSA and the DFPA." DFEIS at 4-92. We heartily agree with this assessment. Alternative A would make these problems even worse, and the BLM concludes that this alternative's impacts to the WSA would be even "more adverse." DFEIS at 4-92. Finally, even the "No Action" alternative would have impacts to the WSA that would be "similar to those described for the Proposed Action but of lesser magnitude." DFEIS at 4-93. In short, the BLM is considering NO ALTERNATIVE which would not adversely impact the wilderness qualities of the adjacent Adobe Town WSA, let alone the citizens' proposed wilderness that lies within the DFPA, in its range of alternatives. This failure constitutes an egregious violation of NEPA's requirement to analyze a range of reasonable alternatives.

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The Powder Rim Proposed ACEC and Associated Winter Ranges Must Receive Full Protection from Surface Disturbances

The Powder Rim is a large and important juniper scrub woodland, which also boasts its own desert elk herd and seven species of rare native plants. According to Pavlacky (2000), "Since juniper woodlands make up a mere 2% of the land area in Wyoming, the juniper woodland bird community is unique and has substantial conservation value" (p.171). He added, "Because very few large woodland patches > 19 km^2 are present on the landscape, woodlands of this size have high conservation value" (p. 181). The Powder Rim has one of only two juniper woodlands in Wyoming that exceeds this size. Juniper woodlands are the third most prevalent vegetation type in the DFPA, covering 6.7% of the project area along the northern part of the Powder Rim. DFEIS at 3-47.

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Seig (1991) found higher bird densities and greater species richness in juniper woodlands than in neighboring grasslands in the Badlands of South Dakota, and pointed out the importance of juniper in providing thermal cover and forage. In the Great Divide planning area, juniper woodlands along the Powder Rim and elsewhere are likely to perform a similar ecological role. The importance of junipers as a nesting substrate for ferruginous hawks has been documented by a number of different researchers (e.g., Howard and Wolfe 1976, Powers 1976, Smith and Murphy 1978, Smith and Murphy 1982, Woffinden and Murphy 1989, Bechard et al. 1990).

Although ferruginous hawk nesting in junipers has not yet been documented for the Powder Rim, this may be an indicator of little survey effort for this species along the Powder Rim rather than a lack of ferruginous hawk nesting activity in this habitat type.

Fitton and Scott (1984) listed 10 species virtually confined to Utah juniper communities in Wyoming: gray flycatcher, ash-throated flycatcher, western scrub jay, plain titmouse, bushtit, Bewick's wren, blue-gray gnatcatcher, gray vireo, black-throated gray warbler, and Scott's oriole. Fitton (1989) described these juniper obligates as follows. The ash-throated flycatcher is a secondary cavity nester that utilizes steeper slopes with old-growth juniper. The plain titmouse requires old growth juniper for cavity nesting and foraging. Gray vireos inhabit mature stands of juniper with moderate canopy closure and well-developed shrub understory or patches of shrubs in clearings. The Scott's oriole requires mature juniper with moderate to sparse canopy cover, often foraging on smaller junipers or deciduous shrubs. Fitton reported that the ash-throated flycatcher and scrub jay each declined 66-67% in its juniper range during the 1970s and 1980s. Bushtits and western scrub jays are particularly sensitive to human disturbance, and abandon their nests easily. Fitton recommended the ash-throated flycatcher, scrub jay, plain titmouse, bushtit, gray vireo, and Scott's oriole as "Species in need of special management in Wyoming." The ash-throated flycatcher, western scrub jay, and juniper titmouse were granted Special Concern III status by the Wyoming Game and Fish Department (Pavlacky 2000). According to the Wyoming Natural Diversity Database, four of the sagebrush obligates found along Powder Rim have been granted NSS3 status by WGFD: the western scrub jay, juniper titmouse, bushtit, and Scott's oriole. Species with this status receive a mitigation category of "High," for which WGFD recommends no net loss of habitat function through enhancement of degraded habitat when a habitat disturbing project is proposed. 11

Nine of Wyoming's ten juniper obligate birds (all except the gray vireo) have nest records along the Powder Rim, and several lesser sites farther east host a lesser number of these species (Fitton and Scott 1984). In the DFPA, Scott's orioles have been recorded from both Powder Rim and from the vicinity of Anthill Reservoir, and Wyoming's first nesting record for this species came from the latter site (Findholt and Fitton 1983). Findholt (1983) recorded blue-gray gnatcatcher nesting on the Powder Rim, and also noted that Wyoming's original nest record for the plain titmouse came from the Powder Rim as well.

Pavlacky (2000) noted that species typically classified as sagebrush obligates also are found in association with juniper woodlands: In this study, Brewer's sparrows were associated with small, early-succession juniper patches, and the green-tailed towhee showed an affinity for larger juniper patches, but preferred open, shrubby stands. Mourning dove, mountain bluebird, plumbeous vireo, and juniper titmouse also occupy dense, mature woodlands with little shrub cover, high grass cover, and little juniper regeneration (Pavlacky 2000). During the course of BCA field work, we also noted an abundance of mourning doves and raptors in the juniper woodlands along the Powder Rim. These juniper woodlands, and the juniper obligate songbirds that depend on them, will receive adequate protection if the BLM chooses to place big game crucial ranges and the Powder Rim proposed ACEC off-limits to disturbance for the purposes of this project. We strongly urge the BLM to adopt this course of action. 11a

The Monument Valley Management Area Should be Protected from Drilling 12

The Monument Valley Management Area (MVMA) was identified as a possible Area of Critical Environmental Concern (ACEC) under the Green River RMP, with the stipulation that conferring ACEC status would be evaluated at a later time. The Desolation Flats project would allow 12a

full-field development at 640-acre spacing in the MVMA: "The Operators anticipate that...the remaining 13 wells [would be] located within the Monument Valley Management Area (MVMA), RSFO administrative area." DFEIS at 2-1. In addition, 13 wells permitted under the Mulligan Draw Project also fall within the MVMA. Ibid. This would mean that a total of 26 wells would be drilled in this sensitive area, damaging this area's eligibility for ACEC status and possibly precluding ACEC designation. The sensitive nature of the landscapes, viewsheds, primitive qualities, and paleontological resources in this area dictate that oil and gas development should not occur at all in this area. 12a

The Proposed Action would allow 640-acre well spacing within the MVMA, a full-field development scenario. DFEIS at 4-91. The BLM further notes, "Hunter options to relocate to other hunting areas within the region are becoming increasingly constrained. The extent of oil and gas development in the region makes it difficult to find hunting opportunities in more natural settings where isolation and solitude persist. The Adobe Town WSA and MVMA are the largest and closest relocation possibilities with these characteristics. However, 23 square miles of the MVMA, 14 of which are on BLM administered property, are also included in the DFPA. The MVMA and WSA are generally higher in elevation than the DFPA. Hunters (or other recreationists) looking south and east could view oil and gas facilities and activities both within the MVMA and east of the WSA. The level of disturbance to the visual resource and oil field activities could reduce the number of users. There are no areas in the region with the isolation and solitude characteristics of Adobe Town/Monument Valley to which hunters could relocate." DFEIS at 4-91. 12b

12

The MVMA is designated as VRM Class 2, and by BLM's own admission, proposed drilling in the MVMA under the Proposed Action would exceed the level of contrast permitted in VRM Class 2, and thus impacts would be considered significant. DFEIS at 4-95. Specifically:

> "Drilling in the 14 BLM administered sections within the MVMA would produce contrasts in line, form, color, and texture as previously described. These contrasts would likely persist although at reduced levels after drilling. The impacts in these sections would be considered significant if site disturbances were not reclaimed to VRM levels necessary for the 14 square miles to be considered for inclusion in a potential future ACEC. They could eliminate the opportunity for future generations of recreationists to experience the relatively undisturbed character of visual resources within these 14 sections."

DFEIS at 4-95. A visibility analysis conducted in the MVMA at BLM's request further revealed, "The generally open nature of the site and its slope toward the road would make it difficult to mitigate visual impacts." DFEIS at 4-96. This would violate the Acceptable Plan Criteria for VRM Class 2 areas, which state, "Pad locations should be hidden by topographical features," and "Screen locations where possible." DFEIS at A-2. BLM also notes, "Impacts to recreation resources resulting from 13 wells in the MVMA would be considered significant because adjacent Adobe Town and MVMA are two of the few remaining areas in the region with landscape characteristics that provide isolation and solitude." DFEIS at 4-92. Thus, impacts to visual resources in this VRM Class 2 area violate Visual Resource Management directives for the MVMA. 12c

This aspect of the project fails to comply with the Green River RMP, which requires management actions in VRM Class 2 areas to "blend into and retain the existing character of the natural landscape." Green River RMP at 21. Note that this criterion is much simpler than the added requirements imposed by the creation of the MVMA: While the eligibility of the MVMA for

ACEC status after full-field development might be debatable, the simple fact that the "existing character of the natural landscape" would be destroyed by development is not. Full-field development at 640-acre spacing, as proposed in the Desolation Flats EIS, would destroy the isolation and solitude present in the area (by BLM's own admission, see above), which are so important to the character of the MVMA, would be destroyed. Thus, the portion of the Desolation Flats EIS which allows full-field development in the MVMA violates the Green River RMP, and as such, constitutes a violation of FLPMA's requirement that all project-level documents conform to the Resource Management Plan. 12c

12

The BLM notes that 9 sections within the MVMA that are covered by the Desolation Flats project are currently in private ownership, and the BLM cannot control the impacts to these parcels. DFEIS at 4-95. While this statement is largely true, it is also true that this checkerboard ownership pattern does nothing to abrogate the agency's responsibility to maintain the MVMA to VRM Class 2 standards. The fact of private inholdings is therefore irrelevant to the protective measures required under the Green River RMP. 12d

The BLM also notes that one well per section was permitted in the MVMA under the Mulligan Draw project, and attempts to use this honest mistake (at best) or intentional violation of federal law (at worst) as a rationale to extend unacceptable visual impacts into other parts of the MVMA. DFEIS at 4-95. While this breach of law may have gone unpunished during the Mulligan Draw project, the agency can rest assured that it will not be tolerated for the Desolation Flats project.

It is also important to note that impacts to visual resources would equally high under the "No Action" alternative as the Proposed Action, and even higher in Alternative A. DFEIS at 4-96. Thus, in its entire range of alternatives for the Desolation Flats project the BLM has three alternatives that would create significant impacts to the visual resources of the MVMA, and no alternatives that do not create such impacts (which also violate the Green River RMP and thus FLPMA). Thus, the Desolation Flats DEIS not only fails to rigorously explore and objectively evaluate a range of reasonable alternatives, but it also fails to explore and evaluate even a single legal alternative. 12e

WILDLIFE

The conversion of significant portions the Desolation Flats project area into a full-field development for natural gas with 160- to 640-acre well spacing and the accompanying maze of roads, pipelines, and wellpads will have major impacts on local wildlife populations. "The principal wildlife impacts likely to be associated with the Proposed Action or alternatives include: (1) a direct loss of certain wildlife habitat, (2) the displacement of certain wildlife species, (3) an increase in the potential for collisions between wildlife and motor vehicles, and (4) and increase in the potential for illegal kill and harassment of wildlife." DFEIS at 4-56. The magnitude of each of these impacts will depend largely on the siting of roads, wells, and pipelines, information which is not presented or contemplated in the DFEIS. Will major trunk roads run across big game migration routes, increasing roadkill? Will wells, which must be serviced year-round, be sited on crucial winter ranges or within three miles of sage grouse leks, driving sensitive wildlife away from critically important habitats? 13

WGFD (1998) has set forth recommendations for allowing habitat-disturbing activities and mitigation for these activities if allowed. Federal Candidate Species and Native Species Status 1 and 2 receive a mitigation category of "Vital," for which habitat directly limits populations and restoration may be impossible; **habitat function must be maintained if habitat modification is allowed to occur**. In the DFPA, species in this category likely to be impacted by the project include mountain plover, bald eagle, Townsend's big-eared bat, roundtail chub, bluehead sucker, and flannelmouth sucker. Habitats such as Crucial Winter and Crucial Winter Relief Ranges also receive a mitigation category of "Vital," regardless of whether or not the crucial ranges of two or more species overlap.

Native Species Status 3 receive a mitigation category of "High," for which WGFD recommend **no net loss of habitat function** through enhancement of degraded habitat when a habitat disturbing project is proposed. In the DFPA, species in this category likely to be impacted by the project include the merlin, peregrine falcon, long-billed curlew, western scrub-jay, juniper titmouse, bushtit, Scott's oriole, dwarf shrew, white-tailed prairie dog, Great Basin pocket mouse, silky pocket mouse, and swift fox. Big game winter-yearlong ranges and parturition areas also fall under the "High" reclamation category, demanding no net loss of habitat function. Furthermore, for Endangered or Threatened Species such as the razorback sucker, bonytail, Colorado pikeminnow, humpback chub, and black-footed ferret, WGFD recommends exclusion of any habitat impacting activity. For these species, "The Commission recognizes that some wildlife or wildlife habitats are so rare, complex and/or fragile that mitigation options are not available. Total exclusion of adverse impacts is all that will ensure preservation of these irreplaceable habitats" (Ibid., p. 4). We concur wholeheartedly, and point out that FLPMA carries a legal requirement for the BLM to manage its lands in accord with state directives such as the WGFD Mitigation Policy. 13

The DFEIS provides, "If development occurs in areas of overlapping wildlife resource concerns, mitigation measures for each individual resource would be implemented." DFEIS at 4-56. This distinction could not possibly be more arbitrary and capricious, because the converse would be that if an area is of wildlife resource concern for only one species, then mitigation measures will not be implemented. Is antelope crucial winter range less important to antelope when it does not overlap with a sage grouse lek or prairie dog colony? Is a mountain plover nesting concentration area less important to the survival of that species when it does not occur in an elk winter range? Mitigation measures should be applied to every acre of sensitive wildlife habitats regardless of whether it also happens to be a crucial habitat for a second or third species. By ocular estimate, half of the planning area appears to be in an area of wildlife resource concern for only one species, with not overlaps. *See* map, DFEIS at G-1. The BLM should clarify in the FEIS that wildlife mitigation measures will indeed be implemented on every acre of sensitive wildlife habitat, not just in areas where sensitive habitats for two different species overlap. 13a 13b 13c

For mule deer, pronghorns, and elk, the BLM asserts that "[s]ignificant impacts in these areas of overlapping resources are not expected if the mitigation measures for each of these individual resources are implemented." See DFEIS at 4-61, 4-60, and 4-62. Obviously, if those areas that are not overlapping and yet are of high wildlife concern for one species are not granted mitigation measures, then significant impacts would implicitly be expected. These impacts constitute unnecessary and undue degradation in light of the availability of mitigation measures of nominal inconvenience to the Operators. 13d

For wildlife, the Impact Significance Criteria included:

- Whether or not an officially designated crucial wildlife habitat was eliminated, sustained a permanent reduction in size, or was otherwise rendered unsuitable.
- Whether or not any effect, direct or indirect, results in a long-term decline in recruitment and/or survival of a wildlife population.

- Disruption of greater sage-grouse, or raptor breeding or nesting activities to the extent that reproductive success is threatened or damaged.

DFEIS at 4-57. All three of these Impact Significance Criteria require that a spatially explicit layout of wells, roads, and pipelines be presented as a prerequisite to any analysis of impact significance. **13**

Seasonal stipulations for surface disturbance are proposed for important big game winter habitat, sage grouse and sharp-tail leks and crucial winter relief range, and raptor nests. DFEIS at B-1, B-2. These seasonal stipulations are insufficient in and of themselves, as the do not prevent ropads and wells from being sited in sensitive habitats when the animals are not present, thereby degrading habitat quality during the crucial season. **13e** But in addition to this important shortcoming, seasonal stipulations are essentially meaningless because waivers are almost always approved on request. For all wildlife species, waivers to seasonal protections under the Desolation Flats project would be available at the Operator's request and the approval of the Authorizing Officer. DFEIS at B-1, B-2. The BLM's pathetic record of waiving these seasonal restrictions is a dismal proof that they are essentially voluntary and meaningless: Last winter, the Pinedale Field Office granted 38 of 42 exceptions (over 90%), Rock Springs Field Office granted 9 of 11 exceptions (82%), and the Rawlins Field Office granted 12 of 16 exceptions (75%). If the BLM is going to grant most exceptions to these seasonal stipulations, then major impacts to wildlife on sensitive ranges will continue to occur, and the mitigative value of these seasonal stipulations is voided. **13f** For these reasons, prohibitions on surface disturbance, rather than seasonal stipulations, are the minimum protections needed on sensitive wildlife habitats.

Oil and gas development is occurring at a breakneck pace all across the Red Desert, and yet the DFEIS completely ignores the cumulative effects of the massive roading, habitat fragmentation, construction, and increased activity on the Red Desert's native wildlife. **13g** According to Ingelfinger's (2001) study of sagebrush birds in Wyoming,

> "the cumulative impact of state wide patterns of [oil and gas] development in sagebrush communities could cause substantial habitat fragmentation that impacts the sagebrush avian community negatively" (p.34), and "While the population consequences of development of one natural gas field may not be important, the development of multiple gas fields simultaneously, accompanied by historic sagebrush management practices, could have important long-term population ramifications. Given the inability of sagebrush obligate passerines to expand their populations quickly…it may take decades for sagebrush obligates to recover following reclamation" (p. 72).

Similar cumulative effects are being felt by mountain plovers, prairie dogs, elk, pronghorns, sage grouse, and burrowing owls, all of which are sensitive to disturbance. Postovit and Postovit (1989) stated, "Although individual energy projects will seldom severely affect raptors over large geographic areas, such developments are often clustered and could thereby affect regional populations" (p. 171). Parrish et al. (1994) echoed these concerns regarding raptors, noting that "even less radical habitat alterations may have a significant impact over a large area – e.g., numerous small/medium alterations in close proximity, such as gas fields" (p. 53). Thus, a credible cumulative impacts analysis is needed on the basis of the ecological needs of wildlife on a regional scale. **13h**

In lieu of a Cumulative Impacts Analysis on threatened, endangered, and sensitive wildlife species, the BLM merely excuses itself from this important analysis by stating "However, the application of monitoring (Wildlife Monitoring/Mitigation Plan for this project; Appendix H) and

mitigation measures associated with each of the projects within the CIA [Cumulative Impacts Analysis] area is expected to provide adequate protection for threatened, endangered, proposed, and sensitive species from past, present, and potential future actions…Through these efforts, cumulative impacts to special status wildlife species are not expected to be significant." DFEIS at 5-22. NEPA does not allow the agency to skip a cumulative impacts analysis on the basis that agency personnel believe (in the absence of any scientific support, we might add) that mitigation measures are adequate to prevent cumulative impacts. **13** **13i**

The impacts on wildlife species are wholly dependent on the placement and mitigation measures of development that occurs on sensitive wildlife habitats. And yet for the Proposed Action, the DFEIS states, "Well placement within the DFPA is not known at this time, therefore it was assumed that any section may potentially be developed." DFEIS at 4-57. Thus, it is impossible to quantify or even estimate impacts to any wildlife species, because the agency has no idea to what degree and with what intensity impacts will occur in the crucial habitat for a given wildlife species. Thus, the BLM is completely unable to provide the "hard look" required by NEPA and must go back to the drawing board, presenting a full disclosure of locations of site disturbances and a credible evaluation of subsequent impacts for each wildlife species. **13j**

Habitat Fragmentation

Habitat fragmentation occurs whenever there is a change in the spatial continuity of the habitat that affects occupancy, survival or reproduction in a particular species, whether or not a net loss of habitat accompanies the spatial change (Franklin et al. 2002). Oil and gas development, with its sprawl of drilling pads, access roads, and pipelines, is the primary cause of habitat fragmentation in the habitats of the DFPA. The Proposed Action entails a well spacing pattern that will maximize habitat fragmentation over the long term; we urge the BLM to adopt a new Proposed Action that uses directional drilling and well clustering to minimize habitat fragmentation, and thus avoid the unnecessary and undue degradation of lands and resources inherent to the current Proposed Action. **14a**

In the Proposed Action, "Existing disturbance includes: 126.1 mi of primary roads (611.1 ac); 132.9 mi of secondary roads (322.3 ac); 402 mi of two-track roads (194.5 ac); 82.2 mi pipeline (39.9 ac) and 338.6 areas [sic] of other disturbed areas." DFEIS at 4-33. Operators estimate that each new well will require 1.5 miles of new road construction and 1 mile of new pipeline construction, totaling an estimated 542 miles of new roads and 361 miles of new pipelines. DFEIS at 2-21. This is an unacceptably high total. The cumulative total surface disturbance when project-related surface disturbance is added to existing disturbance would take in 2.8% of the project area acreage. DFEIS at 4-33. Following reclamation of initial disturbance, overall disturbance would be approximately 1.6% of the project area, up from 0.5% currently. Ibid. Furthermore, "The DFPA Operators anticipate that drilling would typically occur at 2 to 4 wells per section where hydrocarbons are encountered." DFEIS at 4-1. This massive habitat fragmentation is largely preventable through clustering many wells per well pads and drilling directionally; habitat fragmentation on the scale proposed in the Desolation Flats project is therefore unnecessary and undue degradation of the lands and resources in the DFPA. The BLM must choose an alternate course of action that does not entail this massive damage to landscapes and habitats. **14** **14b**

Although the portion of the landscape physically disturbed by roads, wellpads, and pipelines is often a relatively small percentage of the overall landscape, GIS analysis of full-field oil and gas development incorporating quarter-mile buffers to account for habitat degradation due to edge **14c**

effects indicates that almost 100% of lands within a fully developed gas field are degraded (Weller et al. 2002). In this way, the development of an oil and gas field results in widespread habitat destruction that extends well beyond the acreage of roads and wellpads that are bulldozed in. 14c

The DFEIS notes that dwarf shrews, a BLM Sensitive Species, have been collected in eastern Sweetwater County and are likely present in the DFPA. DFEIS at 4-82. Shrews are very small and are poor dispersers. Roads and well pads may constitute dispersal barriers for these tiny mammals. With this in mind, the BLM must analyze the effects of the intensive fragmentation of sagebrush steppe by roads and wellpads, the effects of this fragmentation on shrew dispersal, the degree to which shrew populations would be split into small metapopulations, and the effects that such population shifts would have on vulnerability to inbreeding, stochastic disturbance events such as adverse weather or disease outbreaks, predation, and ultimately to the overall viability of shrew populations and metapopulations. 14d

Predation is believed to be the major factor in the decline of burrowing owl populations in Canada, and habitat fragmentation also serves to increase predation risk in burrowing owls (James et al. 1997, Hjertaas 1997). The BLM must analyze the increase in predation on burrowing owls for all alternatives and reach conclusions about burrowing owl population dynamics that are supported by science. 14e

Fragmentation of shrubsteppe habitats has a particularly strong negative impact on passerine birds. Knick and Rotenberry (1995) and found that sage sparrows and sage thrashers decreased with decreasing patch size and percent sagebrush cover, and reached the following conclusion:

> "Our results demonstrate that fragmentation of shrubsteppe significantly influenced the presence of shrub-obligate species. Because of restoration difficulties, the disturbance of semiarid shrubsteppe may cause irreversible loss of habitat and significant long-term consequences for the conservation of shrub-obligate birds" (p. 1059). 14

Ingelfinger (2001) found significant declines in nesting songbirds within 100m of gas field roads, and also found that sage sparrows declined near pipelines. Kerley (1994) found that 67% of songbird species selected for the tallest available sagebrush stands, and nest success was associated with 41% shrub cover, while the two nests in 15% shrub cover were both unsuccessful. Oil and gas development also creates nesting structures for ravens, which are an important nest predator on sagebrush bird species (Ingelfinger 2001).

Three species of sagebrush obligate passerines, the sage sparrow, Brewer's sparrow, and sage thrasher, have been documented or are likely to be found in the DFPA (DFEIS at 4-83). For each of the species, BLM argues that sagebrush habitats required by this species are abundant, and the impacts of the project are relatively small in terms of acreage, and therefore the impacts to these species are expected to be minimal. The BLM has failed to conduct sufficient analysis of these impacts to warrant such a conclusion. 14f

Ingelfinger (2001) conducted a study of sagebrush birds in a western Wyoming gas field and found that as gravel roads increased, densities of sagebrush obligate birds, Brewer's sparrows, and sage sparrows declined, while horned larks (a grassland species) increased. According to his findings, "roads associated with natural gas development negatively impact sagebrush obligate passerines. Impacts are greatest along access roads where traffic volume is high" (p. 69), but "bird densities are reduced along roadways regardless of traffic volume" (p.71). Ingelfinger

(2001) found significant declines in nesting songbirds within 100m of gas field roads, and also found that sage sparrows declined near pipelines. Kerley (1994) found that small patches had fewer shrub-nesting species than large patches, and the green-tailed towhee, an interior sagebrush species, was entirely absent from small patches. Remnant patches smaller than 1 ha will not support sagebrush shrub-nesting birds (Kerley 1994). 14

In light of these scientific findings the BLM must take the following steps in order to satisfy NEPA's requirements of a credible scientific analysis and hard look: (1) map the locations of all roads, pipelines, and well sites for the project in relation to the sagebrush steppe habitat found within the DFPA; (2) buffer all surface-disturbing areas with a 100 m buffer and subtract this area from available sagebrush habitat; (3) analyze the size of remaining blocks of sagebrush habitat outside these buffer areas and subtract all blocks smaller than 1 hectare from the available total; (4) present this post-disturbance acreage of sagebrush habitat available to sagebrush-obligate passerines; and (5) then, and only then, analyze the population-levels effects of the Desolation Flats project on sagebrush obligate birds and present these results in the FEIS prior to reaching a decision on the project. 14g

Big Game Winter Ranges and Calving Areas

The DFEIS analyzes appallingly weak mitigation guidelines for crucial winter ranges, and fails even to consider adequate measures to protect crucial winter range. Timing stipulations preventing construction activities would apply to crucial big game winter ranges between November 15 and April 30. DFEIS at 2-38. These stipulations would allow road and facility construction in the heart of crucial winter ranges, as long as it didn't occur during the winter season, and furthermore would allow for waivers that would permit winter construction activities in crucial winter range. Wintering elk, deer, and bighorn sheep are sensitive to disturbances of all kinds. Both snowmobiles and cross-country skiers are known to cause wintering ungulates to flee (Richens and Lavigne 1978, Eckstein et al. 1979, Aune 1981, Freddy et al. 1986). Because flight response may be particularly costly to wintering ungulates (Parker et al. 1984), disturbance on winter ranges should be avoided at all costs. As a result, winter ranges should be closed to all road-building and drilling activity year-round. 15 15a

The BLM claims that each alternative in the DFEIS would result in "NSI {No Significant Impact} w/ mitigation" with regard to big game crucial winter ranges. DFEIS at 2-46. This is a completely unsupported and unsupportable assertion. Does the BLM argue new roads and wellpads in the heart of crucial winter range will have no impact on these ungulates? That increased traffic from snowplows and well maintenance, as well as noise from well operations, will not stress wintering animals or drive them away from optimal winter ranges and onto marginal habitats, where condition and chances for survival for the animals are degraded? The BLM's argument that no significant impacts will accrue from such actions ignores a large and unequivocal body of scientific evidence that contradicts this conclusion. The BLM's failure to take account of this evidence is a violation of NEPA's requirement that each EIS be held to a high standard of scientific integrity. 15b 15c 15d

According to BLM, "Production operations would occur on a year-round basis, occasionally limited by weather, maintenance, workover operations, and ground and site conditions. Production operations would require use and maintenance of access roads within the project area on a year-round basis." DFEIS at 2-24. In addition, "'Project personnel will also be advised to minimize stopping and exiting their vehicles in big game winter habitat while there is snow on the ground," indicating that vehicle traffic will indeed occur in crucial winter ranges during the

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winter season. DFEIS at H-19. Furthermore, "Winter maintenance would include blading of snow from the access road as necessary, with the blade kept above the surface." Ibid. These candid assessments of the continuous nature of human activities on oil and gas access roads and wellsites indicate a continuous level of vehicle traffic which would occur within crucial winter range if development were to occur within or nearby this sensitive habitat, and illustrate why oil and gas production facilities and access roads must never be sited on crucial winter ranges. 15

The BLM also has failed to analyze the effects on increased vehicle traffic as well as snow-plowing that occurs on existing roads as a result of the new and increased level of development associated with the 385 new wells. These wells will need to be checked periodically by personnel in vehicles, and the plowing of roads that might otherwise be allowed to drift over constitutes yet another vehicular intrusion into crucial winter ranges, apart from traffic and plowing on newly constructed roads or facilities. NEPA requires that the BLM take a "hard look" at impacts to wildlife, including the impacts of increased traffic and plowing on existing roads, and what this might mean to the survival and subsequent fecundity of elk and other ungulates utilizing crucial winter ranges. This analysis has not been done in the DEIS and must therefore be presented in the FEIS. 15e 15f 15g

Elk

A number of studies have shown that elk avoid open roads (Grover and Thompson 1986, Rowland et al. 2000). Edge and Marcum (1991) found that elk use was reduced within 1.5 km of roads, except where there was topographic cover. (It is important to note that much of the Great Divide planning area has very little topographic variation, and thus provides little topographic cover). Gratson and Whitman (2000) found that hunter success was higher in roadless areas than in heavily roaded areas, and that closing roads increased hunter success rates. On the Black Hills, elk chose their day bedding sites to avoid tertiary roads and even horse trails (Cooper and Millspaugh 1999). Cole et al. (1997) found that reducing open road densities led to smaller elk home ranges, fewer movements, and higher survival rates. Thus, it is important to keep road construction out of crucial ranges to avoid displacing elk to marginal habitats at crucial times of year. 16a

Disturbances associated with oil and gas exploration and development can drive elk away from their preferred calving range. Powell (in press) also found that experimental disturbances in calving habitats led to reduced use of disturbed areas in the Jack Morrow Hills of the northwestern Red Desert, an area of comparable habitat with the DFPA. Powell speculated that in the absence of forest cover, elk would flee in order to put a topographic barrier between themselves and the source of the disturbance. With this in mind, the disturbed area surrounding a road or a gas well would effectively be the entire viewshed visible from that road or structure. According to Powell (in press, p. i), 16

> Disturbance treatments, simulating human activity at a gas/oil well, were conducted on calving ranges during the parturition period. Significantly fewer pellet groups were counted in disturbed areas of calving ranges compared to those areas not disturbed ($p<0.05$). These results support maintaining disturbance-free area for calving elk.

Powell concluded,

> These experiments support observations that suggest elk expend more energy when disturbed by humans and that even short-term, low-level disturbance can result in displacement of elk from traditional calving areas. Inferences about population level effects appear supported in the ungulate literature. Stipulations that restrict entry into calving areas and those stipulations aimed at reducing daily disturbance of elk appear warranted in the JMH study area. (Ibid., p. 43).

We concur with the need to keep all calving areas in the DFPA disturbance-free.

But beyond the temporary effects of construction-related disturbance, the long-term disturbance associated with infrequent but steady traffic along existing roads and wells also drive elk away. According to Powell (in press, p. 23),

> Habitat use patterns of elk in the JMH are also strongly influenced by roads, and areas within 2 km of major roads are used significantly less than expected. This avoidance of roads reduces the amount of habitat effectively available to elk and makes the effective habitat lost much larger than the actual physical "footprint" of a road or structure. 16

A number of studies have shown that elk avoid open roads (Grover and Thompson 1986, Rowland et al. 2000). Edge and Marcum (1991) found that elk use was reduced within 1.5 km of roads, except where there was topographic cover. (It is important to note that much of the Great Divide planning area has very little topographic variation, and thus provides little topographic cover). Gratson and Whitman (2000) found that hunter success was higher in roadless areas than in heavily roaded areas, and that closing roads increased hunter success rates. On the Black Hills, elk chose their day bedding sites to avoid tertiary roads and even horse trails (Cooper and Millspaugh 1999). Cole et al. (1997) found that reducing open road densities led to smaller elk home ranges, fewer movements, and higher survival rates. The maintenance of low road densities in important habitat areas is necessary to maintain healthy elk populations. 16b

Several studies have shown that elk abandon calving and winter ranges in response to oilfield development. In mountainous habitats, the construction of a small number of oil or gas wells has caused elk to abandon substantial portions of their traditional winter range (Johnson and Wollrab 1987, Van Dyke and Klein 1996). Drilling in the mountains of western Wyoming displaced elk from their traditional calving range (Johnson and Lockman 1979, Johnson and Wollrab 1987). The lands in the DFPA are considerably more open, with less cover, and thus elk would be expected to be even more susceptible to disturbance in this area. Powell and Lindzey (2001) found that elk avoid lands within 1.5 kilometers of oilfield roads and well sites in sagebrush habitats of the Red Desert. Migration corridors may in some cases be equally important to large mammals and are susceptible to impacts from oil and gas development (Sawyer et al., in press). Thus, winter range areas should be withdrawn from the surface disturbances associated with oil and gas development. 16c

The BLM correctly observes that elk are quite sensitive to human activity and may be displaced from construction areas by 0.75-2 miles. DFEIS at 4-63. The BLM then waves its arms and makes a series of blatantly unsupported, and unsupportable, statements: 16d

> "Only localized, short-term displacement of elk during the development phase of the project is expected to occur in those areas that are designated as elk seasonal ranges....By the time the field is under full production, construction activities will have ceased, and traffic and human activities in general would be greatly

reduced. As a result, this impact would be minimal and it is unlikely that elk would be significantly displaced under full field development."

DFEIS at 4-63. But it is also true that elk will continue to avoid areas with roads and wells after the construction period is over by a similar distance (Powell and Lindzey 2001, Powell in press). This series of statements is so contrary to the established science that it is baffling that the BLM could have reached a conclusion so out of touch with reality. This egregious analytical error discredits the BLM's scientific integrity and renders the EIS analysis on impacts to elk winter range completely worthless. A credible literature review, or even communication with agency counterparts in Rock Springs, would have revealed that studies on elk and oil and gas development in western Wyoming have demonstrated that elk avoid areas where roads and wells are found regardless of whether construction activities are occurring. 16e 16

A number of studies have shown that elk avoid open roads (Grover and Thompson 1986, Rowland et al. 2000). Edge and Marcum (1991) found that elk use was reduced within 1.5 km of roads, except where there was topographic cover. (It is important to note that much of the Great Divide planning area has very little topographic variation, and thus provides little topographic cover). Gratson and Whitman (2000) found that hunter success was higher in roadless areas than in heavily roaded areas, and that closing roads increased hunter success rates. On the Black Hills, elk chose their day bedding sites to avoid tertiary roads and even horse trails (Cooper and Millspaugh 1999). Cole et al. (1997) found that reducing open road densities led to smaller elk home ranges, fewer movements, and higher survival rates. The reduction of road densities on the winter ranges as a whole and the maintenance of low road densities in important habitat areas would aid in maintaining healthy elk populations. 16f

Mule Deer

The ability of mule deer to forage effectively on winter ranges in a stress-free environment is the key to maintaining viable populations in this region. Winter mortality has claimed up to 80% of the adult mule deer population of southeastern Wyoming, and also depresses fawn production during the following spring (Strickland 1975). On winter ranges, mule deer are easily disturbed by snowmobile traffic and even nonmotorized visitors (Freddy et al. 1996). This can be a critical factor, because metabolic costs of locomotion in snow can be five times as great as normal locomotion costs for mule deer (Parker et al. 1984). Thus, due to the sensitivity of mule deer to disturbance on winter ranges and the crucial nature of winter range performance to maintaining healthy deer populations, mule deer winter ranges must be with drawn from all road construction and development, particularly oil and gas development, which would increase the level of human disturbance on these winter ranges. 17 17a

Pronghorns

The mitigation measures in the DFEIS are insufficient to protect antelope populations in the Washakie Basin. Antelope of the Bitter Creek herd, inhabiting the project area, are 41% below WGFD herd targets. DFEIS at 3-55. This indicates that this population is already stressed and should not be subjected to additional impacts to habitats, displacement from high-quality habitats or additional physiological stress. Winter range is critically important to pronghorn populations, as its availability and quality is likely the strongest determinant of population dynamics. Barrett (1982) reported that during a severe winter in Alberta, overall pronghorn mortality was 48.5%, with fawns and adult males taking particularly heavy losses. This same study documented that pregnant female pronghorns resorbed their fetuses when conditions were poor. Deep winter snows also decrease the survival rate of fawns born the following spring (Cook 1984). Emergency supplemental feeding in ineffective in promoting pronghorn survival during severe 18a 18

winter weather (e.g., Julian 1973, Barrett 1982). Thus, it is critically important to be sure that the winter ranges are maintained in the best possible condition. This means keeping all surface disturbances off of pronghorn crucial winter range to avoid disturbance and/or displacement of antelope as a result of vehicle traffic, well noise, or human activity during the crucial winter season. 18b

Regarding the most environmentally preferable course of action, the BLM makes a grossly inaccurate statement: "Reducing construction activities and vehicle traffic within pronghorn crucial winter range from November 15 to April 30, in accordance with BLM stipulations, would minimize the probability of adverse impacts from displacement during this critical time of year, and long-term adverse effects are not expected." In fact, mere timing stipulations do not ***minimize*** the probability of adverse impacts, and given the ease with which exceptions to these stipulations are granted, it is highly dubious that these stipulations even ***reduce*** the probability of adverse impacts. Nothing less that a prohibition of surface disturbing activities on crucial winter ranges actually minimizes the probability of adverse impacts. 18c

The BLM states, "The potential for vehicle collisions with pronghorn would increase as a result of increased vehicular traffic associated with the presence of construction crews and would continue (although at a reduced rate) throughout all phases of well operations." We appreciate the BLM's candid admission that regular vehicle traffic is an inherent part of gas production activities beyond the construction phase, a fact that is well-known to all who are familiar with oil and gas operations but which is seldom acknowledged by the agency. On crucial winter ranges, such vehicular activity in the midst of crucial winter range would potentially displace antelope from preferred habitats and/or increase the stress levels and metabolic expenditures for individual animals, either of which results in an elevated probability of overwinter mortality or reduced fawn viability the following spring. 18 18d

In the absence of any evidence, direct or indirect, the BLM asserts, "Disturbance of seasonal pronghorn ranges within the DFPA is not likely to reduce pronghorn carrying capacity within the Bitter Creek herd unit." DFEIS at 4-60. This claim is baseless and unsupportable. There are no scientifically credible studies (published in peer-reviewed journals) that indicate that oil and gas development on pronghorn winter ranges are without effect on pronghorn populations. There is no aspect of pronghorn behavioral ecology that would suggest that this species is more tolerant of industrial disturbance than other ungulates. Given the copious literature that indicates that roads and human activity tend to drive other ungulate species away from high-quality habitats, it is the prudent and conservative position to assume that pronghorn behave no differently, until proven otherwise. N this climate of uncertainty, the BLM has the responsibility to protect pronghorns from impacts of unknown magnitude, rather than find out later that oil and gas development on crucial winter ranges does indeed cause a major decline in herd populations. 18e 18f

Ferruginous Hawks and Other Raptors

The ferruginous hawk has been experiencing declines across the continent for the past 30 years, although Wyoming is often viewed as a stronghold for the species. The ferruginous hawk has been petitioned for listing under the Endangered Species Act in the past, and more recently it has been identified by the Wyoming Game and Fish Department as a Species of Special Concern (Oakleaf et al. 1996). As a result, ferruginous hawks are of special concern and deserve the strongest protection available in the context of this project. 19 19a

Oil and gas development and the associated human activity can have major impacts on raptor nest

success. The primary impact to raptor populations is direct disturbance of raptors on the nest, leading to reductions or loss of viability for eggs or nestlings. Disturbance of nesting raptors may cause nest abandonment, damage to the eggs, subject eggs or nestlings to cooling, overheating, or dehydration leading to mortality, prevent young nestlings from receiving sufficient feedings to remain viable, and cause premature fledging (Parrish et al. 1994). Thus, the BLM should establish adequate nest buffers (a minimum of 1 mile in diameter for all species, with larger buffers for ferruginous hawks) around nest sites, preventing all construction of developments (such as wells and roads) that would lead to future disturbance of nesting raptors through focusing human activities in these areas. Seasonal restrictions are insufficient; a well or road constructed outside the nesting season is still likely to lead to nest abandonment or reductions in recruitment due to disturbance from vehicle traffic that does occur during the nesting period. 19b 19c

Ferruginous hawks are among the most sensitive of all raptor species, and are prone to nest abandonment if disturbed (Parrish et al. 1994). Nest abandonment, egg mortality, parental neglect, and premature fledging are common results of disturbing ferruginous hawk nests (White and Thurow 1985). Smith and Murphy (1978) noted that increased human access is a primary threat to the viability of ferruginous hawk nest success. For their central Utah study, these researchers found that "in all instances of nesting failure where the cause could definitely be determined, humans were at fault" (p. 87). White and Thurow (1985) found that walking disturbance and vehicle use had the greatest effect on ferruginous hawk nest success, while vehicle use had the greatest flushing distance. Instead of becoming habituated, most hawks in this study increased their flushing distances with repeated disturbance (Ibid.). In addition, disturbed nests averaged one less offspring fledged per nest when compared to undisturbed control nests. Oakleaf et al. (1996) pointed out that the cumulative effects of oil and gas development may impact large areas of ferruginous hawk habitat. 19

White and Thurow (1985) recommended quarter-mile nest buffers during years of prey abundance, but noted that sensitivity to disturbance increased when prey were scarce, and recommended that nest buffers be "considerably larger" during years of prey scarcity. Although Olendorff (1993) recommended buffer zones of only ½ mile for ferruginous hawk nests, he recommended much larger buffers during periods of prey scarcity. Because it is impractical to move roads away from nest sites when prey bases decline, the appropriate way to ensure the persistence of ferruginous hawks at traditional nesting sites is to use large buffers within which ground-disturbing activities are prohibited. Cerovski et al. (2001) reviewed the issue of appropriate nest buffers and recommended a 1-mile buffer, kept free from human disturbance. Thus, a minimum of 1-mile buffers **prohibiting surface disturbance** should apply to ferruginous hawk nest sites as well as all other raptor nest sites. 19d

Raptor nest buffers presented in the DFEIS are completely insufficient. Surface-disturbing activities, such as well, road, and pipeline construction, would be allowed as close as 1,200 feet from active ferruginous hawk nests and 825 feet of the nests of other raptor species, as long as construction activities occur outside the nesting season. DFEIS at H-17. The 0.5-mile to 1-mile buffer zones around active raptor offer only seasonal protections and apply only to construction activities (see DFIES at H-16); vehicle traffic, maintenance, and production activities can and will occur within a quarter mile of active raptor nests during the nesting season, with a strong likelihood of disturbing nesting raptors, causing temporary and/or permanent nest abandonment, and leading to the deaths of eggs and/or nestlings in the process. This is an unacceptable state of affairs, constitutes "unnecessary and undue degradation" to these wildlife populations, and therefore constitutes a violation of FLPMA. 19e 19f

The BLM's provisions to "allow for well placement planning and avoidance of impacts to actively nesting birds," (DFEIS at 4-85), while giving the appearance of strong protection on its face, reveal a possible fatal flaw in what it does not address. It is all well and good to prevent construction near nest sites while the hawks are present, but nests are used traditionally from year to year, and if a road or well site is constructed near a nest during the off-season, that nest site will be rendered non-viable the following year when the hawks return to their nesting territory. In addition, ferruginous hawks use the same nest from year to year and also build alternate nests within the same territory (Smith and Murphy 1978). Thus, historic as well as active nests deserve a strong degree of protection for traffic-related surface disturbances. The BLM must emplace solid, year-round protections that prevent the construction of roads and well-sites, which will inherently receive regular vehicle traffic throughout their productive lifetimes, regardless of nesting seasons, within 1 mile of ferruginous hawk nests, both active and historic. 19g 19h

In addition, mitigation measures in section 4.7.4.1.6 are once again referenced, and yet no such section can be found in the DFEIS. 19i

The Migratory Bird Treaty Act prevents the taking of any migratory birds, their parts, nests, or eggs except as permitted by regulations and does not require intent to be proven. 16 USC § 703. The Bald and Golden Eagle Protection Act prohibits knowingly taking, or taking with wanton disregard for the consequences of an action, any bald or golden eagle or their body parts, nests, or eggs, which includes collection, molestation, disturbance, or killing. 16 USC § 668. According to the DFEIS, "If nest manipulation or a situation requiring a 'taking' of a raptor nest becomes necessary a special permit will be obtained from the Denver USFWS office..." DFEIS at H-17. Removal or destruction of raptor nests, or causing abandonment of a nest or death of nestlings or eggs could constitute a violation of one or both of the above statutes. According to USFWS policy, permits for nest manipulation, including removal or relocation may, under certain circumstances, be issued for inactive nests only; no permits are issued for an active nest of any migratory bird species. Comments of Mike Long, USFWS, on the Lower Bush Creek CBM Exploratory Project, RSFO. The take of even inactive nests must therefore be done outside the nesting season and with the full involvement of the USFWS. 19 19j

The overall landscape-scale effects of widespread industrialization threaten the viability of raptor populations through habitat loss and fragmentation. Nest buffers currently in force are unlikely to safeguard the viability of native raptors in the Great Divide; a more conservative approach is needed in order to safeguard raptor viability in this region. White and Thurow (1985) stated: "We would prefer to see ecosystems kept intact (cf. Wagner 1977) rather than divided into isolated islands set aside for nesting raptors, because aspects of general land use other than restricted areas also affect the health of raptor populations" (p. 21). Oil and gas development results in habitat fragmentation and increased levels of human disturbance, impacting raptor species; nesting and foraging habitat loss can be substantial in the case of full-field development (Postovit and Postovit 1989). Even when surface-disturbing activities such as strip mining are located away from golden eagle nest sites, the destruction of important foraging habitats, such as prairie dog colonies, within the territory of nesting pairs can be a major problem for the viability of nesting golden eagles (Tyus and Lockhart 1979). Thus, not only should nest buffers be implemented, but the overall integrity of the landscape should be maintained (or improved in areas where it is currently degraded) in order to better provide for raptor viability. 19k 19l

Burrowing Owls

Nationwide, the burrowing owl is a species on the decline. As of 1997, over half of the agencies across North America tracking burrowing owl population trends reported declining populations, while none reported increasing populations (James and Espie 1997). Burrowing owl populations are highly susceptible to stochastic disturbances such as drought, and thus may decline more rapidly than would be predicted on the basis of demographic factors alone (Johnson 1997). In Wyoming, data suggest an overall population decline, with 17.5% reoccupancy of historic sites, but the spotty quality of historical data makes comparisons difficult (Korfanta et al. 2001). 19

The DFEIS states that surveys for burrowing owls "should" be conducted when construction projects are proposed on prairie dog colonies, and alludes to raptor nesting site protections in section 4.7.4.1.6 which would apply if burrowing owls are found. DFEIS at 4-83. First of all, the BLM should make the aforementioned burrowing owl surveys mandatory, rather than something that the Operator "should" do. Secondly, we were unable to locate a section 4.7.4.1.6, but would urge the BLM to implement a 1-mile buffer of no surface disturbance around any active or known burrowing owl nest, and not to allow activities within that buffer after the owls have departed the nest, in order to maintain the viability of nest site locations from year to year and to prevent active nest sites from being impacted during the off-season. 19m 19n 19o

Peregrine Falcon

The BLM asserts that cliffs high enough to provide suitable peregrine falcon nesting habitat (i.e., 200-300 feet high) are absent from the DFPA, and thus no impacts to peregrine falcons would be expected. DFEIS at 4-84. However, cliffs in the Haystacks and possibly along Willow Creek Rim meet these criteria and might possibly be used by peregrine falcons as nest sites. With this information in mind, the BLM should re-examine its analysis of impacts to peregrine falcons in the FEIS. 20

Wolves

There is no analysis of the effect of the Desolation Flats project on the dispersal or recovery of gray wolves in the southern Red Desert in the DFEIS. According to USFWS reports (Status Report of Ed Bangs, May 30, 2003), "We received a reliable report of a gray uncollared wolf-like canid about 7 miles north of Baggs, WY indicating that a wolf [or tame wolf hybrid] may have dispersed within spitting distance of Colorado." This report is available at http://mountain-prairie.fws.gov/wolf/wk05302003.htm. This area is very close to the DFPA, and within easy reach of a dispersing wolf. In light of this report, the BLM must initiate a Section 7 consultation with the USFWS concerning the possible impacts of the Desolation Flats project on dispersing wolves (and also the potential of eventual wolf colonization of the DFPA). The BLM must also present a credible impacts analysis of the effects of full-field development on wolf recovery in this area. 21a 21 21b

Sage Grouse

Wyoming sage grouse populations are some of the largest left in the nation and are relatively stable (showing a 17% decline from 1985-1994); nonetheless, sage grouse populations have experienced major declines rangewide in recent decades (Connelly and Braun 1997). WGFD (2000) reported that since 1952, there has been a 20% decline in the overall Wyoming sage grouse population, with some fragmented populations declining more than 80%; Christiansen (2000) reported a 40% statewide decline over the last 20 years. These declines are attributable at least in part to habitat loss due to mining and energy development and associated roads, and habitat fragmentation due to roads and well fields (Braun 1998). We have attached the Great Divide RMP Scoping Comments of Dr. Clait Braun, the world's leading sage grouse expert, to 22

this document and incorporate them into these comments in full by reference. We urge the BLM to comply with all of Dr. Braun's expert recommendations regarding sage grouse in the FEIS. It is crucially important that the Desolation Flats project include stronger mitigation measures to provide for the maintenance and recovery of sage grouse populations, because this bird is headed for the Endangered Species List if population losses continue. 22a 22b

Connelly et al. (2000) provide a review of the many short- and long-term effects of energy development on sage grouse. Aldridge (1998) noted that oil and gas development has contributed to the serious decline of Canadian sage grouse populations, stating,

> "the removal of vegetation for well sites, access roads, and associated facilities can fragment and reduce the availability of suitable habitat. Furthermore, human and mechanical disturbance at wells may disrupt breeding activities, and traffic on access roads could cause some fatalities of birds.... Even if sites are reclaimed at a later date, birds may fail to return to previously used habitats."

Currently, only 7 of 31 historic lek complexes remain active in Canada (Braun et al., in press). For this Canadian population, these researchers have stated, "The future plans for oil and gas developments within the range of sage-grouse are unknown, but expansion is expected. The cumulative impacts of further activities could result in reduction of the Alberta sage-grouse population to non-viable levels."

It is interesting to note that in the central Washakie Basin lands that fall within the Bitter Creek Upland Game Bird Management Area, there are 6 active sage grouse leks and 10 historic leks inside or within 2 miles of the DFPA, while outside this radius, there area zero active sage grouse leks and 28 historic lek sites that are no longer active. *See* Figure 5-3, DFEIS at 5-20. Many of the former sage grouse leks are clustered in the Continental Divide – Wamsutter area, which has been hammered by heavy gas development over the past 50 years. This fact suggests that full-field development is fundamentally incompatible with the maintenance of viable sage grouse populations. It also highlights the tenuous nature of sage grouse populations in this region as well as the importance of the DFPA to the maintenance of a viable sage grouse population in the Washakie Basin. If the sage grouse leks inside and within 2 miles of the DFPA become inactive, then there will be **no known sage grouse breeding and nesting activity remaining** in the Bitter Creek Upland Game Bird Management Area, no known reproduction, and a strong likelihood of extirpation of sage grouse from this part of the Red Desert. 22

Oil and gas development poses perhaps the greatest threat to sage grouse viability in the region. In a study near Pinedale, sage grouse from disturbed leks where gas development occurred within 3 km of the lek site showed lower nesting rates (and hence lower reproduction), traveled farther to nest, and selected greater shrub cover than grouse from undisturbed leks (Lyon 2000). According to Lyon (2000), impacts of oil and gas development to sage grouse include (1) direct habitat loss from new construction, (2) increased human activity and pumping noise causing displacement, (3) increased legal and illegal harvest, (4) direct mortality associated with reserve pits, and (5) lowered water tables resulting in herbaceous vegetation loss. All of these impacts must be thoroughly evaluated in the FEIS. Pump noise from oil and gas development may reduce the effective range of grouse vocalizations (Klott 1987). Thus, lek buffers are needed to ensure that booming sage grouse are audible to conspecifics during the breeding season. Connelly et al. (2000) recommended, "Energy-related facilities should be located >3.2 km form active leks" (p. 278). But Clait Braun (pers. comm.), the worlds most eminent expert on sage grouse, recommended even larger NSO buffers of 3 miles from lek sites, based on the uncertainty of protecting sage grouse nesting habitat with smaller buffers. 22c

The area within 2 or 3 miles of a sage grouse lek is crucial to both the breeding activities and nesting success of local sage grouse populations. Autenreith (1985) considered the lek site "the hub from which nesting occurs" (p. 52). Grouse exhibit strong fidelity to individual lek sites from year to year (Dunn and Braun 1986). During the spring period, male habitat use is concentrated within 2 km of lek sites (Benson et al. 1991). In a Montana study, Wallestad and Schladweiler (1974) found that no male sage grouse traveled farther than 1.8 km from a lek during the breeding season. Hulet et al. (1986) found that 10 of 13 hens nested within 1.9 miles of the lek site during the first year of their southern Idaho study, with an average distance of 1.7 miles from the lek site; 100% of hens nested within 2 miles of the lek site during the second year of this study, with an average distance from lek of 0.5 mile. In Montana, Wallestad and Pyrah (1974) found that 73% of nests were built within 2 miles of the lek, but only one nest occurred within 0.5 mile of the lek site. Because leks sites are used traditionally year after year and represent selection for optimal breeding and nesting habitat, it is crucially important to protect the area surrounding lek sites from impacts. Thus, the prohibition of surface disturbance within 2 miles (minimally) or 3 miles (optimally) of a sage grouse lek is the absolute minimum starting point for sage grouse conservation.

22d

Under the Proposed Action, only areas within ¼ mile of sage grouse leks would be withdrawn from surface disturbance, and mere timing stipulations would prevent construction activities within 2 miles of lek sites between March 1 and June 30. DFEIS at 2-38. These measures are clearly insufficient, because they would allow construction of roads and well pads in the area between ¼ and 2 miles of the lek site, creating major impacts to sage grouse during the crucial nesting season. Despite the provision that construction activities would not be allowed during the breeding and nesting period, these impacts, along with the vehicle traffic that will inherently be associated with them, will be present during the breeding and nesting periods in subsequent years. Lyon (2000) pointed out that quarter-mile lek buffers used in the Pinedale area, the same measures the BLM proposes for the DFPA, are insufficient to maintain the viability of grouse populations. Connelly et al. (2000) recommended that sage grouse habitat should be protected within 3.2 km of lek sites under ideal habitat conditions, within 5 km when habitat conditions are not ideal, and within 18 km where sage grouse populations are migratory. Furthermore, these same researchers stated that in areas where 40% or more of the original breeding habitat has been lost, **all** remaining habitat should be protected. Considering that in the Bitter Creek Upland Game Bird Management Area, only 6 leks are active while 38 leks previously known to be active no longer have sage grouse (see map, DFEIS at 5-20), even given the possibility that some leks were abandoned due to movement to new sites, the original breeding habitat that has been lost clearly exceeds 60% in this area.

22

Even the minimal measure of prohibiting year-round surface disturbance within 2 miles of lek sites may not be sufficient to protect nesting habitats in all cases. For example, in Bates Hole, Wyoming, Holloran (1999) found that average nesting distance from lek site was 3.25 km for adults and 5.27 km for yearlings. Wakkinen et al. (1992) also cautioned that leks were poor predictors of sage grouse nest sites; although 92% of sage grouse nested within 3.2 km of a lek in this study, sage grouse did not necessarily nest near the same lek where breeding took place. A detailed study of nesting habitat use is therefore needed to identify all important nesting areas in the FEIS, and NSO protective measures must be extended to all identified nesting areas.

22e

In addition to breeding and nesting habitats, early- and late-brood-rearing habitats must also be identified and protected. But the DFEIS makes no mention of brood-rearing habitat, nor does it provide protective measures for such habitats. Sage grouse may move some distance from nesting

22f

sites for early and late brood rearing. In western Wyoming, Lyon (2000) found that sage grouse moved an average of 1.1 km from the nest site for early brood-rearing, and late brood-rearing habitats averaged 4.8 km distant from the early brood-rearing areas. In Bates Hole, Holloran (1999) found that early brood rearing habitats are typified by decreased sagebrush cover and height and increased forb abundance, and movement to riparian sites occurred as uplands became dessicated. This pattern of movement and habitat selection is echoed in the findings of Oakleaf (1971). In western Wyoming, wet meadows, springs, seeps, and other green areas within sagebrush steppe were important for early brood-rearing, while late brood rearing focused on irrigated hay meadows, wet meadows, and drainage bottoms which remained green when early brood rearing habitats were withering (Lyon 2000). This researcher found that most recruitment loss occurred during the early brood rearing stage, and that this may be a limiting factor in sage grouse populations (Ibid.). In Nevada, Oakleaf (1971) found that meadows with succulent forbs, while occupying only 2.3% of grouse home ranges during the brood rearing period, were disproportionately important as brood-rearing habitat. Brood-rearing habitats should thus be identified and managed to maximize sage grouse recruitment success through protective measures laid out in the FEIS.

22g

Beck (1977) cautioned that protection of lek sites only is insufficient to maintain sage grouse winter habitats. And Connelly et al. (1988) later cautioned, "Protection of sagebrush habitats within a 3.2 km radius of leks may not be sufficient to ensure the protection of year-long habitat requirements" (p. 116). Non-migratory sage grouse winter on their nesting and brood-rearing habitats, while migratory populations may travel some distance to winter on traditional wintering areas. For non-migratory populations, nesting habitat and wintering habitat are one and the same (e.g., Wallestad and Pyrah 1974). In a western Wyoming study, however, sage grouse were migratory and traveled at least 35 km to separate wintering grounds (Berry and Eng 1985). In Colorado's North Park, Beck (1977) found that grouse migrated 5-20 km away from breeding areas during winter. In a southeastern Idaho study, Connelly et al. (1988) found that some adult sage grouse moved more than 60 km to winter range, and some juveniles moved more than 80km, despite the availability of suitable wintering habitat nearby. The meager data presented in the DFEIS (point data rather than spatial in nature) indicates that at least some grouse are concentrating in areas distant from leks during severe winters, but no data is presented for average winters. Additional measures are needed to protect sage grouse wintering habitat, for both severe winters and normal winters.

22

22h

Only very weak protections for sage grouse wintering habitat are provided in the DFEIS, and this deficiency must be corrected in the FEIS. No surface disturbance would be allowed in identified sage grouse severe winter relief habitat. DFEIS at 2-38. The DFEIS makes no attempt to identify sage grouse crucial winter ranges that are used during ordinary winters, merely the habitats that are used by grouse during exceptionally severe winters, which might come once or twice a decade. Needless to say, if the sage grouse crucial winter habitats are destroyed by oil and gas development so that grouse are force onto suboptimal habitats during average winters, overwinter survival and spring reproduction could be drastically reduced, ultimately resulting in a situation where there are no grouse left to enjoy the severe winter relief habitats when the harsh winter arrives. This is an unacceptable oversight on the part of the BLM, and the agency must identify grouse crucial winter habitat for ordinary winters in the FEIS and also provide protective measures that assure that this important habitat is not degraded by gas development or road-building.

22i

22j

The cumulative impacts analysis that reveals that 9.3% of sage grouse breeding habitat can be

expected to be impacted is troubling. DFEIS at 5-21. Equally troubling as this overall figure is the BLM's calculation that only 3.1% of cumulative nesting habitat will be disturbed. This is a gross underestimate – the cumulative impact analysis assumes that the paltry and wildly inadequate mitigation measures planned for the Desolation Flats project will only result in about a 1% disturbance to sage grouse breeding habitat. This assumption is predicated on the idea that the ¼-mile NSO buffers and 2-mile seasonal limitations on construction "would ensure that overall impacts to greater sage-grouse populations within the DFPA are low." DFEIS at 5-19. It is a well-known scientific principle, supported by a number of studies over the last 4 decades, that sage grouse nest mostly within 2 miles of a lek site, but sometimes even farther away. 22

The BLM claims that each alternative in the DFEIS would result in "NSI [No Significant Impact] w/ mitigation" with regard to sage grouse leks, nesting habitats, and severe winter relief habitats. DFEIS at 2-46.

Wyoming Pocket Gophers

The BLM notes that the Wyoming pocket gopher is likely to be found in the DFPA. DFEIS at 4-82. Indeed, this species is found exclusively in the southern Red Desert, and nowhere else, and the DFPA likely represents the core of its habitat and range. The BLM argues that the proposed full-field development of the DFPA will have "no significant impacts on this species." DFEIS at 4-82. From what analyses does the BLM derive this highly dubious conclusion? No data are presented regarding expected effects of the project on mortality, recruitment, or behavior of this species that suggest that an industrial development on this massive scale would have no negative effect on Wyoming pocket gopher populations. 23a 23 23b

Mountain Plovers

The mountain plover is proposed for listing as Threatened under the Endangered Species Act, and its rangewide decline appears to be continuing. Wyoming (along with Colorado and Montana) is one of three states that encompass the majority of plover's breeding population (USFWS 1999); approximately 1,500 birds are estimated to occur in Wyoming (Long 2001). On Mexican Flats (portions of which occur within the DFPA), nesting plovers are associated with bare ground and prairie dog colonies amid scattered sagebrush; 8 nesting pairs were recorded in this area in 2000, and 23 birds were recorded after the nesting season in 2001 (Fritz Knopf, pers. comm.). This nesting concentration area has been proposed by conservation groups as an ACEC under the Great Divide RMP revision. In addition, the DFEIS indicates that a second plover nesting concentration area is found immediately southeast of the Haystacks in the Monument Valley Management Area. See Map H-3, DFEIS at H-11. We have attached the Scoping Comments of Dr. Stephen Dinsmore, a well-known mountain plover expert, and incorporate this attachment in full into our comments by reference. We recommend the BLM comply with all of Dr. Dinsmore's expert recommendations concerning plovers in the forthcoming FEIS. 24

Oil and gas development in nesting concentration areas is a direct threat to mountain plover population viability. The U.S. Fish and Wildlife Service found that the Seminoe Road Coalbed Methane project "is likely to adversely affect the proposed mountain plover," stating that wellfields are likely to become an "ecological trap," attracting feeding plovers to roadways where they become susceptible to vehicle-related mortality, or alternately increased vehicle traffic could drive plovers away from preferred nesting areas (Long 2001). The USFWS (1999) added that vehicle traffic on roads could lead to stress and chick abandonment. These officials noted that any human disturbance that significantly modifies adult behavior could cause death to chicks, which can die in as little as 15 minutes due to exposure to sun at temperatures greater than 81° F. Long 24a

(2001) noted that construction equipment and permanent structures inherent to oilfield development constitute a radical increase in raptor perches that could result in increased predation pressure. In addition to these problems, wellfield development can lead to increased invasion rates of non-native weed species, which can have serious impacts on plover nesting habitat by decreasing the availability of bare ground (Good et al. 2001). 24b

Under the Proposed Action, plover surveys would be conducted prior to construction between April 10 and July 10, but well pads and disturbances would be placed outside mountain plover habitat only "where feasible." DFEIS at 2-38. This lack of a hard requirement is both disconcerting and inadequate to protect nesting plovers. In addition, where plovers are found, construction activities would be postponed (but not halted) until 1 week post-hatching. DFEIS at 2-39. This measure would guarantee that while plover nesting could continue during the construction season, plover nesting habitat would be destroyed for all future years, until such time that the project had ended (30-50 years in the future) and roads and wellpads were finally reclaimed. This is a major and significant impact in and of itself to plover nesting habitat. The BLM claims that each alternative in the DFEIS would result in "NSI [No Significant Impact] w/ mitigation" with regard to mountain plovers. DFEIS at 2-46. This is a completely unsupported and unsupportable assertion. As noted above, proposed mitigation measures are completely inadequate. In order to prevent significant impacts to plovers, the BLM must provide prohibitions on surface disturbance for all plover nesting concentrations with a ½-mile buffer to prevent elevated structures (which become raptor perches) from being constructed within sight distance of nesting concentration areas, and nearby roads becoming ecological traps for plover adults and their chicks. 24 24c 24d 24e

Prairie Dogs

The DEIS lists white-tailed prairie dogs as one of the six "primary wildlife resource concerns" (p. 4-56) analyzed; yet, while impacts to the other concerns (big game crucial winter ranges, overlapping big game crucial winter ranges, sage-grouse, raptor nests, and potential mountain plover habitat) are discussed in relative detail on their own merits, white-tailed prairie dogs are discussed throughout this document only in the context of potentially harboring some remaining wild black-footed ferrets. The importance of conserving the white-tailed prairie dog because it is imperiled, declining, and designated as a BLM Sensitive Species and because it is extremely important in supporting healthy populations of other imperiled, declining, and BLM Sensitive Species is completely overlooked, and the resulting analysis is inadequate. 25 25a

I. **The DEIS underestimates the likely impacts to white-tailed prairie dogs and associated species.**

The DEIS underestimates the likely impacts to white-tailed prairie dogs and associated species in several ways, and, as a result, fails to take the requisite "hard look" at the potential environmental consequences. First, the BLM has no idea where the wells will be located. Second, the BLM makes the unsupported assumption that most impacts to prairie dogs will be temporary. 25b 25c 25d

A. **Well locations are unknown, and could be clustered on or around colonies.**

The BLM estimates that the Proposed Action will result in the long-term disturbance of 2139 acres, and admits, "well locations are not known at this time" (p. 4-56). Without knowing where the wells will be located, the BLM states, "the anticipated disturbance of white-tailed prairie dog colonies is expected to be low" (p. 4-82). It seems impossible to support this statement without 25e

knowing where the disturbance is planned. For example, if all the long-term disturbance occurred on prairie dog colonies within the project area, as much as 37% of the area they presently inhabit could be lost.

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B. **Much of the disturbance is assumed to be "temporary" but is likely to have long-term effects.**

The DEIS anticipates that the construction phase will take 20 years, which would involve multiple generations of prairie dogs. Based on the examination of crania from dead white-tailed prairie dogs, Clark *et al.* (1973) estimated that survival to age four is uncommon in white-tails. Similarly, the very oldest individual found during Hoogland's (2001) 13-year study of black-tailed prairie dogs was an eight-year old female. Thus the project could easily impact five generations of prairie dogs, which cannot be construed as a temporary effect for those populations.

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The DEIS assures that reclamation "would result in re-establishment of vegetation in these areas, in a relatively short time period" (p. 4-59). Unfortunately, the vegetation that does become established is likely to consist of noxious weeds, which may permanently alter habitat quality.

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The BLM acknowledges that shrub establishment will take longer – "8 to 15 years" (p. 4-59). White-tailed prairie dogs do not remove or clip vegetation that would otherwise obstruct their line of sight, as black-tailed prairie dogs do (Tileston and Lechleitner 1966; Clark 1973; Clark 1977; Hoogland 1981), and instead are adapted to use shrubs to hide from predators. Therefore, increased predation may result from shrub removal and this effect may also last for generations.

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The DEIS suggests that small mammals would be killed during the initial construction phase, but does not factor in the prolonged increase in white-tailed prairie dog mortality rates that should be expected from the construction of new roads, which result in road kills and allow increased access for prairie dog shooters. Gordon *et al.* (2003) surveyed black-tailed prairie dog shooting pressure at Thunder Basin National Grassland and found that "large towns with easy road access received the greatest amount of shooter pressure, whereas smaller more remote towns were frequently either not visited by shooters at all or were visited primarily by local shooters" (p. 12). The Colorado Division of Wildlife, BLM, and Fish and Wildlife Service have also made the connection between road access and prairie dog shooting pressure: "The BLM has determined that about 30 percent of the prairie dog colonies in the WCMA [Wolf Creek Management Area] are accessible to roads, and therefore easily accessible to shooters. Shooting prairie dogs at the other locations in the WCMA would require walking, which reduces the likelihood that significant levels of shooting would occur relative to that from the existing roads" (Colorado Division of Wildlife *et al.* 2002, p. 10). For Wyoming's Great Divide Basin, Maxell (1973) noted, "Most active prairie dog towns were located some distance from the main thoroughfares in the Basin, probably due to human predation in the form of varmint hunters" (p.85). While the DEIS does include increases in roadkills and illegal poaching as "principal wildlife impacts likely to be associated with the Proposed Action or alternatives" (p. 4-56), it does not discuss these impacts in the General Wildlife section, and does not consider the fact that prairie dog shooting is legal and unregulated in Wyoming.

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Part of the rationale for classifying the impacts to small mammals as temporary is that "the high reproductive potential of these small mammals would enable populations to quickly repopulate the area once reclamation efforts are initiated." DFEIS at 4-59. White-tailed prairie dog biology

contradicts this assertion. First, they reproduce relatively slowly. Females have only one litter per year (Clark *et al.* 1971), and studies have documented that the average number of white-tailed pups that survived to emerge from their natal burrow ranged from only 1.64 (Menkens and Anderson 1985) to 4.8 (Flath 1979). Pups also do not become sexually mature until the following spring. Therefore, white-tailed prairie dog populations are not able to rapidly capitalize on favorable conditions. The DEIS also assumes that source populations will still be available years after the disturbance (during the reclamation phase), but white-tailed prairie dog populations have become highly unstable because of plague, and population crashes and colony extirpations are the norm.

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The BLM further states, "The anticipated disturbance of white-tailed prairie dog colonies is expected to be low, and no significant impacts to white-tailed prairie dogs are expected." DFEIS at 4-82. In the absence of site-specific locations for road, pipeline, and well construction, the BLM has no way of knowing or accurately forecasting where disturbance will take place, and the agency is therefore in no position to speculate about the proportion of prairie dog colonies that will be subjected to full-field development with all of its associated impacts. The BLM's conclusory statement on the lack of impacts to prairie dogs is therefore arm-waving in the absence of any credible data whatsoever, a wild guess with no scientific integrity or credibility. The BLM must rectify this absence of analysis by publishing the locations of proposed developments, quantifying the percentage of prairie dog colonies that would be impacted by oil and gas development (including roadkill mortality, increased predation due to creation of raptor perches, and increased human-induced mortality through shooting and poisoning in response to increased vehicular access), and presenting a thorough analysis of these impacts on the viability of individual prairie dog colonies.

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Depending on the final location of the structures that this project would involve, white-tailed prairie dog habitat could be permanently fragmented, and immigration routes could be cut off. The DEIS recommends a buffer of only 50 m around prairie dog colonies. Our own research using GIS data suggests that 0.5 mi. buffers (805 m) are necessary to maintain connectivity between white-tailed prairie dog colonies. Several researchers have noted that immigration is common for white-tailed prairie dogs, which unlike black-tails are not usually territorial and thus are accepted when they enter a different colony. Clark (1973) observed, "Together, immigration and emigration seems [sic] to be relatively major phenomena in the dynamics of white-tailed prairie dog populations" (p. 161), and this intercolony movement may be an especially important plague survival strategy – prairie dogs may be able to escape infected colonies before exposure, and healthy animals can repopulate colonies after a plague event has ended.

The DEIS also does not consider the long-term impact that the presence of wells and other structures may have in providing perches for raptors, which may increase prairie dog predation. In the BLM's (2003) Final EIS for the Powder River Basin Oil and Gas Project, this was included in potential impacts to black-tailed prairie dogs: "Construction of project facilities could provide new perches for raptors and habitatsa [sic] for mammalian predator [sic]" (p. 4-256).

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Each of these omissions and miscalculations on the BLM's part contributes to the inaccurate assessment that impacts to white-tailed prairie dogs and associated species will be temporary, when the real result is likely to be long-term habitat conversion.

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II. **The DEIS fails to provide adequate protections for white-tailed prairie dogs and associated species.**

The few mitigation measures for white-tailed prairie dogs and their associates have no teeth – they are completely discretionary:

> Adverse impacts to black-footed ferret habitat from implementation of the Proposed Action would be avoided by not allowing surface disturbance within 50 meters of white-tailed prairie dog colonies. In the event this can not [sic] occur, a black-footed ferret survey of suitable prairie dog towns in which ground disturbing activities are proposed would be conducted (USDI-FWS 1989). If no ferrets are found, the area would be cleared for development for one year. (p. 4-74, emphasis added)
>
> It is preferred by the BLM that no disturbance occur within 50 meters of prairie dog colonies, where feasible. (p. 4-82, emphasis added)
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> In general, all prairie dog colonies on the DFPA will be avoided, where practical (p. H-20, emphasis added).

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The BLM has settled for merely recommending avoiding disturbance on prairie dog colonies rather than clearly prohibiting disturbance in these areas, or at least giving some sort of framework explaining under what circumstances disturbance would be allowed. In addition, the BLM should formally recognize in the FEIS that available oil and gas technologies, including directional drilling, allow such protection of prairie dog colonies to be feasible in all cases, without exception. As the DFEIS reads now, disturbing prairie dog colonies could be allowed at the whim of the Operator.

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The DEIS acknowledges that these discretionary guidelines will in fact result in colony disturbance: "Development of the Proposed Action will likely result in direct disturbance of some portions of these prairie dog colonies within complexes" (p. I-12). This lack of protection is problematic for several reasons. The white-tailed prairie dog is a BLM Sensitive Species in Wyoming, and is trending toward listing under the ESA. It also has already been petitioned for Endangered Species Act (ESA) listing. Finally, it is closely associated with other BLM Sensitive, ESA listed, and ESA Proposed species.

A. The BLM is obligated to monitor and conserve Sensitive Species.

The BLM Manual explains that Sensitive species must be managed at least as protectively as Candidates for ESA listing: "The protection provided by the policy for candidate species shall be used as the minimum level of protection for BLM sensitive species" (BLM Manual § 6840.06(E)). These protections are as follows:

> Consistent with existing laws, the BLM shall implement management plans that conserve candidate species and their habitats and shall ensure that actions authorized, funded, or carried out by BLM do not contribute to the need for the species to become listed. Specifically, BLM shall:
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> (1) In coordination with FWS and/or NMFS [National Marine Fisheries Service] determine, to the extent practicable, the distribution, population dynamics, current threats, abundance, and habitat needs for candidate species occurring on lands administered by the BLM; evaluate the significance of lands administered by the BLM or actions undertaken by the BLM in maintaining and restoring those species.
>
> (2) For a candidate species where lands administered by the BLM or BLM authorized actions have a significant effect on their status, manage the habitat to conserve the species by:
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> a. Ensuring candidate species are appropriately considered in land use plans (BLM 1610 Planning Manual and Handbook, Appendix C).
>
> b. Developing, cooperating with, and implementing rangewide and or site-specific management plans, conservation strategies, and assessments for candidate species that include specific habitat and population management objectives designed for conservation, as well as management strategies necessary to meet those objectives.
>
> c. Ensuring that BLM activities affecting the habitat of candidate species are carried out in a manner that is consistent with the objectives for managing those species.
>
> d. Monitoring populations and habitats of candidate species to determine whether management objectives are being met.
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> (3) Request technical assistance from the FWS and/or NMFS, and other qualified sources, on any planned action that may contribute to the need to list a candidate species as threatened or endangered. (BLM Manual § 6840.06(C))

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The BLM has not presented evidence that habitat destruction and fragmentation coupled with increased mortality in these complexes which represent over 9900 acres of active white-tailed prairie dog colonies will not contribute to the need to list the white-tailed prairie dog under the ESA. It has not compiled information on population dynamics, current threats, or habitat needs for white-tailed prairie dogs. It has not evaluated the significance of these two complexes or how the Proposed Action would contribute to maintaining or restoring the white-tailed prairie dog. The BLM has not yet developed habitat or population management objectives for white-tailed prairie dogs at any scale – not for this project, not for Wyoming, and not rangewide. Therefore, the BLM cannot ensure that approving this project is consistent with white-tailed prairie dog management objectives. The BLM should also coordinate with the multi-state prairie dog conservation team to determine how the development of these large complexes may affect the states' attempts to conserve the white-tailed prairie dog and avert ESA listing.

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B. The BLM must not contribute to the need to list species under the ESA.

As discussed in the previous section, the BLM Manual prohibits the agency from authorizing actions that contribute to the need to list species under the ESA. Center for Native Ecosystems, Biodiversity Conservation Alliance, and others petitioned the Fish and Wildlife Service to list the white-tailed prairie dog under the ESA in July 2002 (CNE *et al.* 2002). In February of 2003 we filed suit against the Fish and Wildlife Service for its failure to issue a preliminary finding within 90 days of receipt of the petition. Our petition and complaint make clear that ESA listing is warranted for this species. Now the BLM proposes to permit the conversion of a 9400+ acre white-tailed prairie dog complex to oil and gas development with only discretionary mitigation. Our white-tailed prairie dog research has revealed only 20 complexes of at least this size

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throughout the species' nationwide range. While it is possible that additional large complexes will be found, it is just as possible that many of these 20 complexes have experienced substantial declines since they were last inventoried, and the large complex within the Desolation Flats Project Area may be one of only a handful of complexes left that approach 10,000+ acres. Until white-tailed prairie dog status rangewide is better understood, the BLM and other federal agencies should take a precautionary approach in managing large complexes. Center for Native Ecosystems, Biodiversity Conservation Alliance, and others have compiled a report on recommended white-tailed prairie dog management practices which may be useful to the BLM (CNE *et al.* 2003b).

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C. **Other ESA listed and BLM Sensitive species may be affected by the failure to conserve white-tailed prairie dogs.**

The BLM has analyzed the potential impacts to black-footed ferrets only in the context of how the project could affect any wild ferrets that remain in the area; it has not considered the impacts of reducing the favorability of this area as a potential ferret reintroduction site.

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The BLM also makes the connection between other imperiled species like the BLM Sensitive western burrowing owl and the Proposed Threatened mountain plover and prairie dogs, but does not consider the consequences that prairie dog habitat loss could have on these species. The BLM must also fully evaluate the significance of lands administered by the BLM or actions undertaken by BLM in conserving, maintaining, and restoring these species, and the BLM must determine the occurrence, distribution, abundance, condition, population dynamics, habitat conditions and needs, and current threats of and to these species.

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The BLM is also required to develop and implement programs, management plans, conservation strategies, and/or assessments for the conservation of these species and their habitats, including specific management objectives and strategies; to monitor populations and habitats to determine whether management objectives are being met; and to monitor and evaluate ongoing management activities to ensure conservation objectives, recovery needs, and recovery objectives are being met.

For all of these reasons, the BLM must provide meaningful and enforceable protections for white-tailed prairie dog colonies and for other Sensitive species within the Project Area.

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III. **The DEIS does not consider how this project could affect black-footed ferret recovery.**

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The Fish and Wildlife Service has emphasized the important role that prairie dog complexes of greater than 1000 acres will play in black-footed ferret recovery: "Towns or complexes of 1,000 or more acres should be given special consideration for their importance to the overall recovery and survival of the black-footed ferret as potential reintroduction areas. The Service would like to minimize disturbances of these areas until black-footed ferret reintroduction sites have been selected" (U.S. Fish and Wildlife Service 1989, p. 5). The Service has also made clear that they should be contacted before projects are conducted on prairie dog complexes of this size: "Before any federally funded or permitted activities are conducted on black-tailed or white-tailed prairie dog towns or complexes greater than 1,000 acres, the appropriate Service office should be contacted to determine the status of the area for future black-footed ferret reintroductions" (U.S. Fish and Wildlife Service 1989, p. 4). However, the DEIS presents no evidence that the Fish and

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Wildlife Service has been apprised or has determined that this area is not essential to black-footed ferret recovery. Until this takes place, the BLM cannot conclude that the Proposed Action is not likely to affect black-footed ferret recovery.

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IV. **Approving this project now violates NEPA's prohibition on interim actions.**

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Approving development in this area now, while the Great Divide Resource Management Plan is being revised, while ACEC nominations for the area in question are being considered, and while black-footed ferret reintroduction sites are still being selected violates NEPA's prohibition on interim actions: "Until an agency issues a record of decision . . . no action concerning the proposal shall be taken which would: (1) Have an adverse environmental impact; or (2) Limit the choice of reasonable alternatives" (40 C.F.R § 1506.1(a)).

A. **The current Great Divide Resource Management Plan does not address prairie dog management, but this problem should be redressed through revision.**

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The BLM is currently developing management alternatives for the revised Great Divide Resource Management Plan (RMP), and expects to complete plan revision by Summer 2004. Approving this project now will have adverse environmental impacts and limit the choice of alternatives that conserve white-tailed prairie dogs and associated species in the revised RMP. During the RMP revision process, land use decisions should not prejudice the alternatives or range of decisions to be considered for an area. *See Southern Utah Wilderness Alliance et al.*, 111 IBLA 207, 212, (1989) (striking down BLM approval of application for jeep trip where proposal was not properly analyzed under NEPA and was contrary to the existing RMP); *Uintah Mountain Club*, 112 IBLA 287 (1990) (striking down BLM off-road vehicle route designation which did not conform to the approved RMP).

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One of the critical issues the BLM addresses during RMP revision is whether and which areas should be open to oil and gas development in the first place. BLM Handbook 1624, Planning For Fluid Mineral Resources (or H-1624-1). H-1624-1, for instance, requires BLM in the amendment/revision process to look at areas open to leasing in any capacity, open to leasing with restrictions, open to leasing with No Surface Occupancy and areas open to leasing with special stipulations of conditions of approval. H-1624-1, Ch. IV. B., C.2. "During the amendment or revision process, the BLM should review all proposed implementation actions [this includes oil and gas leasing] through the NEPA process to determine whether approval of a proposed action would harm resource values so as to limit the choice of reasonable alternative actions relative to the land use plan decisions being reexamined." H-1601-1 at VII.E.

Right now the RMP provides no management direction for white-tailed prairie dogs or their habitat, and this must be remedied before the BLM approves oil and gas development in a major complex.

B. **This area has been nominated for ACEC designation.**

On January 21, 2003, CNE and others (2003a) submitted nominations to Kurt Kotter, Rawlins Field Manager, and Ted Murphy, Rock Springs Field Manager, for the designation of ten large white-tailed prairie dog complexes and within their respective Field Offices as Areas of Critical Environmental Concern (ACECs) under the Federal Land and Policy Management Act (FLPMA)

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of 1972, 43 U.S.C. § 1701, *et seq.* and the Administrative Procedure Act 5 U.S.C. § 551 *et seq.*, and pursuant to BLM Manual 1613.21.A.2.a and 1613.41. These areas included the Dad Complex in the Rawlins Field Office, the same large complex found within the Desolation Flats Project Area.

On April 28, 2003, the Wyoming State Office of the BLM wrote to the organizations that had nominated these complexes. In addition to confirming receipt of the nominations, the State Office explained, "the Field Offices will be conducting evaluations of the nominations for their respective planning areas in accordance with the Bureau's planning manuals and guidelines".

The Manual is clear that nominated areas that meet the relevance and importance criteria should be considered for special temporary management until designation is completed:

> Evaluate Each Resource or Hazard to Determine if it Meets Both the Relevance and Importance Criteria. This initial evaluation is accomplished by an interdisciplinary team as part of the analysis of the management situation during the resource management planning process (BLM Manual Section 1616.4). The Area Manager, with District Manager concurrence, approves the relevance and importance evaluations. An area meeting the criteria is identified as a potential ACEC appropriate for further evaluation in the RMP process and perhaps temporary management. (BLM Manual 1613.21C)

The Rawlins Field Office has not informed us of the results of their evaluation of the Dad Complex, and it is entirely likely that temporary management is necessary. These "timely" evaluations are to be completed and temporary management is to be instituted even if RMP revision is not actively underway:

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> If an area is identified for consideration as an ACEC and a planning effort is not underway or imminent, the District Manager or Area Manager must make a preliminary evaluation on a timely basis to determine if the relevance and importance criteria are met. If so, the District Manager must initiate either a plan amendment to further evaluate the potential ACEC or provide temporary management until an evaluation is completed through resource management planning. Temporary management includes those reasonable measures necessary to protect human life and safety or significant resource values from degradation until the area is fully evaluated through the resource management planning process. (BLM Manual 1613.21.E)

Thus, by failing to protect the Dad Complex from degradation until the Great Divide RMP revision is complete, the BLM is in violation of its own Manual.

C. Approving the project may remove this site from consideration as a black-footed ferret reintroduction site.

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Black-footed ferret reintroduction should also be considered during RMP revision, and this project should not be permitted to forestall that option. The approval of the Desolation Flats project, with its associated impacts to the Dad prairie dog complex, potentially precludes the option of ferret reintroduction in the Washakie Basin, thereby limiting the Range of Alternatives available under the revised Great Divide RMP.

V. White-tailed prairie dogs – Conclusion

Conserving any white-tailed prairie dog complex of 5,000 acres or more should be a top priority for the BLM – the main agency that manages habitat for this species. The Desolation Flats Project Area contains nearly twice that amount of active colonies, including the Dad Complex which many of the undersigned groups have already proposed for protective ACEC designation. Clearly, approving this project based on the limited analysis and purely discretionary mitigation measures in the DEIS would be arbitrary and capricious and would support the position that only ESA listing will be adequate to stem white-tailed prairie dog declines and promote recovery, since the state and federal agencies continue to fail to manage this species proactively.

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Endangered and Sensitive Fish Species

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The BLM's analysis of the effects of the Desolation Flats project on BLM Sensitive fishes in Muddy Creek (the bluehead sucker, roundtail chub, and flannelmouth sucker) and the Colorado River Endangered fishes downstream of the project area (the bonytail, razorback sucker, humpback chub, and Colorado pikeminnow) are completely insufficient. All of these fish populations teeter on the edge of extinction/extirpation, and any added impacts to these populations could be the straw that breaks the camel's back.

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According to the DFEIS, Red Wash has been classified as a Class 3 stream by WDEQ, indicating that it currently or potentially supports nongame fishes. And yet the BLM has failed to list the species present in Red Wash. Are the bluehead sucker, flannelmouth sucker, or roundtail chub present in this stream? This is important baseline data to gather prior to completion of the EIS so that impacts to these species as a result of the Desolation Flats project could possibly be quantified.

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According to the BLM, "Soil productivity is likely to be a primary adverse impact of these project effects. Erosion can impede successful revegetation, result in a loss of site productivity, and impair water quality if eroded sediment is transported to surface water bodies. In addition, some soils and geologic units may have relatively high levels of selenium. Erosion of selenium-laden sediment could increase selenium loading of streams." DFEIS at 4-34. How will this increase in potentially toxic sediment impact the three species of BLM Sensitive fishes in the Muddy Creek drainage, or the four species of Endangered fishes downstream in the Little Snake and Yampa Rivers?

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Once again, the BLM's failure to present the siting locations for wells, pipelines, and roads prevents the agency from completing the required analysis of environmental impacts. The BLM notes, "The magnitude of the impacts to surface water resources would depend on the proximity of the disturbance to the surface channel, slope aspect and gradient, degree and area of soil disturbance, soil character duration of time within which construction activities occur, and the timely implementation of mitigation measures." DFEIS at 4-39. This is a candid admission on the part of the BLM that because the agency does not know precisely where (and how close to waterways, and on what types of soils) surface disturbances will occur, it cannot assess the magnitude of impacts to surface waters.

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According to the DFEIS, "If deemed necessary, reserve and evaporative pits would be lined to prevent drilling fluids and produced water from contaminating surface waters." DFEIS at 4-39. The same statement was made regarding aquifers. Ibid. What are the effects of seepage of toxic

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compounds, whether produced water or other drilling wastes, on fishes in Muddy Creek and the Little Snake and Yampa systems?

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The cumulative effects analysis on Endangered and Sensitive fish species is completely inadequate due to the omission of the Atlantic Rim Coalbed Methane Project from the cumulative effects analysis. This project is not only the largest reasonably foreseeable series of impacts to the Muddy Creek watershed and also Little Snake and Yampa systems downstream, but also the nature of this proposal, with 3,880 CBM wells spewing toxic wastewater into the Muddy Creek drainage 24 hours a day constitutes a threat that has the potential to wipe out all native fishes in the Muddy Creek, lower Little Snake, and lower Yampa reaches, both Sensitive and Endangered.

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Plant Species of Concern

One of the Impact Significance Criteria laid out in the DFEIS is the "removal or disturbance of special status plants (or habitat judged important for survival) to the extent that such impact would threaten the viability of the local population and/or induce an upgrade in the federal, state, or resource area status." DFEIS at 4-49. With this in mind, the BLM must present a spatial analysis of the occurrence of "habitat judged important for survival" for plant species of concern. Secondly, the BLM must define in an unequivocal way the magnitude or level of impact that "would threaten the viability of the local population." Finally, and perhaps most importantly, a spatial presentation of wells, roads, and pipeline layouts is a prerequisite to determining the level of significant impact under this Impact Significance Criterion.

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"Except for habitats occupied by plant species of concern, clearing of upland cover types would not be significant because upland cover types are generally abundant and widely distributed throughout the region and/or have been previously impacted (e.g., disturbed land)." DFEIS at 4-49. While this may be true, the fact that the locations of roads, wells, and pipelines is unknown to the BLM renders it impossible for the agency to determine to what extent roads, wells, and pipelines will impact the habitats of these plant species of concern.

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Noxious weeds

The BLM provides some measures to impeded the invasion of noxious weeds, but we are concerned that these measures would be insufficient. Gravel brought onto construction sites would have to weed-free. DFEIS at 2-9. This is an excellent requirement and we urge the BLM to retain it. But what about weed sites brought in from off-site on mud-encrusted construction, drilling, or production vehicles? Will there be a requirement to power wash all equipment, pickup trucks, and other weed-seed transporters prior to entering the DFPA? Such a measure should be mandated in the FEIS. The agency also notes, "Lines of Russian thistle parallel roads on the shoulders and in the ditches and on the disturbed edges of well pads, borrow sites, and other areas of disturbance." DFEIS at 3-76. This statement indicates that current management practices are failing miserably at preventing the invasion of noxious weeds, and that additional, stronger steps must be taken in the future.

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Paleontological Resources

Detailed paleontological surveys would be required in the MVMA and on sites underlain by the Washakie Formation, but sites on the Browns Park Formation, Laney Member of the Green River Formation and Cathedral Bluffs Member of the Wasatch Formation would get only "spot check survey." DFEIS at 2-33. And yet the BLM acknowledges, "With the exception of the Holocene deposits that are probably too young to contain fossils, ***all the listed sedimentary rock units*** have the potential to produce scientifically significant fossil resources." DFEIS at 3-10, emphasis

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added. This would classify all sedimentary strata cropping out in the DFPA in Paleo Initiative Class 3-5. See DFEIS at 3-10. All of these classes require ground reconnaissance at minimum, which cannot be satisfied through a mere "spot check survey." In addition, the Acceptable Plan Criteria state, "On-the-ground surveys will be required prior to any surface disturbing activity." DFEIS at A-2. This requirement directly contradicts the allowability of mere "spot check surveys" on some geologic formations. The FEIS must unconditionally require detailed surveys prior to all surface disturbing activities, regardless of geologic formation type.

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Cultural Resources

The DFEIS cultural resources analysis violates the National Environmental Policy Act (NEPA)

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One of the enumerated purposes of NEPA is to ensure that decisions of the federal government and its agents "preserve important historic, cultural, and natural aspects of our natural heritage." 42 U.S.C. §4331(b)(4). After reviewing the DEIS for the Desolation Flats Project Area (DFPA), it is apparent that BLM has not taken adequate procedural steps to ensure that important known and unknown cultural resources in the DFPA will be protected in the wake of increased energy development. Instead of taking the legally required "hard look," the BLM has, at best, taken only a cursory glance at the potential impacts to the cultural resources in the area. *See NRDC, Inc. v. Morton*, 458 F.2d 827, 838 (D.C. Cir. 1972).

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To begin, BLM is required to provide an adequate description of the environment to be affected. 40 C.F.R. §1502.15. The DEIS falls short of this requirement in two instances. First, the DFPA is roughly 233,542 acres, but only 5% of that acreage has been surveyed for cultural resources. DEIS at S-1, 3-81. There simply can be no adequate description of the affected cultural environment if 95% of it has not been surveyed. In fact, BLM concedes as much, stating, "Potential impacts to specific eligible or unevaluated properties are unknown at this time." DIES at S-11. Second, even if the cultural resources had been properly surveyed, the specific locations where surface disturbance will occur under the Proposed Action are unidentified. Because both the cultural resources and the location of the impacts remain so speculative, the DEIS requires more study and ultimately more specificity. Without these changes, the DEIS is a disingenuous assessment of the affected environment.

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Similar problems exist with BLM's analysis of the environmental consequences to the cultural resources. 40 C.F.R. §1502.16. First, BLM has identified 900 historic or prehistoric sites, yet over half of them (56%) have not been evaluated for eligibility for nomination to the National Register of Historic Places (NRHP). DEIS at 4-97. Moreover, because these 900 sites represent finds from only 5% of the DFPA, "[t]he DFPA has a moderate to high site density, and therefore, high archaeological sensitivity." DEIS at S-11. Given the special potential of the area to reveal additional and significant cultural resources, the DEIS fails to adequately assess the environmental consequences that the Proposed Action would have on these currently unknown resources. Second, BLM's required discussion of direct and indirect effects on the known cultural resources is inadequate and there is no mention whatsoever of cumulative impacts. DEIS at 4-99. *See* 40 C.F.R. §§1508.7; 1508.8. As stated above, the locations and extent of the cultural resources are largely unknown. DEIS at S-11; 4-98. Similarly, none of the alternatives give proposed locations where actual development will occur. This combination of "unknowns" is deeply troubling. It is not possible to adequately assess the varied impacts, nor can the BLM take a "hard look" when so many basic questions remain unanswered. *Morton*, 458 F.2d at 838.

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LETTER 150 cont'd

An example of BLM's failure to analyze indirect and cumulative impacts associated with the Proposed Action is the manner in which surface disturbance is presented and indeed, downplayed. BLM claims that with reclamation, only 3,645 acres or 1.6 percent of the DFPA will be impacted. DEIS at S-2. These figures fail to adequately acknowledge the manner in which the impacts will occur. Much of the "earth disturbing activities" that will result from the Proposed Action will be in the form of some 542 miles of new roads. DEIS at 2-9. Acreage alone does not begin to approximate impact. The entire area to some degree will undoubtedly feel the impact of such extensive road development. BLM briefly mentions unauthorized surface collecting of artifacts as an indirect impact, but again, even if BLM had attempted a more thorough analysis it still would have been ineffective because BLM has no knowledge of the true extent of the existing artifacts and does not know precisely where development will occur. The DEIS also fails to consider the effects of increased ORV use and human presence in the DFPA stemming from the new road building activities. In sum, NEPA calls for BLM to make a "reasonable, good faith, objective presentation of the topics." *Custer County Action Ass'n v. Garvey*, 256 F.3d 1024, 1035 (10th Cir. 2001) (*quoting Holy Cross Wilderness Fund v. Madigan*, 960 F.2d 1515, 1522 (10th Cir. 1992)). BLM has failed to do so here. 30h 30 30i 30j

BLM is also responsible for looking at ways to lessen the impacts of the Proposed Action on the cultural resources by establishing a full range of reasonable alternatives. 40 C.F.R. §1502.14. Each of the three alternatives (including the no action alternative) allows for increased oil and gas development in the DFPA. DEIS at S-2 through S-3. BLM states, "This EIS analyzes the effects of well pad locations, access roads, production facilities, pipelines, and other facilities associated with natural gas development on resources and land use within the project area." DEIS at 1-10. To the contrary, none of the alternatives even begin to specifically analyze these impacts to the cultural resources; nor does BLM's reliance on future action ("procedures... *will be used*...in arriving at determinations regarding the need and type of mitigation required") satisfy BLM's requirements under NEPA to "rigorously explore and objectively evaluate all reasonable alternatives." DEIS at B-3 (emphasis added); 40 C.F.R. §1502.14(a). 30k 30l

Next, BLM's mitigation program does not sufficiently guarantee that the cultural resources in the DFPA will be preserved. *See* 40 C.F.R. §§1505.2; 1505.3. While the "preferred strategy for treating adverse effects on cultural properties is 'avoidance,'" BLM explains that disturbance is inevitable due to the fact that avoidance is often "imprudent or unfeasible." DEIS at B-3. Thus, BLM admits that its primary mitigation measure will not and cannot work. Mitigation can play an important role by reducing the impacts to the cultural resources and it should be given a more thorough treatment in the DEIS. Unfortunately, BLM's mitigation plan is essentially a non-plan, or at best a promise to make a plan in the future. BLM states that "[m]itigation of adverse effects to cultural/historical properties that cannot be avoided *would be* accomplished by the preparation of a cultural resources mitigation plan." DIES at 2-40 (emphasis added). Federal courts have held that "where an agency's decision to proceed with a project is based on unconsidered, irrational, or inadequately explained assumptions about the efficacy of mitigation measures, the decision must be set aside as "arbitrary and capricious." *Stein v. Barton*, 740 F.Supp 743, 754 (D. Alaska 1990). *See also Robertson v. Methow Valley*, 490 U.S. 332, 352 (1989) ("[M]itigation [must] be discussed in sufficient detail to ensure that environmental consequences have been fairly evaluated...."); *Neighbors of Cuddy Mountain v. United States Forest Service*, 137 F.3d 1372, 1381 (9th Cir. 1998) ("mere lisiting of mitigation measures is insufficient to qualify as the reasoned discussion required by NEPA"). In sum, BLM's mitigation "plan" is an ad hoc, piecemeal treatment of the effects to the cultural resources, not a well-thought-out, comprehensive strategy that would allow the BLM to take the legally required "hard look." 30m 30n 30o

Morton, 458 F.2d at 838.

Of particular concern is the lack of any specific mitigation regarding the eligible historic trails, most notably the Cherokee Trail. DEIS at 4-99. The identified .25 mile buffer zone might protect the trails themselves, but may be insufficient to protect their historic and aesthetic viewshed and character, especially because the routes of the trails have not been "verified in the field." DEIS at 3-83 through 3-85 (discussing the still unknown routes of the Shell Creek Stock Trail, the Cherokee Trail and the Outlaw Trail). The BLM has also not provided analysis of impacts to the viewshed of the Cherokee Trail from developments that occur beyond the ¼-mile buffer but still inside the visual horizon of the Trail, and which could detract from the setting of the Cherokee Trail, and important component of its historical legacy. The BLM Field Office in Pinedale incorporated a 3-mile viewshed beyond the .25 protective buffer in order to offer further protection for the Lander Trail. *ROD, EIS for the Pinedale Anticline Oil and Gas Exploration and Development Project*, July 2000, p.29. This is the minimal mitigation required to protect historic trails, and we recommend even stronger protections. The BLM should require a 5-mile no-surface-disturbance buffer around the Cherokee Trail, with COAs attached automatically as a condition of APD approval, and exceptions granted only in cases where surface impacts would be rendered completely invisible to visitors on the Cherokee Trail by intervening topography and/or vegetation. 30p 30q 30r

In addition, the BLM notes that the Outlaw Trail ran near the DFPA, but asserts that "No sites have been associated with outlaw activity." DFEIS at 3-80. Local lore has it that Butch Cassidy and his Hole-in-the-Wall Gang stashed fresh horses somewhere in the Haystacks, which allowed them to outdistance pursuers following their successful Tipton train robbery. This site may in fact lie within the DFPA, as the planning area includes the easternmost portions of The Haystacks. In addition, Cassidy and his gang supposedly kept a cabin at Upper Powder Spring, just south of the DFPA on the Wyoming line. The most direct route between the Haystacks and Upper Powder Spring runs straight through the heart of the DFPA, meaning that the likelihood that the Outlaw Trail runs through the DFPA is actually quite high. An archaeological survey of the area is needed to delineate the stretches of the Outlaw Trail than run through or near the DFPA in order to determine the impacts of the proposed natural gas development. 30 30s

BLM also fails to discuss concrete monitoring plans, preferring instead, to rely on the Operators to monitor themselves and to report to BLM if cultural resources are discovered in the process of development. DEIS at 2-40. The DEIS does not address the very real possibility that industry might choose not disclose the discovery of cultural resources to the BLM. In its analysis of the impacts to cultural resources, BLM is required to assess the possibility that industry might not cooperate voluntarily. *See U.S. v. 27.09 Acres of Land*, 760 F.Supp, 345, 352 (S.D.N.Y. 1991) (explaining that the EA was "inadequate in its failure to consider the consequences of possible non-implementation or inadequacy of its anticipated mitigation measures.") A more comprehensive treatment of mitigation and monitoring is necessary in order "to insure a fully informed and well-considered decision." *Park County Resource Council, Inc. v. USDA*, 817 F.2d 609, 621 (10th Cir. 1987) (*quoting Vermont Yankee Nuclear Power Corp. v. NRDC, Inc.*, 435 U.S. 519, 558 (1978)). 30t 30u 30v

The DFEIS violates the National Historic Preservation Act (NHPA) 31

The policy behind NHPA is to preserve "the historical and cultural foundations of the Nation." 16 U.S.C. §470(b). Congress recognized that "in the face of ever-increasing extensions

of...industrial development," the "preservation of this irreplaceable heritage" serves to maintain a "vital legacy...for future generations of Americans." *Id.* Section 106 of NHPA mandates procedural requirements for agencies to follow when a federal "undertaking" is contemplated. 16 U.S.C. §470f. Additionally, agencies have substantive obligations under section 110 of NHPA. 16 U.S.C. §470h-2. BLM's inadequate analysis of the cultural resources in the DFPA blatantly disregards its responsibilities under NHPA. 31a

First, Section 106 of NHPA requires that an agency give the Advisory Council on Historic Preservation (ACHP) "a reasonable opportunity to comment with regard to such undertaking" when the undertaking may have an effect on "any...site...that is included in or eligible for inclusion in the National Register." 16 U.S.C. 470f. Under this act, it is the State Historic Preservation Office [SHPO] that acts as the contact and is the "key participant in the review process." *Utah Council, Trout Unimited v. U.S. Army Corps of Engineers*, 187 F.Supp.2d 1334, 1350 (D.Utah 2002). The regulations interpreting section 106 of NHPA stress the importance of timing in the consultation process. 36 C.F.R. §800.1(c). "The agency shall ensure that the section 106 process is initiated *early* in the undertaking's planning, so that a broad range of alternatives may be considered during the planning process for the undertaking." *Id.* (emphasis added). The WY state protocol agreement reiterates BLM's responsibilities, stating that "[a]s major projects become known, each Field Office manager has the responsibility to contact the SHPO to discuss upcoming projects that are likely to affect cultural resources (i.e., large land disturbing projects....) This consultation should occur *as early as possible in the planning process* with the objective being to facilitate the accomplishment of these projects in ways that meet heritage preservation goals." State Protocol Agreement, 4/15/99 (emphasis added). 31

As of June 20, 2003, some three months after the publication of the DEIS, the Wyoming SHPO had not received a request to comment (phone conversation with Fred Chapman, Archaeologist/Native American Liaison, WY SHPO, 6/20/03). The fact that the SHPO was not consulted prior to the publication of the DEIS (and has still not been contacted months after its publication) contravenes both the letter and spirit of the regulations. *Id.* BLM should make consultation regarding the irreplaceable cultural resources found in the DFPA an immediate priority. 31b

BLM's second violation involves section 101(d)(6)(B) of NHPA. 16 U.S.C. 470a. The regulations interpreting this section explain that an agency official is "require[d]...to consult with any Indian tribe...that attaches religious and cultural significance to historic properties that may be affected by an undertaking." 36 C.F.R. §800.2(c)(2)(ii). BLM states that "[c]onsultation with appropriate Native American tribes concerning areas of concern to them for traditional, cultural, and religious purposes *would occur*...within the context of specific development proposals, but *would also be* an ongoing process between BLM and affected Indian tribes and traditional cultural leaders." DEIS at 3-83 (emphasis added). Again, the use and tense of the word "would" denotes a future, hypothetical consultation — not an actual, present consult as required by the regulations. Timing is crucial in order to ensure that tribes and organizations have "a reasonable opportunity to identify...concerns about historic properties...advise on the identification and evaluation of historic properties...articulate...views on the undertaking's effects on such properties, and participate in the resolution of adverse effects." 36 C.F.R. §800.2(c)(ii)(A). For this reason, "[c]onsultation should *commence early* in the planning process, in order to identify and discuss relevant preservation issues and resolve concerns...." *Id.* (emphasis added). 31c

It appears from the text of the DEIS that even at this late stage, BLM has chosen not to make the 31d

effort to contact the appropriate Native American groups. After a two recent phone conversations with an archaeologist in the Rawlins Field Office, however, it seems letters were sent to the Shoshone Tribal Cultural Center, the Eastern Shoshone Tribal Council, the Comanche Business Council, the Northern Arapaho Tribal Business Council, the Fort Hall Business Council, the Northern and Southern Ute Tribes and the Medicine Wheel Coalition, but none of the Tribes responded (phone conversations with BLM archaeologist, Nina Trapp, 6/21,23/03). While it is not clear why BLM failed to mention these correspondences in its DIES, courts have made it known that even when an agency attempts to contact interested Native American groups, "a mere request for information is not necessarily sufficient to constitute the 'reasonable effort' section 106 requires." *Pueblo of Sandia v. U.S.*, 50 F.3d 856, 860 (10th Cir. 1995). 31e

The Wyoming SHPO identified at least six Native American groups that may have an interest in the DFPA: The Northern Utes, the Eastern Shoshone, the Comanche, the Northern Arapahoe, the Sioux and the Northern Cheyenne (e-mail correspondence from Fred Chapman, Archaeologist/Native American Liaison, WY SHPO 6/19/03). The discrepancy in lists between the BLM and the SHPO (with the Sioux and Northern Cheyenne being recommended by the SHPO but not contacted) illustrates the mistakes that occur when BLM does not follow proper procedure. Had BLM consulted with the SHPO early in its decision making process, these groups surely would have been contacted. Even if all groups had been sent letters, BLM incorrectly assumes that "contact" is equivalent to "consultation." A letter should be just the first step in BLM's "reasonable and good faith effort" to attempt to include these groups in true consultation. 36 C.F.R. §800.2(c)(ii)(A). 31 31f

The DEIS has additional problems under NHPA. Pursuant to §110 of NHPA, BLM must "establish...a preservation program for the identification, evaluation and nomination to the National Register of Historic Places [NRHP]...." 16 U.S.C. §470h-2(a). BLM has identified 900 sites within the DFPA; however, 56% of these sites remain unevaluated. DEIS at 3-81. The 900 sites represent an inventory of only 5% of the total project area. *Id.* It is unfortunate that given the myriad of undiscovered cultural resources undoubtedly to be found in the DFPA, BLM has chosen to commit most of the DFPA to oil and gas development before it has made a good faith effort to preserve the cultural resources as required by NHPA. 36 C.F.R 800.4(b)(1). It is not possible to adequately assess, let alone avoid or mitigate the adverse effects under 36 C.F.R. 800.5 if the proper baseline information has not been collected. Even though the regulations allow for some phased identification and evaluation for large land areas, the DEIS does not identify a responsible way this will occur. *See* 36 C.F.R. §800.4(b)(2). BLM simply states (again in its "future-hypothetical tense") that "[m]easures *would be taken* to mitigate or minimize adverse effects to historic properties included in or eligible for the [NRHP]." DEIS at 4-97. This is a grossly irresponsible handling of the irreplaceable cultural resources Congress intended to safeguard by the passage of the NHPA. Far from adhering to a preservation program that involves the identification, evaluation and nomination of sites to the NRHP, BLM seems content with the "inventory through bulldozing" approach to cultural resource preservation. At the very least, BLM should act now to ensure that a proper evaluation is accomplished for the over 500 known sites currently unevaluated and implement a responsible identification plan for unknown sites consistent with the policy and mandates of NHPA. 31g 31h 31i 31j

The DFEIS violates Executive Orders 11593, 13007, and 13287

BLM has an obligation to respond to the policy directives in each of these Executive Orders with 32

concerted effort and measurable action. Instead, as evidenced by the DEIS, BLM has chosen to blatantly disregard its responsibilities under these Orders. Executive Order 11593 states that Federal Agencies shall "administer the cultural properties under their control in a spirit of stewardship and trusteeship for future generations...[and] initiate measures necessary to direct their policies, plans and programs in such a way that federally owned sites, structures, and objects of historical, architectural or archaeological significance are preserved, restored and maintained for the inspiration and benefit of the people...." Executive Order 11593, §1, May 13, 1971. BLM's adherence to this mandate is nowhere reflected in the DEIS. Indeed, BLM's choice to increase oil and gas development through the Proposed Action is a choice not to preserve, restore and maintain the cultural resources of the area, but to breach its duty to act as a steward and trustee of these important sites and artifacts. This is particularly true given BLM's failure to assess the effects of development on the cultural resources by providing inadequate baseline data, providing no sufficient mitigation or monitoring plans for the known and unknown resources and ignoring its consultation and inventory duties under NHPA. 32a 32b 32c 32d

BLM's failure to make a timely and reasonable effort to contact the appropriate Native American tribes disregards Executive Order 13007. This Order requires Federal Agencies to "ensure that reasonable notice is provided of proposed actions or land management policies that may restrict future access to or ceremonial use of, or adversely affect the physical integrity of, sacred sites." Executive Order 13007, §2(a), May 24, 1996. The DEIS makes no mention of BLM's efforts to consult with Native American tribes who may possess some affinity with the area. Not only is this a violation of NHPA, but this inaction also ignores the policy clearly stated in Executive Order 13007. *See* 36 C.F.R. §800.2(c)(2)(ii). The surface disturbing activities inherent in oil and gas development certainly threaten the physical integrity of potentially sacred sites; and as discussed above, BLM's mitigation and monitoring plan is insufficient to address this harm (particularly since 95% of the DFPA remains unsurveyed.) 32e 32f 32g

Executive Order 13287 builds on both previous Orders by encouraging Federal Agencies to "provide leadership in preserving America's heritage by actively advancing the protection, enhancement, and contemporary use of the historic properties owned by the Federal Government..." and to "seek partnerships with State and local governments, Indian Tribes, and the private sector to promote local economic development and vitality through the use of historic properties in a manner that contributes to the long-term preservation and productive use of those properties." Executive Order 13287, §§1-2, March 3, 2003. BLM admits that the DFPA has a "high archaeological sensitivity;" however, its treatment of the cultural resources in no way contributes to their long-term preservation. DEIS at S-11. BLM has also not actively sought Native American partnerships, as it has not even begun to meet the basic requisites for Native American consultation. *See* 36 C.F.R. §800.2(c)(2)(ii). 32 32h 32i

The DFEIS violates the Federal Land Policy and Management Act (FLPMA)

FLPMA mandates that the public lands be managed "under principles of multiple use and sustained yield." 43 U.S.C. §1732(a). The term "multiple use" encompasses both mineral development as well as "natural scenic, scientific and historic values." 43 U.S.C. §1702(c). These uses must be weighed so that resources are managed without "permanent impairment of the productivity of the land and the quality of the environment." *Id.* Moreover, the chosen uses do not have to be ones that "give the greatest economic return." *Id.* BLM's support of the Proposed Action without adequate assessment, evaluation and planning for mitigating and monitoring of the affects to the cultural resources violates its multiple use management policy. 43 33 33a

U.S.C. §1732(a). Undoubtedly, with so little of the DFPA even surveyed, the choice to allow such extensive development in a relatively untouched landscape will have lasting detrimental effects to the quality of the cultural environment. In addition, by failing to initially survey to avoid adverse impacts to cultural resources and to study and adopt a meaningful mitigation plan, BLM has violated FLPMA's proscription against "unnecessary or undue degradation of the lands." 43 U.S.C. §1732(b). 33 33b

Water Quality

We are concerned that the Proposed Action will result in serious water quality problems. Water produced as a byproduct of natural gas production is likely to be highly toxic. The BLM notes, "Limited data from the deeper parts of this system indicate TDS concentrations in excess of 10,000 mg/l, which exceeds Wyoming DEQ groundwater standards for livestock." DFEIS at 3-45. Thus, produced water from gas development in the DFPA would be expected to be of very low quality and high toxicity. Since the lining of reserve pits is an optional measure rather than an ironclad standard, we can only assume that significant amounts of this toxic water will in fact leak from reserve pits to enter shallow subsurface aquifers and/or intermittent stream channels, thereby polluting the waterways downstream. And yet the BLM has presented no analysis of the impacts of such leakage. To remedy this problem, the BLM should require that reserve pits be lined in all cases, or, better yet, require that pitless drilling techniques be used so that produced effluent is reinjected as a matter of course. 34a 34b

Magnesium chloride would be used in conjunction with water for dust abatement purposes. DFEIS at 2-33. What are the impacts of the use of magnesium chloride on water quality in downstream waterways that are home to sensitive or Endangered fishes, such as Muddy Creek and the Little Snake River? Certainly this compound will be washed into intermittent waterways and find its way into permanent streams during downpours. The silence of the DFEIS on this issue is a shortcoming that violates NEPA requirements. 34c

The project also inherently entails the possibility that drilling activities will cause cross-contamination of aquifers, as deep, poor-quality waters may leak upward into shallower aquifers that feed wells or springs. The BLM notes,

> "Although there is some downward movement of the water from the shallow surficial units, most of the groundwater movement, if any, is upward from the deeper aquifers to the shallower aquifers. Concerns have been raised for several gas field projects in southwest Wyoming regarding groundwater quality degradation due to the piercing of confining layers and vertical and horizontal migration and mixing of water of various qualities. Data suggesting this is a current problem in the project area are not available. Improperly completed injection wells could be a potential source of contamination between aquifers."

34

DFEIS at 3-46. Why is there no analysis of the impacts of aquifer cross-contamination through improperly cased production or reinjection wells? What are the odds of such an accident? The BLM must present an analysis of this eventuality and prepare a mitigation plan should it occur. 34d

The BLM's failure to plan the locations of wells, roads, and pipelines once again renders an analysis of impacts impossible, this time for water quality. The BLM admits, "Specific project impacts on waters of the U.S. cannot be accurately assessed since facility locations have not been identified." DFEIS at 4-49. Furthermore, "The magnitude of the impacts to surface water resources would depend on the proximity of the disturbance to the surface channel, slope aspect and gradient, degree and area of soil disturbance, soil character duration of time within which 34e

construction activities occur, and the timely implementation of mitigation measures." DFEIS at 4-39. This is a candid admission on the part of the BLM that because the agency does not know precisely where (and how close to waterways, and on what types of soils) surface disturbances will occur, it cannot assess the magnitude of impacts to surface waters. This gross failure is an egregious violation of NEPA, which requires that the agency take a hard look at project impacts, a hard look that depends on the site-specific location of construction activities and production facilities. 34f 34

Soils

The soils in the DFPA are highly susceptible to erosion and degradation as result of human-induced disturbance of the type proposed in the Desolation Flats project. The BLM notes, "Of the 233,542 acres of land within the DFPA, most (154,104.2 acres or 66 percent) fall into a sensitive soils category in regard to topsoil depth and quality, with limitations to roads and facilities construction, rapid to very rapid runoff potential, and severe to very severe win and water erosion potential." DFEIS at 4-40. Some 66% of the DFPA is on soils that are considered "sensitive" or are susceptible to erosion and runoff. DFEIS at 3-25. Furthermore, "Soil crusting also reduces infiltration rates. Most soils in the project area are likely to form a surface crust, particularly if vegetative cover deteriorates." DFEIS at 3-27. "As a result of the project area's slow infiltration rates, steeply sloping surfaces and sparse vegetal cover, runoff potential is very high." DFEIS at 3-36. "Due to the highly erosive nature of the area, relatively high suspended sediment concentrations [in surface waters] are expected." DFEIS at 3-37. Thus, according to BLM's own admission, the DFPA is typified by fragile soil types that are highly susceptible to disturbance. 35

Badland areas are particularly sensitive. This land type covers 11.4% of the DFPA, the second most extensive land type in the project area. DFEIS at 3-29.The BLM notes,

> "Areas such as badlands have a very low reclamation potential with high clay and/or salinity concerns. In addition to these limitations, low annual precipitation and wind and water erosion could make successful reclamation more difficult to attain. Therefore, the overall potential for successfully stabilizing disturbed soils is poor to fair."

DFEIS at 4-34. Due to the sensitivity of this landscape type, badlands must be avoided at all costs. And yet the Acceptable Plan Criteria for Transportation Planning do not include provisions for prohibiting or even avoiding construction activities in badland areas. See DFEIS at A-1. The BLM must present the spatial distribution of badlands topography in the FEIS, and this deficiency in mitigation measures must be rectified. 35a

Revegetation and reclamation is likely to be a source of long-term problems if this project is allowed to go forward. The BLM's own analysis states, "A large portion of the project area would likely experience difficulties during revegetation due to the presence of excess sodium and/or clay in the soil. In addition, the droughty nature of the soils would further limit reclamation potential." DFEIS at 4-34. Furthermore, "These potential adverse impacts of the proposed project could reduce soil productivity, impair successful revegetation, and result in increased erosion potential....Soil erosion is likely to be a primary adverse impact of these project effects." DFEIS at 4-34. Finally, wind erosion is likely to accelerate. According to BLM analysis, "Wind erosion could also be an adverse effect of project development given the dominant sandy texture of the soils in portions of the project area....Chronic and severe wind erosion could occur in limited areas where roads and/or pipelines traverse sandy soil areas." DFEIS at 4-35. The BLM calls for "special efforts to avoid these areas," but fails to identify what these "special measures" 35b 35c

entail. Ibid.

The mitigation requirements in the DFEIS are insufficient to prevent widespread damage to soils and long-term revegetation problems. The BLM notes, "Excessive areas of sand, clay, and wetness would be avoided by final siting choices." DFEIS at 4-34. What sand, clay, or salt content is considered "excessive" for the purposes of this project? Numerical standards are needed, because if these criteria are left to the judgment of the Operators, it is likely that sensitive soils will be given short shrift. In addition, what will happen when areas of excessive sand clay, or wetness are too large to be mitigated by "final siting choices?" One would expect that some areas of sensitive soils are quite extensive, and that major, rather than minor, shifts of surface disturbance will be needed to avoid them. In order to mitigate properly for such large-scale occurrences of sensitive soils, these should be mapped and presented in the Final EIS as areas where surface disturbance will not be permitted. This work may have been partially completed in the DFEIS in Figure 3-8 (mapping soils of moderate-high and high risk of erosion) and in Figure 3-1 (showing deposits of dune sand and loess, although dune sand would need to be further distinguished from loess). 35d 35e 35f 35g

Avoidance measures for steep and/or erodible slopes in the DFEIS are insufficient. The mitigation provided is not watertight: "Placement of project facilities would need to avoid [soils with high water tables and/or surface inundation]. In order to preclude significant impacts, roads, drill/well sites, and pipelines should not be placed in areas with steep slopes greater than 25 percent and in areas with badland soils." DFEIS at 4-35. In the Acceptable Plan Criteria, construction would "Avoid slopes in excess of 25 percent." DFEIS at A-3. But these provisions do not outright proscribe construction on such steep slopes, which is the appropriate measure to prevent unnecessary and undue degradation of resources. But would project facilities ***in fact*** avoid saturated soils, badlands, and steep slopes? The DFEIS offers no guarantees. The BLM further states, "Although the majority of the project area is classified as sensitive soil and such areas cannot be totally avoided, particular attention would be given to avoiding steep slopes greater than 25%, badlands, sandy soils, and soils with high water tables and/or which are subject to inundation and thus, minimize the chance of a significant impact." DFEIS at 4-47. First of all, the assertion that sensitive soils "cannot be totally avoided" is absolutely false; the BLM has the unequivocal authority to require as a Condition of Approval on APDs to require that surface disturbances not occur on these soils. Secondly, "particular attention" needs to be defined in terms of ironclad standards, not just vague and vacuous promises with no guarantees. 35h 35 35i

The BLM's discussion of Alternative A sheds further light on the proposed action: "As discussed previously, it would be very difficult to totally avoid all sensitive soil areas. Slopes greater than 25 percent, badland soils, and sandy soils should be totally avoided. Therefore, where the other sensitive soils cannot be avoided, special construction techniques and mitigation measures should be applied to reduce the probability of significant soils impacts." DFEIS at 4-37. In what cases will the BLM determine that sensitive soils cannot be avoided? Certainly, with the availability and capabilities of directional drilling, all sensitive soils in the project area should be avoidable by moving drilling facilities away from them. 35j

With soils, just as with wildlife, the extent of impacts cannot be determined without knowing exactly where the wells, roads, and pipelines are going to be constructed. BLM admits as much: "Since specific sites have not been identified for wells, pipelines, and roads, Table 3-11 indicates the likelihood of encountering soil limitations that would require special attention." DFEIS at 4-41. Once again, the discussion of Alternative A sheds further light on the degree to which the 35k

BLM is able to evaluate impacts under the Proposed Action: "The same types of soils impacts would occur under this alternative as with the Proposed Action. The amount and duration of such impacts would depend on the location of the wells and access roads." DFEIS at 4-37. Thus, the BLM cannot offer any analysis on effects to soils and erosion beyond gross estimates, a fact that violates the NEPA requirements to make a thorough evaluation of impacts. 35 35l

The DFEIS also presents inadequate standards with regard to conserving and replacing topsoil during construction and reclamation activities. Retention of topsoil for reclamation purposes is important, because availability of mycorrhizal propagules in soil used for reclamation can influence the success of sagebrush reestablishment (Lyford 1995). Topsoil should be reserved during every surface-disturbing activity, so that it can be replaced during the reclamation process. The Acceptable Plan Criteria require only, "Salvage and the subsequent replacement of topsoil whenever possible..." DFEIS at A-3, emphasis added. It is hard to imagine a case when topsoil salvage and replacement would not be possible, and thus the burden is upon the BLM to elucidate the circumstances under which topsoil replacement would not be mandated, and if there are no such cases, the language in the FEIS should be amended to a non-discretionary requirement. 35m 35n

Biological Soil Crusts

Biological soil crusts are important to soils because they fix nitrogen into the soil, stabilize the soil surface, reduce erosion and increase water retention and infiltration (Snyder and Wullstein 1973). According to Rychert et al. (1978), "Blue-green algae crusts and/or blue-green algae-lichen crusts can fix significant amounts of atmospheric nitrogen in desert soils, and are probably responsible for a major input of nitrogen into desert ecosystems." This is particularly important, because, as the BLM notes, "Soils typically have adequate potassium for plant growth, while nitrogen and phosphorus may be limiting." DFEIS at 3-27. "Due to low organic matter in the soil and lack of geological material that would enhance fertility, all soils are assumed to be deficient in nitrogen. Potassium is assumed to be adequate." DFEIS at 3-28. For desert shrub vegetation types, "[c]ryptogamic crusts are also present on the surface of the soil." DFEIS at 3-47. What measures will the BLM require to promote the re-establishment of biological soil crusts following disturbance and reclamation? Are there mitigation measures that will enhance the possibility of biological soil crust disturbance following recovery? And what is the timeframe in which biological soil crusts can be expected to recover following abandonment and reclamation of roads and well sites? All of these questions must be adequately addressed in the FEIS. 36 36a 36b 36c

Reclamation

We are concerned that many of the scars that occur under the Proposed Action will take decades to heal even after reclamation efforts, and that some of these impacts may never disappear. According to the BLM, "Reclamation potential is generally poor to moderate within the DFPA, with some limited areas of good potential." DFEIS at 3-28.The BLM assumes "a reasonable success rate of 60% for reclamation..." DFEIS at 4-35. This statement suggests that 40% of disturbed areas will never be successfully reclaimed. 37a

Currently disturbed areas make up 0.6% of the DFPA, and "[t]hese areas have altered vegetative structure and composition and, in some cases, are actively eroding." DFEIS at 3-48. This is an indication that current management practices for oil and gas development are not succeeding in preventing significant impacts to other resources during the life of the project. 37

Directional Drilling 38

In the DFEIS, the BLM has failed to give detailed consideration and analysis to a directional drilling alternative. DFEIS at 2-43. This proposal was rejected on the basis of potentially prohibitive costs to the natural gas operators. Looking only at these costs is incomplete. The added costs associated with directional drilling will be mitigated by the benefits to the public in terms of avoided environmental impacts and impacts on hunting and other recreation. These benefits need to be estimated and included and directional drilling should be re-considered with more complete information. We have attached a report, *Drilling Smarter: Using Directional Drilling to Reduce Oil and Gas Impacts in the Intermountain West*, to provide a detailed technical basis, founded on the petroleum engineering literature produced largely by the oil and gas industry itself, which concludes that directional drilling is feasible and economical in virtually any geologic setting, including the setting presented by the DFPA. We incorporate this report and its conclusions in full into these comments, and expect the BLM to respond to it as the agency would to any other public comment in the NEPA process. 38a 38b 38c

The BLM admits that directional drilling is feasible for the project area. According to BLM, "The DFPA Operators feel that in certain circumstances, where the need arises to vacate the drilling of a vertical well, a directional (i.e., directional, horizontal, diagonal) well could be utilized for resource protection." DFEIS at 2-43. We wholeheartedly agree with this statement, and would like to call attention to some specific "resource protection" issues which should automatically trigger the use of directional drilling technology:

-Areas within 3 miles of a sage grouse lek;
-Areas of Critical Environmental Concern, including the MVMA, proposed Dad Colony Prairie Dog ACEC, proposed Mexican Flats Plover ACEC, and proposed Powder Rim ACEC;
-Areas within 2 miles of an active or historic ferruginous hawk nest or 1 mile of the active or historic nests of other raptor species;
-Areas on floodplains of intermittent and permanent streams;

Furthermore, many directional wells have already been drilled in the area. Of the 17 diagonal wells drilled in the Wamsutter Field between 1994-1999, horizontal displacement ranged from 250-2450 feet. DFEIS at 2-43. According to BLM's own analysis, "No completion problems were experienced with the S-shaped wellbores, therefore, this configuration was accepted as the preferred method of directionally drilling in the Wamsutter Field." DFEIS at 2-43. The DFEIS also ignores the possibility of slant-hole completions, which also do not experience difficulties from the standpoint of binding up the drilling string at bends in the wellbore. 38 38d

The BLM's analysis of the environmental advantages of directional drilling is flawed. The BLM makes an unsupported assertion: "Multiple wells per pad do not translate into a direct reduction of surface disturbance," due to the increased number of condensate tanks and increased dehydrator and separator size. DFEIS at 2-43. While we agree that an individual wellpad supporting a number of directional wells is larger that the well pad for a single vertical well, it is not apparent that the overall surface disturbance for, say, 5 clustered wells on a single pad would not be substantially less than 5 separate pads with all of their associated access roads, pipelines, and other disturbances. The BLM notes that as many as eight wells can be drilled on a single pad. DFEIS at 2-14. This would obviate the need for a substantial network of roads and pipelines as the single pad with 8 wells could be placed immediately adjacent to an existing high-standard road. 38e

The BLM argues that directional drilling should not be required due to potentially increased cists to Operators. Experiments in the Wamsutter Field found that directionally drilling 4 wells from a

single pad cost 15-20% more than drilling 4 wells on separate pads. DFEIS at 2-44. Presumably, these wells were diagonal or S-turn, as they did not yield a greater product production than the vertical wells. Nonetheless, a 15-20% drilling cost increase is a small price to pay to gain the reduction in habitat fragmentation from such clustering; indeed, it is the least the BLM could require to mitigate for the habitat fragmentation inherent to the project. If the BLM is to live up to its multiple-use mandate, it must require Operators to spend the extra money to achieve substantial reductions in environmental impacts as a cost of doing business on multiple-use public lands. 38f

The DFEIS also reports arbitrary and incorrect limits on the horizontal displacement achievable in the DFPA. The BLM asserts that the maximum horizontal displacement of directional wells using "the same rig equipment capabilities and the same casing program" as in Wamsutter would be 6,200 feet due to mechanical limits of the drill pipe. DFEIS at 2-44. Why would the BLM artificially constrain directional drilling in the DFPA based upon drilling rigs used in the Wamsutter Field? This assumption is arbitrary and capricious. In fact, the entire range of well technologies is available to the Operators in the DFPA; they are able to truck in larger/more technologically advanced drilling rigs capable of reaching much greater horizontal displacements if the BLM's development standards required them to do so. 38g

The BLM makes the argument that because directional drilling costs are higher, some marginal wells may not be drilled, some leases would be undeveloped, and thus less gas would be produced. DFEIS at 2-44. We agree with this assessment, but it does not indicate a problem. Gas prices are market-driven; as supplies increase, the price goes down, rendering some plays marginal. Low prices which would reduce the number of wells in the DFPA under directional drilling are indicative of a gas glut, when the nation does not need more natural gas. On the other hand, prices are driven higher when the national gas supply drops (and additional production is helpful), and under these conditions both directional and vertical drilling would be economically feasible. Thus, the overall public interest favors directional drilling, under which gas production is optimized when supplies are tighter, the same amount of gas ultimately gets to market, only when it is needed rather than during periods of glut, and the environmental impacts are simultaneously reduced. The argument that directional drilling reduces gas production is a false one over the long term, and the argument that the public interest suffers when marginal plays go undeveloped during periods of glut is even more specious and unsupportable. 38

The BLM must therefore analyze at least one alternative that mandates the use of directional drilling to cluster wells and reduce impacts as well as to avoid surface disturbance to sensitive landscapes (plover concentration areas, big game crucial ranges, plover nesting concentration areas, prairie dog colonies, 2-mile buffers for sage grouse leks and 1-mile buffers for raptor nests), and should select this alternative for implementation in the Desolation Flats project. 38h 38i

Pitless Drilling

One method that is universally applicable to reduce drilling impacts is "pitless drilling," entailing closed-loop systems that recycle drilling mud rather than dumping it into open pits. In addition to the elimination of toxic waste pits on the surface, this method reduces wellfield truck traffic by up to 75%, reduces water consumption by 80%, and is actually 8% less costly than constructing and maintaining a reserve pit (Longwell and Hertzler 1997). This method has proven successful in Alaska (Phillips Petroleum 2002) and Colorado (Longwell and Hertzler 1997), and is planned for the Sakhalin I project in Russia (Sumrow 2002). Due to its environmental advantage, pitless drilling should be mandated as a standard requirement for drilling operations under the 39 39a

Desolation Flats project.

Each well pad under the proposed project would be accompanied by a reserve pit 10 feet deep, and on average 160x140' in size. See Figure 2-2, DFEIS at 2-13, and Figure 2-3, DFEIS at 2-15. Some of these reserve pits would be unlined, in cases where water-based drilling muds are used. DFEIS at 2-12. Sheep-tight fencing would surround reserve pits (DFEIS at 2-12). Netting could be required by BLM on a case-by-case basis, but is not an ironclad requirement. DFEIS at 2-14. And yet elsewhere, BLM states that "all reserve pits and other pits and areas that contain potentially hazardous materials would be fenced and netted." DFEIS at 2-39. Ultimately, drilling muds would simply be buried on-site, and allowed to remain in the ground. DFEIS at 2-14. All of these impacts are completely unnecessary in light of the availability of "pitless drilling" technology, which recycles drilling muds through the systems and does not require the deposition of toxic waste in surface reserve pits. 39 39b

In the proposed action, produced water would be either reinjected, evaporated from lined or unlined ponds, or trucked to a disposal facility. DFEIS at 2-17. Water produced as a byproduct of natural gas production is likely to be highly toxic. The BLM notes, "Limited data from the deeper parts of this system indicate TDS concentrations in excess of 10,000 mg/l, which exceeds Wyoming DEQ groundwater standards for livestock." DFEIS at 3-45. A nearby disposal facility east of North Flattop Mountain, run by Devon Energy, utilizes sprayers to mist produced water into the air for evaporation. Waters of this low quality and high TDS content, if sprayed into the air for evaporative purposes, would result in a rain of toxic salts and heavy metals on nearby soils which would likely sterilize the soils, kill off the vegetation, and ultimately drain off into Muddy Creek or the Little Snake River during heavy rainfalls. The BLM could avoid all of these impacts through requiring Operators to employ pitless drilling techniques. 39c

Traffic

BLM in several places commits to low speed limits to prevent roadkill of wildlife and danger to recreational users. See, e.g., DFEIS at 2-39, 2-40. How will such speed limits be enforced? Is there any hope of compliance without a credible enforcement presence? 40

Coalbed Methane

The BLM notes, "Coal resources are not currently economically minable, but potential exists for coalbed methane development." DFEIS at 3-3. The project description does not encompass the drilling of coalbed methane (CBM) wells, and the BLM has not presented a detailed analysis of the special impacts of CBM development which are unique and quite different from the impacts of conventional gas development. We therefore conclude that CBM wells will not be permitted under the DFEIS, as adequate NEPA analysis has not been performed in this document to support CBM exploration and development. 41

Floodplains

In Table 3-1, BLM notes that for floodplains, there are "None present" and the issue is not addressed in the text of the EIS. DFEIS at 3-1. And yet when describing the topography of the DFPA, the BLM notes, "There are nearly level to gently sloping floodplains and alluvial terraces..." DFEIS at 3-24. Furthermore, "Stratified sands and gravels are present in riverwash associated with streambeds and floodplains..." DFEIS at 3-25. And "Floodplains, alluvial terraces, seep areas, streambeds, and bottomlands have an average water table depth less than six feet." DFEIS at 3-27. Certainly, there are numerous floodplains in the DFPA associated with intermittent watercourses distributed throughout the DFPA. These floodplains must not be the site 42 42a

of construction or drilling activities in accordance with Executive Order 11990. 42

The DFEIS provides, "Impacts would be considered significant if the following were to occur…Non-compliance with EO 11990, Protection of Floodplains." DFEIS at 4-39. This Executive Order is not discretionary, and thus the BLM should require that all surface disturbing activities comply with its provisions, without exception. 42a

AIR QUALITY

When combined with existing, permitted, and reasonably foreseeable future emission sources, the Desolation Flats Natural Gas Development Project will result in a significant cumulative increase in regional emissions of air pollutants which poses a significant threat to air quality related values throughout Wyoming, as well as in northern Colorado. Despite all of the claims to the contrary, the DFEIS systematically underestimates the air quality and visibility impacts associated with this project and as a result fails to meet the basic "hard look" requirements mandated by the National Environmental Policy Act. The Desolation Flats DEIS also fails to comply with BLM's non-discretionary duty under the Federal Land Policy and Management Act (FLPMA) to "provide for compliance with applicable pollution control laws, including state and federal air …pollution standards or implementation plans[.] 43 USC 1712(c)(8), and to "require compliance with air and water quality standards established pursuant to applicable Federal and State law." 43 CFR § 2920.7

Contrary to BLM's assertions, WOC and other environmental groups did not endorse or otherwise indicate acceptance of the Air Quality Assessment Protocol.

The DFEIS (at 4-7) implies that the Air Quality Assessment Protocol is acceptable to "environmental groups including Wyoming Outdoor Council, Powder River Basin Resource Council, and Northern Plains Resource Council." This is patently not true. First, as BLM now concedes, NPRC and PRBRC did not comment on the air quality protocol or, indeed, on any other aspect of this project. We have been informed that the statement was included in the DEIS by mistake. We appreciate the fact that BLM has promised to correct the record to show that these groups did not endorse or comment on the methodology selected to analyze air quality impacts. (Personal communication with Susan Caplan, BLM physical scientist, June 27, 2003). 43 43a

Second, although WOC did attend a single meeting convened by BLM on November 28, 2000, to discuss air quality protocol issues, and did submit scoping comments, we reject any implication that our limited participation "ensur[ed] that the assessment methodology was technically sound and acceptable to all parties[]"(DFEIS at 4-7), or resulted in "consensus" being reached. DFEIS at 4-8. We appreciate the BLM's willingness to acknowledge these statements were improperly included in the DFEIS and it's efforts to correct the mistake in the final EIS. Id.

The DFEIS fails to include all sensitive receptors potentially impacted by this and other developments included (or that should have been included) in the cumulative effects analysis.

Table 4-2 lists the "sensitive areas" analyzed in the DFEIS. Conspicuously absent are Teton and Washakie wilderness areas, and Grand Teton National Park, all of which are mandatory Class I areas, and all or portions of which are included in the modeling domain (Figure 4-1). Because NEPA requires a hard look at all potential direct, indirect and cumulative effects of a proposal, 43b

the far field analysis should have included these sensitive receptors. The need to do so is particularly urgent because other recent analyses (see, e.g., Powder River Basin Oil and Gas Project EIS, Pinedale Anticline EIS) reveal significant cumulative impacts to air quality related values in these areas, to which any addition of pollutants from the Desolation Flats project would increase and further exacerbate the already significant impacts.

The DFEIS fails to include all reasonably foreseeable future emission sources. 43c

The DFEIS states (at 5-2) that "[t]he Proposed Action incorporates all reasonably foreseeable *natural gas activity* within the project area based on current knowledge of the area's geology and natural gas drilling and development technology." (emphasis added). First, a scientifically defensible and legally adequate environmental disclosure requires consideration of *all* reasonably foreseeable emission sources, not just those related to oil and gas activities. The EIS should be revised to include an expanded inventory that lists all expected increases in emissions from both mobile and stationary sources in the study area 2, including projected increases in railroad and highway traffic, as well as mines, power plants, and other emission sources.

Second, with respect to reasonably foreseeable future *natural gas activity*, the DEIS fails to include many significant proposed projects which have either been approved or are presently undergoing NEPA review, including but not limited to: 43

* Powder River Basin Oil and Gas Development Project Record of Decision (WY-070-02-065), 51,000 CBM wells (April 2003);

* South Piney CBM Project - 210 wells, Sublette County, (68 Fed. Reg 4513, January 29, 2003);

* EnCana, Inc's Jonah Field Infill Drilling Project, Sublette County, 1,250 wells (68 Fed. Reg. 12100, March 13, 2003);

* Seminoe Road CBM Project, 1,240 wells, Carbon County, (68 Fed.Reg 12101, March 13, 2003);

* Atlantic Rim CBM Project, 3,880 wells, Carbon County, (66 Fed. Reg. 33975, June 26, 2001);

* Wind River Natural Gas Development Project, Fremont County, 325 wells (being added to existing field consisting of 160 wells never previously analyzed in NEPA document) (68 Fed. Reg 3543, January 24, 2003);

* Big Porcupine CBM Project, TBNG, 453 CBM wells, scoping closed, EA or EIS pending;

* Kennedy Oil Pilot Exploratory CBM Project, 20 wells, Rock Springs Field Office, Sweetwater County;

* Copper Ridge Shallow Gas Project, 89 wells, Rock Springs Field Office, scoping ended November 15, 2002, EA pending;

* Little Monument Unit Natural Gas Project, 31 additional wells in the Fontenelle National

Gas Infill Drilling Project area in Sweetwater County.

Particularly curious is BLM's failure to evaluate the cumulative effects of the Atlantic Rim CBM project which, unlike the others listed above, is at least identified in the Desolation Flats DEIS at 5-3. The explanation for not including emissions from the Atlantic Rim Project is untenable. For purposes of NEPA compliance, the project long ago reached the stage of a "proposal" (40 CFR § 1508.23) the cumulative effects of which must be included in this analysis. How is it that a proposed project which itself is the subject of a pending federal EIS is nonetheless deemed not reasonably foreseeable enough to be included in a cumulative effects analysis in an EIS being prepared for a similar action in the same general area? BLM's ridiculous rationale for not including consideration of this project inevitably guarantees a backwards looking analysis that is totally contrary to the whole point of NEPA's cumulative effects analysis requirements. While we acknowledge NEPA's requirement to consider "reasonably foreseeable future action" shouldn't necessitate "crystal ball inquiry," by the same token it most certainly doesn't mandate an absolute "beyond a reasonable doubt" standard the BLM seems to be insisting on. Surely, once a project has passed a conceptual stage to the realm of a concrete proposal that independently triggers an EIS or EA, the CEQ's NEPA regulations require that it be considered in a cumulative effects analysis. To do otherwise defies common sense and makes a mockery of the NEPA process.

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The stated rationale for not including the Atlantic Rim natural gas project along with others that have been proposed is even more absurd when one considers the double standard being applied. When BLM adopts or revises land use plans, environmental impact analysis is based on a reasonably foreseeable development scenario (RFD) that projects a level of development some ten to fifteen years into the future. For obvious reasons, this projection is almost always made in the complete or near absence of specific development proposals thus necessarily requiring a degree of speculation or "guess work," yet it is the accepted method under BLM's supplemental program guidance and other Interior Department policies. In this case, BLM has specific knowledge of numerous concrete and well-defined oil and gas development proposals, some of which are in the same county, yet it chooses to pretend they don't exist. Frankly, the approach is ludicrous.

The DEIS fails to include emission sources located outside the study area that will impact Class I sensitive receptors listed in the DFEIS.

43d

One of the most glaring and problematic deficiencies in the DFEIS's air quality analysis is its failure to consider existing and reasonably foreseeable future emissions from coal bed methane (CBM) and other industrial (i.e., mineral and energy) developments in the Powder River Basin. Although the DEIS admits that "the CIA area for air quality effects is regional in nature; therefore the scope of activities considered is necessarily broad" (DFEIS at 5-1) it nonetheless ignores a significant new source of regional emissions: coal bed methane development in the Powder River Basin. As the BLM knows, the Powder River Basin Oil and Gas Project FEIS (January 2003) discloses significant direct and cumulative impacts to air quality in western Wyoming, including significant impacts to air quality related values in several Class I areas that are also affected by this project, including the Bridger and Fitzpatrick wildernesses. See Final Environmental Impact Statement and Proposed Plan Amendment for the Powder River Basin Oil and Gas Project, Volume 2, Chapter 4 (discussion of cumulative impacts beginning at page 4-386); and Volume 3, Appendix F – Air Quality Technical Support Document (showing significant visibility impacts in Bridger, Fitzpatrick and Washakie Wilderness areas, among others). As a result, the DFEIS seriously underestimates the potential cumulative air quality impacts by ignoring emissions from

existing and proposed industrial developments in the Powder River Basin. Had those emissions been included in this DEIS, projected cumulative impacts to air quality related values in western Wyoming would be much greater than described, potentially exceeding applicable ambient air quality standards, PSD increments, and established significance criteria.

The BLM fails to ensure compliance with air pollution standards.

43e

The BLM is required under NEPA to thoroughly analyze whether implementation of the Desolation Flats Project, together with other existing and reasonably foreseeable future actions, will violate state or federal ambient air quality standards or exceed increments established for Class I and II areas. Specifically, to satisfy NEPA's requirements, the DFEIS must contain sufficient information to enable decision-makers to determine whether existing, permitted and reasonably foreseeable industrial and energy development in Wyoming will comply with ambient air quality standards and Prevention of Significant Deterioration (PSD) increments established under the Clean Air Act, 42 U.S.C. §§ 7401 *et seq.* This analysis is also required to ensure that BLM complies with Federal Land Policy Management Act regulations requiring that "each land use authorization shall ...(3) Require compliance with air and water quality standards established pursuant to applicable Federal and State law." 43 CFR § 2920.7.

NEPA regulations also require that an EIS discuss the "possible conflicts between a proposed action and the objectives of Federal, regional, State and local (and in the case of a reservation, Indian tribe) land use plans, policies and controls for the area concerned." 40 C.F.R. § 1502.16(c); *see also* 40 C.F.R. § 1502(d) (requiring discussion of "any inconsistency with any approved State or local plan and laws (whether or not federally sanctioned)"). In addition, an EIS must discuss the "significance" of the environmental effects of a proposed action, 40 C.F.R. § 1502.16(a) and (b) – a term that requires consideration of "[w]hether the action threatens a violation of Federal State or local law or requirements imposed for protection of the environment." *Id.* § 1508.27(b)(10). These requirements are reinforced by Section 202(c) of FLPMA, the BLM's "organic act" and substantive law governing activities on BLM-administered lands, which requires the agency to "provide for compliance with applicable pollution control laws, including State and Federal air, water, noise, or other pollution standards or implementation plans ..." 43 U.S.C. § 1712(c)(8). Unfortunately, as explained in detail below, the "analysis" in this DEIS does not even come close to meeting these basic requirements.

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1) The DEIS' Failure to Conduct Complete Increment Consumption Analysis Violates FLPMA and NEPA.

The DFEIS acknowledges that the significance criteria for potential air quality impacts includes a violation of the National, Colorado and Wyoming Ambient Air Quality Standards and any exceedance of the PSD increments for Class I or Class II areas. DFEIS at 4-8. Yet, ironically, it also acknowledges that the air quality assessment fails to include a complete increment consumption analysis sufficient to determine whether increments have been exceeded: "It should be noted that any comparisons made to the PSD Class I and II increments during this analysis are intended to evaluate an 'impact threshold' and do not represent a regulatory PSD increment consumption analysis. The determination of PSD increment consumption is a state air quality regulatory agency responsibility with oversight from the [EPA]. DFEIS at 3-20.

Using this non-regulatory approach, the DFEIS nevertheless concludes that PSD Class I and Class II increments will not exceeded by project-generated or cumulative emissions. See, e.g.,

Executive Summary at S-16; Table 4-6; and Table 5-4. The BLM arrives at this faulty conclusion because : (1) compliance with PSD increments is evaluated based on inappropriate baselines; (2) as mentioned previously, significant direct and cumulative emissions from reasonably foreseeable future projects were not considered. No reason is given for the failure to perform a proper increment consumption analysis as part of the EIS.

a) Inappropriate Baselines.

The essential element of an increment consumption analysis is a determination of the extent to which the allowable increment has been consumed since the baseline was set for the area affected by the proposed projects. The DFEIS acknowledges that the significance criteria for potential air quality impacts include PSD increments, which limit the incremental increase of NO_2, SO_2, PM 10 and $PM_{2.5}$ concentrations above legally defined baseline limits. Nevertheless, the DFEIS proceeds to analyze potential air quality impacts against arbitrary baselines that do not conform with the requirements of the Clean Air Act. Under the Clean Air Act, PSD increments are "maximum allowable increases *over baseline concentrations*." 42 U.S.C. § 7473(b) (emphasis added). The Act defines "baseline concentration" as:

> with respect to a pollutant, the ambient concentration levels which exist at the time of the *first* application for a permit in an area subject to this part, based on air quality data available in the [EPA] or State air pollution control agency and on such monitoring data as the permit applicant is required to submit. . . . *Emissions of sulfur oxides and particulate matter from any major emitting facility on which construction commenced after January 6, 1975, shall not be included in the baseline and shall be counted against the maximum allowable increases in pollutant concentrations established under this part*.

42 U.S.C. § 7479(4) (emphasis added); *see also* 40 C.F.R. § 52.21(b)(13)(i). State and federal implementation plans must contain measures assuring that these "maximum allowable increases *over baseline concentrations* . . . shall not be exceeded." 42 U.S.C. § 7473(a) (emphasis added).

The BLM's analysis of the direct and cumulative effects on Class I and Class II increments failed to satisfy the definition of "baseline concentration" prescribed by the Clean Air Act. Because the DFEIS does not conduct a regulatory analysis, it does not identify the minor source baseline dates for any of the pollutants in either Wyoming or Colorado. (The NO_2 baseline area in Wyoming is Statewide. The minor source baseline date was set February 28, 1988, soon after the February 8,1988, trigger date established by EPA. See 53 Fed. Reg. 40656 (October 17, 1988). For particulate matter, the trigger date was in 1978, and the minor source baseline dates were set soon thereafter in both states). Thus all new sources, both major and minor stationary sources, as well as additional mobile source emissions, consumed the allowable increment after those dates.

Rather than assessing the cumulative impact on the increments using the baseline concentrations required by the Act and EPA regulations, BLM used the pollutant concentrations existing in 1995 as the baseline for its air quality analysis. While this analytical approach makes sense for the purpose of determining compliance with absolute ceilings such as the National Ambient Air Quality Standards, it cannot be used to assess the increment ("maximum allowable increases over baseline concentrations") consumed after the establishment of baselines under the Clean Air Act, all of which were established well before 1995. BLM has done exactly what NEPA prohibits. By using the 1995 period as a baseline for the purposes of its analysis of potential increment

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violations, instead of the much earlier baseline periods required by the Clean Air Act and EPA regulations, the DEIS provides a misleading analysis that minimizes the magnitude of the threat to PSD increments.

The increment consumption analysis performed for the DFEIS, however, considered new emissions as beginning with the permitted and "reasonably foreseeable" new sources after July 1995. See DFEIS at 5-6 ("Emissions for sources operating before 1995 were assumed to be included in the background monitoring data."). Because, as the DFEIS states, "[t]he estimated emissions from sources permitted between 1995 to 2001, along with the changes in producing well emissions and future RFD emissions were added to the Desolation Flats emissions to obtain the cumulative emissions inventory[]" (DEIS at 5-6), the DFEIS' cumulative PSD increment consumption analysis fails to take into account increments consumed by emissions during the period beginning with the regulatory baseline dates and ending in 1995.

Given the level of industrial development in Wyoming since the establishment of the regulatory baselines, including major sources such as power plants and gas treatment facilities, the sources omitted from the consumption analysis are likely significant, and major consumers of increment. Indeed, the sources included in the inventory for this DEIS quite likely account for less than half of the emissions added into the modeling domain during the period since the regulatory baselines were set. By considering only the sources permitted and expected to be permitted after 1995, the consumption of increment that has occurred from earlier development is not counted in the current increment calculations. All emission sources (major or minor, stationary or mobile) that may affect Wyoming's Class I area -- whether within or outside the study area -- must be included in the modeling analysis to understand the consequences of new development for full increment consumption in the Class I areas.

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This has potentially significant consequences for the EIS because Class I and Class II increments have already been partially consumed, an important point not taken into account in the analysis. The failure to include a comprehensive increment consumption analysis renders the DFEIS inadequate because without such analysis it is impossible to determine whether increments have been consumed by prior development, or whether the proposed actions will cause the increments to be exceeded. Thus the current analysis is seriously deficient with respect to characterizing the magnitude of increment consumption that must be identified before the BLM may issue a decision approving the proposed action. Without a proper "regulatory" increment consumption analysis, the BLM is unable to demonstrate compliance with state and federal air quality standards.

b) Omission of Reasonably Foreseeable Future Projects.

The BLM's unexplained exclusion of several reasonably foreseeable future actions from its consideration of cumulative air quality impacts substantially skewed the analysis of air quality effects on Wyoming and Colorado PSD increments, ambient air quality standards, visibility goals in Class I area, and impacts to ANC at sensitive alpine lakes. By BLM's own admission, the DFEIS fails to include air emissions from the 3,880-well Atlantic Rim project, as well as emissions from a large number of other industrial developments proposed in Wyoming, including but not limited to nearly a dozen other natural gas projects totaling over 50,000 wells.

Taken together, these projects will be major sources of air emissions with significant impacts

upon PSD increments, ambient air quality, visibility and ANC at sensitive lakes. BLM's insupportable decision to ignore these otherwise "reasonably foreseeable" future projects from consideration in its analysis of the cumulative effects on air quality results in an analysis that substantially underestimates the cumulative air quality impacts of this Project. Accordingly, because the DFEIS fails to alert decision-makers and the public to the significance of the reasonably foreseeable impacts to the PSD Class I and Class II increments, a supplemental draft EIS containing the proper increment consumption analysis should be prepared.

2) BLM may not rely on State regulatory programs to satisfy its independent obligations under FLPMA and NEPA to assess air quality impacts and compliance with air quality standards.

The DFEIS notes (at 5-1) that "this discussion of potential cumulative impacts assumes the successful implementation of the environmental protection and mitigation measures ... as well as compliance with ... all applicable federal, state, and local regulations and permit requirements."

Reliance on the State's regulatory program cannot be substituted for the affirmative duty imposed on BLM to provide for compliance with NAAQS and the increments, both because FLPMA requires that BLM comply with state standards, and because BLM has no assurance that the State will perform a complete increment consumption analysis before the proposed actions are substantially underway and contributing to additional emissions that may add to further exceedances of increments or cause increments to be violated. For these reasons, the EIS must include the increment consumption analysis so that BLM's obligation to develop and adopt sufficient mitigation measures may be performed as part of the project NEPA analyses and adopted as conditions in the ROD.

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BLM contends that it need not conduct a "regulatory" increment consumption analysis because "PSD increment consumption analyses are applied to large industrial sources and are solely the responsibility of the State and the Environmental Protection Agency." DFEIS at 4-8. The fact that the State has a legal responsibility to protect increments does not mean that BLM is thereby relieved of its independent responsibility under FLPMA to "provide for compliance with pollution standards," or its obligation under NEPA to fully describe the cumulative impacts of the proposed projects and identify mitigation measures to prevent adverse impacts. Simply put, BLM's obligations to assess and provide for compliance with PSD increments cannot be delegated to a State agency.

Emissions from the projects under review are associated with a large number of small to medium sized sources that are not expected to exceed the threshold for "major stationary source." The Wyoming PSD SIP only requires that major sources perform an increment consumption analysis and an assessment of visibility impairment in Class I areas. See Chapter 6, Permitting Requirements, Section 4 PSD. The provisions governing the permitting of minor sources only require that the applicant demonstrate that "the proposed facility will not cause significant deterioration of existing ambient air quality in the Region as defined by any Wyoming standard or regulation that might address significant deterioration." Chapter 6, Section 2(c)(iii). This provision does not explain what standard, if any, applies, nor does it describe the "region" that must be considered, whether emissions from the minor source must be considered together with emissions from other permitted and reasonably anticipated sources, or what pollutants are to be considered. Moreover, in a recent letter to WOC, the DEQ's Air Quality Administrator has indicated that the state has never performed any increment consumption analysis to determine if

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the Wyoming PSD SIP is being complied with." See Letter from Dan Olson, Administrator, DEQ/AQD to Dan Heilig, Director, WOC, dated May 19, 2003, appended hereto as Attachment 4.

NEPA and FLPMA require a more thorough discussion of mitigation measures to prevent air quality violations, exceedance of increments and adverse impacts to AQRV.

43f

The CEQ regulations interpreting NEPA require that the EIS identify the "means to mitigate adverse environmental impacts," 40 CFR 1502.16(h), and "include appropriate mitigation measures already included in the proposed action or alternatives." 40 CFR 1502.14(f). "Mitigation" is defined to include "(a) avoiding the impact altogether by not taking a certain action," and "(b) minimizing impacts by limiting the degree or magnitude of the action." 40 CFR §1508.20. Where federal or state environmental standards are shown to be adversely affected by the proposed action (e.g., cumulative visibility impacts in the Bridger Wilderness), the NEPA review must at least identify sufficient mitigation measures that will prevent the adverse impact. This obligation is reinforced by FLPMA which establishes the obligation to "provide for compliance with pollution standards." Thus the DFEIS is inadequate both because it fails to describe the full magnitude of the exceedances of increments that will result from adding emissions from the proposed project and other reasonably foreseeable future actions, and it fails to identify the mitigation measures that will effectively prevent those adverse impacts.

The DFEIS did not identify exceedances of near-field Class II increments in the project area, or Class I and II exceedances in far-field areas. However, had the BLM conducted a full modeling analysis of all emissions to determine the amount of increment that is available for new emissions, the results likely would have been quite different. In order to remedy these serious omissions, BLM must prepare a proper and thorough air quality analysis, and then identify mitigation measures sufficient to prevent any clean air violations. BLM's obligation is not limited to considering the direct impacts of the proposed project. It must consider the cumulative impacts of the proposed project, including impacts in areas where the NAAQS and increments are currently violated or where additional emissions will cause those standards to be violated. If the revised DEIS identifies expected violations of the federal pollution standards, 43 USC §1712(c)(8) prohibits the project from being approved until sufficient mitigation measures are adopted to prevent or remedy these violations. The kinds of mitigation measures that should be identified and evaluated for effectiveness in a revised DEIS include phased development of the fields, emissions reductions from other stationary sources, and more stringent emission control technologies.

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The DFEIS must recommend the adoption of emission controls assumed in the air quality analysis

43g

The DFEIS indicates at 5-1 that "the discussion of potential cumulative impacts assumes the successful implementation of the environmental protection and mitigation measures discussed [in the DFEIS]." To the extent that the DFEIS relies on assumed emissions controls for the purpose of developing the emissions inventory, those assumptions amount to de facto mitigation measures that must be required in the ROD. These include, but are not limited to, the requirement of 50% control of fugitive dust on access roads, use of natural gas as the fuel for compressor stations, the assumed NOx emissions limitations of 1.0 and 1.5 gr/hp-hr for compressor engines, and the use of NSCR on diesel engines. To conclude that emissions will not be greater than the estimates developed for the EIS, the ROD must adopt mitigation requirements that ensure emissions will be

controlled to the levels assumed in the analysis. Since the DFEIS at 4-31 admits that "the amount of potential emission reductions have not been calculated[ ], the BLM must explain the basis for its confidence in the effectiveness of the mitigation measures discussed in the DFEIS. To the extent BLM relies on these assumed control measures to limit emissions for the purpose of demonstrating NAAQS or increment compliance, then they must be required in the ROD so that BLM can satisfy its obligation to "provide for compliance" with applicable pollution standards.

Visibility Impairment in Class I areas not prevented. 43h

The Clean Air Act imposes on the Secretary of the Interior, as a Federal Land Manager ("FLM"), "an affirmative responsibility to protect the air quality related values (including visibility) of any such lands within a Class I area and to consider, in consultation with the Administrator, whether a proposed major emitting facility will have an adverse impact on such values." 42 USC §7475(d)(2)(B).

The Secretary's affirmative responsibility to protect visibility in these Class I areas is not limited by the Act to major stationary sources. Indeed, EPA's PSD rule requires the FLM to "consider, in consultation with the Administrator, whether a proposed source or modification would have an adverse impact on such values." 40 CFR §51.166(p)(2). Under the PSD rule, "Stationary source means any building, structure, facility, or installation which emits or may emit any air pollutant subject to regulation under the Act." Id., §51.166(b)(5). This obligation is therefore not limited to "major stationary sources."

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The Secretary's affirmative responsibility applies not only to the review of permits for major stationary sources, but also applies to the implementation of RMPs under FLPMA. Under FLPMA, public lands are to be managed to "protect the quality of ...ecological, environmental, air and atmospheric, water resource and archeological values; [and] that where appropriate, will preserve and protect certain public lands in their natural condition." 43 USC §1701(a)(8). When the Secretary, acting through the BLM, is also authorizing major action for other federal public lands where the activities being authorized are shown to interfere with the express policies enacted to protect parks, wilderness and monuments under her stewardship, then the Secretary must exercise her authority under FLPMA to ensure that the air and atmospheric resources (including visibility) in Class I areas are protected. 43

The DFEIS shows that visibility in the Bridger and Fitzpatrick wilderness areas will be negatively impacted from cumulative emission sources. DFEIS Table 5-5. The cumulative visibility impacts in these Class I areas are likely much greater than shown because Powder River Basin emissions sources and other reasonably foreseeable future emission sources were ignored. Yet despite this evidence of deterioration in visibility, the DFEIS is completely silent regarding how the FLM will carry out the affirmative responsibility to protect visibility in these areas. The Act requires protection of visibility in Class I areas which is not determined by one source, or one set of sources, but by all sources adding emissions since the national goal was enacted. It is visibility impairment caused by these cumulative impacts that must be addressed and prevented.

In addition to the affirmative responsibility to "protect" visibility in Class I areas under her charge as an FLM, the Secretary acting through BLM under FLPMA, also has a responsibility to ensure the national visibility goal established by the Clean Air Act is implemented in all Class I areas likely to be impacted by emissions from developments authorized by BLM.

The CAA "declares as a national goal the prevention of any future, and the remedying of any existing, impairment of visibility in mandatory class I Federal areas which impairment results from manmade air pollution." 42 USC §7491(a)(1). EPA has promulgated rules to implement this national goal. 40 CFR Part 51, subpart P. These regulations include requirements defining reasonable progress toward the national goal. "The reasonable progress goals must provide for an improvement in visibility for the most impaired days over the period of the implementation plan and ensure no degradation in visibility for the least impaired days over the same period." 40 CFR §51.308(d)(1). This rule has been affirmed by the D.C. Circuit Court of Appeals is response to an attack by industry arguing that EPA is not authorized by the Act to establish a "no degradation" standard. American Corn Growers v. EPA, 291 F.3d 1 (D.C. Cir 2002)("Petitioners' claim that the agency is without authority to mandate attainment of the national goal is therefore meritless.")

This standard for reasonable progress has not been addressed in the EIS, but should have been. At a minimum, the DFEIS should have identified the visibility for the least impaired days in each of the Class I areas where significant impacts are predicted, and the extent to which the additional emissions from the projects combined with other regional emissions increases would cause degradation on those days. The results of that analysis should then be considered for the purpose of identifying the kinds of mitigation measures necessary to achieve the no degradation standard. This should also be addressed in a supplement to the current DFEIS before any final action to approve the project or adopt final mitigation measures as part of the ROD. 43

Acid rain impacts underestimated. 43i

Due to the absence of a legally and technically sufficient cumulative effects analysis, the DFEIS is able to conclude that "the predicted change in sensitive lake ANC levels resulting from cumulative source acid deposition were found to be far below the levels of acceptable change." DFEIS at 5-12. However, had the BLM considered impacts from all identified reasonably foreseeable future actions, including the Powder River Basin developments, the projected impacts to ANC would have been shown to be much more significant. For example, while the DFEIS shows cumulative emissions are 27.1% of the LAC at Upper Frozen Lake, the Powder River EIS shows that impacts to the LAC are nearly double the acceptable limit of one ueq/L for this extremely sensitive lake. Consequently, because cumulative acid rain impacts are actually much greater than shown in the DFEIS, the mitigation measures to be considered for the purposes of preventing NAAQS and increment violations, and for ensuring no degradation of visibility on the least impaired days, should also be assessed to determine if they will prevent the adverse impacts on lake chemistry based on the FS guideline. If not, then additional mitigation options should be identified to determine the extent of mitigation needed to prevent adverse impacts on the quality of these lakes.

Other air quality issues.

Projected success rate. The DEIS forecasts a "success rate of 65%" which provides the basis for evaluation of direct and cumulative impacts. The 65% rate is predicted for each of the action alternatives. What information, specifically, was used to arrive at this particular success rate? Why is the rate the same for the Proposed Action and Alternative A? One would assume greater selectivity, and hence a higher success rate, under the Proposed Action, which limits the number of wells that can be drilled to 385, as opposed to 592 wells for Alternative A which allows for a greater margin of error and perhaps a more aggressive exploration program. 43j

Compression emissions. The Technical Support Document (at 21) states that "for RFD projects that approved new compression but no specific amount was stated in the NEPA analysis, it was assumed 35 horsepower per well will be required." What is the basis for this assumption? We have seen rates as high as 200 horsepower per well documented in EISs prepared for oil and gas projects in southwest Wyoming. 43k

RFD emissions. The Technical Support Document (at 21) states that SO_2 and particulate matter emissions are not estimated for RFD sources because that they "expected to be insignificant." How can these pollutants be deemed insignificant? Please explain. 43l

Well production emissions. The DFEIS (at 4-12) identifies well production emissions. Does the emissions inventory include VOC (including HAP) emissions from well "blow downs," a common, yet often overlooked (in air quality analyzes), technique used to enhance production? 43m

Fugitive dust. The DFEIS (at 4-11) "assumes" a 50% control efficiency for fugitive dust emissions by "watering on the well pad and service roads during well pad and resource road construction." Is watering (and thus 50% control efficiency) also assumed after completion of the construction phase? In order to ensure compliance with the 50% control efficiency, will the Record of Decision contain mandatory watering and other dust control measures? If not, how will the assumed 50% efficiency rate be assured? 43n

Watering costs operators money, so it is rarely done. In our experience, 50% control efficiency for particulates cannot be realistically achieved, and in fact is not achieved in any oil and gas project under BLM's jurisdiction. What evidence does BLM have to the contrary? Beside raw assumptions, is there any practical, "on the ground" basis for the assumed 50% control efficiency? 43

Wind Erosion Emissions. Are the wind erosion estimates for the construction period only, or do they include emissions from continued wind erosion that will occur over the life of the project?

A specific problem area of the emission inventory is that existing techniques for estimating fugitive dust emissions are incomplete, inadequate, and probably severely underestimate the actual PM_{10} and $PM_{2.5}$ emissions. A recent report prepared for the Western Regional Air Partnership by a panel of experts (WGA, 2001) has extensively examined the issue of fugitive dust. Specific findings from this effort that apply directly to this impact analysis are:

- Fugitive dust emission factors need to be appropriate.
- Fugitive dust emissions are not continuous processes.
- Source activity levels need to be accurate.
- Annual fugitive dust emission inventories are not sufficient.
- Spatial allocation of fugitive dust emissions is important.
- The fine fraction of fugitive dust emissions is not adequately characterized.
- Disturbed surfaces produce significantly more fugitive dust than undisturbed surfaces.

The air quality analyses presented still rely on the out-dated EPA emission factors and, thus will underestimate fugitive dust emissions

In addition to the use of out-dated emission factors, major sources of fugitive dust emissions directly associated with the proposed Project are still excluded in the air quality analysis:

- Increased road dust emissions due to increased non-project travel (recreational, curiosity, miscellaneous) on new dirt roads developed specifically for the Project;

- Increased wind blown dust from surfaces disturbed by CBM development due to the fact that disturbed surfaces produce significantly more fugitive dust than undisturbed surfaces (WGA, 2001); and 43

The DFEIS Socioeconomic Analysis is Incomplete and Likely Flawed

As outlined in Section 4.12.3.1.1, the input-output model has a number of highly dubious assumptions, leading to equally dubious conclusions:

As an indication of the poor prospects for gas production in the DFPA, the BLM states: "Good reservoir rock is not uniformly distributed within the DFPA. Therefore, development wells would most likely be drilled along productive trends or pockets between large intervening areas that are nonproductive and have little or no development potential." DFEIS at 4-3. And yet the DFEIS forecasts a 65% success rate for the wells – Please explain the basis for this unusually high success-rate assumption. Are these development wells or exploration wells? Please explain what percent of the well drilled are exploration wells. Exploration wells have much lower success rates than 65%. In fact, in the Jack Morrow Hills DSEIS, the overall projected success rate for wells was set at only 15%, in an area that is likely more geologically promising for gas production than the DFPA.

Please explain how much gas was estimated to be economically recoverable in the planning area. What is the reference for the estimated gas used in the economic impact analysis? How were the production estimates on page 2-30 derived? What references were used to estimate these amounts? How do these estimate (page 2-30) compare with USGS estimates for economically recoverable gas? Please compare and contrast USGS estimates of economically recoverable gas with the amount of gas assumed recoverable and used in the economic impact analysis. 44

According to BLM's estimates, "Under the assumptions used for this assessment, annual gas production would total 16 million MCF in 2003, increase to 50.5 million MCF in 2021, and then gradually decrease to about 10 million MCF in 2041. At the volumes assumed for this assessment, over 1.1 trillion cubic feet of natural gas would be produced over the 40 year production cycle." DFEIS at 4-5. Please identify the assumptions that were used to arrived at this unbelievably high figure. Please justify the 5 bcf per well estimate used in the economic impact analysis (page 4-102). Is this the amount of gas estimated to be economically recoverable? How was this 5bcf estimated? Please justify this assumption and estimate.

The majority of gas discussed in the DEIS is gas that has yet to be discovered. Estimating quantities of undiscovered gas is fraught with uncertainties and economic risks for communities, companies, and the public. The Congressional Research Service (Corn et al. 2001) [3] recommends economically recoverable resources as the basis of policy analysis. Virtually every report on gas supply in the past 20 years has reported results in terms of economically recoverable resources (Environmental Law Institute 1999).[4] If economic constraints on production are ignored, land management plans will overestimate the quantity of gas that will be recovered in the reasonably foreseeable future. Please discuss the economic assumptions and parameters used in developing the RFD and planning alternatives.

The USGS 50-percent estimate (the mean estimate) for economically recoverable gas represents the best, unbiased estimate currently available. Please justify why the USGS data, developed by government scientists, were not used in the analysis. Please justify why USGS estimates of economically recoverable resource were not used in the DEIS. Please repeat the analysis of economic impacts using USGS data for both technically and economically recoverable gas resources. Such an analysis is required by law in order to provide a realistic examination of economic impacts. We believe the current economic impact analysis is in violation of the law.

The costs that USGS uses to assess economically recoverable gas and oil include the direct costs of exploration, development, and production at the wellhead, plus a profit margin. For gas to be considered profitable to recover, the full costs of gas recovery must be less than or equal to the price for gas. It is important to note that USGS estimates do not include transportation costs, non-market costs, or off-site mitigation costs such as increased water treatment costs. Please discuss potential mitigation costs and transportation costs associated with bring the gas to market. The DFEIS discusses water quality concerns and therefore must include an analysis of mitigation costs.

To account for the uncertainty inherent in price forecasts, USGS uses a range of prices, rather than a single-point estimate, to attain its estimates of economically recoverable gas. In the Rocky Mountains, the USGS estimates that less than 20 percent of technically recoverable gas is economically recoverable when prices (adjusted for inflation to 2002 dollars) are between $2.17 and $3.62 per thousand cubic feet (mcf) (Table 1, below). As context, from 1996 to 1999, wellhead gas prices in the United States averaged about $2.16 per mcf, with $2.00 per mcf viewed as the long-term price trend (Energy Information Administration 2002). At these prices, more than 60 percent of technically recoverable gas in the lower 48 states cannot be extracted profitably. USGS research underscores the economic risks from drilling in general, and the specific risks to the public and communities from developing management plans that ignore economics. [5]

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Economic recovery rates for technically recoverable gas in the United States based on prices of $2.17 and $3.62 per mcf (2002 dollars)

Region	USGS Economic recovery rates[a]
United States	38 – 46%
Rockies and Northern Plains	13 – 18%
Southwestern Wyoming	1 - 5%

[a] Percent of technically recoverable gas in reserves and gas left undiscovered that is profitable to extract (before accounting for environmental costs). Excludes recovery rates for offshore gas. Source: Root et al. 1997[6], Attanasi 1998[7], LaTourrette et al. 2002[8]

The fact that the USGS estimates that less than 5% of the gas in SW Wyoming can be recovered economically underscores the need to generate management plans and to estimate potential economic impacts to communities based on the gas and oil resources that are economic to recover. A more recent report by RAND estimated that 35-45% of the gas in the Greater Green River area is economic to recover.

Management plans that rely on technically recoverable estimates will dramatically overstate the

gas recoverable and hence the jobs and revenues from future gas production (Morton et al. 2002) [9]. Please discuss how economic constraints on gas production were included in the analysis of expected gas recovery from each alternative, including the economic impacts associated with each alternative. Please complete a marginal revenue-cost analysis of estimated gas production levels. Please compare and contrast the marginal revenues with the marginal costs for the full range of drilling levels. For example, examine the cost from drilling wells in deeper formations with the potential revenues from deeper wells.

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The average wellhead price in Wyoming was $2.42 as reported by EIA (based on data from 1996 to 2000), but more importantly, regionally observed wellhead prices range mainly from $1.20 to $2.09 per mcf. Based on the temporal analysis of Sproule Associates, wellhead prices in Wyoming price reach $2.81 less than 25% of the time. (see article August 7, 2002 from the Gillette, WY News Record, attached at the end of these comments). Please provide a more detailed analysis of historic wellhead prices from the local, regional and state perspective – include an analysis of the variation in those prices. Please obtain the Sproule analysis and fully consider the economic implications of their analysis in the estimates of gas resource potential and recoverable gas resources.

Employment Estimates in the DFEIS are Overblown

Under Section 3.12.2.3 (Earnings), unemployment rates in counties have remained flat for the period from 1992-2002. This would indicate that projections of improved employment from the Proposed Action may not be appropriate given that oil and gas development in these counties during the same period increased.

Oil and gas companies are not expected to hire large numbers of local workers (per the DFEIS). The conclusion is that the two affected counties will experience population growth as a result of the proposed action, and furthermore that this growth will be beneficial to the area. Adding residents to the counties may have some positive economic impacts in terms of multipliers in the economy, but these effects have not been examined. Please include the detailed analysis from the input-output model used. It should also be noted that these new residents will demand increase public services and the net benefit to the communities will be reduced by the added costs of these additional services. Please estimate the expected increases in required services and the costs thereof.

45

Carbon county earnings increased 5% between 1990 and 1998. The DEIS asserts that when adjusted for inflation this small increase is actually a 21% decrease. This decrease in real earnings is exaggerated. Estimates from Columbia School of Journalism, NASA, and the Federal Reserve Bank of Minneapolis (as well as others) estimate this decrease at only 16%.

Increased Gas Revenues Will Not Necessarily Buoy Local Economies

Under Section 3.12.2.4 (Recent Oil and Gas Activity), it is important to note that in Carbon County oil and gas earnings increased during the same period described above when overall earnings decreased. Please explain how the DEIS can support the assertion that local earnings will increase with this project given past experience?

46

Strains on the Infrastructure of Local Communities

Under Section 3.12.5 (Community Facilities, Law Enforcement and Emergency Management Services), if the expected population increases occur, the need for law enforcement will also increase. Studies have show that per capita incidents increase in rapidly expanding rural

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communities (Gulliford, 1989; Power, 1996). This will require proportionally greater needs for emergency services, especially law enforcement. The costs of these additional services should be considered in projections of the economic impacts of the Proposed Action.

It is noted that the town of Wamsutter is seeking grant funds for new emergency equipment (and it is noteworthy that these funds have not yet been secured). Please include the costs of new emergency equipment as costs of the project. These costs should be included regardless of whether grants are used or local funds. The use of grant funds for Wamsutter emergency equipment needs will reduce the availability of funds for other projects locally, statewide, or nationally. These opportunity costs need to be accounted for within the economic analysis of the Proposed Action. Furthermore, given that the need for additional equipment has been assumed, if such equipment is foregone in the event that grant funds are not secured, this will impose costs on the community in terms of reduced levels of services. Additionally, an ambulance provided by an oil and gas company should also be considered a cost of the project.

Increased emergency personnel needs are to be expected due to increased population. Fulfilling these needs with volunteers cannot be considered to have a zero cost. The value of additional volunteer time must be considered as a cost of the project. The DEIS projects that local earnings will increase. If these projections are correct the value of current volunteer time will also increase. Please estimate these costs and show where they have been accounted for in this assessment. **47**

Water system improvements which are required to accommodate growth need to be counted as project costs regardless of the funding source. Again, these funds must come from somewhere and their use for a water project in the Desolation Flats area will have opportunity costs in terms of foregone projects elsewhere. The costs of water system improvements need to be included in the DEIS.

The DEIS also notes that the town of Wamsutter has "identified a variety of street and infrastructure improvements...that may be required to accommodate growth from the drilling programs planned for the area." (p. 3.95) No outside funding for these services has been identified. Please explain how these direct project costs have been accounted for in the DEIS.

Expected sewer and water improvements in Baggs need to be included as project costs.

Sales and Use Tax Benefits of the Project are Overblown

Under Section 3.12.6.2 (Sales and Use Tax), only a portion of sales and use taxes are returned to the local community. If the DEIS is only looking at costs to the local community (i.e. leaving out costs paid by outside sources such as grants), consistency requires that only the portion of the increased sales and use tax revenue increase from the Proposed Action that will actually accrue to the local area can be counted as a benefit of the Proposed Action. **48**

Impact Significance Criteria

In Section 4.12.2, the following criteria are used to determine whether socioeconomic impacts of the Proposed Action and alternatives would be significant: **49**

An increase in county or community population that would strain the ability of affected communities to provide housing and services or otherwise adapt to growth-related social and economic changes;

This criteria has not been properly applied. It is clear from the analyses used in the DEIS that population increases are expected, and that these increases will result in the need for additional services. However, these services have not been explicitly described, the costs of these services have not been estimated, and they have not been included in the calculations of the economic impacts of the project. **49**

And aggregate change in revenue and expenditure flows likely to result in an inability on the part of affected units of government to maintain public services and facilities at established service levels; **50**

This criteria has been only partially adhered to given that only potential increases in revenue have been accounted for in great detail. Costs to the local communities have been mentioned in qualitative terms and dismissed. Please provide detailed estimates of the costs (market and non-market) associated with the changes in community population and structure.

Permanent displacement of residents or users of affected areas that would result from project-induced changes or conflicts with existing ways of life; **51**

This criteria has been applied only to local ranchers who are expected to suffer some losses in grazing access. It has been assumed that this will not produce a permanent change in the way of life of ranchers. This may or may not be the case, since the only measure of this is the replacement of the AUMS and income. It is possible that some ranchers may feel permanent changes in their way of life due to the presence of natural gas wells on the landscape.

Furthermore, it is incomplete to assume that the only group affected by this project are ranchers. Recreationists and conservationists from within and without the community will most certainly experience a permanent change in their existing way of life. These changes have been dismissed in the DEIS. Please include an accounting how the impacts on users other than ranchers.

Levels of project-induced dissatisfaction likely to generate organizational response and conflict. **52**

It seems to be inappropriate to use the generation of "organizational response" as a criteria for significance for the levels of dissatisfaction. Dissatisfaction will be experienced by many facets of the communities surrounding the project area, as well as those who are not in the immediate vicinity, but who have legitimate status as stakeholder in Federal public lands. The dissatisfaction will also take many forms, but can be unified into a common unit of measure using widely accepted economic techniques to measure non-market costs and benefits (and dissatisfaction is certainly a non-market cost). Secondary research can and should be used to estimate anticipated costs associated with this dissatisfaction, and from this a significance criteria can be developed that is more appropriate. Please revise this significance criteria to be consistent with the first two which use quantifiable measures.

LETTER 150 cont'd

Conclusion
We appreciate the opportunity to comment on the 385 well project proposed by the BLM in the Desolation Flats project area. If this project is to go forward, it should implement the most environmentally preferable methods available, irrespective of cost to the proponent. The DFEIS as it currently stands is a woefully deficient document, both from a substantive standpoint and from a legal perspective. If oil and gas development is to go forward at all, we urge the BLM to make radical changes to the current Proposed Action so that the project is done right, limiting drilling to contexts where it is compatible with protecting wildlands, wildlife, and public recreation. Please keep us informed of all future developments in regard to this project.

Sincerely yours,

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LETTER 151

July 1, 2003

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Dear Mr. Spehar:

The following comments are submitted on behalf of the National Wildlife Federation (NWF), the Wyoming Wildlife Federation (WWF), and the Natural Resources Defense Council (NRDC) for consideration during the preparation of the final environmental impact statement (EIS) for the Desolation Flats Natural Gas Field Development Project (DFP).

Despite its name, Desolation Flats is not a barren landscape. It is home to many wildlife species including several, such as sage grouse and mountain plovers, which are declining across their ranges. It is, perhaps, too late to forestall listing under the Endangered Species Act for the mountain plover. The sage grouse may yet avoid that fate if the agency takes the right actions now. Desolation Flats also provides crucial habitat for big game species such as mule deer, elk, and pronghorn. Pronghorn herds in Wyoming decreased by more than 300,000 animals between 1964 and 1997. Mule deer populations are also waning. For these reasons, NWF, WWF, and NRDC believe the Bureau of Land Management (BLM) should approach the development of 400 to 600 natural gas wells in Desolation Flats with extreme caution. The final EIS prepared by BLM should include a careful exploration of the true impacts of such development on the wildlife and wildlife habitat remaining in Desolation Flats and measures necessary to preserve that habitat.

The Draft EIS for the DFP fails to provide that true picture of the impacts of those wells because it offers no alternative that would prohibit or even limit oil and gas development in the area. The so-called "No Action" alternative assumes that the existing leases will be developed and that individual Applications for Permits to Drill (APDs) will be approved with little or no significant measures to preserve wildlands or wildlife habitat in Desolation Flats. 1

The Draft EIS also assumes, without any substantiation, that the cumulative impacts from other oil and gas development in the Red Desert of Wyoming is insignificant because much of the lands impacted by that development has been reclaimed. While lands that were disturbed during the construction phase of oil and gas development may have been re-graded and seeded, there is no indication in the Draft EIS that BLM actually measured the long-term success of reclamation. Moreover, the more serious issue of habitat fragmentation is not redressed by scattering some seed around the well pads. As long as the roads, pipelines, power lines, and other infrastructure remain, wildlife habitat is degraded. 2

The Draft EIS assumes, without explanation, that BLM will be able to impose occupancy and

seasonal limitations on surface-disturbing activities in order to preserve wildlife and wildlife habitat. There is, however, no discussion in the Draft EIS of whether the underlying leases contain no surface occupancy (NSO) and seasonal stipulations. Unless the leases themselves contain such stipulations for the protection of crucial big game ranges, sage grouse leks and nesting areas, mountain plover nesting areas, raptor nest sites, prairie dog towns, and other essential wildlife habitats, BLM cannot ensure that these habitats will be off limits to drilling and road construction. BLM's description of the impacts from oil and gas development on Desolation Flats, therefore, is simply inaccurate. 3

In addition, the proposed development of 400 to 600 natural gas wells in Desolation Flats is not in conformity with the existing Great Divide Resource Management Plan (GDRMP). The Draft EIS makes a prodigious attempt to reconcile the size of this proposal with the projections for only limited oil and gas development contained in the GDRMP. This attempt fails because it too relies on a number of assumptions; none of which are true. First, the Draft EIS assumes that the only significant impact from oil and gas development is the number of acres permanently disturbed by infrastructure. It ignores the very real impacts of habitat fragmentation and degradation that result from oil and gas development.[1] Second, the Draft EIS assumes that all abandoned wells and roads have been reclaimed. It assumes that all surface disturbance associated with the construction phase of currently producing fields has been rehabilitated. Yet, there is nothing in the Draft EIS to support these conclusions. 4

The proposal described in the Draft EIS is not in conformity with the Visual Resource Management (VRM) provisions of the applicable land use plans. It also fails to address agency guidance directing that all Wilderness Study Areas (WSAs) will be managed "according to VRM Class I management objectives . . .." BLM Instruction Memorandum No. 2000-096. 5

Finally, the mitigation measures proposed in the Draft EIS are inadequate to preserve wildlife and wildlife habitat in Desolation Flats. 6

For these reasons, NWF, WWF, and NRDC strongly urge BLM to complete a supplemental draft EIS for the DFP that includes a new alternative that addresses staged development of the project area. BLM should also explore alternatives that provide more effective protection for wildlife and wildlife habitats. The final EIS must more accurately reflect the environmental damage associated with this proposal. 7

The Alternatives Analysis is Flawed

Regulations adopted by the Council on Environmental Quality (CEQ) require a reasonable range of alternatives to be presented and analyzed in the EIS so that issues are "sharply defined" and the EIS provides "a clear basis for choice among options . . . ." 40 C.F.R. § 1502.14. CEQ regulations and court decisions make clear that the discussion of alternatives is "the heart" of the NEPA process. Environmental analysis must rigorously explore and objectively evaluate all reasonable alternatives. 8

The Draft EIS looks at only three alternatives.[2] None of these alternatives examines BLM's

authority to control the pace and direction of development on the public lands in order to preserve wildlife and their habitat. The Proposed Action authorizes the construction of 385 natural gas wells at locations yet to be disclosed. Alternative A authorizes the construction of 592 natural gas wells. While Alternative B looks at a significantly decreased number of wells, the alternative itself is completely unrealistic. It assumes that drilling for natural gas would continue at historic rates over the next twenty years resulting in 78 new gas wells in Desolation Flats.[3] Alternative B, however, leaves the rate of development completely within the discretion of the industry. APDs would simply be approved as they were submitted. Alternative B also assumes that "[c]oordinated area-wide monitoring and protective plans . . . would not be required . . .." Draft EIS at 2-3. It therefore provides no significant measures to preserve wildlife habitat. 8

BLM rejected without further consideration an alternative that would have added lands to the adjacent Adobe Town Wilderness Study Area (WSA) and one that required reductions in the infrastructure associated with oil and gas development by the use of directional drilling. In short, BLM included no alternative that would have authorized fewer wells than the numbers requested by industry. BLM included no alternative that looked at whether the impacts of oil and gas development could be reduced by requiring staged development. Under such an alternative, strict habitat rehabilitation of damaged wildlife habitats would be required before additional oil and gas activities would be authorized.

The Draft EIS Fails to Address the True Impacts on Wildlife

Pages 2-38 and 2-39 of the Draft EIS contain a list of additional mitigation measures that BLM intends to require for oil and gas development within Desolation Flats.[4] These measures include both timing and occupancy restrictions that purport to limit the scope of surface-disturbing activities. However, there is no discussion in the Draft EIS of whether the underlying leases already issued by BLM contain provisions that may be inconsistent with the imposition of such measures. There is no suggestion that requiring a lessee to move well pads or other infrastructure to avoid sage grouse leks or mountain plover nesting habitat or prairie dog colonies may not be legally feasible. However, if the leases contain no NSO stipulations for such habitat, BLM may not be able to impose such limitations now. The same is true for the seasonal restrictions BLM hopes to use to protect crucial big game winter range.[5] If the leases contain no timing stipulations on surface-disturbing activities, the lessees may object strenuously to BLM's attempt to impose new seasonal closures. Without an honest assessment of BLM's legal authority and practical ability to impose these mitigation measures, the Draft EIS's conclusion that 385 new natural gas wells in Desolation Flats will result in no significant impact on wildlife populations is no more than wishful thinking. 9

Additional Impacts Not Addressed in the Draft

The Draft EIS fails to address the impacts of the Proposed Action on Native American sacred sites and landscapes. There is no indication in the Draft EIS that BLM consulted with the tribes or others concerning such locations within the DFP area and what measures should be undertaken to preserve them.[6] 10

There is no discussion in the Draft EIS on the economic impacts of the DFP on hunter use or other recreation. The addition of 400 to 600 natural gas wells is bound to degrade the hunting experience in Desolation Flats. Others who use the area seeking to experience natural landscapes will also avoid the DFP area. The economic impact of that should be addressed in the final EIS. 10

The Proposed Action Does Not Conform to the Existing Land Use Plan

The Draft EIS engages in a deceptive effort to demonstrate that BLM has not exceeded, and that the DFP will not cause the agency to exceed, the Reasonably Foreseeable Development Scenario (RFD) for the Rawlins Field Office (RFO) (otherwise known as the Great Divide Resource Area). In the Draft EIS, BLM boldly proclaims that it "will not authorize oil and gas development actions (APD's, ROW's) that exceed current RFD estimates prior to the plan review and possible amendment." Draft EIS at 1-11. This pledge is followed by a tortured attempt to obscure the fact that BLM has already done so.

In the 1987 Great Divide Resource Management Plan EIS ("GDRMP EIS"), BLM relied upon an RFD of 1,440 wells. GDRMP DEIS at 220 ("It is projected that 1,440 new wells will be drilled on private, state and federal mineral estate in the planning area over the next 20 years.") Oil and gas wells over and above 1,440, therefore, cannot be authorized in conformity with the GDRMP. *See* Draft EIS at 1-11. In the Draft EIS for the DFP, however, BLM now calculates "new wells" in a manner completely dissimilar from that set forth in the RFD prepared for the GDRMP. First, BLM asserts that there were 2,310 active wells within the RFO as of the close of 2001, including all wells drilled since the late 1800's. BLM then cites the GDRMP EIS's finding that 1,775 wells were active in 1987. BLM subtracts 1,775 from 2,310 and declares that there are only "535 active producing wells since the RMP EIS," a figure far below the 1,440 discussed in the RFD. 11

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However, the fact that there were 2,310 active wells in 2001 and 1,775 active wells in 1987 does not mean that only 535 new oil and gas wells were drilled between 1987 and 2001. There are certainly wells that were drilled after 1987 but were no longer active in 2001. The RFD for the GDRMP drew no distinction between wells that would remain active for the life of the plan and those that might be abandoned or plugged temporarily for purposes of the RFD's estimate that 1,440 new wells would be drilled on the RFO.[7] Absent more precise data regarding how many wells were drilled in what year, a more appropriate measure is total wells in 1987 (3,671) versus total wells in 2001 (5,756). Draft EIS at 1-12, Table 1-4. Simple subtraction demonstrates that the total number of oil and gas wells within the RFO increased by 2,085, a number far larger than the 1,440 projected in the RFD. In other words, the RFD for the RFO already has been exceeded by 645 wells. Add in the 1,353 wells already authorized but not yet drilled, *see* Draft EIS at 1-13, and it becomes apparent that BLM has approved nearly 2000 wells that, by its own admission, it should not have.

BLM then tries to obscure the fact that it has already exceeded the RFO RFD by referring to the Continental Divide/Wamsutter II Draft EIS and trying to focus attention on "long term disturbance" rather than the number of wells. Essentially, BLM now argues that the appropriate

metric for evaluating RFD compliance is really "long term disturbance," defined by the agency as disturbed and unreclaimed ground surface. According to BLM, the 1987 GDRMP EIS projected that 34,355 acres would be disturbed during the 20-year period and that 18,263 of those acres would be reclaimed at the end of that period. GDRMP EIS at 220. So, the agency argues, as long as the 385 wells proposed for Desolation Flats, together with other active and/or authorized wells, will not result in the permanent disturbance of more than 16,092 acres within the RFO, the RFD will not have been eclipsed.

There are, however, at least two critical flaws with BLM's analysis. The first is BLM's misplaced conviction that only "long term disturbance," as defined by the agency, is relevant to whether impacts from oil and gas development have exceeded those projected and planned for in the 1987 GDRMP. In short, BLM assumes that only the actual surface acreage still disturbed after required reclamation is relevant to a determination of whether its RFD scenario has been exceeded. Ignoring for the moment BLM's wholly unsupported assumption that required reclamation has been successfully completed on each and every well site on the RFO, including wells on private lands, the impacts stemming from oil and gas development do not correspond in a linear fashion to the surface acreage disturbed. Because of pipeline and, particularly, road construction, habitat fragmentation, for example, is magnified with each well drilled. A spiderweb of active and inactive roads across the landscape creates impacts on that landscape's capacity as wildlife habitat that reach far beyond the specific pieces of ground occupied by well pads or pipelines.[8]

The second flaw in BLM's analysis is the conjecture that all inactive wells have been fully and adequately reclaimed. BLM states that "[r]eclamation was assumed to take from 3-5 years in the RMP. Therefore, it can be assumed that most wells drilled before 1996 should be adequately reclaimed." Draft EIS at 1-13. The second statement does not, however, follow from the first. Just because reclamation was presumed to take from three to five years does not mean that all 2,774 plugged and abandoned wells within the RFO (Draft EIS at 1-12, Table 1-4), in fact, have been reclaimed. Wishing will not make it so. BLM cites no data whatsoever regarding the extent to which these wells have actually been reclaimed or with what degree of success they have been reclaimed. Nevertheless, BLM's "long term disturbance" analysis proceeds from this notion that no impact whatsoever remains from any plugged or abandoned wells within the RFO. 11

BLM extrapolates the acreage of long-term disturbance based solely on the net increase in active wells within the RFO between 1987 and 2001. According to this calculation, 585 active wells x 9 (the average disturbance-per-well considered in the CD/WII analysis[9]) = 4,815 acres of disturbed and unreclaimed ground surface. Draft EIS at 1-12 to 1-13. This analysis takes wholly for granted that the other 1,500 wells drilled since 1987 left no trace whatsoever upon the landscape and its wildlife—an assumption utterly unsupported by any data in the Draft EIS.

BLM then relies on this calculation to conclude that an additional 4,224 acres of disturbance projected from currently-authorized but not-yet-completed projects (1,353 wells) combined with the 4,815 figure is less than the 16,092 acres of unreclaimed disturbance forecast in the 1987 GDRMP EIS. This presumably is why, according to BLM, the RFD will not be exceeded with the addition of 2,029 acres of disturbance from the DFP. Draft EIS at 1-14.

This analysis claims to rely on the CD/WII EIS. It is, however, not consistent with the findings of that EIS.[10] In the CD/WII EIS, completed in 2000, BLM determined that 10,305 acres of long-term disturbance already had resulted from 1,145 wells developed within the RFO since completion of the GDRMP. The CD/WII EIS also concluded that an additional 1,200 acres would be disturbed pursuant to projects authorized for Creston/Blue Gap, Mulligan Draw, Hay Reservoir, Sierra Madre, and South Baggs. CD/WII EIS at § 3.1. Nothing in the Draft EIS for the DFP supports a conclusion that 560 well sites and 5,490 acres within the RFO have been reclaimed completely within the past three years.

Moreover, even if long-term disturbance were an appropriate measure of RFD compliance, the analysis contained in the Draft EIS does not support BLM's conclusion that the RFD has not been exceeded. For example, BLM fails to explain why, at the top of page 1-13 of the Draft EIS, the agency uses a "CD/WII disturbance figure" of nine acres per well but further down that same page asserts that the "average disturbance per well" from the CD/WII project is less than three acres. Draft EIS at 1-13 and Table 1-5.[11] If a consistent figure of nine acres of disturbance per well were used, then the 1,353 wells remaining to be completed under existing authorizations would result in 12,177 acres of disturbance. Together with the 4,815 acres of land disturbed by active wells, the total surpasses the 16,092 acres of unreclaimed lands BLM asserts is the relevant calculation for the RFO RFD.[12] 11

In sum, despite BLM's remarkable effort in the Draft EIS, there simply is no way to reconcile the current explosion of oil and gas activity within the RFO with the limited projections for such development contemplated in the GDRMP.

Visual Resource Management

According to the Draft EIS, the only significant impact of the DFP will be reductions in the scenic quality of viewsheds and lands within the Monument Valley Management Area (MVMA) and the Adobe Town WSA.[13] Twenty-three square miles of the DFP lie within the MVMA. Twenty-one miles of the DFP abut the WSA. According to the Draft EIS, the lands in the MVMA are to be managed as VRM Class II. Class II areas:

> are those where changes in any of the basic elements (form, line, color, or texture) caused by management activity should not be evident in the characteristic landscape.

GDRMP at 74. The Draft EIS admits that the short-term impacts will "exceed the level of contrast permitted in both Class 2 and Class 3 areas . . .." Draft EIS at 4-95. More importantly, these contrasts "will persist . . . after drilling." Draft EIS at 4-95. The well densities that would be authorized pursuant to the Proposed Action clearly will not be in conformity with the provisions of the existing RMP with respect to the MVPA. *See* Draft EIS at 4-96. 12

In addition, "site disturbance and facilities would be visible from other portions of the MVMA and adjacent Adobe Town WSA, diminishing the quality of the visual experience . . .." Draft EIS at 4-95. NWF, WWF, and NRDC strongly urge BLM to restrict development in order to preserve the Class I quality of the WSA.

Wildlife Resources and Management

Before authorizing additional oil and gas development in the Red Desert, BLM must carefully evaluate the problem of habitat fragmentation and the need for maintaining the connectivity or linkage of habitats. Habitat fragmentation is strongly associated with the road building that accompanies such development. By altering the physical environment, roads and highways modify animal behavior. Many species shift home ranges, change movement patterns and even reproductive and feeding behaviors to avoid roads. Perhaps the most pervasive, yet insidious, impact of roads is providing easy access to natural areas and encouraging further development. Additional information on the impacts of roads on wildlife can be found at http://www.defenders.org/habitat/highways/new/ecology.html, incorporated into these comments by this reference.

The necessary corollary to preventing habitat fragmentation is maintaining migration corridors and other ecological linkages. It is more effective to preserve existing corridors/linkages than to attempt to create new ones. It is, therefore, crucial that BLM identify all existing migration and other movement corridors. BLM must preserve the ecological integrity of these corridors and linkages. Big game migration routes have been widely documented, but riparian areas, mountain ranges and ridges, and other areas serve as important linkages among habitats (and even eco-regions) that must be preserved. The Draft EIS contains no discussion of these linkages. BLM itself has acknowledged that maintaining connectivity between important habitats (crucial winter ranges, severe winter relief areas, calving/fawning habitats, migration corridors, topographic relief areas, mountain shrub communities, forest type habitats) is paramount to sustaining viable big game herds and other wildlife. Fragmentation of these crucial habitats will not sustain big game population objectives. Draft Environmental Impact Statement for the Jack Morrow Hills Coordinated Activity Plan (JMHCAP DEIS) at 235. These corridors should be kept free of fences and other structures that impede wildlife movement. 13

To prevent habitat fragmentation and preserve ecological linkages, the final EIS and ROD should establish specific, binding limits on road densities and other habitat disturbance that cannot be exceeded in the Desolation Flats area. This is the only way to ensure biological diversity is preserved, and that ecosystem attributes are not "nickel and dimed" to death by individually small but cumulatively significant site-specific projects.

Big Game

The BLM lands within Desolation Flats contain important habitat for pronghorn, elk, and mule deer. The area provides "crucial habitat" for all three species. Those activities and structures which prevent animals from reaching crucial habitat, which damage or eliminate crucial habitats, or which cause animals to avoid such habitat can severely impact the health and size of these herds.[14] Both mule deer and pronghorn populations in Wyoming are in decline. The JMHCAP DEIS noted that the elk in the Steamboat Mountain area previously were migratory but, "due to the large amount of human 14

disturbance and activities associated with oil and gas development," these migrations are no longer observed. JMHCAP DEIS at 236. Thomas et al. (1979) reported that elk habitat effectiveness declined 54% when improved road densities were 2.0 road miles/square mile in open habitats. The final EIS must address the impact of habitat fragmentation and loss of ecological connectivity on big game habitats in the DFP area and within the ranges of affected herds.

The cumulative impacts analysis in the Draft EIS contains no reference to the efforts of the Cumulative Impacts Task Force or the Green River Advisory Committee to design a framework for the assessment of impacts on big game habitats in the region. Moreover, the cumulative impacts analysis contained in the Draft EIS is both superficial and misleading. For example, the Draft EIS seems to recognize that the big game populations in Desolation Flats are part of larger herd units and that these herds migrate. Still, the Draft EIS contains little or no information on current population trends among these herds and no data on the types of activities, other than oil and gas production[15], occurring on the lands they occupy that might impact their numbers. Vegetation management, mineral production, feral horse populations, and livestock grazing within the respective herd units will impact big game in the Desolation Flats area. [16] BLM must consider and evaluate the cumulative impacts of these and other activities across the affected herd units in order to assess the cumulative impacts to big game populations of oil and gas development in Desolation Flats.[17] Once BLM completes a more accurate assessment of the cumulative impacts on the DFP area's big game herds, we believe that assessment will demonstrate the need to set aside crucial ranges within Desolation Flats from additional oil and gas development. 14

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Mountain Plover and Sage Grouse

The mountain plover and sage grouse have experienced drastic reductions in numbers across many parts of their native ranges.

Mountain Plover: The mountain plover is one of the rarest of North America's birds. Declines in mountain plover populations nationwide have been so severe that the United States Fish and Wildlife Service (USFWS) has proposed to add it to the endangered species list. Although Wyoming was previously considered to be on the periphery of the range of mountain plover, Wyoming is now "the core" of the remaining range of this rare bird.

Oil and gas development, as well as other human disturbances, in nesting areas is a direct threat to mountain plover population viability. For example, USFWS concluded that the proposed Seminoe Road Coalbed Methane project "is likely to adversely affect the proposed mountain plover," stating that wellfields are likely to become an "ecological trap," attracting feeding plovers to roadways where they become susceptible to vehicle-related mortality. Alternatively, increased vehicle traffic could drive plovers away from preferred nesting areas.[18] For these reasons, all mountain plover nesting habitat in the planning area should be closed to surface-disturbing activities and vehicle access should be severely restricted.[19] 15

Northern Sage Grouse: Sage grouse have declined precipitously rangewide and are now under consideration for listing under the Endangered Species Act. Declines have been estimated at over 50% in occupied area, and up to 80% decline in bird abundance, with complete extirpation in several states. In Wyoming, populations have declined significantly since the 1950s. Even so, Wyoming is the global stronghold for sage grouse and has the largest population in the world. 16

To ensure the viability of sage grouse populations, it is important to provide protection and restoration for breeding, nesting, brood rearing, and winter habitats. To ensure that these habitats are protected, BLM should impose NSO restrictions within two miles of leks and on all lands within nesting or wintering areas.[20]

Prairie Dogs, Mountain Plovers, Burrowing Owls, Swift Fox, and Black-footed Ferrets

The public lands in Desolation Flats provide habitat for white-tailed prairie dogs. In July 2002 a petition to list white-tailed prairie dogs as threatened under the ESA was jointly filed by the Center for Native Ecosystems, Biodiversity Conservation Alliance, Southern Utah Wilderness Alliance, American Lands Alliance, and Forest Guardians. [21] Moreover, both prairie dogs and their habitat are highly important to numerous other species, such as the swift fox, mountain plover, burrowing owl, ferruginous hawk, and our nation's most endangered mammal, the black-footed ferret.

Under the Black-footed Ferret Recovery Plan, USFWS has called for the establishment of ten or more separate, self-sustaining, black-footed ferret populations. At present, there does not appear to be enough large prairie dog complexes (5,000-10,000 acres) to achieve this goal. During the last decade, black-footed ferrets have been reintroduced at a number of sites but with only mixed success. Plague has wiped out several black-tailed prairie dog communities where ferrets have been reintroduced, with the result being that those reintroduced ferret populations have also been decimated. Other reintroduction sites have been marginal in terms of the size of the prairie dog complex where the ferrets were released. Only at the Buffalo Gap National Grasslands in South Dakota does it appear that there are sufficient numbers of prairie dogs to sustain a self-perpetuating, viable population of black-footed ferrets. The success at this site can be attributed to the absence, so far, of plague in South Dakota. With this exception, there is no current reintroduction site where a population of ferrets has been re-established that is likely to be viable and self-sustaining over the long term without increasing the number of prairie dogs and prairie dog colonies at reintroduction sites. Re-established ferret populations at Shirley Basin in Wyoming, at the Charles M. Russell National Wildlife Refuge and at Ft. Belknap Indian Reservation in Montana, at Aubrey Valley in Arizona, on BLM lands in northwestern Colorado, and at Coyote Basin in Utah, are all tenuous to varying degrees. 17

In addition to ferrets, which are obligate predators on prairie dogs, a number of other short-grass prairie wildlife species appear to be closely associated with prairie dogs and depend on their colonies. These associated species include those that use prairie dogs for food and those that use prairie dog burrows for shelter. Although none of these dependent species are currently listed as threatened or endangered (none are as exclusively dependent on prairie dogs as black-footed ferrets), they are all in decline. By clipping vegetation and creating areas free of vegetation,

prairie dogs create the ecological conditions required by mountain plovers for nest sites. There are strong indications that prairie dogs, as well as ground squirrels, are the primary prey of the ferruginous hawk. Burrowing owls utilize the burrows of prairie dogs for cover and nesting habitat. They appear to prefer active prairie dog colonies to burrows in decimated colonies. In addition to preying on prairie dogs in some areas, swift fox appear to require a high density of burrows for escape cover and for shelter.[22] Continued decline of prairie dogs is very likely to accelerate the decline of these prairie dog associates to the point where they, too, will warrant listing, along with the black-footed ferret.

NWF, WWF, and NRDC believe that all larger prairie dog colonies and those associated with other vulnerable species such as black-footed ferrets, mountain plovers, burrowing owls, ferruginous hawks, and swift fox should receive NSO restrictions on oil and gas development and protection from other surface-disturbing activities.[23]

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Endangered Fish

According to the Draft EIS, streams located within the DFP area drain into the Little Snake River. Draft EIS at 3-34. Waters from the Little Snake River eventually flow into the Colorado River. The Colorado River basin is home to several species of fish listed as endangered pursuant to the Endangered Species Act. Draft EIS at 3-68 to 3-70. The Biological Assessment (BA) prepared in conjunction with the Draft EIS concluded that the DFP will have no effect on these fish species. This conclusion, however, is based upon little or no data. The Draft EIS contains no current data on surface water quality within the DFP area. Draft EIS at 3-38. "Site-specific groundwater data for the project area is [also] limited." Draft EIS at 3-39. Moreover, what data is available seems to indicate that the surface disturbance and produced water associated with oil and gas development may affect the endangered fish in the Colorado River.

The soils in the DFP area are highly erosive. Draft EIS at 3-37. Moreover, soils in the project area have a high selenium content. Draft EIS at 3-28. Therefore, the construction of roads and well pads is likely to result in an increase in total dissolved solids (TDS) and selenium in streams within the project area. "Limited data from the deeper parts of the Tertiary aquifer system indicate TDS concentrations [in groundwater] in excess of 10,000 mg/l." Draft EIS at 3-45. Selenium problems with groundwater also have been identified. Draft EIS at 3-46. Water produced during drilling operations on the DFP area, therefore, is likely to be contaminated with both TDS and selenium. Since, fish can be extremely sensitive to TDS and selenium, additional information should be generated on the potential impacts of the DFP on water quality in the Little Snake River drainage in order to support the "no effect" conclusion of the BA. The final EIS should also include data on the efficacy of BLM's Best Management Practices to control non-point sources of pollution associated with oil and gas activities.

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Conclusion

NWF, WWF, and NRDC strongly urge BLM to suspend the issuance of new APDs in the DFP area until a new Resource Management Plan (RMP) for the RFO can be completed. In the process of preparing that RMP, the agency should take the requisite "hard look" at the environmental impacts that will result from additional oil and gas development in Desolation Flats and elsewhere in the Resource Area. To do so, the agency should explore fully its ability to control the pace and direction of both exploration and production activity. Moreover, the agency must consider the cumulative impacts on wildlife populations resulting from the full range of actions occurring on the public and private lands that provide wildlife habitat. Those actions include, among others, mineral production, livestock grazing, road construction, vegetation management, and recreation. Without an evaluation of the toll each of these actions exacts on habitat availability and effectiveness, no EIS is complete.

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Thank you for considering these comments.

Sincerely,

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Some of the documented impacts of roads on wildlife and wildlife habitat include direct loss of habitat; increased habitat fragmentation; decreased wildlife security; lost hunter opportunity; decreased quality of experience; spread of noxious weeds and edge species; increased erosion; decreased water quality; and increased illegal activity, such as wildlife poaching, artifact collecting, littering and illegal off-road use.

[1] It must be noted at the outset that the purpose of this Draft EIS is unclear. At this juncture, the federal lessees have not submitted a Plan of Development (POD) for the Desolation Flats area nor have they submitted individual Applications for Permits to Drill (APDs). So, the effect of the Record of Decision (ROD) issued by BLM once the final EIS is completed is uncertain. Does the issuance of this ROD mean that the first 385 natural gas wells automatically will be approved within Desolation Flats? Does BLM intend to set off some sort of race to its district office to be the first in line to acquire these APDs? Since there is no development proposal before the agency, there is no accurate description of where roads and well pads will be constructed. There is no way to tell from the Draft EIS what wildlife habitats will be affected. For this reason, we believe the discussion of potential impacts in this EIS is too vague to support the issuance of any APDs or PODs.

[2] Given the current industry proposal to drill 385 wells in Desolation Flats, there is no reason to believe that development of Desolation Flats will continue at historic levels.

[3] No data is provided on the efficacy of any of these mitigation measures or those contained elsewhere in the Draft EIS. Merely listing proposed mitigation measures with no supporting data is not adequate. Moreover, there is no discussion of agency resources available to impose mitigation measures and monitor their effectiveness. Without a binding commitment on the part of BLM to carry out promised mitigation, we fear that mitigation will be jettisoned in favor of management activities with higher internal agency priorities. We note, for example, that the Draft EIS promises annual surveys of many wildlife habitats, including sage grouse leks and areas occupied by mountain plovers. Draft EIS, Appendix H at H-10 and H-12. The Wildlife Monitoring Plan for the Continental Divide/Wamsutter project contained these same kinds of assurances regarding annual habitat assessments, but NWF, WWF, and NRDC are concerned that required data has not been collected for several years now. The final EIS for the DFP should include an honest appraisal of BLM's commitment and ability to complete the promised monitoring.

[4] It is unclear from the Draft EIS whether any of these restrictions will apply during the production and reclamation phases of natural gas development on Desolation Flats. If these restrictions are only enforceable during initial exploration and construction, the Draft EIS should so state and must address truthfully the continuing impacts on wildlife from ongoing natural gas operations.

[5] In general, the Draft EIS's discussion of impacts to cultural resources is inadequate and disingenuous. Since so little of the DFP area has been surveyed, it is impossible for BLM to conclude that there will be no significant impacts to cultural resources.

[6] The RFD concerned itself with the total amount of new wells to be drilled over the 20-year planning period, not merely the increase in active and producing wells over the course of that period. By citing the 585-well difference in active wells between 1987 and 2001, BLM is comparing apples (net increase in active wells) with oranges (the RFD, or total number of new wells).

[7] With respect to the impacts of long-term surface disturbance on many small birds and mammals, the Draft EIS asserts that these birds and mammals will simply move to new habitat when a well pad or road is constructed on their nest sites or burrows. The Draft EIS fails to acknowledge that such alternative habitats do not exist. Suitable areas most likely are already occupied.

[8] It should be noted that this assumption does not differ substantially from the one utilized by the BLM in the GDRMP EIS. 16,092 acres of disturbance divided by 1,440 wells is a little more than 11 acres per well, not much more than the 9-acre figure now employed at times in the Draft EIS. BLM's assertion that the current footprint of oil and gas development is significantly smaller now than in 1987 is not borne out by these figures.

[9] In a recent brief submitted to the Interior Board of Land Appeals, BLM provided yet another description of the CD/WII EIS analysis. There, the agency asserted that BLM had "reduced by 870 the number of wells permitted in the CD/Wamsutter Project Area, which provided an 870 well cap set-aside for use by BLM's Rawlins Field Office." *National Wildlife Federatin v.Bureau of Land Management* No. IBLA 2003-58, Agency's Answer to National Wildlife Federation's Statement of Reasons (March 24, 2003). In fact, the CD/WII EIS found that the CD/WII

project, as planned, would have exceeded the GDRMP RFD. CD/WII EIS at § 3.1. Therefore, the Record of Decision modified the project to allow 870 fewer wells than proposed. *Id.* This, however, did not allow BLM to permit another 870 wells without exceeding the RFD.

[10] It certainly appears that BLM is again trying to explain away its existing violation of the RFD by mixing apples and oranges—nine acres of disturbance per currently-active well (and DFP well) versus less than three acres of disturbance for authorized but not yet drilled wells in the CD/WII and other projects. *See* Draft EIS at 1-12 to 1-14 and Table 1-5.

[11] If the CD/WII analysis were followed consistently, then the Draft EIS would conclude that 10,305 acres of long-term disturbance had occurred within the RFO as of 1998. The 1,353 wells remaining to be completed would result in an additional 12,177 acres of disturbed and unreclaimed lands. Total acres of long-term disturbance within the RFO, therefore, would be 22,562. This far exceeds the 16,092 acres of disturbance BLM claims was anticipated by the GDRMP.

[12] *See, e.g.,* Draft EIS at S-11.

[13] Of course, widespread impacts to other noncrucial habitats can also negatively affect big game.

[14] The cumulative impacts analysis with respect to existing and future oil and gas development is based upon the same flawed logic addressed above in the discussion of the RFD. The cumulative impacts analysis fails to address the problems of habitat fragmentation and loss of ecological connectivity. It also assumes, without any supporting data, that reclamation requirements have been met and that such measures have been successful at restoring wildlife habitat. *See* Draft EIS at 5-4.

[15] There is also a lack of acknowledgement within the Draft EIS of the rise in poaching that will result from the increased access and human presence authorized in the project area. Poaching will reduce herd numbers. It will also have impacts on the wildlife enforcement resources of the Wyoming Game and Fish Department. BLM should address this issue.

[16] Cumulative analysis at this scale may reveal opportunities for off-site mitigation through habitat improvement.

[17] NWF, WWF, and NRDC welcome the inclusion of driving restrictions within plover habitat as discussed in the Draft EIS. *See* Draft EIS at 4-80.

[18] This must include not only active nest sites but areas that have been used for three out of the last five years. *See* Comments of Stephen J. Dinsmore on the Great Divide Resource Management Plan (February 3, 2003) (attached to these comments). The Draft EIS proposes a buffer zone of only 200 meters for plover nesting areas. A buffer this size is inadequate to protect mountain plovers. *Id.* In addition, the mitigation measures outlined on pages 4-79 and 4-80 of the Draft EIS should be required in all circumstances.

[19] The Draft EIS proposes only a ¼ -mile buffer for sage grouse leks. This buffer is inadequate. *See* Comments of Clait E. Braun on the Great Divide Resource Management Plan (February 14, 2003) (attached to these comments). In the Supplemental Draft Environmental Impact Statement for the Jack Morrow Hills Coordinated Activity Plan JMHCAP SDEIS), BLM itself acknowledges that nearly half of the sage grouse nesting habitat lies more than two miles beyond the radius of the strutting grounds. JMHCAP SDEIS at 3-18. Twenty percent occurs more than four miles from leks. JMHCAP SDEIS at 3-18. Moreover, "[m]ost successful nests are located beyond two miles." JMHCAP SDEIS at 3-19. The Wyoming Game and Fish Department (WGFD) has recognized that existing measures to protect sage grouse have been ineffective. WGFD Comments on Draft Management Situation Analysis for the Great Divide Resource Area at 5. At the very least, BLM should await the completion of the Wyoming Greater Sage-Grouse Conservation Plan before finalizing this EIS. *See* JMHCAP SDEIS at 3-18.

LETTER 151 cont'd

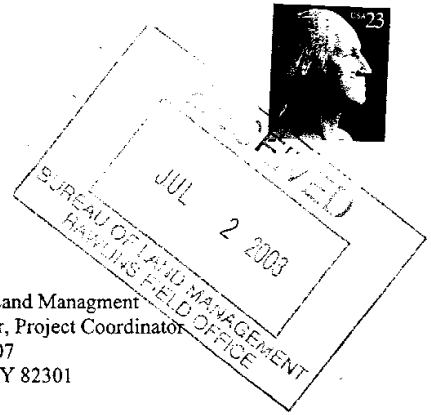
20 A copy of NWF's white paper on the status of the white-tailed and Gunnison's prairie dogs is attached to these comments.

21 While the USFWS has recently determined that swift fox are not warranted for listing under the ESA, the population remains much reduced from its former abundance.

22 While we welcome the imposition of measures to preserve some prairie dog colonies on Desolation Flats, NWF, WWF, and NRDC are concerned that the proposal in the Draft EIS providing that "[w]ell pads and disturbances would be placed outside of (50 m) prairie dog colonies where feasible," Draft EIS at 2-39 (emphasis added), may protect only small prairie dog towns, more easily avoided by oil and gas operations, while larger, more ecologically-significant colonies will be destroyed.

LETTER 152

Jim Weis
3416 Foxcroft
Cheyenne, WY
82001
Please include full name and address



Bureau of Land Managment
John Spehar, Project Coordinator
PO Box 2407
Rawlins, WY 82301

Dear Mr. Spehar,

The Desolation Flats project area contains spectacular public lands. In order to ensure adequate protection for the magnificent scenic and recreational value of the area as well as its outstanding wildlife habitat, I ask the Bureau of Land Management to:

- **Avoid drilling in environmentally sensitive areas such as wilderness quality lands, roadless lands, and important wildlife habitats.** The BLM should withdraw from leasing or require "No Surface Occupancy" for oil and gas drillingion floodplains, roadless lands, wilderness quality lands, crucial elk and deer winter ranges, prairie dog colonies, mountain plover habitat, and within three miles of sage grouse leks and one mile of raptor nests.
- **Protect all lands within the Adobe Town citizens' proposed WSA.** In the project area there are almost 50,000 acres of wildnerness-quality lands adjacent to the existing Adobe Town WSA. These lands should be protected by incorporating them into the larger, existing Wilderness Study Area.
- **Adopt a Conservation Alternative in the FEIS.** The FEIS must not only have a conservation (or true no action) alternative, but also adequate mitigation and monitoring measures to ensure proper protection for the area's special values.
- **Mandate the least environmentally damaging types of drilling.** Directional drilling should be required in the Desolation Flats Final EIS to minimize impacts to wildlife, recreation, and landscapes.

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Signature: _____